PREPARED BY GDS ASSOCIATES, INC.

2023-2024 ILLINOIS BASELINE STUDY

AMEREN ILLINOIS, COMMONWEALTH EDISON, AND NICOR GAS

Residential Baseline Results

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1 Introduction

ComEd, Ameren Illinois (Ameren), and Nicor Gas (the Utilities) contracted with GDS Associates (GDS) and GDS's team of subcontractors to develop a baseline study for the residential sector. The residential baseline study, a companion nonresidential baseline study, and an energy efficiency potential study combine to provide comprehensive perspectives on the energy use and energy efficiency opportunities within the Utilities' service territories. The residential baseline study provided inputs into the energy efficiency potential study and also provides data and insight for other stakeholders and users of the data.

The residential baseline study was completed with three major elements of primary data collection. These include:

- A large-scale online survey of the Utilities' residential customers to understand the presence of energy consuming equipment. The online survey was also used to recruit for onsite data collection and an additional willingness to participate survey.
- Onsite data collection was conducted by trained technicians to gather technical information difficult to acquire via the online survey. Additionally, site visits were used to verify and inform possible adjustments to the online survey results. A subsample of single-family homes were recruited to participate in blower door tests to understand air infiltration in single-family homes.
- The willingness to participate survey enabled respondents to describe how they may choose or not choose energy efficiency equipment under a variety of utility incentive levels. Additionally, these results were used to inform adoption curves used in the potential study.

Recruitment into the residential baseline study was driven by utility account records with email addresses. These records served as the starting point to understand and confirm respondent energy service providers, housing type, and income level, all of which serve as points of disaggregation in the results. This report is organized to present the study and results in the following major sections:

Section 2: Methodology Summary

Section 3: Online and Onsite Combined Utility Results

Section 4: Willingness to Participate Results

Appendices: Detailed tables of utility, housing, and income type results for the online and willingness to participate survey results.

2 Methods

The residential data collection effort involved multiple steps to collect baseline housing information. The team contacted customers of Ameren Illinois, ComEd, and Nicor Gas first through an online survey to collect basic household information. The survey was then used as a recruitment tool for subsequent on-site data collection and a second survey focused on willingness to pay.

2.1 SAMPLE COMPOSITION

The data collection team received customer contact and usage information from Ameren Illinois, ComEd, and Nicor Gas for their entire residential customer populations, totaling almost 7 million records. There was substantial overlap between ComEd electric customers and Nicor Gas customers. After removing contacts duplicated across and within utilities, commercial accounts, and records with incomplete contract information, the residential population to be surveyed included about 3.8 million households in Illinois.

The data collection team selected a sample frame of about 312,000 records from the population file, proportional to the targeted survey groups in the overall population (utility, housing type, and energy usage level), with customers randomly selected for the sample frame within the targeted groups. Housing types (single family or multifamily) were identified by utility records, while energy usage levels were defined by the data collection team. The team established targets for survey groups to meet a criterion of ±5% precision with 95% confidence for survey results from the targeted groups.

Energy usage levels were defined as a simple “high” or “low” designation, determined by the household’s average daily use compared to other households of the same housing type within the same energy utility. Households that were above the median usage were categorized “high” and those under the median were “low”, thus dividing customers into two almost exactly equal groups. Customers with both gas and electric usage data were categorized according to their electric usage. About 5% of contactable customers were excluded from the sample frame due to incomplete or irregular usage data (i.e., extremely low usage homes that were presumably unoccupied), so that all customers in the sample frame could be accurately categorized as high or low usage.

The data collection team attempted to contact a randomly selected 201,700 of the 312,000 households in the sample frame to complete the survey. Emails were deployed in weekly waves for nine weeks, with up to 40,000 emails per wave. As responses were received, the data collection team tracked response rates by targeted groups and adjusted the proportions by group for each survey wave. This was done to reach all the defined survey targets (housing type and energy usage level) and to keep the survey responses proportional to the contactable population. Representation by utility did not have defined survey targets, but due to the sampling techniques employed the survey respondents closely matched the proportions by utility in the overall population.

Once the initial survey targets were met, the survey continued for several weeks in order to generate additional prospects for on-site inspection recruitment. The data collection team continued to follow the same proportional approaches for surveys collected beyond the original targets. In total, 3,819 Illinois households responded to the residential survey, exceeding the initial target of 1,360.

TABLE 2-1. SURVEY GROUP SIZES, BY USAGE

Survey Group	Survey Target	Achieved Surveys
Single family, high usage	340	1,110
Single family, low usage	340	1,064
Multifamily, high usage	340	1,037
Multifamily, low usage	340	1,205
Total surveys	**1,360**	**4,416**

The data collection team also tracked respondent income levels, though income levels could not be targeted by the email campaign because income level was determined by answers to survey questions. Households were categorized as limited income if they responded to household size and income questions that indicated their household income was less than 80% of the Area Median Income (AMI) for their county[1], or if they were flagged as limited income in utility data and did not give survey answers that contradicted that designation. Some customers did not answer the survey questions about household income. Using these criteria, the data collection team identified 1,472 limited income households among the 3,819 respondents who did answer questions about household income.

TABLE 2-2. SURVEY GROUP SIZES, BY INCOME

Survey Group	Survey Target	Achieved Surveys
Single family, limited income	280	640
Single family, standard income	400	1,329
Multifamily, limited income	280	832
Multifamily, standard income	400	1,018
Single family, unknown income	N/A	221
Multifamily, unknown income	N/A	311
Total surveys	**1,360**	**4,416**

Survey respondents were asked to identify their household energy suppliers. This includes electric and gas utilities and non-utility providers. The analysis team reviewed the responses and categorized respondents by combinations of electric utility provider and other energy sources. In some cases, the analysis updated responses to correct for misunderstandings – for example, respondents may have provided a retail energy provider but not the host distribution electric utility. Table 2-3 summarizes the combination of responses by household energy supplier.

TABLE 2-3. BASELINE SURVEY RESPONDENTS BY HOUSEHOLD ENERGY SUPPLIER

Gas (down) / Electric (across)	Ameren	Comed	Muni/Coop/Other	TOTAL
Ameren	564	3	44	**611**
Nicor Gas	125	1,957	69	**2,151**

[1] The limited income definition of 80% of AMI is used by the U.S. Department of Housing and Urban Development (HUD) to define "low income" households. For this study, we used the most recently published HUD 80% AMI income guidelines for Illinois, which were effective June 1, 2023.

Gas (down) / Electric (across)	Ameren	Comed	Muni/Coop/Other	TOTAL
North Shore	0	154	0	**154**
Peoples Gas	0	1,301	0	**1,301**
Other Gas	18	4	0	**22**
Non-Utility Fuel	21	21	0	**42**
Electric-Only	40	95	0	**135**
TOTAL	**768**	**3,535**	**113**	**4,416**

As shown in Table 2-3, a large proportion of the respondents are served by ComEd, with substantial ComEd responders being served by Peoples Gas and Nicor Gas. Most respondents with Ameren electric service also receive Ameren gas service, though overlaps with Nicor Gas were also common. Separate responses by these combinations, related to the sponsoring utilities, are included in the detailed results in the appendices.

2.2 RECRUITMENT

The data collection team used the Qualtrics survey platform to email potential respondents and collect their survey responses. Customers selected for the survey received two emails: an initial invitation and a follow-up reminder approximately 7 days after the initial contact. As an incentive to take the survey, respondents were offered a chance to enter a sweepstakes drawing to win one of twenty $100 gift cards upon completion of the survey. During the initial baseline survey, respondents were asked if they would be willing to take the Willingness To Pay survey and/or participate in an on-site inspection of their home. An additional sweepstakes of twenty $100 gift cards was offered to respondents who also took the Willingness To Participate survey.

The recruitment for the Willingness to Participate Survey resulted in the following outcomes (see Table 2-4). All utilities were represented, however subdividing the sample responses by utility often resulted in small counts for any given survey response or response category. As such, the GDS team recommends utilizing the overall responses to understand residential willingness to participate patterns, and did so for the potential study adoption curves, utilizing the housing and income types for the level of disaggregation.

TABLE 2-4. WILLINGNESS TO PARTICIPATE RESPONSE COUNTS (TOTAL)

Survey Group	Overall	SF	MF
Low-income	263	125	138
Not-Low-Income	481	268	213
Total	**744**	**393**	**351**

On-site inspection participants were all initially recruited through the baseline residential survey, which outlined the process and informed them about the $100 incentive for participating. The field data collection team were tasked with reaching out to, scheduling, and performing site visit inspections with survey respondents who expressed interest. They focused on a three-step approach when contacting

potential homeowners and tenants, outlined below. Site visit recruitment always began with a telephone call, though some follow-up communications were done by email when respondents preferred that approach.

1. **Initial Interest**: Start with a list of prospects who have already indicated interest through survey responses. This ensures that the leads are fresh and respondents more likely to be receptive.
2. **Phone Call Cadence**: Implement a structured phone call cadence. Begin with an introductory call to confirm their interest and provide a brief overview of the benefits of an onsite inspection. Leave voicemails if they don't answer, as this can increase the chances of success on subsequent calls. Try calling at different times of the day on later attempts to better accommodate their schedules.
3. **Territory Approach**: Organize the prospects by territory to streamline the scheduling of on-site inspections. This approach helps efficiently manage time and resources, allowing for multiple inspections in the same area on the same day.

The site visits resulted in the following mix of respondents across housing and income types (see Table 2-5, below). Overall, the responses indicated a diverse mix. The GDS team does not recommend further subdividing the results into utility-specific categories due to the small number of resulting counts. Furthermore, not all data in the site visits were collected on an equal basis due to availability of data from each home. Results reported in Section 3 of this report take this into account, with aggregation often only being reported at the level of housing type.

TABLE 2-5. SITE VISIT COMPLETION BY HOUSING AND INCOME

Survey Group	Overall	SF	MF
Low-income	122	60	62
Not-Low-Income	215	117	98
Total	**337**	**177**	**160**

As a subset of the site visits, 67 single-family homes had blower door tests completed to understand air infiltration. Of this sample, low-income homes represented 18 of the 67 cases, with not-low-income homes representing 49 of the 67 cases.

2.3 SURVEY INSTRUMENTS

The data points collected in the residential baseline survey are summarized in the list below.

- Building type (single family, apartment, attached, etc.)
- Home characteristics (home age, duration of residence, conditioned areas, basement, etc.)
- Heating equipment and fuel source
- Cooling equipment
- Thermostat type
- Water heating equipment and fuel source
- Appliances and fuel source (as needed)
- Electronics (dehumidifiers, air purifiers)

- Lighting
- Insulation
- EVs and EV chargers
- Solar panels and home batteries
- Smart home devices (other than thermostats)
- Respondent demographics (including income and household size)
- Electric and gas utilities
- Consent and preferred contact for site visit recruitment
- Consent to receive Willingness To Pay survey invitation

The data points collected in the residential Willingness To Pay survey are summarized in the list below.

- HVAC system purchase barriers, benefits, and incentives
- Water heater purchase barriers, benefits, and incentives
- Insulation and air sealing purchase barriers, benefits, and incentives
- Major appliance (refrigerators, dishwashers, laundry) purchase barriers, benefits, and incentives

2.4 DATA COLLECTION

2.4.1 Data Collection Protocols

Cadmus created data collection protocols for major data collection categories, such as heating and cooling equipment, building envelope details, and appliances. Training with field technicians helped ensure that Cadmus and subcontractors were aligned regarding how data should be collected, which in turn informed communication with field staff and updates to the data collection tool. The data collection protocols will also be a valuable resource for those who use the data and need a better understanding of how specific data points were captured, as well as for project staff working on future iterations of the project.

The field collection team used the Arkenstone data collection tool to record data about specific home components. There were 265 different data points addressed by the inspection, which are summarized in the table below.

TABLE 2-6. DATA POINTS ADDRESSED BY INSPECTION

Home Type (15 data points)
· Type of home
· Stories
· Sq Feet
· Electrical features
Water Flow (7 data points)
· Types of showerheads, faucets and their gallon per minute flow
Appliances (19 data points)
· Refrigerators, freezers, washers, dryer, dishwashers, and stovetop/ovens, were documented
· Energy Star logo is or is not present
· Age of appliance
HVAC (198 data points)

· Type of domestic hot water heater
· Heating type, efficiency, and distribution system
· Air conditioning type, efficiency, and distribution system
· Pictures of appliances, labels, and any other useful information
Envelope (26 data points)
· Insulation R values
· Type of foundation
· Attic, ceiling, wall, and floor details

2.4.2 Quality Control and Data Cleaning

Project staff ensured a high level of data quality through a multilayered, two-phase approach to QC. The initial phase consisted of a thorough site-level review performed by Cadmus and its subcontractors. That included the following verifications:

- Built-in validation that all required fields had been completed in the data collection tool.
- An automated data QC web portal, available to all field staff, with predefined data quality checks. Field staff were required to review and resolve all data quality alerts in the QC portal before data for a site was considered complete. Automated tests checked for consistency between related values, ensured that calculated values derived from raw inputs were in a reasonable range, and flagged unusual configurations for expert review by senior team members. When the flagged items could not be rectified field staff reached out to Cadmus for guidance.
- A brief manual examination of key fields by the Cadmus QC leads for technical inconsistencies and identification of apparent discrepancies for deeper, technical review.
- Resolution of any identified technical discrepancies through discussions between Cadmus QC staff and field staff.

2.4.3 Further QC after completion of site assessments

As Cadmus received batches of draft data that had completed the first pass of site-level review, the team performed additional, in-depth data cleaning and QC. This process comprised of multiple layers of tasks and included a combination of automated and manual checks, comparing across sites to identify outliers and patterns in the collected data:

Cadmus checked records for completion, verified that values fell within expected ranges, and checked for internal consistency. Project staff verified internal consistency through a QC checklist with specific checks for each record type like the following example:

- If a furnace record was missing a key field—such as heating capacity—the record was flagged for deeper review, which may have included research to look up the value based on the model number or other information.
- If a furnace record's heating capacity was entered as "12" and the heating capacity units were entered as "Btuh," the record was flagged for deeper review, because 12 Btuh is not within the expected range for furnace heating capacities. The value would be verified against the recorded nameplate photos, and if necessary additional research would be done to determine the correct value.

- If a furnace record's fuel type was entered as "Electricity" and the heating capacity units were entered as "Btuh," the record was flagged for deeper review, because capacity for electric HVAC equipment typically is not reported in Btuh.
- Every HVAC unit was checked individually to ensure the brand, name, size, and type of heating and cooling was accurate.

2.5 ON-SITE INSPECTIONS

Cadmus performed the training for inspectors and ongoing evaluation of sites during the project. In addition to initial training there was always a line of open communication from Cadmus to the field staff and managers to answer questions, help onboard new staff, speak to recuring errors and how to eliminate them, and answers questions pertaining to specific sites.

2.5.1 Training

Cadmus performed the initial project training virtually for anyone involved in the project including field staff, field staff managers, and QC personnel. The presenters recorded each session to allow trainees to review the content later and to support training of technicians who could not attend the training session. When new staff joined the project after the initial rollout, they were provided with training and encouraged to reach out to Cadmus QC staff and schedule a one-on-one meeting to discuss any questions.

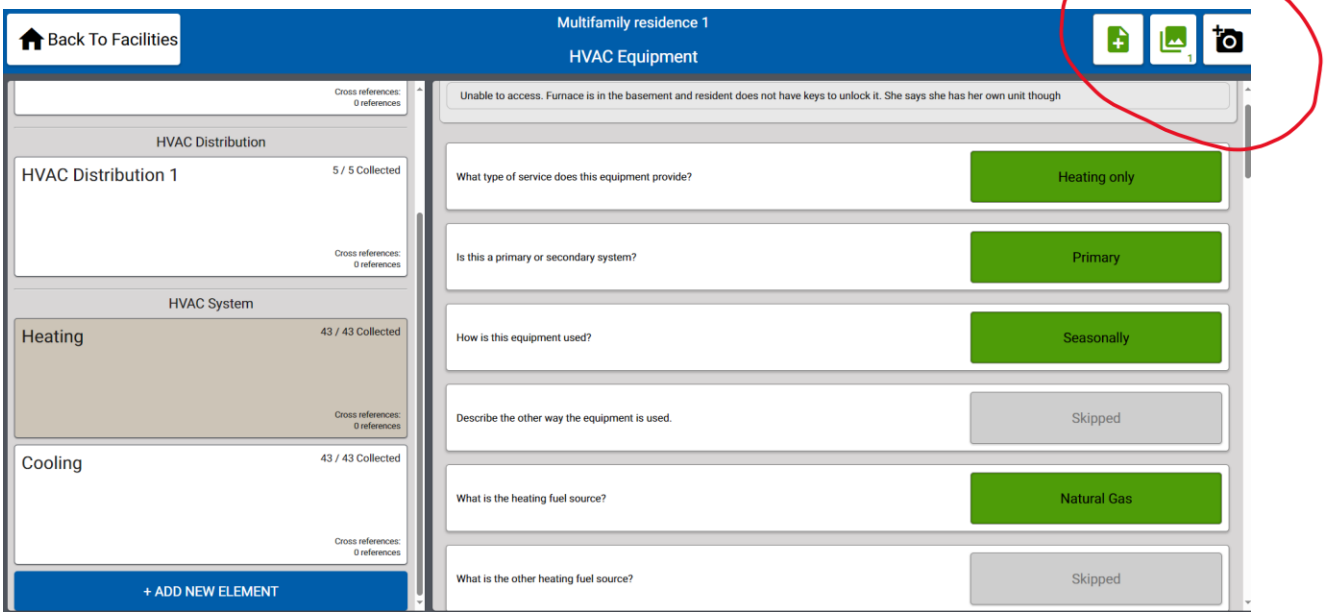
2.5.2 Arkenstone Tool

Field staff captured and submitted site visit data using Arkenstone, a tablet-based Cadmus data collection tool. This tool provided a standard set of questions and response options for each site visit and adapted dynamically to responses to skip questions that were not applicable based on previous responses. Where applicable, the tool provided pre-configured response options for the user to select from to ensure consistent data entry, with the option to enter a custom "other" value where necessary. Numeric fields were also configured with an acceptable input range where relevant, flagging invalid values. When free-form text or numeric entry was required, the study team double-checked the figures through the QC process and evaluated for correctness and spelling errors. To avoid data loss, the tool was configured to work offline without a network connection, and to sync data to a secure cloud server over WiFi or cellular data connection when available.

Pictures of pertinent information were taken during the site visit and uploaded immediately. Direction was given to take pictures of:

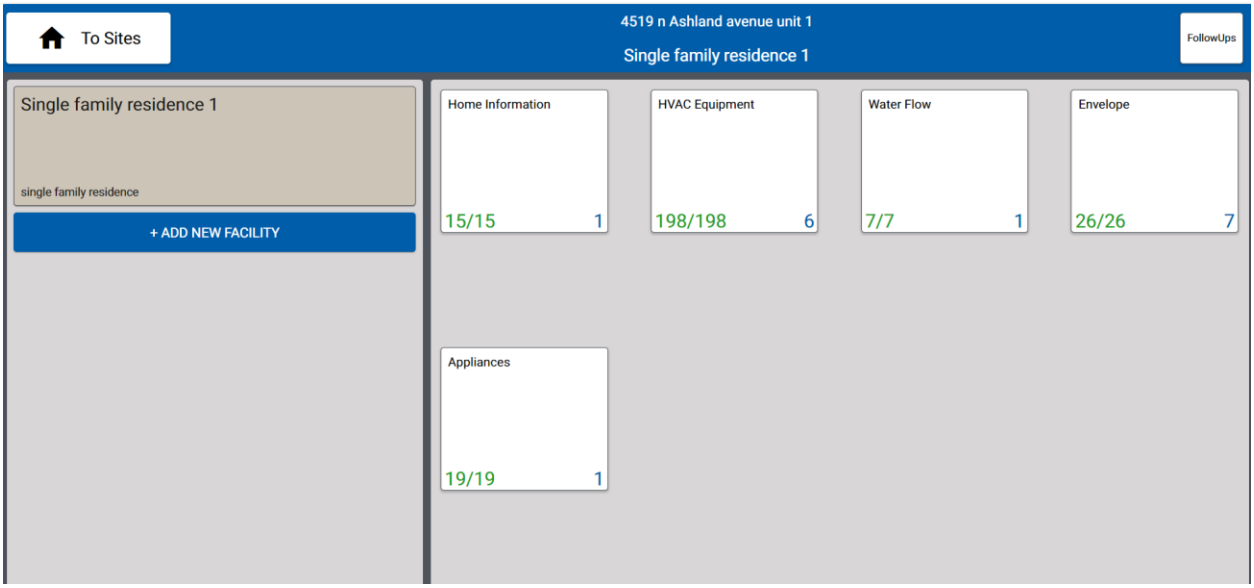
- A wide shot of the appliance
- A close shot of the appliance label. More than one of these was recommended.
- Any notable features of the appliance.
- Any wear and tear or other defects of the appliance or components.
- Insulation levels when available.
- All electrical components.
- Plans of the home when made available.

FIGURE 2-1. IMAGE OF ARKENSTONE TOOL



The example below is for a single-family residence, but the multifamily residence is very similar with some small differences.

FIGURE 2-2. SINGLE-FAMILY RESIDENCE EXAMPLE

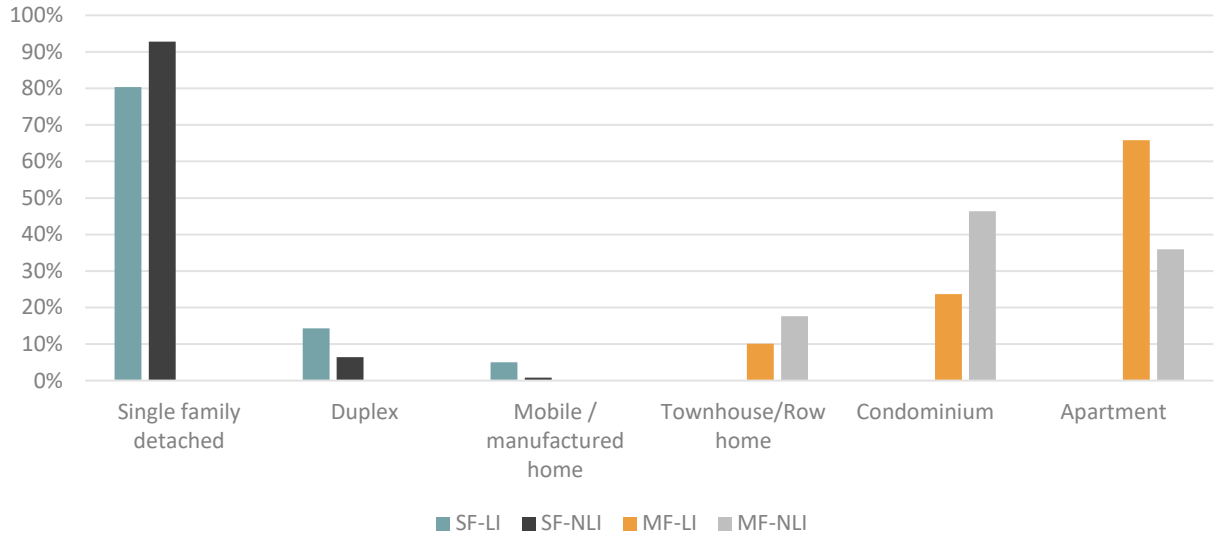


3 Key Baseline Study Combined Utility Results

3.1 BUILDING CHARACTERISTICS

Survey participants were asked what their home type. The majority of single-family respondents live in single family homes, with the remainder living in duplexes or mobile / manufactured homes. The most common type of dwelling for multifamily participants is apartments for low-income households and condominiums for non-low-income households. See Figure 3-1 for the dwelling types of survey participants. These dwelling types are shown as a percentage of the total homes in the housing/income category.

FIGURE 3-1 DWELLING TYPES



Multifamily survey respondents were asked how many dwelling units were in their buildings. Table 3-1 shows the results. The most common response for low-income households was 3 to 4 units, and the most common response for non-low-income households was 5 to 9 units. 28 percent of multifamily low-income households own their home, where 59 percent of multifamily non-low-income households own their home.

TABLE 3-1 NUMBER OF DWELLING UNITS IN MULTIFAMILY BUILDINGS

	MF-LI	MF-NLI
3 to 4 units	30%	23%
5 to 9 units	25%	26%
10 to 19 units	14%	11%
20 to 49 units	13%	15%
More than 50 units	18%	24%
I don't know (n)	65	34
Respondents (n)	**801**	**970**

3.2 SPACE HEATING

Space heating is a substantial portion of energy consumption in homes. Baseline data for space heating investigated the presence of equipment types and energy sources being used across homes in the Utilities' service territories. The residential online survey provided responses to understand differences between utilities, home types, and income types for in-home/in-unit heating systems. Residential site visits were used to verify the online response and inform adjustments to the shares of heating fuels and equipment types. Additionally, site visits were used to gather information to confirm heating system capacities and efficiencies.

Site visits revealed that online survey respondents appeared to have one common source of error – the online survey's initial responses to primary heating equipment type and fuel indicated an unexpectedly large share of electric furnaces. Site inspections did identify cases of electric furnaces but found that half of the online respondents indicating electric furnaces actually utilized natural gas furnaces. As a result, the online survey responses were adjusted to reflect this pattern, reducing reports of electric furnaces by 50 percent, reallocating those responses to natural gas furnaces. The analysis team believes that some of the respondents indicating the presence of electric furnaces may have misunderstood their air-handling system as being the source of heat. In fact, air handlers used for both natural gas and electric furnaces can have a heating coil, though site inspections helped to reconcile the specific use-case of the air handlers.

The other substantive change during the data review process was to recode combinations of indicated heating systems and fuels or remove the data from the online survey dataset analysis. For example, a household (not part of the onsite sample) indicating a geothermal heat pump fueled by propane was removed due to irreconcilable conflict between the heating technology and fuel. In other cases, the analysis team inspected responses and made adjustments based on open-ended responses. For example, a respondent indicating "natural gas" and "in-floor heat" would be recoded as having a boiler. Table 3-2 summarizes the volume of adjustments made to the online responses to arrive at the final results.

TABLE 3-2 SPACE HEATING ONLINE SURVEY ADJUSTMENTS

Adjustment Action	Number of Cases	Percent of Case Responses
No change	2,990	74%
Electric Furnace Adjustment	141	3%
Case-level recoding	429	11%
Data removed	487	12%
Total	**4,047**	**100%**

The primary adjustment was the removal of 487 (12 percent) cases due to illogical or irreconcilable responses. Three-quarters of the survey responses were not adjusted, with case-level recoding occurring in 11 percent of cases and broadly distributed across energy sources and equipment types. The result is the analysis team's best estimate of the share of each type of heating fuel and equipment from the combination of online survey inspection and correction driven by onsite verification.

For the combined utilities, the results of the analysis point to natural gas furnaces as the dominant form of primary space heating across single-family and multifamily households, regardless of income type. Natural gas boilers are the next most common for single-family homes, with electric heating being the

second most common heating fuel for multifamily homes (boilers were a close third for multifamily homes). Ameren multifamily homes are one exception – in both Ameren's gas and electric service territories, the analysis indicated approximately 50 percent of Ameren's multifamily homes used electric heat. Ameren confirmed that this outcome aligned with their historical understanding. Utility-level breakouts of space heating equipment and fuel are included in the Appendices.

Table 3-3 summarizes the combined utilities' results for primary space heating equipment and fuel. Overall, low-income households were somewhat more likely to have electric forms of heating. Propane, fuel oil, and wood heat are relatively uncommon. Heat pumps, as a form of electric heat, represent 3.5 percent of single-family homes' primary heating systems, and 6.2 percent of multifamily homes' primary heating system. Ducted air-source heat pumps were identified as the most common form of heat pump for both housing types.

The analysis created a category of heating equipment called "supplementary" heating. While respondents indicated that these were primary heating systems, the types of equipment within this category include radiant heating in ceiling panels or lamps. Site visits could not validate this category of heating, and these types of heating equipment are rare in the results (<0.5% in all cases). The analysis team allows that this category is somewhat uncertain in its disposition but retained the data for transparency and comprehensiveness.

The results point to the importance of natural gas as a source of space heating, with electricity also being important for the multifamily marketplace.

TABLE 3-3 PRIMARY SPACE HEATING EQUIPMENT AND FUEL, COMBINED UTILITIES

Heating Fuel	Equipment	SF Overall (n=1,949)	SF LI (n=593)	SF NLI (n=1,248)	MF Overall (n=1,529)	MF LI (n=642)	MF NLI (n=828)
Electricity	Furnace	2.8%	3.5%	2.2%	5.7%	7.6%	3.6%
	Air source heat pump (with ductwork)	2.1%	2.2%	1.9%	5.0%	2.8%	6.8%
	Baseboards for space heating	0.5%	1.3%	0.1%	6.0%	8.6%	4.0%
	Wall/room heater	0.2%	0.3%	0.2%	5.2%	6.7%	4.1%
	Geothermal heat pump	0.8%	0.3%	0.9%	0.1%	0.2%	0.1%
	Water source heat pump	0.5%	0.3%	0.2%	0.8%	0.2%	0.6%
	Supplementary Heating	0.2%	0.2%	0.2%	0.2%	0.0%	0.4%
	Ductless heat pump	0.1%	0.0%	0.2%	0.3%	0.0%	0.5%
	Subtotal - Electric	**6.8%**	**8.3%**	**5.9%**	**23.0%**	**26.0%**	**20.0%**
Natural Gas	Furnace	83.2%	78.9%	85.6%	59.7%	52.0%	66.3%
	Boiler	7.6%	9.8%	6.3%	15.6%	19.2%	12.7%
	Stove or fireplace	0.2%	0.3%	0.1%	0.1%	0.2%	0.0%
	Supplementary Heating	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
	Wall/room heater	0.4%	1.0%	0.1%	1.2%	1.9%	0.7%
	Subtotal - Natural Gas	**91.3%**	**90.1%**	**92.1%**	**76.7%**	**73.2%**	**79.8%**
Propane	Furnace	1.5%	1.2%	1.7%	0.0%	0.0%	0.0%
	Boiler	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%
	Subtotal - Propane	**1.7%**	**1.3%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**

Heating Fuel	Equipment	SF Overall (n=1,949)	SF LI (n=593)	SF NLI (n=1,248)	MF Overall (n=1,529)	MF LI (n=642)	MF NLI (n=828)
Fuel Oil	Boiler	0.0%	0.0%	0.0%	0.4%	0.8%	0.1%
	Subtotal - Fuel Oil	**0.0%**	**0.0%**	**0.0%**	**0.4%**	**0.8%**	**0.1%**
Wood	Stove/fireplace	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%
	Furnace	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%
	Boiler	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%
	Subtotal - Wood	**0.2%**	**0.3%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**

Site visits were able to identify and confirm details about heating systems. Due to the large share of natural gas furnaces (and natural gas in general), most site visits encountered home heating with natural gas furnaces. Below, we summarize the results of the site inspections as related to space heating equipment efficiency and capacity.

3.2.1 Furnaces

Across the onsite sample, site inspectors were able to capture adequate data to confirm 192 furnaces' capacity and 186 furnaces' efficiency. Table 3-4 summarizes the average output capacity in tons (12,000 BTU/hour). In general, low-income households tend to have lower capacity furnaces than that not-low-income homes. Additionally single-family homes have furnaces with approximately 20 percent higher capacities than multifamily homes.

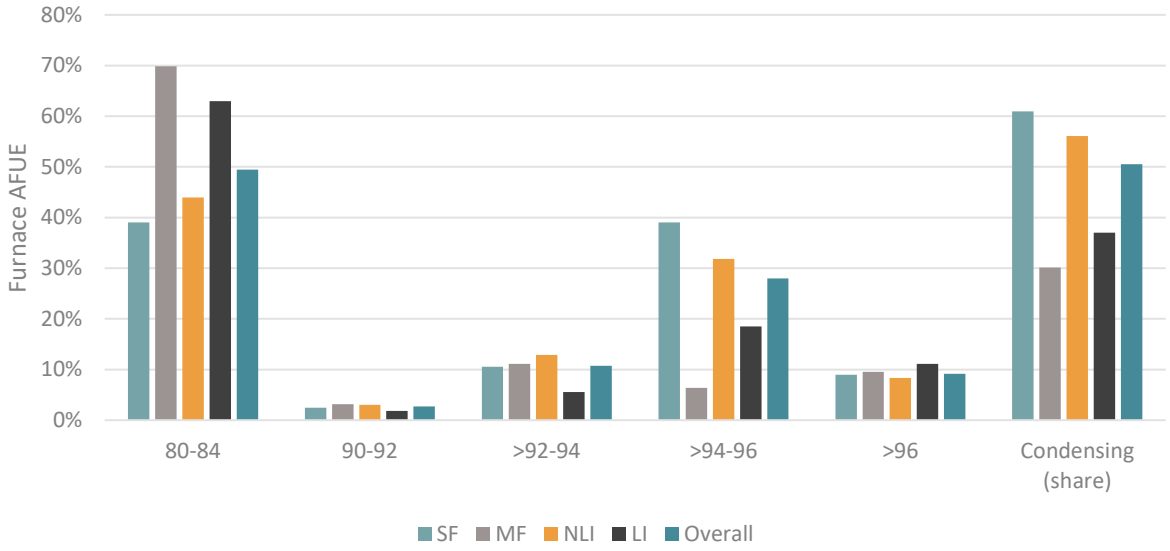
TABLE 3-4 FURNACE AVERAGE OUTPUT CAPACITY

Housing Type	Count	Average Tons
All Residential	192	5.8
SF Overall	127	6.4
SF NLI	88	6.7
SF LI	39	5.6
MF Overall	65	4.8
MF NLI	46	5.1
MF LI	19	4.1

Furnace efficiencies ranged from 80 percent to over 96 percent. At 90 percent and above, a furnace is considered a condensing unit and requires specific exhaust piping. Figure 3.2.1 summarizes the range furnace AFUEs, including the share that is condensing (the total of 90 percent or higher AFUE). Breakouts for home type and income-type indicate that multifamily homes are more likely to have a non-condensing furnace than single-family homes. Low-income homes are also more likely to have non-condensing systems. Very high efficiency furnaces (above 96 percent) are rare but show consistency between housing and income types. Of condensing furnaces, single-family and non-low-income homes were found to be the most common in the range >94 to 96% AFUE, including nearly 40 percent of single-family homes and over 30 percent of non-low-income homes.

Details of AFUE were not developed to identify the combination of housing type and income type due to the relatively small number of homes that would be represented in each efficiency bin.

FIGURE 3-2 FURNACE AFUE CATEGORIES BY HOUSING/INCOME TYPES



3.2.2 Boilers

Boilers were not commonly encountered during residential site visits. Only 14 could be analyzed for AFUE levels, with only one of those being an in-unit multifamily boiler. Table 3-5 summarizes the AFUEs for condensing and non-condensing boilers. Output capacities ranged from 4.8 tons (the multifamily boiler) to 15.4 tons, with the average single-family boiler output capacity being 9.7 tons. For single-family homes, these output capacities are substantially larger than average furnace capacities. Condensing boilers were all found in not-low-income homes, though the small count warrants against making a statistical conclusion.

TABLE 3-5 BOILER AFUE

AFUE	Count	Average AFUE
Overall	14	86.3%
Non-condensing	10	82.9%
Condensing	4	95.0%

3.2.3 Heat Pumps

The site visits identified nine homes with heat pumps. These included five ducted air-source heat pumps, two ductless heat pumps, and two ground-source heat pumps. Due to the small count of homes verified for heat pumps, caution is warranted against making statistical extrapolations. Only one multifamily unit was visited with a heat pump, with that home being served by a ground-source heat pump system, an. All others were single-family homes.

TABLE 3-6 HEAT PUMP EFFICIENCIES AND CAPACITIES

Heat Pump Type	Count	SEER2 (Average)	HSPF2 (Average)	COP (Average)	Cooling Tons (Average)	Heating Tons (Average)
ASHP Ducted	5	15.4	8.0	N/A	2.8	2.7
ASHP Ductless	2	17.0	8.9	N/A	2.7	2.7

Heat Pump Type	Count	SEER2 (Average)	HSPF2 (Average)	COP (Average)	Cooling Tons (Average)	Heating Tons (Average)
GSHP	2	N/A	N/A	4.2	3.8	3.3

3.2.4 Other Heating

Site visits also captured other forms of heating. Other than electric furnaces, none would likely be viewed as primary heating systems. Table 3-7 summarizes the types and counts of these other heating systems.

TABLE 3-7 OTHER TYPES OF HEATING IDENTIFIED DURING SITE VISITS

Equipment Type	Energy Source	Count
Portable	Electric	7
Wall Furnace	Gas	1
Unit Heater	Gas	1
Furnace	Electric	8
Fireplace	Gas	4
Fireplace	Electric	2
Fireplace	Unknown	1

Only in the case of electric furnaces and fireplaces were these results used to validate the online survey results. Site inspectors did not attempt to verify the presence or absence of small space heaters – these units could be overlooked during the inspection or easily forgotten by online respondents. The resulting confirmation of electric furnace was used to create the adjustment factor, with only eight of sixteen online respondents in the site sample having confirmed electric furnaces.

3.3 SPACE COOLING

Space cooling is a significant user of electricity in the residential sector. Baseline data collection for space cooling investigated the presence of space cooling and the range of technologies that are present in homes. Site visits confirmed the presence of cooling and obtained equipment information to inform the efficiency ratings of cooling equipment. In reviewing the site visit results and comparing equipment types to those reported in the online survey, the analysis team did not identify systematic mischaracterizations by online survey respondents. As such, no adjustments were made to the online survey results, in terms of equipment types.

In the case of multifamily homes, the survey first confirmed whether the cooling equipment served only the individual unit or may serve multiple units. Across the multifamily category, the combined utility results showed that 89 percent of multifamily space cooling equipment only served the respondents unit, with 11 percent serving multiple units. For ComEd's service territory, the result mirrors that split. However, for multifamily units in Peoples Gas territory and served by ComEd, 16 percent of multifamily online respondents indicated cooling systems serving more than one unit. For the portion of ComEd's service territory also served by Nicor Gas, only six percent of the online respondents indicated a cooling system serving more than one unit. For Ameren Electric, the results of this question aligned with the combined utility results and are similar to ComEd's overall results regarding cooling systems serving multiple units.

Table 3-8 summarizes the presence and type of space cooling equipment as identified by the online survey, representing the combined results across the utilities. Central air conditioning is the most common form of space cooling for all home types, with window or wall air conditioning also being common. Multifamily respondents show a higher share of window/wall cooling than single-family respondents. Other forms of cooling are relatively rare, with few homes having no cooling. Of homes with no cooling, low-income homes were more likely to report having no cooling than not-low-income homes, though the lack of space cooling was relatively rare regardless of income type.

TABLE 3-8 TYPES OF SPACE COOLING EQUIPMENT, COMBINED UTILITY RESULTS

Type of Cooling Equipment	SF Overall (n=2,037)	SF LI (n=636)	SF NLI (n=1,296)	MF Overall (n=1,628)	MF LI (n=697)	MF NLI (n=868)
Central air conditioning (whole house, excluding heat pumps)	86.3%	77.0%	91.0%	62.7%	51.1%	71.8%
Wall/window air conditioning	13.2%	22.2%	8.9%	31.4%	42.9%	22.1%
Air source heat pump (with ducts)	1.9%	1.7%	1.9%	2.7%	2.6%	3.0%
Ductless heat pump	0.7%	0.3%	0.8%	0.7%	0.6%	0.8%
Ductless air conditioner	0.7%	0.5%	0.8%	0.6%	0.3%	0.9%
Portable / floor-based air conditioning unit	1.6%	2.5%	1.2%	3.0%	4.0%	2.4%
Other	1.2%	0.3%	1.6%	1.8%	1.3%	2.3%
No cooling system	2.1%	3.8%	1.2%	0.7%	1.3%	0.2%
Total	107.7%	108.3%	107.4%	103.7%	104.0%	103.6%
Ducted Systems	88.2%	78.7%	92.9%	65.4%	53.7%	74.8%
Ductless Systems	16.2%	25.5%	11.7%	35.7%	47.8%	26.2%

Online respondents were able to select or identify multiple cooling technologies, with the "Other" response enabling responses not included in the survey's specific technology response categories. As such, the total percentages reflected in Table 3-8 are over 100 percent. The analysis team inspected the "Other" responses. While rare, these responses covered a range of technologies, including references to the use of fans. From an equipment penetration perspective, the percentages for specific technologies in Table 3-8 are reasonable to assume as representing the combined utilities' market, with "Other" responses do not conflict with the technology saturations.

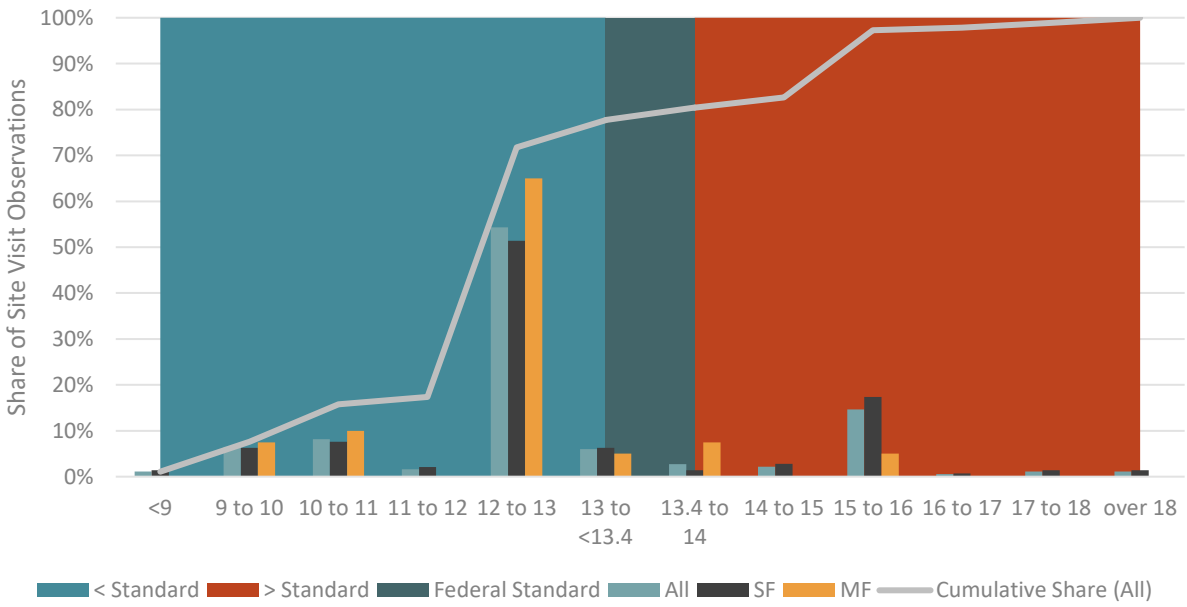
The analysis team has some concern about possible confusion of respondents identifying heat pumps as distinct from air conditioners. As the site visits did not reveal systematic mischaracterizations, the analysis team suggests combining forms of central air conditioning and ductless air conditioning, regardless of the specified technology type.

Site visits were able to confirm the types of air conditioning in the onsite sample, along with equipment capacities and efficiencies for a portion of the onsite sample. In alignment with the online survey results, the most frequently encountered type of cooling system was central air conditioning with ducts. We summarize the results of central air conditioning systems and window/room air conditioners below.

3.3.1 Central Air Conditioners

Site visits were able to capture model numbers to inform the capacity and efficiency of 194 central air conditioning systems. To allow for direct comparisons and to align with current federal and Illinois TRM approaches, the analysis team converted equipment with SEER ratings to SEER2 using the Illinois TRM method.[2] The current federal standard requires a SEER2 rating of 13.4, with the majority of central air conditioners in the site sample falling below that standard (most were in the 12 to 13 SEER2 range). Figure 3-3 summarizes the SEER2 ratings (or their converted equivalence) of central air conditioners by housing type and overall. The dark green column is included to illustrate the breakpoint of those above or below the current federal efficiency standard.

FIGURE 3-3 SHARE OF CENTRAL AIR CONDITIONER SEER2 LEVELS



Approximately 20 percent of central air conditioners in the site sample were above the current minimum federal standard. Very few (about 2.5 percent) were above a SEER2 of 16. Multifamily homes generally exhibited lower SEER2 levels than single-family homes, though the total number of observations (n=40) limits statistical confidence in the distribution across SEER2 ratings. For single-family homes, with 145 cases to confirm SEER2, is more robust. For All homes, the results are weighted to single-family homes by virtue of the sample count, through for many SEER2 levels, are similar between housing types.

Table 3-9 summarizes the average SEER2 rating and capacity (in tons) for central air conditioners by housing and income type. Single-family homes have somewhat higher capacities and efficiencies than multifamily homes, with minor differences by income category within a housing type.

[2] 2024 IL TRM v12.0_September 22, 2023_FINAL, page 103 of 508.

TABLE 3-9 AVERAGE CENTRAL AIR CONDITIONER CAPACITY AND SEER2 LEVELS

Home and Income Type		Observations (n)		Results	
Home Type	Income Type	SEER2	Capacity	SEER2	Capacity (tons)
Overall	All	185	188	12.7	2.8
SF	Overall	145	146	12.8	2.9
SF	NLI	104	105	13.0	3.1
SF	LI	41	42	12.3	2.6
MF	Overall	40	42	12.2	2.4
MF	NLI	24	27	12.2	2.4
MF	LI	16	15	12.3	2.5

3.3.2 Window Air Conditioners

Window and room air conditioners were encountered far less in the site visits than central air conditioners. Only 19 homes were visited with observed window air conditioners, with each of these homes having a single window air conditioning unit. Of those, only 10 were able to provide adequate information to determine efficiency and capacity. Of those with adequate information, most were older EER-rated units (8 of 10), with two cases of newer CEER-ratings. Capacities ranged from 0.4 tons to 1.3 tons. Due to the small number of results and diversity of ratings and sizes, the site visit data window air conditioner sizing and efficiencies is much more limited than for central air conditioners. Thirteen of the nineteen window air conditioners were located in multifamily units. Both low-income (n=10) and not-low-income homes (n=8) were represented in the observations and technical with no observable patterns

Table 3-10 summarizes the observations captured from site visit data for window air conditioners. Due to the low number of observations, no breakout in terms of housing type or income type is useful.

TABLE 3-10 WINDOW AIR CONDITIONER EFFICIENCY AND CAPACITY OBSERVATIONS

		Efficiency			Capacity (tons)		
Rating	Count	Average	Min	Max	Average	Min	Max
EER	8	10.6	9.7	12.2	0.8	0.4	1.2
CEER	2	11.9	11.8	12.0	1.0	0.7	1.3
Overall	10	N/A	N/A	N/A	0.8	0.4	1.3

Further research may be warranted to explore the efficiency and capacity of installed window air conditioners. A study focused on the subject may be warranted to better understand the mix of efficiency, capacity, housing type differences, and income type differences.

3.4 WATER HEATING

Water heating is a critical end-use and consumes a substantial share of energy in the residential sector. Baseline data collection regarding water heating technologies focused on three major elements:

1. Water heater energy source,
2. Water heater type, and
3. Water heater efficiency

The online survey asked respondents to describe their water heater energy source and fuel. Site inspections were used to validate the online responses and gather additional information about water heater efficiencies, as available. The site inspections revealed that a portion of online respondents mischaracterized their water heater types or fuel. For those mischaracterizations that were found to repeat, these were treated as systematic, with the analysis team developing adjustment factors to correct for the systematic mischaracterizations. In general, these adjustments resulted in fewer heat pump water heaters and electric resistance water heaters, and more natural gas tank-based water heaters.

The analysis team developed adjustment factors to reconcile online responses with site visits. Table 3-11 shows the type of water heater and fuel adjustment factors. The adjustment factor is a multiplier to the original percentage of the online survey results. For example, the online survey responses indicated that 7.7 percent of single-family homes have heat pump water heaters. In reviewing the site visit data, the analysis team found that only 11 percent of water heaters were correctly characterized as heat pump water heaters. Across the multiple *possible* errors in online reporting of water heater type and fuel, the adjustment factor represents the net adjustment across all combinations of water heater types and fuels. These adjustment factors are applied to all housing and income types across all utilities as the volume of site visits and observed online survey errors did not allow for a more granular breakout. The onsite sample did not include all types of water heaters identified in the online survey. For these cases, no adjustments were made – adjustments were only made to those with onsite observations.

TABLE 3-11 WATER HEATER TYPE AND FUEL ADJUSTMENT FACTORS

Water Heater Type and Fuel	Adjustment Factor
Heat pump water heater with a tank	0.11
Electric water heater with a tank	0.63
Electric tankless / on-demand[3]	1.00
Natural gas water heater with a tank	1.24
Natural gas tankless / on-demand	0.89
Propane water heater with a tank	0.96
Solar water heater	1.00
No water heater	1.00

Table 3-12 summarizes the water heater types and fuels, reconciling the share identified by online respondents with those observed onsite. Natural gas fired tank-style water heaters dominate the combined utilities' marketplace for both single-family and multifamily homes. Electric resistance water heaters with a tank also have a substantial share. Other types of water heaters are relatively rare. Low-income homes are somewhat more likely to have electric resistance water heaters than not-low-income homes.

[3] In the case of electric tankless water heaters, site surveys included two cases of respondents characterizing their water heater as electric tankless. Both were found to be natural gas tankless. The analysis team recommended to not make an adjustment factor for electric tankless water heaters as doing so would result in no electric tankless water heaters from the online survey results. As such, it is possible that the online survey results overstate electric tankless water heater presence, but to an unknown degree.

TABLE 3-12 WATER HEATER FUEL AND TYPE BY HOUSING AND INCOME

Water Heater Type and Fuel	SF Overall (n=2,078)	SF LI (n=606)	SF NLI (n=1,362)	MF Overall (n=799)	MF LI (n=301)	MF NLI (n=455)
Heat pump water heater with a tank (electric)	0.9%	1.2%	0.7%	1.3%	1.5%	1.2%
Electric water heater with a tank	10.3%	14.4%	8.4%	19.7%	25.6%	16.0%
Electric tankless / on-demand	2.0%	1.7%	2.1%	1.7%	1.7%	1.3%
Natural gas water heater with a tank	81.8%	77.9%	83.3%	74.4%	68.4%	78.7%
Natural gas tankless / on-demand	3.3%	2.8%	3.7%	1.6%	0.9%	1.9%
Propane water heater with a tank	1.3%	1.0%	1.5%	0.1%	0.3%	0.0%
Solar water heater	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
No water heater	0.4%	1.0%	0.1%	1.3%	1.7%	0.9%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

**Rounding to the decimal point results in 0.0% for some technologies with very few reported cases.*

The site visits were able capture adequate detail from 240 of the 337 homes to identify efficiency ratings. Multifamily with central hot water systems were not included in the efficiency comparison – only in-unit water heaters were included in the manufacturer and efficiency rating analysis. Additionally 15 homes with water heaters could not have their efficiency rating determined, resulting in a final sample of 240 water heaters.

These water heaters were found to have efficiency ratings that included a mix of energy factor (EF) and uniform energy factor (UEF), resulting in efficiencies that could not be directly compared due to the changes in the rating system. To enable a comparison, the analysis team utilized a RESNET[4] UEF to EF calculator to develop an EF to UEF conversion factor. Taking this approach allows older EF-rated water heaters to be compared to the current UEF rating system. Table 3-13 describes the conversion from EF to UEF used in the comparison of water heater efficiency ratings.

TABLE 3-13 EF TO UEF CONVERSIONS BASED ON RESNET CALCULATOR

Water Heater Type	EF to UEF Conversion
Consumer Gas-Fired Water Heater	UEF = (EF-0.0711)/0.9066
Consumer Electric Water Heater (Electric Resistance)	UEF = (EF+1.2844)/2.4027
Consumer Electric Water Heater (Heat-Pump)	UEF = (EF+0.6052)/1.2101
Instantaneous Gas-Fired Water Heater	UEF = EF

[4] https://www.resnet.us/wp-content/uploads/RESNET-EF-Calculator-2017.xlsx Note that this calculator converts UEF to EF. GDS adapted the calculation to convert EF to UEF.

Water Heater Type	EF to UEF Conversion
Instantaneous Electric Water Heater	UEF = EF
Residential-Duty Commercial Gas-Fired Water Heater	UEF = (EF-0.0019)/1.0005
Residential-Duty Commercial Electric Instantaneous Water Heater	UEF = (EF+0.0025)/1.0219

In the analysis of water heater efficiencies across income and housing types, the analyst team found only minor differences in UEF values between income categories - approximately zero to 0.01 UEF difference between income and housing types within a water heater category. The site visits include no electric resistance tankless units or residential-duty commercial water heaters. Three boiler systems were used to heat tanks of water (indirect water heating) and were not analyzed. Table 3-14 summarizes the results. Fossil fuel water heaters combine natural gas and propane water heaters.

TABLE 3-14 AVERAGE WATER HEATER UEF RESULTS

Water Heater Type	UEF (actual or calculated)
Fossil Fuel Tank (n=196)	0.62
Fossil Fuel Tankless (n=9)	0.94
Electric Resistance Tank (n=30)	0.92
Heat Pump Water Heater (n=2)	3.67

The average AFUE of indirect water heaters using boilers (n=3) was found to be 0.91, though this was driven by two single-family boilers with AFUEs of 0.95 and an in-unit multifamily boiler with an AFUE of 0.82. Due to boilers, heat pump water heaters, and fossil fuel tankless water heaters having relatively small number of observations, some caution is warranted at assuming a representative sample. However, for the dominant type of water heaters – fossil fuel tank and electric resistance tank – the counts of water heaters may be sufficient to utilize the resulting UEF averages to reflect the market as a whole.

3.5 APPLIANCES

This section summarizes the results of online and onsite data collection for household appliances. Data collection focused on kitchen and laundry equipment. The results found that virtually all homes have at least one refrigerator with a freezer, while multifamily homes were much less likely to have a stand-alone freezer or second refrigerator. Natural gas cooking was widely prevalent. Single family homes were more likely to have laundry equipment than multifamily homes. The following tables and figures present a summary of the combined utilities results for each major appliance or appliance end-use.

3.5.1 Refrigerators and Freezers

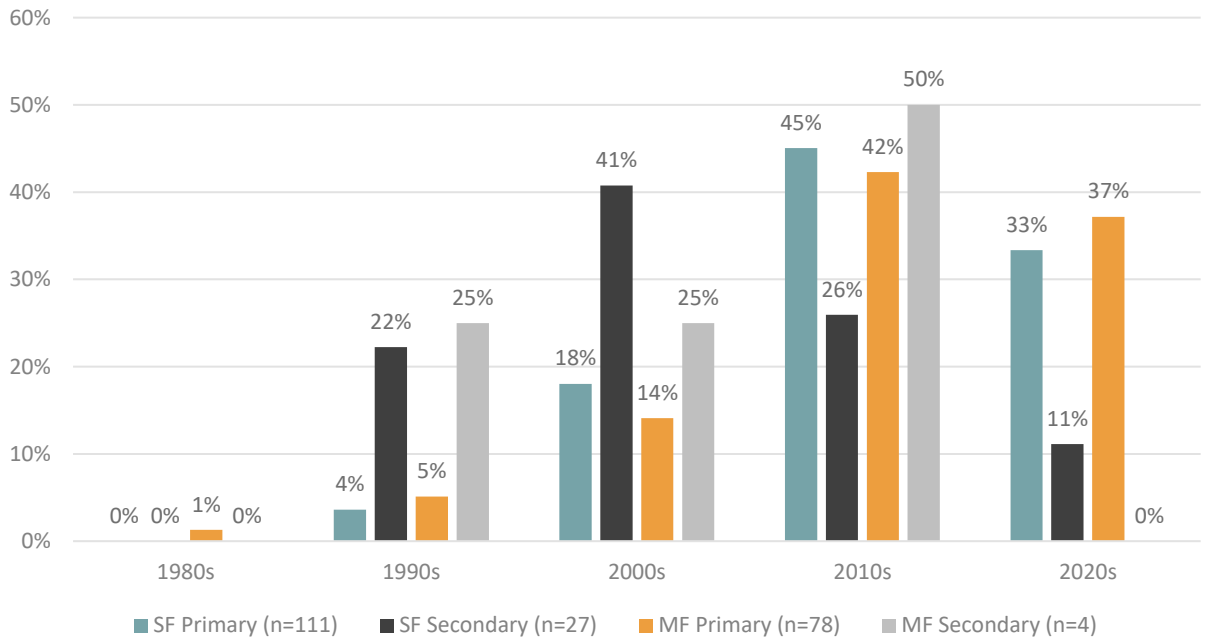
Over 99 percent of single family and multifamily homes reported having at least one refrigerator. Table 3-15 summarizes the responses to the online survey.

TABLE 3-15 THE PRESENCE OF REFRIGERATORS AND FREE-STANDING FREEZERS

Equipment Type	SF Overall (n=2,005)	SF LI (n=636)	SF NLI (n=1,298)	MF Overall (n=1,934)	MF LI (n=870)	MF NLI (n=1,018)
Refrigerator	99.1%	98.4%	99.6%	99.5%	99.3%	99.7%
Free-standing freezer	39.0%	35.7%	41.2%	9.8%	11.0%	8.6%
Mini fridge	23.1%	18.2%	26.0%	9.5%	6.4%	12.3%
Other	27.5%	14.9%	33.8%	3.8%	3.8%	3.8%

Site visits were able to confirm the presence of primary refrigerators, secondary refrigerators, and stand-alone freezers. Additionally, site visit results allowed for a determination of the age of many of these appliances. The results are summarized below.

FIGURE 3-4 DECADE OF REFRIGERATOR MANUFACTURE



As shown in Figure 3-4, primary refrigerators were found to be generally newer than secondary refrigerators. Both single and multifamily refrigerators were of similar vintages. While site visits did identify some multifamily units with secondary refrigerators, their presence was uncommon in the site sample, aligning with the responses to the online survey.

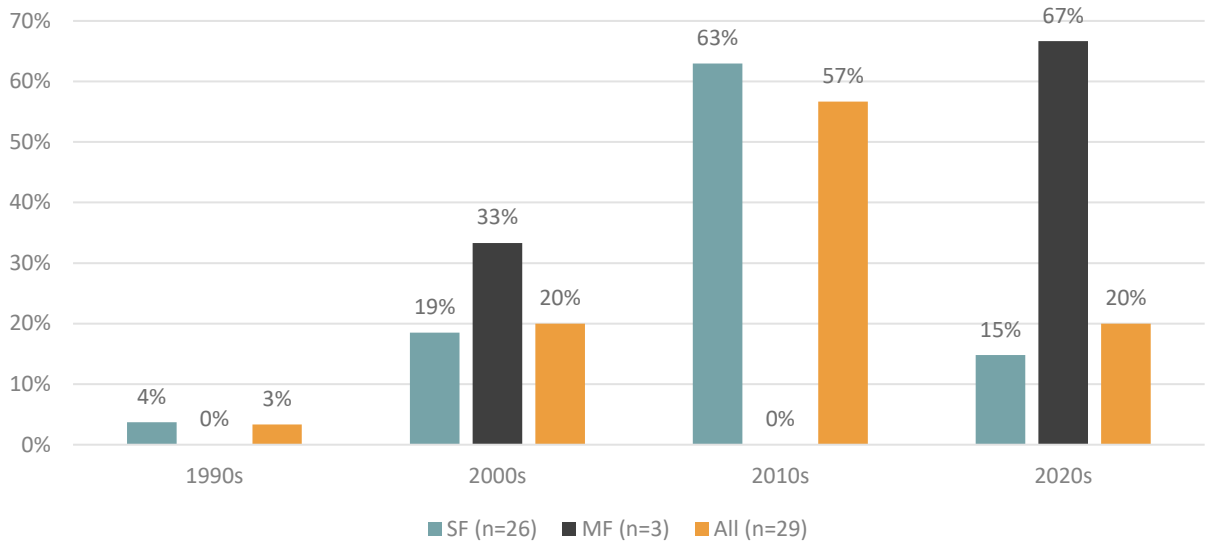
The site visits found that the average age of all refrigerators was 10.4 years, though with substantially older refrigerators being used as secondary units. Table 3-16 summarizes the average age of refrigerators by housing type.

TABLE 3-16 AVERAGE AGE OF REFRIGERATORS BY HOUSING TYPE

	Overall	SF Primary	SF Secondary	MF Primary	MF Secondary
Average Age (weighted)	10.4	9.5	17.0	8.9	17.8

Site visits confirmed the presence of stand-alone freezers, though the presence is substantially less than for primary refrigerators. Figure 3-5 summarizes the age of these freezers. Note that the very limited presence of multifamily stand-alone freezers limits the value of multifamily information. Most single family stand-alone freezers were manufactured in the 2010s or 2020s.

FIGURE 3-5 DECADE OF FREEZER MANUFACTURE



The site sample revealed that stand-alone freezers were 10.9 years old, slightly older than primary refrigerators.

3.5.2 Dishwashers

Dishwashers are a common appliance found in approximately 60 percent of single family and multi-family homes. However, low-income homes are substantially less likely have a dishwasher than not-low-income homes. As shown in Table 3-17, dishwashers were between 70 and 80 percent more likely to be reported as present in not-low-income homes than low-income homes. Across the utilities, Ameren Electric and Ameren Gas customers were less likely to report the presence of a dishwasher. That detail is available in the appendices, with substantially fewer dishwashers being reported by multifamily households of all income types than for Nicor Gas or ComEd.

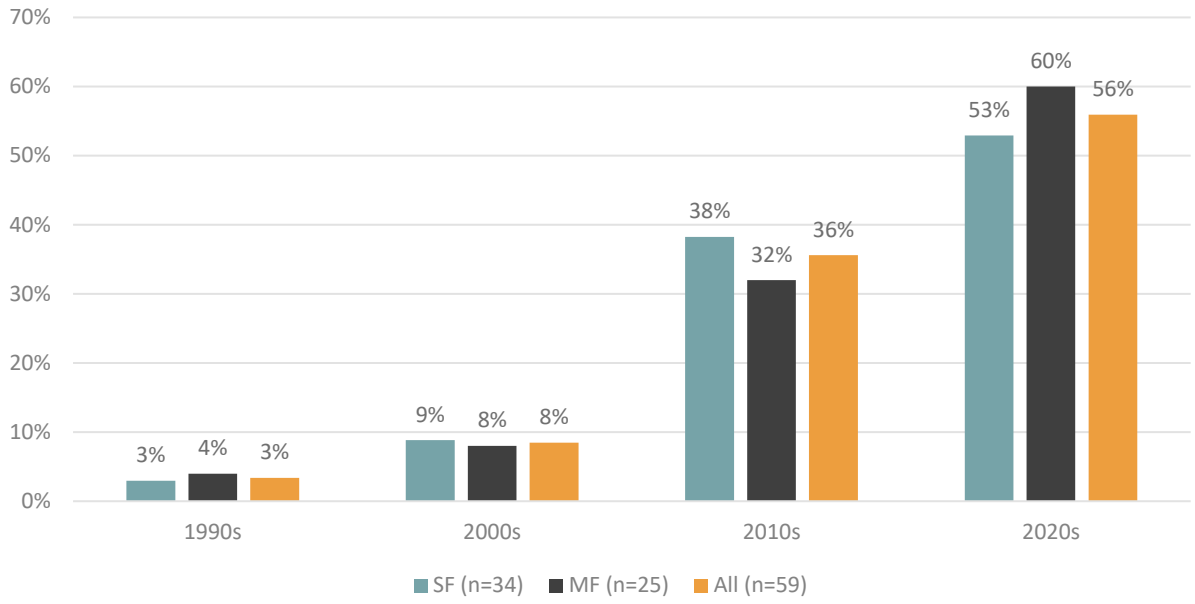
TABLE 3-17 THE PRESENCE OF DISHWASHERS

Equipment Type	SF Overall (n=2,005)	SF LI (n=636)	SF NLI (n=1,298)	MF Overall (n=1,934)	MF LI (n=870)	MF NLI (n=1,018)
Dishwasher	59.2%	38.8%	69.4%	59.2%	44.0%	72.0%

SITE VISITS WERE ABLE TO CAPTURE DATA TO INFORM THE MANUFACTURING YEAR OF DISHWASHERS FOR 59 HOMES, MOSTLY SINGLE FAMILY.

Figure 3-6 summarizes the decade of manufacture. The majority of dishwashers were manufactured in the 2020s, with very few indicating manufacturing in the 1990s or 2000s.

FIGURE 3-6 DECADE OF DISHWASHER MANUFACTURE



The available site visit data showed little difference between single family and multifamily households, in terms of the average age, as shown in Table 3-18.

TABLE 3-18 AVERAGE AGE OF DISHWASHER BY HOUSING TYPE

	Overall	SF	MF
Average Age (weighted)	6.6	6.5	6.7

3.5.3 Residential Laundry Equipment

The online survey asked about the presence and types of residential laundry equipment that were in a home. For multifamily homes, this only counted equipment located within the dwelling unit. Single-family homes were substantially more likely to report the presence of laundry equipment (96.4%) than multifamily homes (59.3%). The presence of clothes washers is very similar to the presence of clothes dryers. These results are shown in Table 3-19.

TABLE 3-19 THE PRESENCE AND TYPES OF RESIDENTIAL LAUNDRY EQUIPMENT

Equipment Type	SF Overall (n=1,997)	SF LI (n=630)	SF NLI (n=1,297)	MF Overall (n=1,915)	MF LI (n=860)	MF NLI (n=1,011)
Washer: top-loading	64.8%	69.0%	62.3%	37.8%	34.4%	40.7%
Washer: front-loading	31.8%	22.9%	36.7%	21.7%	10.7%	31.0%
Total washers	**96.6%**	**91.9%**	**99.0%**	**59.5%**	**45.1%**	**71.6%**
Dryer: natural gas	53.9%	47.9%	56.7%	27.2%	18.5%	34.5%
Dryer: electric	41.2%	43.2%	40.2%	29.3%	24.5%	33.5%

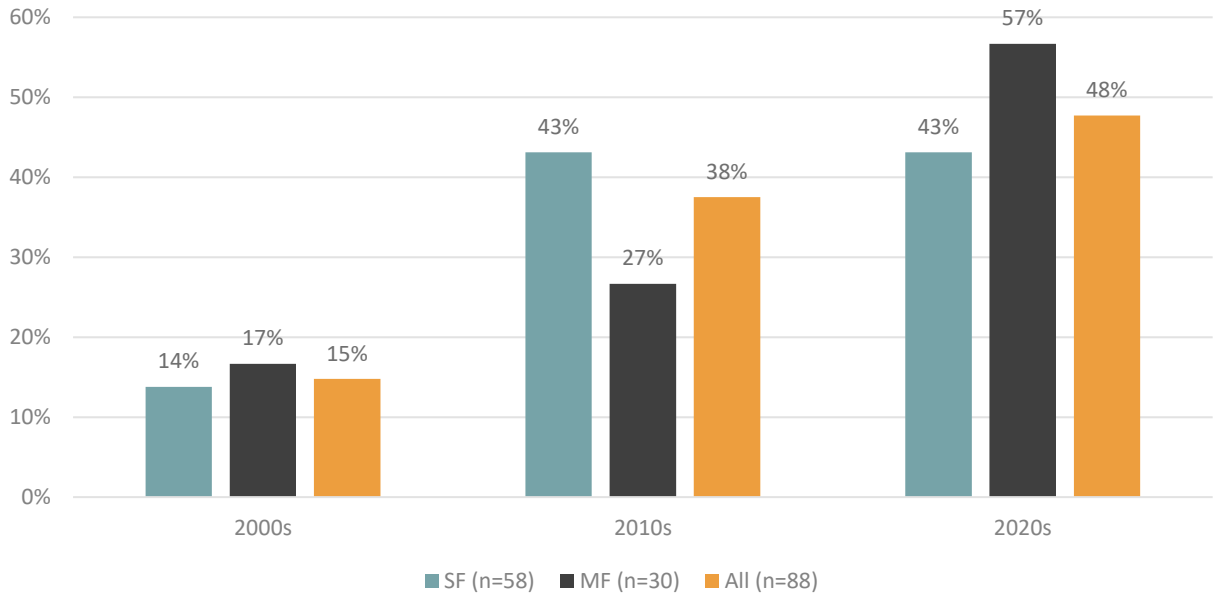
Equipment Type	SF Overall (n=1,997)	SF LI (n=630)	SF NLI (n=1,297)	MF Overall (n=1,915)	MF LI (n=860)	MF NLI (n=1,011)
Dryer: heat pump	0.6%	0.8%	0.5%	1.0%	0.8%	1.1%
Total dryers	**95.7%**	**91.9%**	**9750.0%**	**57.5%**	**43.8%**	**69.1%**
None of the above	3.6%	7.5%	1.7%	40.7%	55.5%	28.4%

Online survey reports of heat pump clothes dryers indicate a small percentage of homes with these types of equipment. The accuracy of these reports could not be verified via the onsite surveys, though as an emerging technology, a small share in the market is likely correct. The online survey did not receive reports of propane-fueled clothes dryers, with natural gas and electric dryers being the two dominant types. Single family homes show a higher likelihood to have a gas dryer than electric, with multifamily homes being nearly evenly split. Site visit data did not reveal an error in reporting the dryer fuel type.

Site visits were able to capture the manufacturing year of a portion of washers and dryers (88 for each type). Figure 3-7 summarizes the manufacturing decade of washers with

Figure 3-8 summarizing the manufacturing decade of dryers. No clothes washers were identified as being manufactured prior to the 2000s.

FIGURE 3-7 CLOTHES WASHER MANUFACTURE DECADE



Clothes dryers were found to have somewhat older manufacturing vintages, with a small portion extending into the 1990s. Compared to clothes washers, there is a greater share of dryers with manufacturing occurring in the 2000s and 2010s.

FIGURE 3-8 CLOTHES DRYER MANUFACTURE DECADE

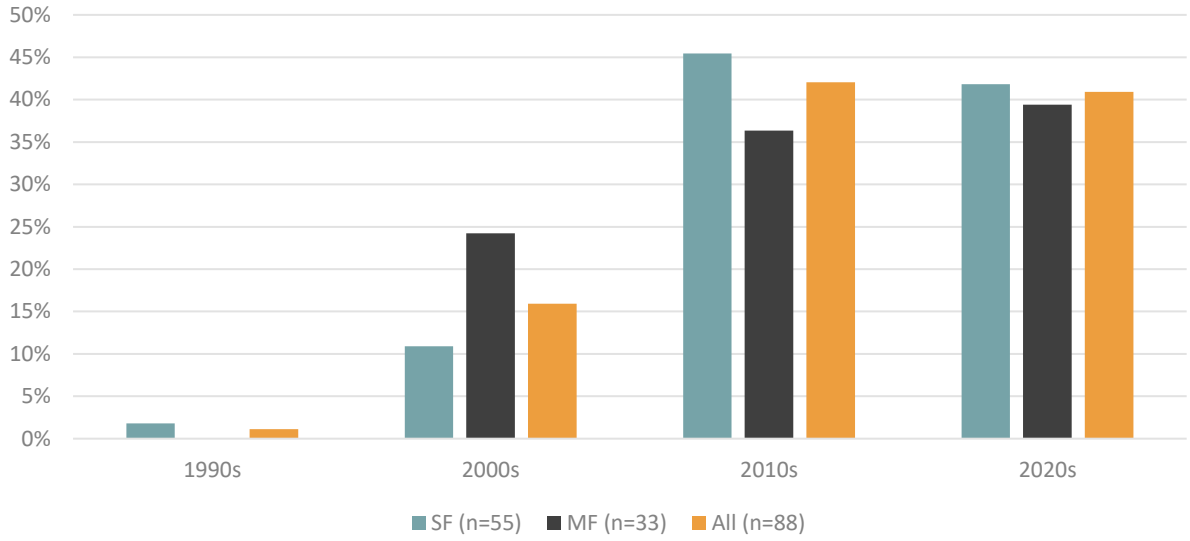


Table 3-20 presents the average age of laundry equipment found during site visits. Distinctions between housing types are minor. Single family homes had very similar ages for both types of equipment (on average), whole multifamily homes exhibited somewhat older clothes dryers than washers. However, in alignment with the manufacturing data, above, dryers are somewhat older than washers, overall.

TABLE 3-20 AVERAGE AGE OF RESIDENTIAL LAUNDRY EQUIPMENT

	Overall	SF	MF
Washers	7.2	7.5	6.7
Dryers	8.0	7.8	8.4

3.6 LIGHTING

The online survey included a question to understand the share of lighting in a household that is LED-based. Lighting was not a topic explored in the onsite survey. Table 3-21 summarizes the results across the utilities. While a majority of respondents indicated LEDs made up 75 percent or more of their lamps, a substantial share identified that 50 percent or less of their lamps were LED-based. A low share of respondents indicated no LED lighting in their home.

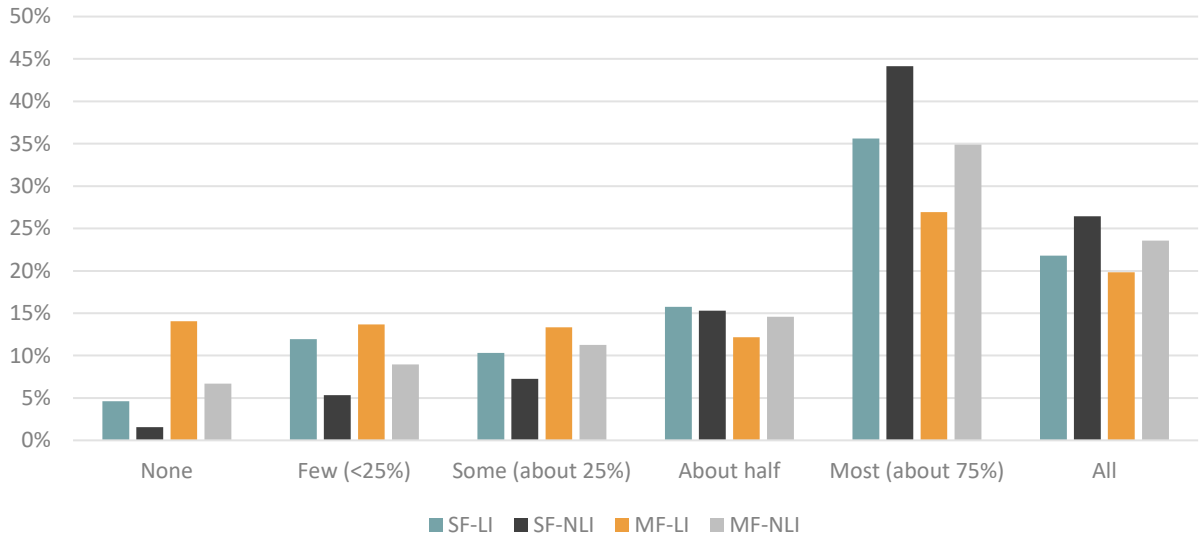
TABLE 3-21 LED SHARE OF RESIDENTIAL LIGHTING

LED Share of Lamps and Fixtures	SF Overall (n=1,981)	SF LI (n=629)	SF NLI (n=1,294)	MF Overall (n=1,907)	MF LI (n=862)	MF NLI (n=862)
None	2.6%	4.6%	1.5%	10.2%	14.0%	6.7%
Few (<25%)	7.6%	11.9%	5.3%	11.1%	13.7%	9.0%
Some (about 25%)	8.4%	10.3%	7.3%	12.3%	13.3%	11.2%
About half	15.4%	15.7%	15.3%	13.5%	12.2%	14.6%
Most (about 75%)	41.2%	35.6%	44.1%	31.1%	26.9%	34.9%

LED Share of Lamps and Fixtures	SF Overall (n=1,981)	SF LI (n=629)	SF NLI (n=1,294)	MF Overall (n=1,907)	MF LI (n=862)	MF NLI (n=862)
All lighting is LED	24.7%	21.8%	26.4%	21.9%	19.8%	23.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Figure 3-9 summarizes the income type and housing type shares of residential lighting. For homes reporting 75 percent or greater shares of LEDs, not-low-income households have a higher share LED than low-income households. Multifamily respondents were also less likely to indicate 75 percent or more of lights as being LEDs than single-family households.

FIGURE 3-9 INCOME AND HOUSEHOLD TYPES, REPORTED SHARE OF LED LIGHTING



3.7 SOLAR, BATTERIES, EVS, AND ELECTRICITY PANEL CAPACITY

The online survey asked respondents to indicate whether they had forms of solar energy, had a battery storage system to store electricity from photovoltaic solar panels, whether they had an electric vehicle, and the type of charger that supported that electric vehicle. Additionally, the onsite survey investigated the capacity of each home's electric panel, capturing the amp rate of the panel when available. Broadly speaking, these technologies provide clean energy solutions that extend beyond energy efficiency and that may have an impact on utility energy sales (primarily electricity) or load shapes.

Table 3-22 summarizes the results of the online survey responses regarding the presence of solar panels, electric vehicles, and batteries. Note that the total of the percentages sums to greater than 100 percent as respondents could select more than one technology if multiple technologies were present.

TABLE 3-22 PRESENCE OF VARIOUS DISTRIBUTED ENERGY RESOURCES

Technology	SF Overall (n=1,912)	SF LI (n=614)	SF NLI (n=1,242)	MF Overall (n=1,870)	MF LI (n=852)	MF NLI (n=986)
Solar panels for home electricity	9.3%	5.7%	11.3%	0.3%	0.2%	0.2%
Battery to store electricity from solar panels	0.8%	0.8%	0.9%	0.2%	0.1%	0.3%
Electric Vehicle (EV)	6.1%	1.1%	8.6%	2.5%	1.2%	3.7%
EV charger	5.1%	1.3%	7.0%	1.8%	0.7%	2.7%
Solar water heating	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%
None of the above	85.9%	92.8%	82.3%	96.7%	98.4%	95.2%
Total	107.4%	102.1%	110.1%	101.5%	100.7%	102.2%

As shown in Table 3-22, the results indicate that solar panels generating electricity (photovoltaics) is indicated as having a 9.3 percent presence in single-family respondent homes. This is far higher than multi-family homes. Further, non-low-income single family homes are approximately twice as likely to have solar photovoltaic panels than low-income single-family homes. For electric vehicles and at-home charging, a similar pattern emerges, though with greater distinction between income types than housing types. Solar water heating (the sole source of possible gas impacts) exhibits a very low market share across all respondent categories. Notably, approximately 14 percent of single-family homes have at least one of these technologies, whole only about three percent of multifamily home have one of these technologies.

For homes indicating the presence of EV chargers, respondents were asked to categorize the level of charger present. The accuracy of these reports was not validated with site visits, an area of possible future research. The results in Table 3-23 indicate the types and capacities of chargers identified by respondents.

TABLE 3-23 EV CHARGER TYPES IDENTIFIED BY RESPONDENTS

EV Charger Type	SF Overall (n=84)	SF LI (n=4)	SF NLI (n=78)	MF Overall (n=29)	MF LI (n=6)	MF NLI (n=23)
Level 1	14.3%	25.0%	12.8%	17.2%	33.3%	13.0%
Level 2	85.7%	75.0%	87.2%	75.9%	50.0%	82.6%
Level 3	0.0%	0.0%	0.0%	6.9%	16.7%	4.3%
Total	100%	100%	100%	100%	100%	100%

Level 2 chargers dominated the share of EV chargers. Readers should note that modern electric vehicles do not necessarily require a separate charger but have on-board chargers. Some multifamily respondents indicated the presence of Level 3 chargers, suggesting high-capacity chargers may be available at these buildings. The presence of these high-capacity chargers was not validated but points to the possibility that some multifamily buildings may host such systems. Site visits were only able to validate the presence of residential Level 1 and Level 2 chargers (19 chargers in total in the onsite sample).

The electric service capacity amp rating was collected by field technicians during site visits. A total of 244 of the 337 homes had this data available. While multifamily units tended to have a lower amp rating in their electric service panel most homes had service panel ratings at 100 amps or greater. The results are summarized in Table 3-24, below.

TABLE 3-24 ELECTRIC SERVICE PANEL CAPACITIES

Amp Rating	20	50	60	100	125	150	200	400
Multifamily (n=79)	2.5%	1.3%	12.7%	70.9%	3.8%	3.8%	5.1%	0.0%
Single Family (n=165)	0.0%	0.0%	0.0%	49.1%	0.6%	2.4%	47.3%	0.6%

As shown in Table 3-24, the large majority of single-family homes either had a 100 or 200 amp rating (96.4 percent), split roughly evenly. No single-family home was found with less than a 100 amp capacity rating. For multifamily units, the majority were found to have a rating of 100 amps. However, approximately 16 percent had an amp rating less than 100 amps, with most of those having a 60-amp service panel.

3.8 AIR INFILTRATION

As part of the site visits, single-family respondents were given an option to participate in a blower-door test. A blower door test depressurizes a house to understand the "leakiness" of a home relative to uncontrolled ventilation. A total of 69 homes provided usable results and allowed for comparing the blower door test outcomes to other factors, such as the age of the home, the square feet of conditioned space in each home, and the qualitative perception of blower door technicians to the general state of a home's air infiltration or opportunity for improvement.

Blower door tests provide a result known as ACH50. This metric refers to the number of air changes per hour (ACH) at the tested pressure (50 pascals). The results show several general trends:

- The older the home, the greater the air infiltration. The results show a separation in ACH50 results for homes less than or greater than 40 years old.
- The larger the home, the lower the ACH50 results. All else held equal, there is less surface area per volume of home as a home gets larger, resulting in less air infiltration per square foot. This does not mean that larger homes necessarily leak less air than smaller homes.
- The perception that blower door technicians had regarding the quality of air sealing in a home generally followed the same pattern, though the perceptions were not hard breakpoints. The perception reflects an expectation of potential improvement opportunities and is reflective of expectations. A home with a "poor" rating may have a lower ACH50 score (lower infiltration) than home with a "good" rating, indicating that the "poor" home has opportunities for improvement that a "good" home may not, despite the blower door test results.

Figure 3-10 illustrates the relationship between a home's square footage and ACH50 score. A lower ACH50 score indicates a home with less air filtration than one with a higher ACH50 score. The general pattern

suggests larger homes have less air infiltration per square foot. As noted above, this is partly driven by larger homes having a greater interior volume per surface area – to achieve an air-change in the home, more air will need to move through the building shell. This pattern does not reflect the absolute volume of air moving through a home's building shell and total energy savings opportunity. It does reflect that the percentage of energy savings that could be derived by improving air sealing would likely be less for a larger home than a smaller home. One case with a very high ACH50 score has been removed (ACH50=42.9) from the data supporting the figure.

FIGURE 3-10 HOME SQUARE FOOTAGE AND ACH50 RESULTS

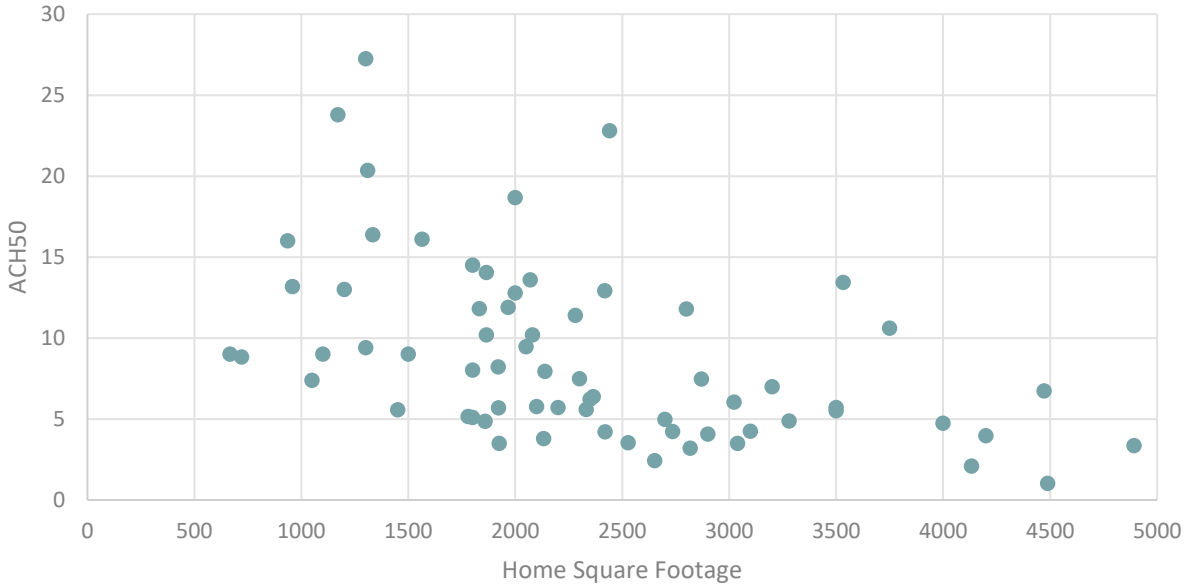
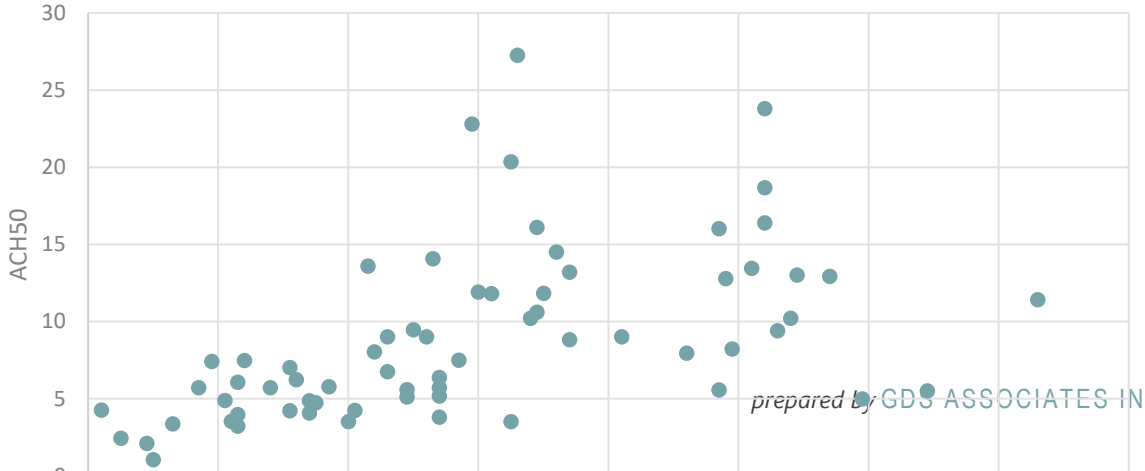


Figure 3-11 illustrates the pattern of ACH50 results relative to the age of the tested homes. In general, older homes results in a higher ACH50 score than newer homes, indicating that older homes tend to experience greater air infiltration. That said, some homes of all ages had relatively low ACH50 results, suggesting that these homes had either taken action to reduce air infiltration or may have been built differently than other homes of a similar age. A notable breakpoint of results occurs at the 40 year-old mark. While speculative, the results may reflect the impact of modern building codes on home construction. Nevertheless, blower door technicians felt that many of the newer homes (<40 years old) had opportunities for improvement. However, the technicians also indicated that absolute energy savings would be expected to be higher for older homes. One case with a very high ACH50 score has been removed (ACH50=42.9) from the data supporting the figure.

FIGURE 3-11 AGE OF HOME AND ACH50 RESULTS



The blower door technicians were asked to provide a qualitative judgement on the condition of air-sealing of each home. Rated as "good, normal, poor," this rating captured the general perception of the technician of a home's air sealing relative to expectations or opportunities for improvement. While not a rigorous measure, the results indicate that homes of all types, regardless of the ACH50 score, have opportunities for improvement. Similarly, there are homes with even high ACH50 scores that were perceived as "good," suggesting limited opportunities for improvement based on the current status and home construction. Table 3-25 summarizes the mix of technician ratings and statistics.

TABLE 3-25 TECHNICIAN AIR-SEALING QUALITATIVE RATING AND SUMMARY INFORMATION

Rating	Count	Avg ACH50	Avg Sq Ft	Avg Age (years)	Min ACH50	Max ACH50
Good	15	5.2	2,919	40	1.0	13.0
Normal	38	9.4	2,130	58	3.2	39.0
Poor	16	15.1	2,033	79	5.2	42.9
Overall	69	9.8	2,279	59	1.0	42.9

The analysis utilized information about each home to explore regression models that may predict the likelihood of ACH50 results. Across multiple combinations of variables, the analysis team was able to draw out key factors that impacted the ACH50 score. The sample size and possible combinations of factors limits clear statistical outcomes. While no one model painted a complete picture, the exploration revealed the following considerations for a home's ACH50 score, with t-test scores greater than 1.4:

- Square footage – ACH50 decreases with increasing square footage,
- Age of home – ACH50 increases with increasing age,
- Presence of a finished basement – ACH50 is higher for homes with finished basements,
- kWh per day – higher kWh per day results in higher ACH50 (note: higher gas consumption per day may also show the same result, but the sample of homes had more complete kWh records than gas records).

The above factors are generally observable without conducting a blower door test and provide an expectation of whether a home may have opportunity to reduce air infiltration and save energy.

4 Willingness to Participate Combined Results

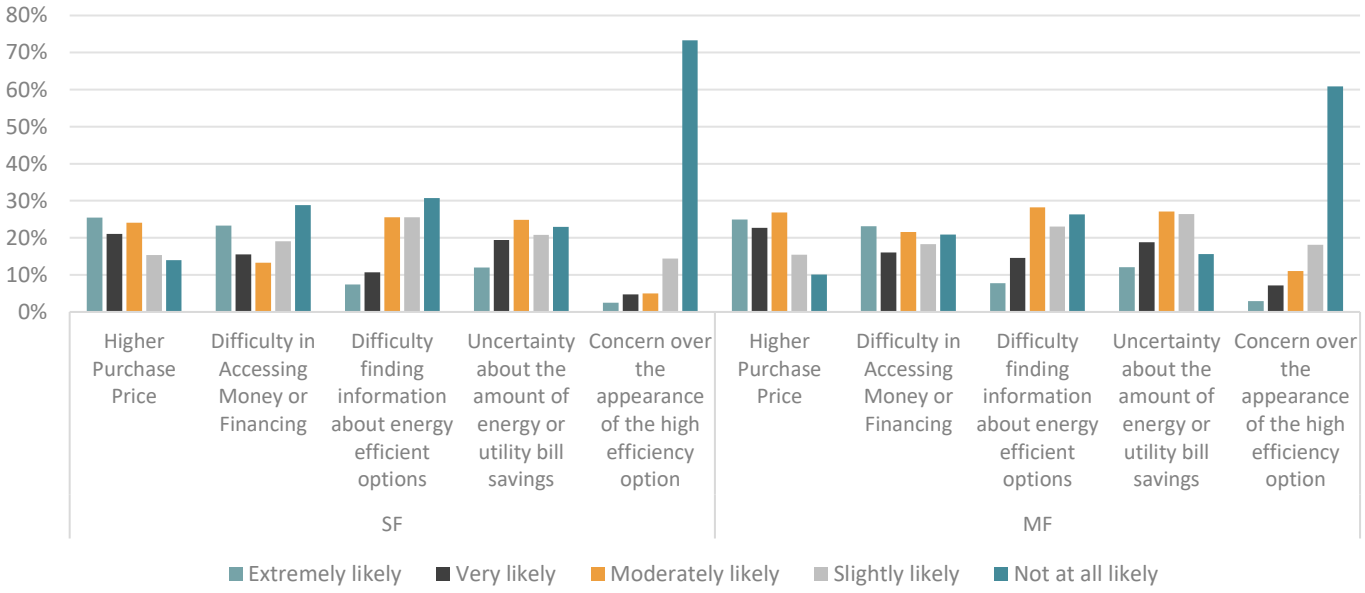
Online survey participants were asked a variety of questions to determine their willingness to participate in energy efficiency. These willingness-to-participate questions helped to determine common barriers to prevent participation, incentive levels that would encourage participation, and awareness of certain energy efficiency measures.

4.1 HEATING AND COOLING

Survey participants were asked the likelihood of several factors preventing them from replacing their broken central heating system with a high-efficiency model. These factors included a higher purchase price, difficulty in accessing money or financing, difficulty finding information about energy efficient options, uncertainty about the amount of energy or utility bill savings, and concern over the appearance of the high efficiency option.

Results are shown in Figure 4-1. Concern over the appearance of the high efficiency option did not appear to be a big concern, with the majority of participants (73 percent of single family and 61 percent of multifamily) responding "not at all likely" as a barrier. The greatest overall barrier was the higher purchase price, with 71 percent of single family participants and 74 percent of multifamily participants responding "moderately likely" or higher.

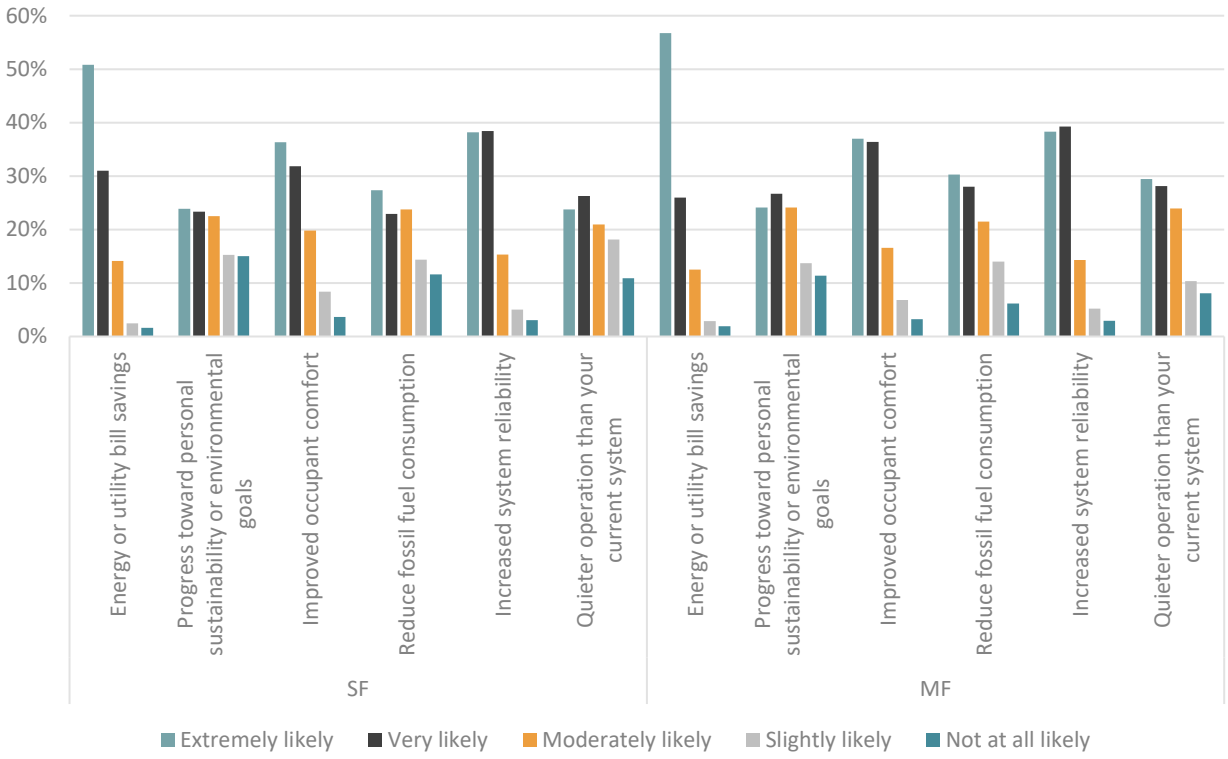
FIGURE 4-1 LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM REPLACING BROKEN CENTRAL HEATING SYSTEM WITH A HIGH-EFFICIENCY MODEL



Participants were also asked the likelihood of several factors motivating them to replace their broken central heating system with a high-efficiency model. These factors included energy or utility bill savings, progress towards personal sustainability or environmental goals, improved occupant comfort, reducing fossil fuel consumption, increased system reliability, and quieter operation than their current system.

Energy or utility bill savings was the most likely factor for survey participants to be motivated to replace equipment with a high-efficiency model. 51 percent of single-family participants and 57 percent of multifamily participants responded that this factor was "extremely likely" to motivate them. Figure 4-2 shows the results of these questions.

FIGURE 4-2 LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN CENTRAL HEATING SYSTEM WITH A HIGH-EFFICIENCY MODEL



Survey participants were asked how likely they would be to purchase a high-efficiency HVAC system at different incentive levels: no incentive, 25 percent of the additional cost of a high-efficiency model ($250), 50 percent ($500), 75 percent ($750), and 100 percent ($1,000). As shown in

Figure 4-3 , the likelihood of participating increases as the incentive amount increases. 77 percent of single-family participants and 78 percent of multifamily participants responded that they would be extremely likely to purchase a high efficiency model if 100 percent of the additional cost would be covered by an incentive.

FIGURE 4-3 LIKELIHOOD OF PURCHASING A HIGH EFFICIENCY HVAC MODEL AT DIFFERENT INCENTIVE LEVELS

Survey participants were asked if they currently have a heat pump installed in their homes. Only six percent of single family and multifamily respondents already have a heat pump. Those responding that they already had a heat pump were asked how satisfied they were with it. Figure 4-4 shows the heat pump satisfaction for single family respondents and

Figure 4-5 shows the heat pump satisfaction for multifamily respondents. Generally, heat pump owners are satisfied, with only four percent of single-family participants and six percent of multifamily participants responding that they are "not at all satisfied".

FIGURE 4-4 SATISFACTION LEVEL OF SINGLE FAMILY SURVEY PARTICIPANTS THAT HAVE A HEAT PUMP

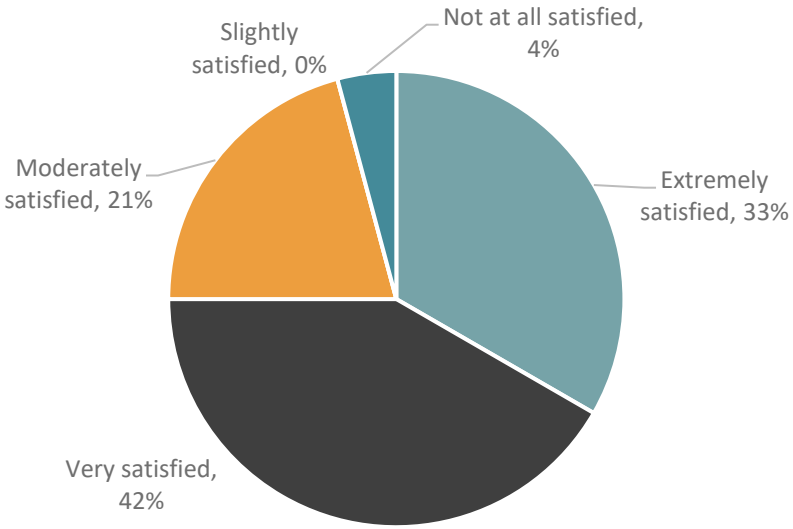
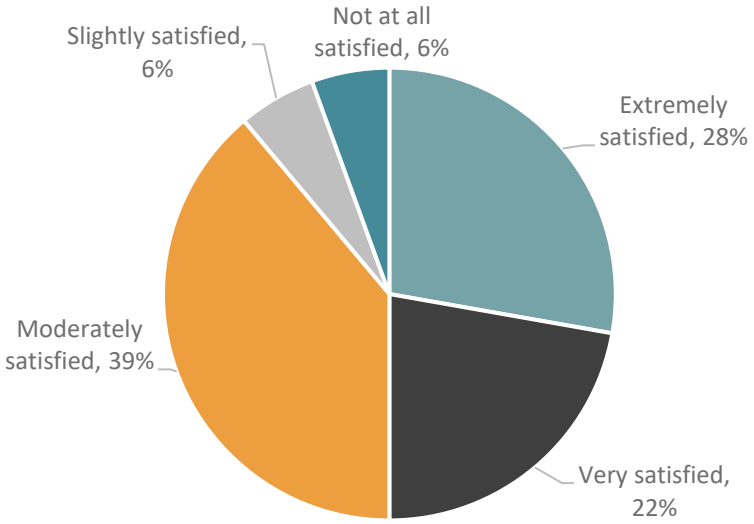


FIGURE 4-5 SATISFACTION LEVEL OF MULTIFAMILY SURVEY PARTICIPANTS THAT HAVE A HEAT PUMP



Survey participants that did not already own a heat pump were asked if they were aware of heat pumps being an alternative option to heat and cool homes. Results of this question are included in Table 4-1.

TABLE 4-1 HEAT PUMP AWARENESS OF SURVEY PARTICIPANTS WHO DO NOT OWN A HEAT PUMP

	SF	MF
Very aware	31%	29%
Somewhat aware	32%	26%
Unaware	37%	45%

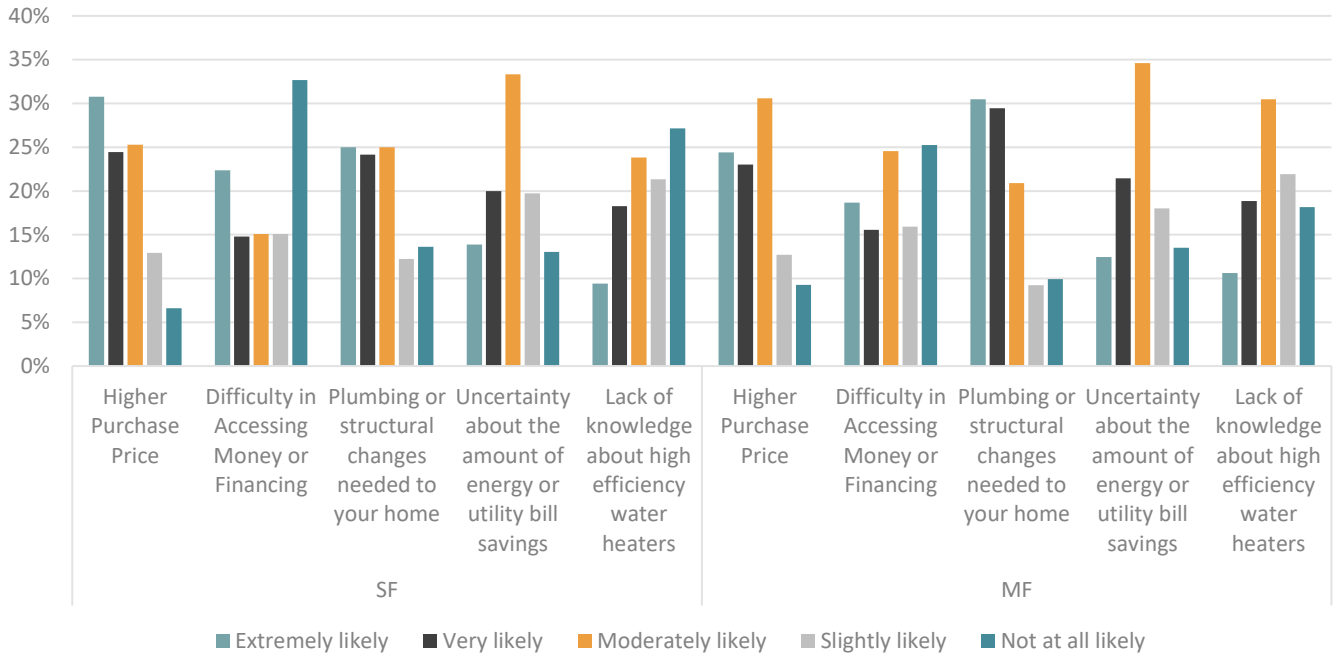
4.2 WATER HEATING

Survey participants were asked the likelihood of several factors preventing them from replacing their broken water heater with a high-efficiency water heater instead of a standard-efficiency water heater. These factors included a higher purchase price, difficulty in accessing money or financing, plumbing or structural changes needed to the home, uncertainty about the amount of energy or utility bill savings, and lack of knowledge about high efficiency water heaters.

DIFFICULTY IN ACCESSING MONEY OR FINANCING HAD THE HIGHEST PERCENTAGE OF PARTICIPANTS RESPONDING "NOT AT ALL LIKELY" AS A BARRIER FOR BOTH SINGLE FAMILY (33 PERCENT) AND MULTIFAMILY (25 PERCENT) PARTICIPANTS. THE GREATEST OVERALL BARRIER FOR SINGLE FAMILY PARTICIPANTS WAS THE HIGHER PURCHASE PRICE, WITH 80 PERCENT OF PARTICIPANTS RESPONDING "MODERATELY LIKELY" OR HIGHER. THE GREATEST BARRIER FOR MULTIFAMILY PARTICIPANTS WAS PLUMBING OR STRUCTURAL CHANGES NEEDED TO THE HOME, WITH 81 PERCENT OF PARTICIPANTS RESPONDING "MODERATELY LIKELY" OR HIGHER. RESULTS ARE SHOWN IN

Figure 4-6.

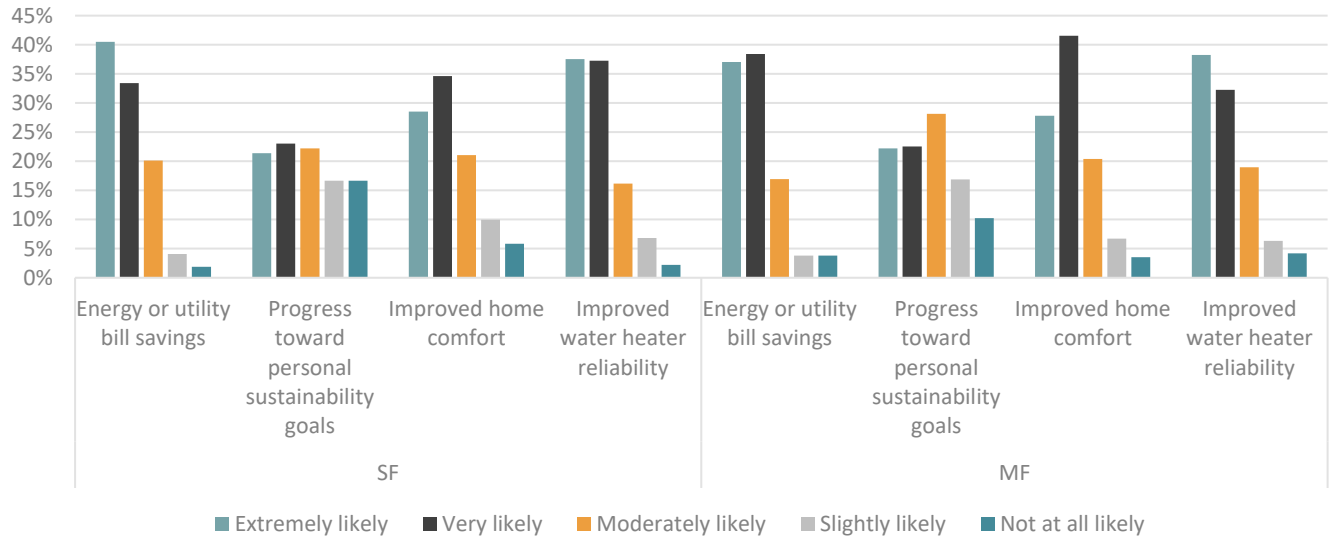
FIGURE 4-6 LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM REPLACING BROKEN WATER HEATER WITH A HIGH-EFFICIENCY WATER HEATER



Participants were also asked the likelihood of several factors motivating them to replace their broken water heater with a high-efficiency model. These factors included energy or utility bill savings, progress toward personal sustainability goals, improved home comfort, and improved water heater reliability.

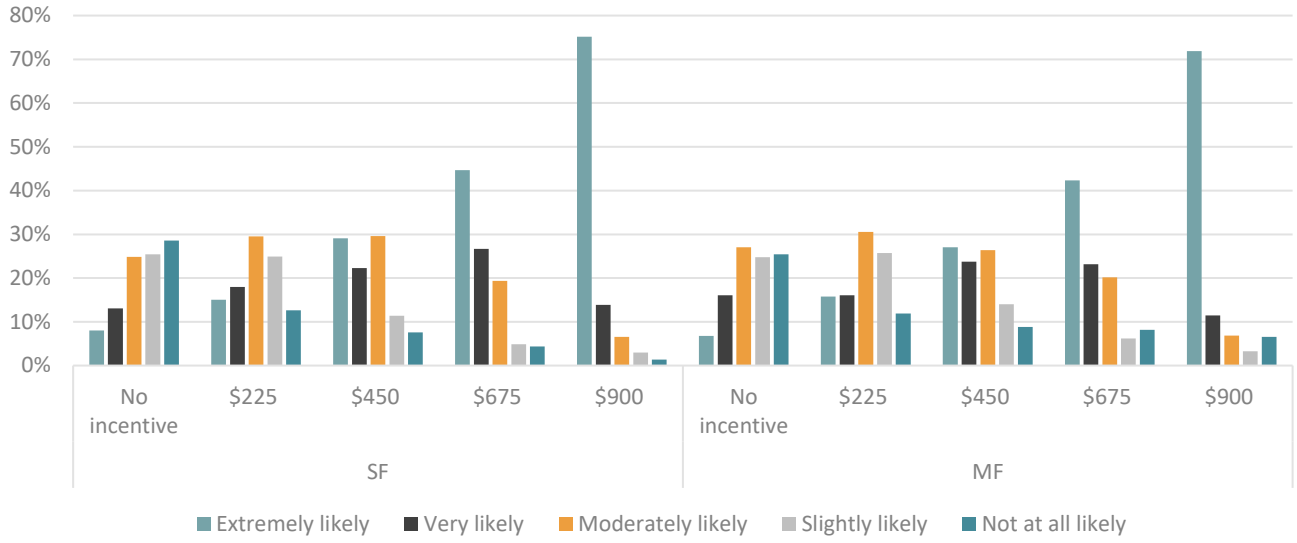
Energy or utility bill savings was the most likely factor for survey participants to be motivated to replace water heating equipment with a high-efficiency model. 94 percent of single-family participants and 92 percent of multifamily participants responded "moderately likely" or higher as a factor that energy or utility bill savings would motivate them to purchase a high-efficiency model. Figure 4-7 shows the results of these questions.

FIGURE 4-7 LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN WATER HEATER WITH A HIGH-EFFICIENCY MODEL



Survey participants were asked how likely they would be to purchase a high-efficiency water heater at different incentive levels: no incentive, 25 percent of the additional cost of a high-efficiency model ($225), 50 percent ($450), 75 percent ($675), and 100 percent ($900). As shown in Figure 4-8, the likelihood of participating increases as the incentive amount increases. 75 percent of single family participants and 72 percent of multifamily participants responded that they would be extremely likely to purchase a high efficiency model if 100 percent of the additional cost would be covered by an incentive.

FIGURE 4-8 LIKELIHOOD OF PURCHASING A HIGH EFFICIENCY WATER HEATER AT DIFFERENT INCENTIVE LEVELS



Survey participants were asked if they currently have a heat pump water heater installed in their homes. Only four percent of single family and three percent of multifamily respondents already have a heat pump water heater. Those responding that they already had a heat pump water heater were asked how satisfied they were with it. Figure 4-9 shows the heat pump water heater satisfaction for single family respondents and

Figure 4-10 shows the heat pump water heater satisfaction for multifamily respondents. Generally, heat pump owners are satisfied, with only seven percent of single family participants and zero percent of multifamily participants responding that they are “not at all satisfied”.

FIGURE 4-9 SATISFACTION LEVEL OF SINGLE FAMILY SURVEY PARTICIPANTS THAT HAVE A HEAT PUMP WATER HEATER

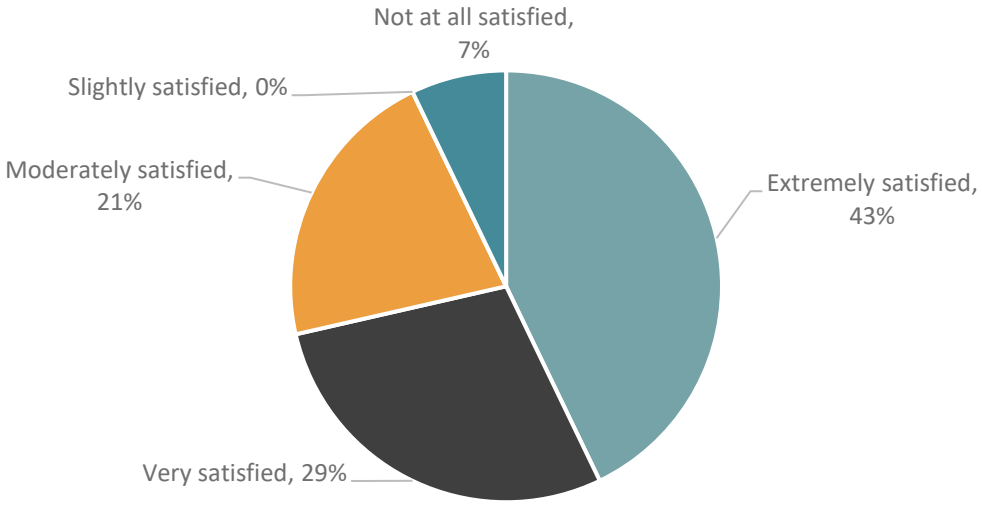
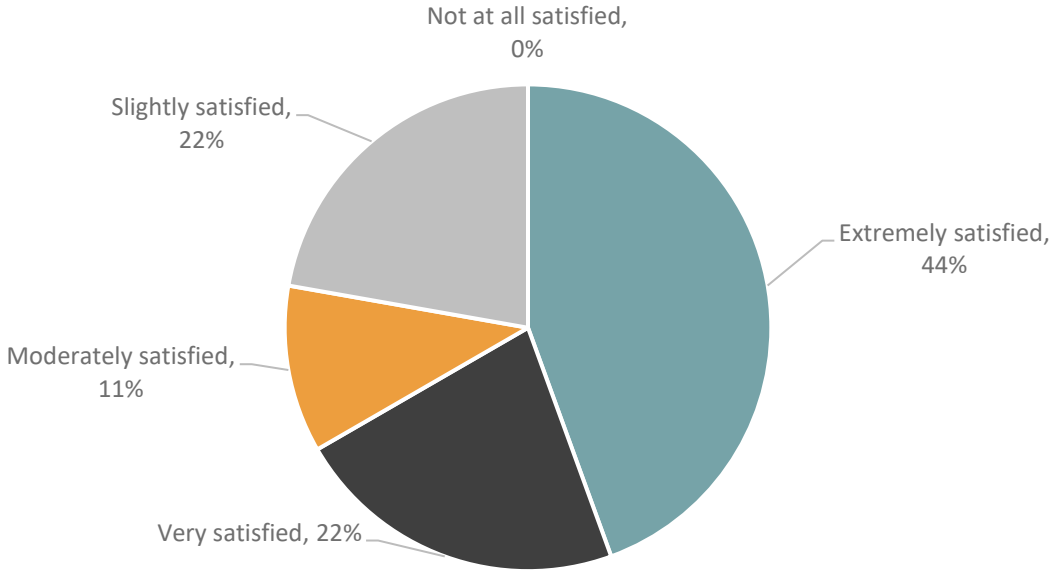


FIGURE 4-10 SATISFACTION LEVEL OF MULTIFAMILY SURVEY PARTICIPANTS THAT HAVE A HEAT PUMP WATER HEATER



Survey participants that did not already own a heat pump water heater were asked if they were aware of heat pump water heaters being an alternative option to provide hot water for homes. Results of this question are included in Table 4-2. Over 60% of participants were unaware of heat pump water heaters.

TABLE 4-2 HEAT PUMP WATER HEATER AWARENESS OF SURVEY PARTICIPANTS WHO DO NOT OWN A HEAT PUMP

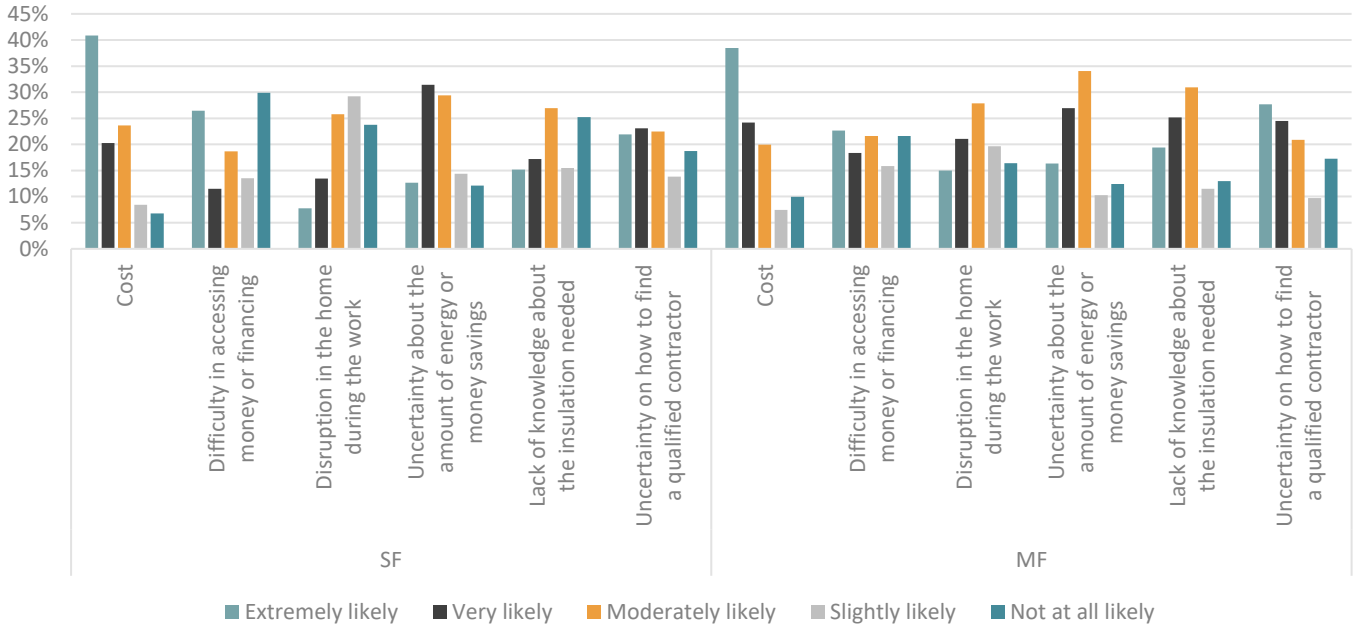
	SF	MF
Yes	19%	14%
Somewhat aware	18%	26%
Unaware	63%	60%

4.3 BUILDING SHELL

Survey participants were asked the likelihood of several factors preventing them from making improvements to their home's ceiling insulation or air sealing. These factors included cost, difficulty in accessing money or financing, disruption in the home during the work, uncertainty about the amount of energy or money savings, lack of knowledge about the insulation needed, and uncertainty on how to find a qualified contractor.

Cost was the biggest barrier for survey participants, with 41 percent of single family participants and 38% of single family participants responding that cost was "extremely likely" as a barrier. Difficulty in accessing money or financing had the highest percentage of participants responding "not at all likely" as a barrier for both single family (30 percent) and multifamily (22 percent) participants. Results are shown in Figure 4-11.

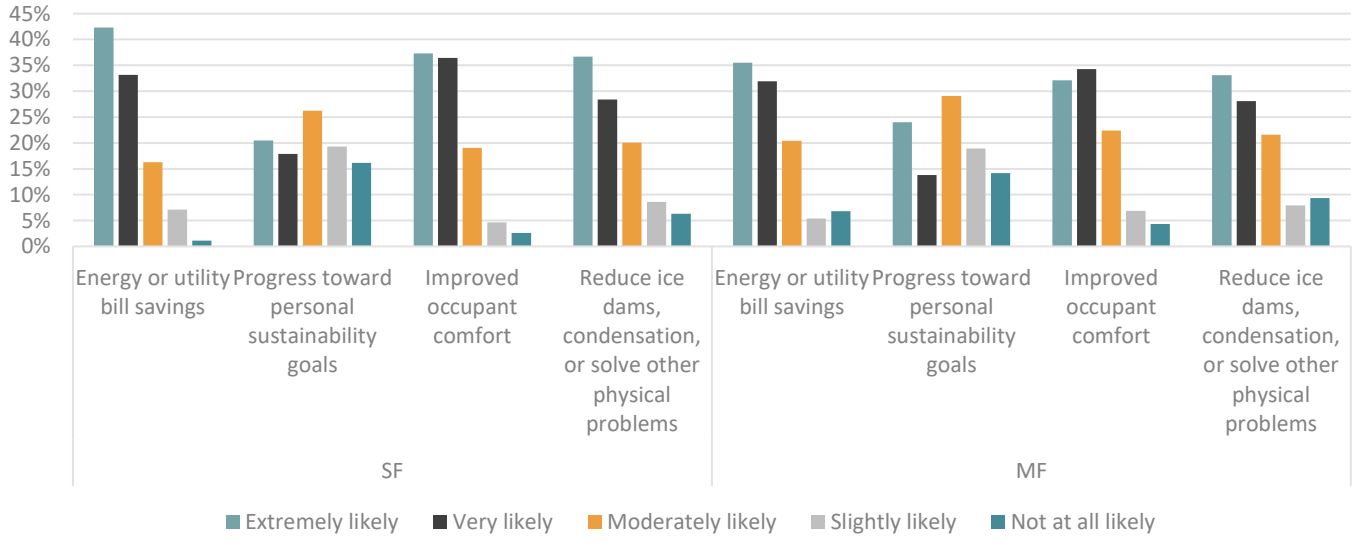
FIGURE 4-11 LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM MAKING IMPROVEMENTS TO THEIR HOME'S CEILING INSULATION OR AIR SEALING



Participants were also asked the likelihood of several factors motivating them to replace their broken water heater with a high-efficiency model. These factors included energy or utility bill savings, progress toward personal sustainability goals, improved occupant comfort, and reducing dams, condensation, or solving other physical problems.

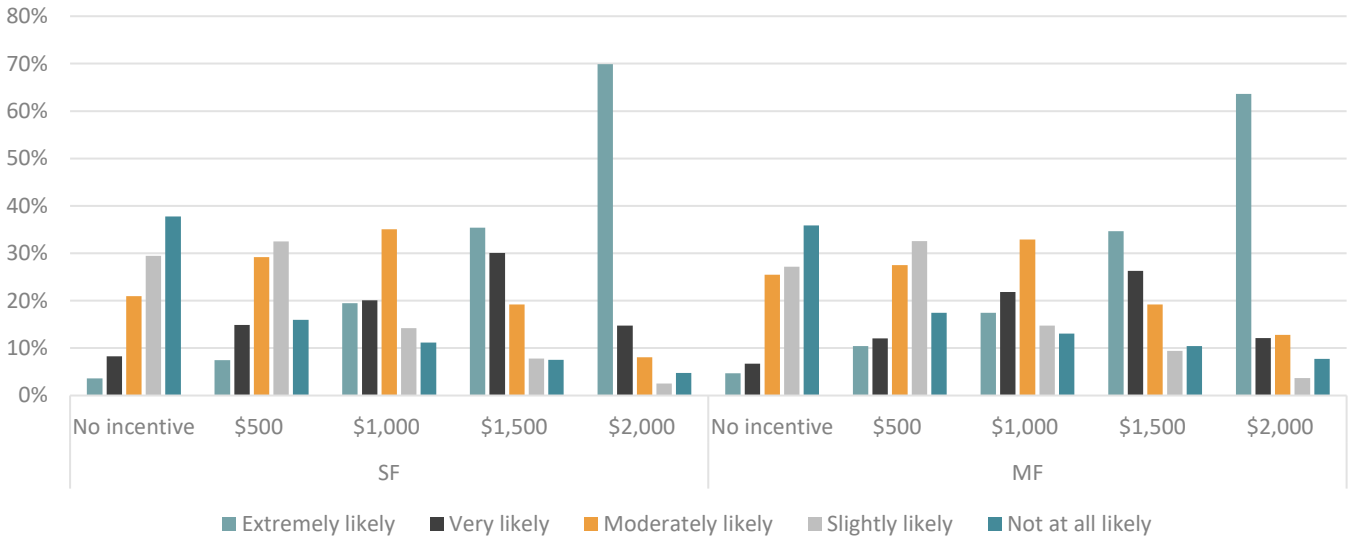
Improved occupant comfort was the most likely factor for survey participants to be motivated to improve ceiling insulation or air sealing. 93 percent of single family participants and 89 percent of multifamily participants responded "moderately likely" or higher as a factor that improved comfort would encourage them to improve their ceiling insulation or air sealing. Figure 4-12 shows the results of these questions.

FIGURE 4-12 LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO IMPROVE CEILING INSULATION OR AIR SEALING



Survey participants were asked how likely they would be to upgrade their home's ceiling insulation or air sealing at different incentive levels: no incentive, 25 percent of the project cost ($500), 50 percent ($1,000), 75 percent ($1,500), and 100 percent ($2,000). As shown in Figure 4-13, the likelihood of participating increases as the incentive amount increases. 70 percent of single family participants and 64 percent of multifamily participants responded that they would be extremely likely to upgrade their home's ceiling insulation or air sealing if 100 percent of the additional cost would be covered by an incentive.

FIGURE 4-13 LIKELIHOOD OF IMPROVING CEILING INSULATION OR AIR SEALING AT DIFFERENT INCENTIVE LEVELS



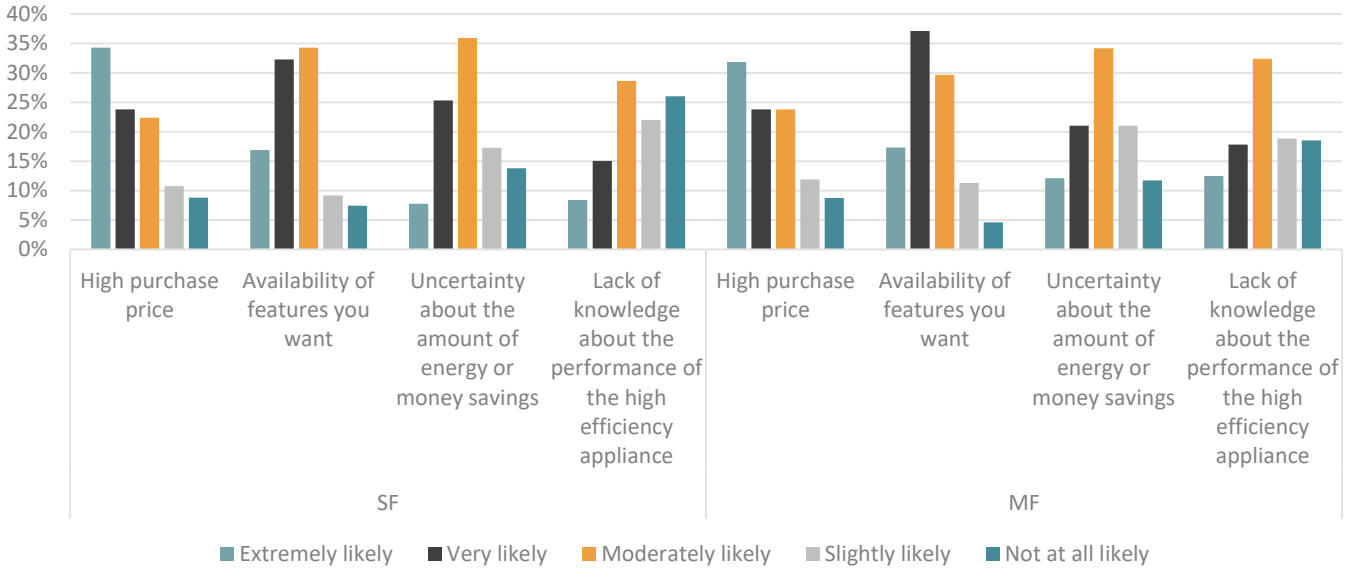
4.4 APPLIANCES

Survey participants were asked the likelihood of several factors preventing them from replacing a major household appliance with a high-efficiency model instead of a standard-efficiency model. These factors included a higher purchase price, availability of features wanted, uncertainty about the amount of energy or money savings, and lack of knowledge about the performance of the high efficiency appliance.

Lack of knowledge about the performance of the high efficiency appliance had the highest percentage of participants responding "not at all likely" as a barrier for both single family (26 percent) and multifamily (19 percent) participants. The greatest overall barrier was the availability of features wanted, with 83 percent of single family participants and 84 percent of multifamily participants responding "moderately likely" or higher. Results are shown in

Figure 4-14.

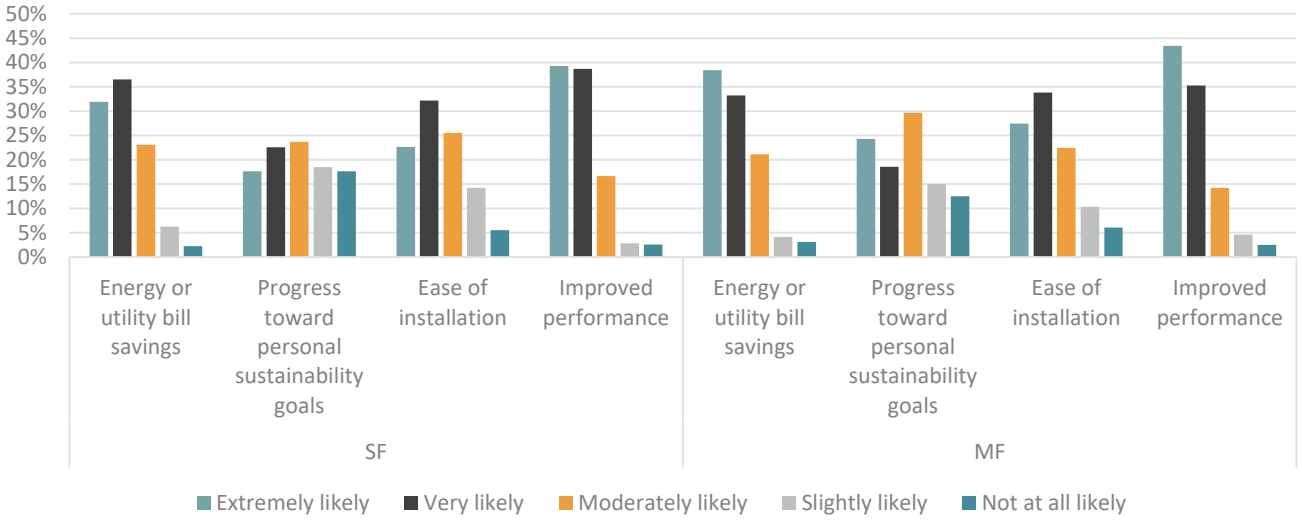
FIGURE 4-14 LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM REPLACING BROKEN HOUSEHOLD APPLIANCE WITH A HIGH-EFFICIENCY MODEL INSTEAD OF A STANDARD-EFFICIENCY MODEL



Participants were also asked the likelihood of several factors motivating them to replace their broken appliance with a high-efficiency model. These factors included energy or utility bill savings, progress toward personal sustainability goals, ease of installation, and improved performance.

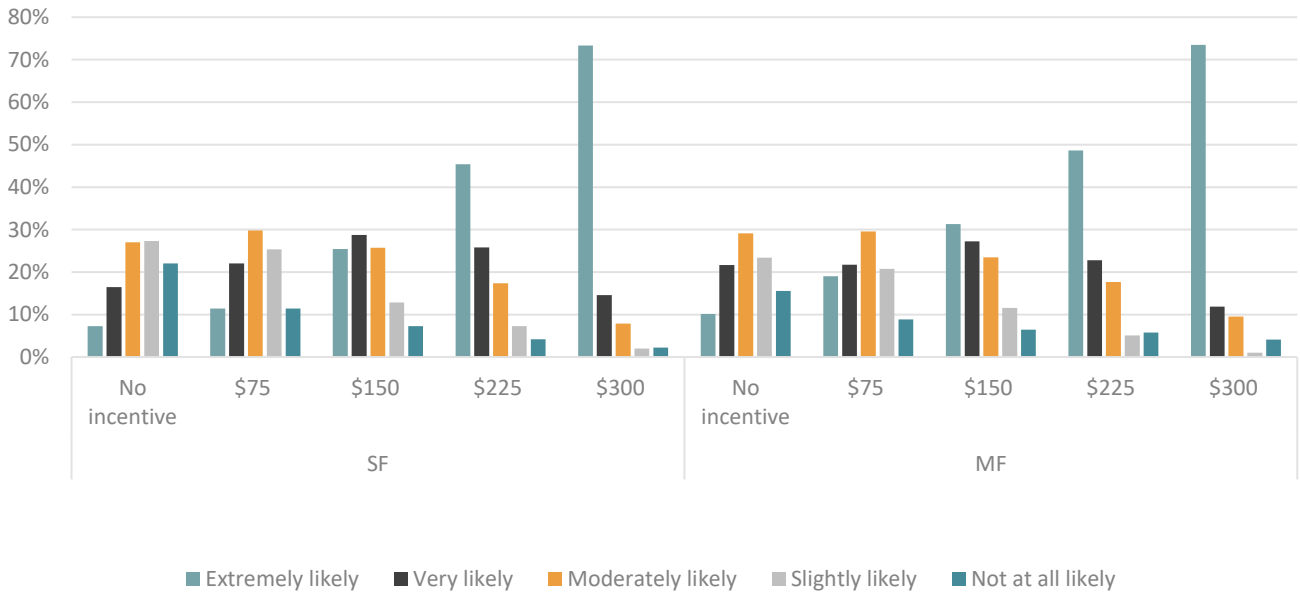
Improved performance was the most likely factor for survey participants to be motivated to improve ceiling insulation or air sealing. 95 percent of single family participants and 93 percent of multifamily participants responded "moderately likely" or higher as a factor that improved comfort would encourage them to improve their ceiling insulation or air sealing. Figure 4-15 shows the results of these questions.

FIGURE 4-15 LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN APPLIANCE WITH A HIGH-EFFICIENCY MODEL



Survey participants were asked how likely they would be to purchase a high-efficiency model instead of a standard-efficiency model at different incentive levels: no incentive, 25 percent of the additional cost of a high-efficiency model ($75), 50 percent ($150), 75 percent ($225), and 100 percent ($300). As shown in Figure 4-16, the likelihood of participating increases as the incentive amount increases. 73 percent of single family and multifamily participants responded that they would be extremely likely to upgrade their home's ceiling insulation or air sealing if 100 percent of the additional cost would be covered by an incentive.

FIGURE 4-16 LIKELIHOOD OF PURCHASING A HIGH EFFICIENCY APPLIANCE AT DIFFERENT INCENTIVE LEVELS



APPENDIX A. Demographics

Appendix A includes tables of demographics asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables A-1 through A-3 provide the counts of people in each age group living in the survey participants' households.

TABLE A-1. COUNTS OF PEOPLE LIVING IN EACH HOUSEHOLD BY HOUSING TYPE

E3 / Q43: How many people in each of the following age groups currently live in your household?	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
Under 19	1.03	0.78	1.09	0.80	1.00	0.78	1.09	0.83	0.96	0.86	0.96	0.87	1.21	0.72
19 to 64	1.67	1.65	1.59	1.85	1.72	1.64	1.58	2.00	1.69	1.66	1.72	1.67	1.88	1.65
65 or older	1.09	0.84	0.87	1.16	1.16	0.82	0.87	0.80	1.18	1.08	1.19	1.08	0.88	0.52
Total	**2.67**	**2.18**	**2.54**	**2.45**	**2.73**	**2.17**	**2.53**	**2.39**	**2.66**	**2.28**	**2.70**	**2.30**	**3.00**	**2.08**
Respondents (n)	**1,902**	**1,830**	**558**	**103**	**1,260**	**1,706**	**447**	**80**	**1,069**	**761**	**930**	**734**	**222**	**828**

TABLE A-2. COUNTS OF PEOPLE LIVING IN EACH HOUSEHOLD BY INCOME TYPE - SINGLE FAMILY

E3 / Q43: How many people in each of the following age groups currently live in your household?	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Answer														
Under 19	1.18	0.95	1.23	1.00	1.16	0.92	1.27	0.97	1.04	0.92	1.05	0.91	1.42	1.02
19 to 64	1.69	1.67	1.59	1.59	1.75	1.71	1.59	1.58	1.71	1.67	1.76	1.70	1.81	1.94
65 or older	0.97	1.14	0.67	0.99	1.09	1.19	0.64	1.01	1.16	1.18	1.19	1.19	0.82	0.95
Total	**2.76**	**2.62**	**2.59**	**2.51**	**2.88**	**2.67**	**2.58**	**2.49**	**2.77**	**2.62**	**2.84**	**2.65**	**3.10**	**2.92**
Respondents (n)	**621**	**1,272**	**207**	**350**	**392**	**860**	**166**	**281**	**311**	**750**	**269**	**654**	**102**	**119**

TABLE A-3. COUNTS OF PEOPLE LIVING IN EACH HOUSEHOLD BY INCOME TYPE - MULTIFAMILY

E3 / Q43: How many people in each of the following age groups currently live in your household?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
Under 19	1.00	0.55	1.03	0.42	0.99	0.56	1.05	0.53	0.96	0.74	0.95	0.77	1.02	0.47
19 to 64	1.63	1.66	2.16	1.29	1.59	1.67	2.49	1.30	1.55	1.76	1.56	1.77	1.64	1.66
65 or older	0.82	0.86	0.77	1.68	0.81	0.82	0.94	0.58	1.00	1.16	1.00	1.15	0.55	0.49
Total	**2.30**	**2.09**	**2.61**	**2.16**	**2.28**	**2.09**	**2.80**	**1.72**	**2.27**	**2.30**	**2.28**	**2.32**	**2.29**	**1.95**
Respondents (n)	**837**	**988**	**66**	**37**	**763**	**939**	**50**	**29**	**377**	**381**	**365**	**366**	**329**	**499**

Tables A-4 through A-6 show the ownership of the survey respondents' households.

TABLE A-4. OWNERSHIP OF HOUSEHOLD BY HOUSING TYPE

E4 / Q44: Do you own or rent at this address?	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
Own	89%	45%	86%	15%	90%	47%	85%	13%	93%	54%	93%	53%	73%	41%
Rent	11%	55%	14%	85%	10%	53%	15%	87%	7%	46%	7%	47%	27%	59%
Respondents (n)	**1,931**	**1,881**	**564**	**106**	**1,282**	**1,754**	**454**	**82**	**1,083**	**783**	**943**	**755**	**231**	**847**

TABLE A-5. OWNERSHIP OF HOUSEHOLD BY INCOME TYPE - SINGLE FAMILY

E4 / Q44: Do you own or rent at this address?	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Answer														
Own	76%	95%	72%	94%	78%	95%	72%	93%	82%	97%	83%	98%	64%	81%
Rent	24%	5%	28%	6%	22%	5%	28%	7%	18%	3%	17%	2%	36%	19%
Respondents (n)	**628**	**1,294**	**207**	**357**	**399**	**874**	**167**	**287**	**314**	**761**	**273**	**662**	**105**	**125**

TABLE A-6. OWNERSHIP OF HOUSEHOLD BY INCOME TYPE – MULTIFAMILY

E4 / Q44: Do you own or rent at this address? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Own	28%	59%	4%	33%	30%	60%	4%	27%	40%	67%	40%	66%	19%	55%
Rent	72%	41%	96%	67%	70%	40%	96%	73%	60%	33%	60%	34%	81%	45%
Respondents (n)	**860**	**1,014**	**67**	**39**	**785**	**963**	**51**	**30**	**387**	**391**	**375**	**375**	**335**	**512**

Tables A-7 through A-9 provide the ranges of household incomes.

TABLE A-7. HOUSEHOLD INCOME BY HOUSING TYPE

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household. Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Under $10,000	3%	6%	4%	15%	3%	6%	4%	15%	3%	5%	3%	5%	4%	6%
$10,000 - $15,000	2%	5%	3%	12%	1%	4%	3%	13%	1%	4%	1%	4%	2%	4%
$15,000 - $20,000	2%	2%	2%	9%	1%	2%	2%	10%	1%	1%	1%	1%	3%	2%
$20,000 - $25,000	3%	5%	4%	6%	3%	5%	4%	6%	2%	5%	2%	5%	5%	4%
$25,000 - $30,000	2%	4%	3%	6%	1%	4%	2%	5%	2%	4%	1%	4%	2%	3%
$30,000 - $35,000	3%	4%	5%	5%	3%	4%	5%	1%	2%	5%	2%	4%	5%	4%
$35,000 - $40,000	3%	4%	3%	9%	3%	3%	3%	9%	3%	4%	3%	4%	3%	3%
$40,000 - $45,000	4%	4%	6%	3%	3%	4%	6%	4%	3%	5%	3%	5%	2%	4%
$45,000 - $50,000	3%	3%	3%	2%	2%	3%	2%	3%	2%	5%	2%	5%	3%	2%
$50,000 - $60,000	7%	8%	8%	6%	6%	9%	8%	6%	6%	11%	6%	11%	9%	6%
$60,000 - $80,000	13%	13%	16%	9%	12%	13%	16%	9%	12%	15%	12%	15%	10%	11%
$80,000 - $100,000	12%	9%	13%	9%	12%	9%	13%	9%	13%	9%	13%	9%	10%	10%

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household.	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
$100,000 - $150,000	20%	15%	18%	9%	21%	15%	19%	10%	21%	14%	21%	14%	16%	16%
$150,000 or more	24%	18%	14%	3%	29%	19%	14%	1%	28%	12%	30%	11%	22%	26%
Respondents (n)	**1,712**	**1,710**	**520**	**103**	**1,113**	**1,588**	**419**	**80**	**945**	**705**	**816**	**678**	**201**	**775**
Average	***$99,500***	***$81,887***	***$82,400***	***$46,515***	***$107,382***	***$84,176***	***$83,680***	***$44,407***	***$106,701***	***$74,054***	***$109,564***	***$73,718***	***$90,596***	***$95,540***

TABLE A-8. HOUSEHOLD INCOME BY INCOME TYPE - SINGLE FAMILY

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household.	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Answer														
Under $10,000	5%	2%	5%	3%	5%	2%	6%	2%	4%	2%	4%	2%	7%	2%
$10,000 - $15,000	5%	0%	7%	0%	4%	0%	7%	0%	4%	0%	4%	0%	5%	0%
$15,000 - $20,000	5%	0%	5%	0%	4%	0%	5%	0%	4%	0%	3%	0%	7%	0%
$20,000 - $25,000	8%	0%	10%	0%	8%	0%	9%	0%	7%	0%	7%	0%	11%	0%
$25,000 - $30,000	5%	0%	7%	0%	4%	0%	5%	0%	6%	0%	4%	0%	4%	0%
$30,000 - $35,000	10%	0%	12%	0%	8%	0%	12%	0%	7%	0%	8%	0%	11%	0%
$35,000 - $40,000	8%	0%	7%	0%	9%	0%	9%	0%	9%	0%	9%	0%	7%	0%
$40,000 - $45,000	10%	0%	16%	0%	7%	0%	16%	0%	9%	0%	8%	0%	5%	0%
$45,000 - $50,000	6%	0%	6%	0%	6%	0%	5%	0%	6%	1%	6%	0%	6%	0%

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household.	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Answer														
$50,000 - $60,000	17%	2%	14%	5%	18%	1%	13%	5%	18%	1%	18%	1%	18%	1%
$60,000 - $80,000	16%	11%	9%	21%	20%	7%	10%	20%	21%	8%	22%	7%	10%	10%
$80,000 - $100,000	4%	17%	2%	20%	5%	15%	2%	20%	6%	16%	6%	16%	3%	16%
$100,000 - $150,000	1%	31%	0%	29%	1%	31%	0%	31%	1%	31%	1%	31%	2%	30%
$150,000 or more	0%	37%	0%	23%	1%	44%	0%	23%	0%	41%	0%	44%	1%	41%
Respondents (n)	**608**	**1,104**	**204**	**316**	**382**	**731**	**164**	**255**	**307**	**638**	**266**	**550**	**96**	**105**
Average	***$42,672***	***$130,796***	***$37,592***	***$111,327***	***$45,672***	***$139,630***	***$37,473***	***$113,397***	***$46,325***	***$135,754***	***$47,522***	***$139,570***	***$40,510***	***$136,390***

TABLE A-8. HOUSEHOLD INCOME BY INCOME TYPE – MULTIFAMILY

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household.	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
Under $10,000	9%	4%	17%	11%	8%	3%	18%	10%	7%	4%	7%	4%	10%	3%
$10,000 - $15,000	9%	0%	18%	0%	8%	0%	20%	0%	8%	0%	7%	0%	9%	0%
$15,000 - $20,000	5%	0%	14%	0%	4%	0%	16%	0%	2%	0%	2%	0%	6%	0%
$20,000 - $25,000	10%	0%	9%	0%	10%	0%	10%	0%	9%	0%	10%	0%	10%	0%
$25,000 - $30,000	8%	0%	9%	0%	7%	0%	8%	0%	8%	0%	8%	0%	6%	0%
$30,000 - $35,000	9%	0%	8%	0%	9%	0%	2%	0%	8%	0%	8%	0%	10%	0%
$35,000 - $40,000	8%	0%	14%	0%	7%	0%	14%	0%	8%	0%	8%	0%	6%	0%
$40,000 - $45,000	9%	0%	5%	0%	9%	0%	6%	0%	9%	0%	9%	0%	9%	0%

E5 / Q45: Please indicate the approximate total pre-tax household income for 2023 including wages, salaries, pensions, social security, etc. for all members of this household.	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
$45,000 - $50,000	6%	1%	2%	3%	6%	1%	2%	3%	8%	1%	9%	1%	5%	0%
$50,000 - $60,000	16%	1%	3%	11%	17%	0%	2%	14%	20%	1%	20%	1%	14%	0%
$60,000 - $80,000	11%	15%	3%	19%	12%	15%	4%	17%	10%	21%	10%	21%	13%	9%
$80,000 - $100,000	1%	17%	0%	24%	1%	17%	0%	24%	1%	19%	1%	19%	1%	16%
$100,000 - $150,000	1%	28%	0%	24%	1%	28%	0%	28%	1%	30%	1%	31%	1%	26%
$150,000 or more	0%	35%	0%	8%	1%	36%	0%	3%	1%	25%	1%	24%	1%	45%
Respondents (n)	**840**	**870**	**66**	**37**	**766**	**822**	**51**	**29**	**379**	**326**	**367**	**311**	**325**	**450**
Average	***$37,184***	***$125,049***	***$23,372***	***$87,799***	***$38,398***	***$126,835***	***$22,719***	***$82,548***	***$39,785***	***$113,895***	***$40,165***	***$113,314***	***$36,972***	***$137,839***

Table A-9 shows the percentage of each utility and housing type that is low income and not low income. This was not a survey question, but was calculated from the income levels in the previous tables.

TABLE A-9. INCOME TYPE

Income Status of Survey Respondents	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
Low Income	33%	47%	37%	64%	32%	46%	37%	63%	30%	51%	30%	51%	47%	41%
Not Low Income	67%	53%	63%	36%	68%	54%	63%	37%	70%	49%	70%	49%	53%	59%
No Response (n)	221	311	70	16	146	292	56	12	120	142	102	137	34	150
Total Responses	**1,953**	**1,931**	**574**	**108**	**1,294**	**1,803**	**461**	**82**	**1,089**	**800**	**947**	**771**	**238**	**879**

APPENDIX B Building Characteristics

Appendix B includes tables of building characteristics asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables B-1 through B-3 provide the types of home for the survey participants. For the respondents who answered "other", the majority wrote in that their home was one of the dwelling types already listed (e.g., townhouses, single family homes, duplexes). The remaining participants who answered "other" stated that they lived in a triplex, quadruplex, high rise, senior home, coach home, or mixed-use facility.

TABLE B-1. TYPE OF HOME BY HOUSING TYPE

S4 / Q4: What type of home is this dwelling? Answer	SF	MF	Ameren -E-SF	Ameren -E-MF	ComEd -SF	ComEd -MF	Ameren -G-SF	Ameren -G-MF	Nicor -SF	Nicor -MF	ComEd -Nicor-SF	ComEd -Nicor-MF	ComEd - Peoples Gas-SF	ComEd - Peoples Gas-MF
Single family home	88%	0%	89%	0%	87%	0%	91%	0%	90%	0%	91%	0%	70%	0%
Duplex (2 dwelling units)	9%	0%	6%	0%	10%	0%	6%	0%	7%	0%	7%	0%	28%	0%
Townhouse/Row home	0%	14%	0%	10%	0%	14%	0%	9%	0%	26%	0%	25%	0%	4%
Condominium	0%	35%	0%	8%	0%	36%	0%	7%	0%	33%	0%	33%	0%	38%
Apartment	0%	49%	0%	77%	0%	48%	0%	78%	0%	39%	0%	39%	0%	56%
Mobile/manufactured home	2%	0%	4%	0%	1%	0%	3%	0%	2%	0%	1%	0%	0%	0%
Other (please specify)	1%	2%	0%	5%	1%	2%	0%	7%	1%	2%	1%	2%	2%	2%
I don't know (n)	4	15	0	0	4	15	0	0	2	6	2	6	2	9
Respondents (n)	**2,083**	**2,032**	**615**	**118**	**1,381**	**1,892**	**495**	**90**	**1,158**	**843**	**1,008**	**812**	**256**	**923**

TABLE B-2. TYPE OF HOME BY INCOME TYPE - SINGLE FAMILY

S4 / Q4: What type of home is this dwelling? Answer	SF-LI	SF-NLI	Ameren -E-SF-LI	Ameren -E-SF-NLI	ComEd -SF-LI	ComEd -SF-NLI	Ameren -G-SF-LI	Ameren -G-SF-NLI	Nicor -SF-LI	Nicor -SF-NLI	ComEd -Nicor-SF-LI	ComEd -Nicor-SF-NLI	ComEd - Peoples Gas-SF-LI	ComEd - Peoples Gas-SF-NLI
Single family home	80%	93%	82%	94%	80%	92%	86%	94%	82%	95%	85%	95%	66%	76%
Duplex (2 dwelling units)	14%	6%	9%	5%	18%	7%	6%	6%	13%	5%	12%	5%	31%	24%
Townhouse/Row home	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Condominium	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

S4 / Q4: What type of home is this dwelling? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Apartment	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mobile/manufactured home	5%	1%	9%	1%	2%	1%	7%	1%	5%	0%	3%	0%	1%	0%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%
I don't know (n)	9	8	2	0	6	8	1	0	5	6	4	6	2	1
Respondents (n)	**637**	**1,291**	**211**	**360**	**405**	**868**	**170**	**289**	**316**	**757**	**274**	**658**	**109**	**124**

TABLE B-3. TYPE OF HOME BY INCOME TYPE – MULTIFAMILY

S4 / Q4: What type of home is this dwelling? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Single family home	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Duplex (2 dwelling units)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Townhouse/Row home	10%	18%	14%	6%	10%	17%	13%	4%	16%	36%	16%	35%	2%	4%
Condominium	24%	46%	3%	19%	25%	48%	2%	14%	31%	38%	32%	38%	18%	54%
Apartment	66%	36%	83%	75%	64%	35%	85%	82%	53%	26%	52%	27%	79%	42%
Mobile/manufactured home	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
I don't know (n)	21	18	3	3	17	15	4	2	11	4	11	3	3	12
Respondents (n)	**869**	**1,004**	**65**	**36**	**797**	**956**	**47**	**28**	**386**	**391**	**373**	**376**	**350**	**504**

Tables B-4 and B-5 list the number of dwelling units per building. This is only applicable for multifamily homes.

TABLE B-4. NUMBER OF DWELLING UNITS BY HOUSING TYPE

S5 / Q5: How many dwelling units are in the building that this unit occupies?	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
3 to 4 units	NR	27%	NR	39%	NR	26%	NR	36%	NR	33%	NR	32%	NR	22%
5 to 9 units	NR	25%	NR	20%	NR	26%	NR	22%	NR	25%	NR	25%	NR	27%
10 to 19 units	NR	13%	NR	24%	NR	12%	NR	25%	NR	13%	NR	13%	NR	10%
20 to 49 units	NR	14%	NR	10%	NR	14%	NR	9%	NR	15%	NR	15%	NR	13%
More than 50 units	NR	21%	NR	8%	NR	22%	NR	8%	NR	14%	NR	15%	NR	28%
I don't know (n)	0	118	0	10	0	107	0	8	0	50	0	48	0	52
Respondents (n)	**0**	**1,872**	**0**	**102**	**0**	**1,750**	**0**	**76**	**0**	**776**	**0**	**748**	**0**	**855**

TABLE B-5. NUMBER OF DWELLING UNITS BY INCOME TYPE – MULTIFAMILY

S5 / Q5: How many dwelling units are in the building that this unit occupies?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
3 to 4 units	30%	23%	38%	48%	29%	22%	34%	48%	32%	32%	32%	31%	29%	17%
5 to 9 units	25%	26%	23%	9%	25%	27%	25%	16%	23%	28%	23%	28%	27%	27%
10 to 19 units	14%	11%	18%	27%	14%	10%	18%	24%	17%	9%	17%	10%	11%	10%
20 to 49 units	13%	15%	10%	12%	14%	15%	9%	12%	14%	16%	14%	16%	12%	15%
More than 50 units	18%	24%	11%	3%	18%	25%	14%	0%	14%	15%	14%	15%	21%	32%
I don't know (n)	65	34	4	3	61	30	3	3	28	15	28	14	28	15
Respondents (n)	**801**	**970**	**61**	**33**	**733**	**926**	**44**	**25**	**358**	**376**	**345**	**362**	**319**	**489**

APPENDIX C Space Heating

Appendix C includes tables of space heating equipment asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type. Residential site visits were used to verify the online response and inform adjustments to the shares of heating fuels and equipment types. See Section 3.2 for further details on how adjustments were made.

Tables C-1 through C-3 provide the primary space heating fuel and heating system type for survey participants.

TABLE C-1. PRIMARY SPACE HEATING FUEL AND HEATING SYSTEM BY HOUSING TYPE

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)															
Fuel	**Heating System**	**SF**	**MF**	**Ameren-E-SF**	**Ameren-E-MF**	**ComEd-SF**	**ComEd-MF**	**Ameren-G-SF**	**Ameren-G-MF**	**Nicor-SF**	**Nicor-MF**	**ComEd-Nicor-SF**	**ComEd-Nicor-MF**	**ComEd-Peoples Gas-SF**	**ComEd-Peoples Gas-MF**
Electric	Furnace	3%	6%	6%	16%	1%	5%	6%	18%	1%	5%	1%	5%	2%	4%
	Air source heat pump (with ductwork)	1%	3%	2%	6%	1%	3%	3%	6%	0%	2%	0%	2%	0%	4%
	Baseboards for space heating	0%	6%	1%	20%	0%	5%	1%	15%	0%	6%	0%	6%	0%	3%
	Wall/room heater	0%	5%	1%	8%	0%	5%	0%	9%	0%	3%	0%	3%	0%	5%
	Geothermal heat pump	1%	0%	2%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Ductless heat pump (mini-split)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Electric		***6%***	***21%***	***13%***	***49%***	***3%***	***19%***	***13%***	***48%***	***2%***	***15%***	***2%***	***16%***	***3%***	***17%***
Natural Gas	Furnace	83%	60%	78%	45%	85%	60%	80%	44%	90%	67%	90%	66%	74%	59%
	Boiler (water heater or steam)	8%	16%	5%	3%	9%	16%	5%	5%	7%	14%	7%	15%	19%	20%
	Stove or fireplace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Air source heat pump (with ductwork)	1%	2%	1%	0%	1%	2%	1%	0%	0%	2%	0%	2%	3%	2%
	Geothermal heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Wall/room heater	0%	1%	0%	1%	1%	1%	0%	2%	0%	2%	0%	2%	2%	1%
Subtotal - Natural Gas		***92%***	***78%***	***83%***	***49%***	***96%***	***80%***	***86%***	***50%***	***98%***	***84%***	***98%***	***84%***	***97%***	***82%***
Propane (bottled gas)	Furnace	2%	0%	3%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Propane (bottled gas)		***2%***	***0%***	***3%***	***0%***	***1%***	***0%***	***1%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***
Fuel Oil	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Subtotal - Fuel Oil		***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***1%***
Wood	Stove or fireplace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Furnace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)

Fuel	Heating System	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Wood		***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***

TABLE C-2. PRIMARY SPACE HEATING FUEL AND HEATING SYSTEM BY INCOME TYPE - SINGLE FAMILY

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)

Fuel	Heating System	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Electric	Furnace	4%	2%	6%	6%	2%	1%	5%	7%	3%	1%	2%	1%	1%	3%
	Air source heat pump (with ductwork)	2%	1%	4%	2%	0%	1%	4%	3%	0%	0%	0%	0%	0%	0%
	Baseboards for space heating	1%	0%	3%	0%	1%	0%	3%	0%	0%	0%	0%	0%	0%	0%
	Wall/room heater	0%	0%	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	1%
	Geothermal heat pump	0%	1%	1%	3%	0%	0%	1%	2%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
	Ductless heat pump (mini-split)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Electric		***8%***	***5%***	***15%***	***13%***	***4%***	***2%***	***12%***	***14%***	***4%***	***1%***	***3%***	***1%***	***2%***	***3%***
Natural Gas	Furnace	79%	85%	79%	78%	78%	88%	84%	79%	83%	92%	83%	92%	69%	77%
	Boiler (water heater or steam)	10%	6%	3%	5%	13%	7%	3%	5%	10%	6%	11%	6%	22%	16%
	Stove or fireplace	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%
	Air source heat pump (with ductwork)	1%	1%	0%	1%	1%	1%	0%	1%	0%	0%	0%	0%	3%	3%
	Geothermal heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Wall/room heater	1%	0%	0%	0%	2%	0%	0%	0%	1%	0%	1%	0%	3%	1%

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)															
Fuel	**Heating System**	**SF-LI**	**SF-NLI**	**Ameren-E-SF-LI**	**Ameren-E-SF-NLI**	**ComEd-SF-LI**	**ComEd-SF-NLI**	**Ameren-G-SF-LI**	**Ameren-G-SF-NLI**	**Nicor-SF-LI**	**Nicor-SF-NLI**	**ComEd-Nicor-SF-LI**	**ComEd-Nicor-SF-NLI**	**ComEd-Peoples Gas-SF-LI**	**ComEd-Peoples Gas-SF-NLI**
Subtotal - Natural Gas		***91%***	***93%***	***83%***	***84%***	***95%***	***97%***	***87%***	***86%***	***95%***	***99%***	***96%***	***99%***	***98%***	***97%***
Propane (bottled gas)	Furnace	1%	2%	2%	3%	1%	1%	1%	0%	0%	0%	0%	0%	0%	0%
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Propane (bottled gas)		***1%***	***2%***	***2%***	***3%***	***1%***	***1%***	***1%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***
Fuel Oil	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Fuel Oil		***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***
Wood	Stove or fireplace	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Furnace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Wood		***0%***	***0%***	***1%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***

TABLE C-3. PRIMARY SPACE HEATING FUEL AND HEATING SYSTEM BY INCOME TYPE – MULTIFAMILY

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)															
Fuel	**Heating System**	**MF-LI**	**MF-NLI**	**Ameren-E-MF-LI**	**Ameren-E-MF-NLI**	**ComEd-MF-LI**	**ComEd-MF-NLI**	**Ameren-G-MF-LI**	**Ameren-G-MF-NLI**	**Nicor-MF-LI**	**Nicor-MF-NLI**	**ComEd-Nicor-MF-LI**	**ComEd-Nicor-MF-NLI**	**ComEd-Peoples Gas-MF-LI**	**ComEd-Peoples Gas-MF-NLI**
Electric	Furnace	8%	4%	14%	15%	7%	3%	16%	19%	7%	3%	6%	3%	5%	3%
	Air source heat pump (with ductwork)	2%	5%	4%	6%	2%	5%	5%	4%	1%	2%	1%	2%	0%	7%
	Baseboards for space heating	9%	4%	28%	6%	7%	4%	24%	4%	8%	4%	9%	4%	3%	3%
	Wall/room heater	7%	4%	10%	6%	7%	4%	11%	8%	3%	2%	3%	2%	8%	4%
	Geothermal heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%
	Ductless heat pump (mini-split)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%

A3 / Q9: What is the main fuel type and heating system used in your home? (For respondents with only one fuel type)

Fuel	Heating System	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Subtotal - Electric		***25%***	***18%***	***56%***	***36%***	***22%***	***17%***	***57%***	***38%***	***20%***	***11%***	***20%***	***12%***	***16%***	***18%***
Natural Gas	Furnace	52%	66%	38%	61%	53%	66%	38%	54%	58%	76%	57%	75%	54%	62%
	Boiler (water heater or steam)	19%	13%	4%	3%	21%	13%	3%	8%	18%	10%	19%	11%	26%	16%
	Stove or fireplace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Air source heat pump (with ductwork)	1%	2%	0%	0%	1%	2%	0%	0%	2%	1%	2%	2%	1%	3%
	Geothermal heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Water source heat pump	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
	Wall/room heater	2%	1%	2%	0%	2%	1%	3%	0%	3%	1%	3%	1%	1%	1%
Subtotal - Natural Gas		***74%***	***82%***	***44%***	***64%***	***77%***	***83%***	***43%***	***62%***	***80%***	***89%***	***80%***	***88%***	***82%***	***82%***
Propane (bottled gas)	Furnace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Propane (bottled gas)		***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***
Fuel Oil	Boiler (hot water or steam)	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	2%	0%
Subtotal - Fuel Oil		***1%***	***0%***	***0%***	***0%***	***1%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***2%***	***0%***
Wood	Stove or fireplace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Furnace	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Boiler (hot water or steam)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Subtotal - Wood		***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***	***0%***

APPENDIX D Space Cooling

Appendix D includes tables of space cooling equipment asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables D-1 and D-2 provide responses to whether the cooling equipment in multifamily units serves only the respondent's unit or multiple units. This question was not asked to single family survey participants.

TABLE D-1. COOLING EQUIPMENT FOR MULTIFAMILY HOMES BY HOUSING TYPE

A7 / Q13: Do you have cooling equipment in your apartment or unit that only serves your apartment or unit?														
Answer	SF	MF	Ameren -E-SF	Ameren -E-MF	ComEd-SF	ComEd-MF	Ameren -G-SF	Ameren -G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Yes, the cooling equipment only serves my unit	NR	89%	NR	91%	NR	89%	NR	91%	NR	94%	NR	94%	NR	84%
No, the cooling equipment serves multiple units	NR	11%	NR	9%	NR	11%	NR	9%	NR	6%	NR	6%	NR	16%
Don't know (n)	0	121	0	5	0	116	0	5	0	33	0	33	0	78
Respondents (n)	**0**	**1,822**	**0**	**104**	**0**	**1,697**	**0**	**77**	**0**	**775**	**0**	**746**	**0**	**803**

TABLE D-2. COOLING EQUIPMENT FOR MULTIFAMILY HOMES BY INCOME TYPE - MULTIFAMILY

A7 / Q13: Do you have cooling equipment in your apartment or unit that only serves your apartment or unit?														
Answer	MF-LI	MF-NLI	Ameren -E-MF-LI	Ameren -E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren -G-MF-LI	Ameren -G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Yes, the cooling equipment only serves my unit	87%	90%	92%	91%	87%	90%	91%	88%	91%	96%	91%	95%	81%	85%
No, the cooling equipment serves multiple units	13%	10%	8%	9%	13%	10%	9%	12%	9%	4%	9%	5%	19%	15%
Don't know (n)	68	46	3	2	65	44	2	3	19	11	19	11	44	31
Respondents (n)	**792**	**957**	**61**	**34**	**724**	**911**	**45**	**25**	**364**	**379**	**352**	**364**	**300**	**473**

Tables D-3 through D-5 include the type of cooling system in respondents' homes. The most common response for single family survey respondents who answered "other" was geothermal heat pumps (42%). The most common response for multifamily survey respondents who answered "other" was fans (28%). There were several other responses listed by respondents in the "other" category, including whole house fans, PTAC units, and ceiling fans.

TABLE D-3. TYPES OF COOLING SYSTEM BY HOUSING TYPE

A8 / Q14: What type(s) of cooling system, if any, does your home have?														
Answer	SF	MF	Ameren -E-SF	Ameren -E-MF	ComEd-SF	ComEd-MF	Ameren -G-SF	Ameren -G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Central air conditioning (whole house air conditioning, not including heat pumps)	86%	63%	85%	57%	86%	63%	86%	57%	92%	69%	92%	68%	66%	58%
Wall / window air conditioning	13%	31%	16%	39%	12%	31%	14%	37%	10%	26%	9%	27%	27%	34%
Air source heat pump (with ducts)	2%	3%	3%	5%	1%	3%	3%	5%	1%	2%	1%	2%	1%	3%
Ductless heat pump (mini-split)	1%	1%	1%	0%	1%	1%	1%	0%	0%	1%	0%	1%	1%	1%
Ductless air conditioner (mini-split)	1%	1%	1%	1%	0%	1%	1%	1%	1%	0%	0%	0%	0%	1%
Portable / floor-based air conditioning unit	2%	3%	1%	1%	2%	3%	1%	0%	1%	3%	1%	3%	6%	3%
Other (please specify)	1%	2%	2%	0%	1%	2%	2%	0%	1%	2%	1%	2%	0%	2%
No cooling system	2%	1%	1%	0%	3%	1%	1%	0%	1%	0%	1%	0%	9%	1%
Don't know (n)	7	27	0	1	7	26	1	1	5	9	5	9	1	14
Respondents (n)	**2,037**	**1,628**	**604**	**100**	**1,346**	**1,507**	**486**	**75**	**1,133**	**730**	**985**	**702**	**248**	**674**

TABLE D-4. TYPES OF COOLING SYSTEM BY INCOME TYPE - SINGLE FAMILY

A8 / Q14: What type(s) of cooling system, if any, does your home have?														
Answer	SF-LI	SF-NLI	Ameren -E-SF-LI	Ameren -E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren -G-SF-LI	Ameren -G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Central air conditioning (whole house air conditioning, not including heat pumps)	77%	91%	76%	91%	77%	91%	79%	91%	85%	94%	85%	94%	55%	75%
Wall / window air conditioning	22%	9%	24%	11%	22%	8%	21%	10%	18%	7%	17%	6%	35%	22%
Air source heat pump (with ducts)	2%	2%	4%	3%	0%	1%	3%	4%	1%	1%	1%	1%	0%	1%
Ductless heat pump (mini-split)	0%	1%	1%	1%	0%	1%	1%	1%	0%	1%	0%	0%	0%	1%
Ductless air conditioner (mini-split)	0%	1%	1%	1%	0%	1%	2%	1%	0%	1%	0%	1%	0%	0%
Portable / floor-based air conditioning unit	3%	1%	1%	1%	3%	1%	1%	1%	2%	1%	1%	1%	8%	4%
Other (please specify)	0%	2%	0%	4%	0%	1%	1%	3%	0%	1%	0%	1%	0%	1%

A8 / Q14: What type(s) of cooling system, if any, does your home have?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
No cooling system	4%	1%	1%	0%	5%	2%	1%	0%	2%	1%	2%	1%	14%	6%
Don't know (n)	4	3	0	0	4	3	0	1	3	2	3	2	1	0
Respondents (n)	**636**	**1,296**	**212**	**360**	**402**	**873**	**170**	**288**	**317**	**761**	**274**	**662**	**106**	**125**

TABLE D-5. TYPES OF COOLING SYSTEM BY INCOME TYPE – MULTIFAMILY

A8 / Q14: What type(s) of cooling system, if any, does your home have?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Central air conditioning (whole house air conditioning, not including heat pumps)	51%	72%	43%	74%	51%	71%	45%	67%	57%	80%	57%	80%	44%	67%
Wall / window air conditioning	43%	22%	52%	24%	43%	22%	48%	29%	37%	15%	38%	15%	47%	26%
Air source heat pump (with ducts)	3%	3%	7%	3%	2%	3%	9%	0%	2%	2%	2%	3%	3%	3%
Ductless heat pump (mini-split)	1%	1%	0%	0%	1%	1%	0%	0%	1%	1%	1%	1%	1%	1%
Ductless air conditioner (mini-split)	0%	1%	0%	3%	0%	1%	0%	4%	0%	1%	0%	1%	0%	1%
Portable / floor-based air conditioning unit	4%	2%	2%	0%	4%	3%	0%	0%	4%	2%	4%	2%	5%	2%
Other (please specify)	1%	2%	0%	0%	1%	2%	0%	0%	1%	2%	2%	2%	2%	3%
No cooling system	1%	0%	0%	0%	1%	0%	0%	0%	1%	0%	1%	0%	3%	0%
Don't know (n)	13	11	1	0	12	11	1	0	3	4	3	4	7	6
Respondents (n)	**697**	**868**	**58**	**34**	**632**	**822**	**44**	**24**	**340**	**363**	**329**	**347**	**239**	**410**

Tables D-6 through D-8 include the percentage of survey respondents answering that they had a wall / window air conditioning unit that had one, two, three, or four or more units. The average count of units is included as well.

TABLE D-6. NUMBER OF WALL / WINDOW AIR CONDITIONING UNITS BY HOUSING TYPE

A9 / Q15: How many wall / window air conditioning units does your home have?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
1 unit	40%	45%	45%	59%	36%	44%	42%	64%	45%	50%	44%	49%	26%	38%
2 units	32%	37%	29%	33%	35%	37%	30%	29%	29%	37%	30%	38%	39%	39%
3 units	17%	12%	15%	8%	19%	12%	16%	7%	14%	10%	15%	10%	24%	14%
4+ units	11%	6%	11%	0%	10%	7%	12%	0%	12%	3%	11%	3%	11%	9%
Respondents (n)	**266**	**507**	**96**	**39**	**165**	**467**	**69**	**28**	**111**	**187**	**89**	**184**	**66**	**226**
Average Count of Units	**1.98**	**1.79**	**1.93**	**1.49**	**2.03**	**1.81**	**1.97**	**1.43**	**1.93**	**1.66**	**1.93**	**1.67**	**2.20**	**1.93**

TABLE D-7. NUMBER OF WALL / WINDOW AIR CONDITIONING UNITS BY INCOME TYPE - SINGLE FAMILY

A9 / Q15: How many wall / window air conditioning units does your home have?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
1 unit	36%	46%	36%	59%	36%	39%	34%	55%	41%	51%	41%	49%	27%	27%
2 units	34%	27%	34%	21%	34%	32%	37%	21%	30%	25%	33%	27%	35%	38%
3 units	21%	12%	22%	3%	22%	15%	20%	7%	20%	8%	17%	10%	30%	19%
4+ units	8%	15%	8%	18%	8%	14%	9%	17%	9%	16%	9%	15%	8%	15%
Respondents (n)	**140**	**113**	**50**	**39**	**87**	**72**	**35**	**29**	**56**	**51**	**46**	**41**	**37**	**26**
Average Count of Units	**2.01**	**1.96**	**2.02**	**1.79**	**2.02**	**2.04**	**2.03**	**1.86**	**1.96**	**1.88**	**1.93**	**1.90**	**2.19**	**2.23**

TABLE D-8. NUMBER OF WALL / WINDOW AIR CONDITIONING UNITS BY INCOME TYPE -MULTIFAMILY

A9 / Q15: How many wall / window air conditioning units does your home have?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
1 unit	54%	32%	70%	25%	52%	32%	81%	14%	54%	38%	54%	37%	47%	29%
2 units	34%	43%	23%	63%	35%	43%	14%	71%	34%	47%	33%	48%	37%	42%
3 units	10%	14%	7%	13%	10%	14%	5%	14%	10%	9%	11%	10%	10%	16%
4+ units	3%	11%	0%	0%	3%	11%	0%	0%	2%	6%	2%	6%	5%	13%
Respondents (n)	**295**	**192**	**30**	**8**	**265**	**183**	**21**	**7**	**125**	**53**	**123**	**52**	**110**	**107**
Average Count of Units	**1.62**	**2.04**	**1.37**	**1.88**	**1.65**	**2.05**	**1.24**	**2.00**	**1.59**	**1.83**	**1.59**	**1.85**	**1.74**	**2.13**

Tables D-9 through D-11 include the percentage of survey respondents answering that they had a ductless mini-split unit that had one, two, three, four, five, or six or more units. The average count of units is included as well.

TABLE D-9. NUMBER OF DUCTLESS MINI-SPLIT UNITS BY HOUSING TYPE

A10 / Q16: How many ductless mini-split units are there inside your home? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
1 unit	43%	58%	36%	100%	45%	56%	38%	100%	40%	57%	33%	57%	50%	55%
2 units	26%	21%	45%	0%	9%	22%	38%	0%	20%	29%	0%	29%	0%	18%
3 units	9%	5%	9%	0%	9%	6%	13%	0%	0%	0%	0%	0%	50%	9%
4 units	13%	11%	0%	0%	27%	11%	0%	0%	30%	14%	50%	14%	0%	9%
5 units	4%	0%	9%	0%	0%	0%	13%	0%	0%	0%	0%	0%	0%	0%
6+ units	4%	5%	0%	0%	9%	6%	0%	0%	10%	0%	17%	0%	0%	9%
Respondents (n)	**23**	**19**	**11**	**1**	**11**	**18**	**8**	**1**	**10**	**7**	**6**	**7**	**2**	**11**
Average Count of Units	**2.22**	**1.89**	**2.00**	**1.00**	**2.55**	**1.94**	**2.13**	**1.00**	**2.60**	**1.71**	**3.33**	**1.71**	**2.00**	**2.09**

TABLE D-10. NUMBER OF DUCTLESS MINI-SPLIT UNITS BY INCOME TYPE - SINGLE FAMILY

A10 / Q16: How many ductless mini-split units are there inside your home? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
1 unit	50%	41%	33%	38%	NR	44%	50%	25%	NR	44%	NR	40%	NR	0%
2 units	25%	29%	33%	50%	NR	11%	25%	50%	NR	22%	NR	0%	NR	0%
3 units	0%	12%	0%	13%	NR	11%	0%	25%	NR	0%	NR	0%	NR	100%
4 units	0%	12%	0%	0%	NR	22%	0%	0%	NR	22%	NR	40%	NR	0%
5 units	25%	0%	33%	0%	NR	0%	25%	0%	NR	0%	NR	0%	NR	0%
6+ units	0%	6%	0%	0%	NR	11%	0%	0%	NR	11%	NR	20%	NR	0%
Respondents (n)	**4**	**17**	**3**	**8**	**0**	**9**	**4**	**4**	**0**	**9**	**0**	**5**	**0**	**1**
Average Count of Units	**2.25**	**2.18**	**2.67**	**1.75**	**0.00**	**2.56**	**2.25**	**2.00**	**0.00**	**2.44**	**0.00**	**3.20**	**0.00**	**3.00**

TABLE D-11. NUMBER OF DUCTLESS MINI-SPLIT UNITS BY INCOME TYPE -MULTIFAMILY

A10 / Q16: How many ductless mini-split units are there inside your home? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
1 unit	40%	64%	NR	100%	40%	62%	NR	100%	50%	60%	50%	60%	33%	63%
2 units	40%	14%	NR	0%	40%	15%	NR	0%	50%	20%	50%	20%	33%	13%
3 units	0%	7%	NR	0%	0%	8%	NR	0%	0%	0%	0%	0%	0%	13%
4 units	0%	14%	NR	0%	0%	15%	NR	0%	0%	20%	0%	20%	0%	13%
5 units	0%	0%	NR	0%	0%	0%	NR	0%	0%	0%	0%	0%	0%	0%
6+ units	20%	0%	NR	0%	20%	0%	NR	0%	0%	0%	0%	0%	33%	0%
Respondents (n)	**5**	**14**	**0**	**1**	**5**	**13**	**0**	**1**	**2**	**5**	**2**	**5**	**3**	**8**
Average Count of Units	**2.40**	**1.71**	**0.00**	**1.00**	**2.40**	**1.77**	**0.00**	**1.00**	**1.50**	**1.80**	**1.50**	**1.80**	**3.00**	**1.75**

Tables D-12 through D-14 include the percentage of survey respondents answering that they had a portable air conditioning unit that had one or two or more units. The average count of units is included as well.

TABLE D-12. NUMBER OF PORTABLE AIR CONDITIONING UNITS BY HOUSING TYPE

A11 / Q17: How many portable / floor-based air conditioning units does your home have? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
1 unit	81%	81%	71%	100%	83%	81%	100%	NR	92%	91%	100%	90%	71%	68%
2+ units	19%	19%	29%	0%	17%	19%	0%	NR	8%	9%	0%	10%	29%	32%
Respondents (n)	**32**	**48**	**7**	**1**	**24**	**47**	**4**	**0**	**13**	**22**	**10**	**21**	**14**	**22**
Average Count of Units	**1.19**	**1.19**	**1.29**	**1.00**	**1.17**	**1.19**	**1.00**	**0.00**	**1.08**	**1.09**	**1.00**	**1.10**	**1.29**	**1.32**

TABLE D-13. NUMBER OF PORTABLE AIR CONDITIONING UNITS BY INCOME TYPE - SINGLE FAMILY

A11 / Q17: How many portable / floor-based air conditioning units does your home have? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
1 unit	81%	80%	67%	75%	85%	80%	100%	100%	83%	100%	100%	100%	78%	60%
2+ units	19%	20%	33%	25%	15%	20%	0%	0%	17%	0%	0%	0%	22%	40%
Respondents (n)	**16**	**15**	**3**	**4**	**13**	**10**	**1**	**3**	**6**	**6**	**4**	**5**	**9**	**5**

A11 / Q17: How many portable / floor-based air conditioning units does your home have?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Average Count of Units	**0.81**	**0.80**	**0.67**	**0.75**	**0.85**	**0.80**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

TABLE D-14. NUMBER OF PORTABLE AIR CONDITIONING UNITS BY INCOME TYPE – MULTIFAMILY

A11 / Q17: How many portable / floor-based air conditioning units does your home have?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
1 unit	82%	80%	100%	NR	81%	80%	NR	NR	93%	88%	92%	88%	69%	67%
2+ units	18%	20%	0%	NR	19%	20%	NR	NR	7%	13%	8%	13%	31%	33%
Respondents (n)	**28**	**20**	**1**	**0**	**27**	**20**	**0**	**0**	**14**	**8**	**13**	**8**	**13**	**9**
Average Count of Units	**0.82**	**0.80**	**1.00**	**0.00**	**0.81**	**0.80**	**0.00**	**0.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**

APPENDIX E Other HVAC

Appendix E includes tables of other HVAC equipment not included in Appendices C and D asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables E-1 through E-3 display if the survey respondents have dehumidifiers in their home.

TABLE E-1. DEHUMIDIFIERS BY HOUSING TYPE

A12 / Q18: Do you use a dehumidifier at your home? Answer	SF	MF	Ameren -E-SF	Ameren -E-MF	ComEd-SF	ComEd-MF	Ameren -G-SF	Ameren -G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Yes	41%	16%	36%	14%	43%	16%	33%	12%	45%	17%	44%	16%	34%	15%
No	59%	84%	64%	86%	57%	84%	67%	88%	55%	83%	56%	84%	66%	85%
Don't know (n)	27	74	4	2	23	72	3	1	18	34	17	34	6	35
Respondents (n)	**1,990**	**1,866**	**597**	**111**	**1,306**	**1,736**	**482**	**85**	**1,099**	**769**	**953**	**742**	**239**	**845**

TABLE E-2. DEHUMIDIFIERS BY INCOME TYPE - SINGLE FAMILY

A12 / Q18: Do you use a dehumidifier at your home? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Yes	33%	45%	31%	40%	33%	47%	30%	37%	34%	49%	34%	48%	28%	39%
No	67%	55%	69%	60%	67%	53%	70%	63%	66%	51%	66%	52%	72%	61%
Don't know (n)	13	9	2	1	11	8	1	1	8	8	7	8	4	0
Respondents (n)	**621**	**1,274**	**210**	**356**	**389**	**855**	**169**	**286**	**308**	**743**	**266**	**645**	**101**	**123**

TABLE E-3. DEHUMIDIFIERS BY INCOME TYPE - MULTIFAMILY

A12 / Q18: Do you use a dehumidifier at your home? Answer	MF-LI	MF-NLI	Ameren -E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Yes	16%	16%	14%	16%	16%	16%	14%	10%	16%	17%	16%	17%	17%	15%
No	84%	84%	86%	84%	84%	84%	86%	90%	84%	83%	84%	83%	83%	85%
Don't know (n)	36	26	2	0	34	26	1	0	17	11	17	11	15	15
Respondents (n)	**827**	**973**	**64**	**38**	**755**	**926**	**49**	**29**	**369**	**373**	**357**	**360**	**325**	**492**

Tables E-4 through E-6 show if the survey participants have had preventative maintenance tune-ups in the past 12 months for their heating equipment and Central ACs.

TABLE E-4. PREVENTATIVE MAINTENANCE TUNE-UPS BY HOUSING TYPE

A13 / Q19: Have you had a preventative maintenance tune-up for the following in the past 12 months? Answer	SF	MF	Ameren -E-SF	Ameren -E-MF	ComEd-SF	ComEd-MF	Ameren -G-SF	Ameren -G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Heating Equipment:														
Yes	61%	50%	51%	35%	66%	51%	52%	42%	65%	56%	67%	56%	62%	47%
No	39%	50%	49%	65%	34%	49%	48%	58%	35%	44%	33%	44%	38%	53%
Don't know (n)	44	298	12	24	32	274	9	20	20	100	18	97	12	157
Respondents (n)	**1,963**	**1,639**	**583**	**88**	**1,295**	**1,530**	**470**	**67**	**1,095**	**696**	**951**	**670**	**232**	**724**
Central AC:														
Yes	59%	58%	53%	57%	62%	57%	53%	69%	61%	63%	62%	63%	56%	51%
No	41%	42%	47%	43%	38%	43%	47%	31%	39%	37%	38%	37%	44%	49%
Don't know (n)	29	74	11	9	18	64	8	8	13	32	11	30	7	29
Respondents (n)	**1,691**	**928**	**489**	**47**	**1,122**	**862**	**401**	**35**	**1,003**	**460**	**875**	**437**	**153**	**359**

TABLE E-5. PREVENTATIVE MAINTENANCE TUNE-UPS BY INCOME TYPE - SINGLE FAMILY

A13 / Q19: Have you had a preventative maintenance tune-up for the following in the past 12 months? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Heating Equipment:														
Yes	54%	64%	47%	54%	58%	69%	47%	56%	60%	67%	60%	69%	57%	64%
No	46%	36%	53%	46%	42%	31%	53%	44%	40%	33%	40%	31%	43%	36%
Don't know (n)	27	14	10	2	17	12	7	2	13	6	11	6	4	6
Respondents (n)	**600**	**1,277**	**201**	**358**	**378**	**857**	**162**	**287**	**299**	**749**	**258**	**651**	**100**	**119**
Central AC:														

A13 / Q19: Have you had a preventative maintenance tune-up for the following in the past 12 months? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Yes	55%	60%	49%	55%	59%	62%	46%	56%	61%	61%	60%	63%	56%	53%
No	45%	40%	51%	45%	41%	38%	54%	44%	39%	39%	40%	37%	44%	47%
Don't know (n)	16	10	9	2	7	8	6	2	7	5	5	5	2	3
Respondents (n)	**467**	**1,156**	**152**	**323**	**295**	**775**	**129**	**259**	**258**	**704**	**225**	**612**	**54**	**90**

TABLE E-6. PREVENTATIVE MAINTENANCE TUNE-UPS BY INCOME TYPE – MULTIFAMILY

A13 / Q19: Have you had a preventative maintenance tune-up for the following in the past 12 months? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Heating Equipment:														
Yes	41%	57%	31%	39%	42%	57%	36%	46%	47%	64%	47%	64%	37%	53%
No	59%	43%	69%	61%	58%	43%	64%	54%	53%	36%	53%	36%	63%	47%
Don't know (n)	163	119	14	6	149	113	11	6	64	30	62	30	71	80
Respondents (n)	**700**	**894**	**51**	**33**	**641**	**850**	**39**	**24**	**318**	**360**	**308**	**345**	**272**	**432**
Central AC:														
Yes	56%	58%	52%	59%	56%	58%	59%	77%	61%	63%	63%	63%	48%	51%
No	44%	42%	48%	41%	44%	42%	41%	23%	39%	37%	38%	37%	52%	49%
Don't know (n)	27	40	4	3	23	36	3	3	15	14	14	13	5	22
Respondents (n)	**322**	**576**	**21**	**22**	**294**	**544**	**17**	**13**	**176**	**273**	**168**	**259**	**97**	**249**

Tables E-7 through E-9 describe the type of temperature control survey participants use.

TABLE E-7. TEMPERATURE CONTROL BY HOUSING TYPE

A14 / Q20: What type of temperature control do you use for the main heating / cooling system at your home? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Simple on / off switch with no specific temperature control	5%	14%	5%	18%	4%	14%	6%	18%	3%	12%	4%	12%	8%	16%
Non-programmable thermostat (temperature is manually set and does not change automatically)	21%	32%	29%	44%	18%	31%	30%	44%	17%	32%	16%	32%	23%	28%
Programmable thermostat (can set it to automatically change temperature at specific times)	41%	33%	32%	25%	45%	33%	30%	23%	46%	37%	47%	37%	40%	31%
Basic networked or Wi-Fi enabled thermostat (has remote control, but no occupancy sensing or learning features)	6%	3%	7%	2%	5%	3%	8%	0%	5%	4%	5%	3%	3%	4%
Advanced smart thermostat which includes advanced features such as occupancy sensing, schedule learning, etc., (e.g., Nest, Ecobee, Honeywell, Lyric, Emerson Sensi, etc.)	28%	17%	26%	11%	28%	18%	25%	15%	29%	15%	29%	15%	26%	21%
Not sure / Not applicable (n)	29	164	9	2	19	162	3	1	15	39	9	39	6	114
Respondents (n)	**1,996**	**1,793**	**587**	**111**	**1,323**	**1,660**	**477**	**87**	**1,114**	**772**	**973**	**743**	**240**	**770**

TABLE E-8. TEMPERATURE CONTROL BY INCOME TYPE - SINGLE FAMILY

A14 / Q20: What type of temperature control do you use for the main heating / cooling system at your home? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Simple on / off switch with no specific temperature control	8%	2%	9%	3%	8%	3%	11%	3%	6%	2%	7%	2%	10%	6%
Non-programmable thermostat (temperature is manually set and does not change automatically)	31%	16%	37%	25%	27%	13%	37%	26%	26%	13%	25%	12%	30%	16%

A14 / Q20: What type of temperature control do you use for the main heating / cooling system at your home? Answer	SF-LI	SF-NLI	Ameren -E-SF-LI	Ameren -E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren -G-SF-LI	Ameren -G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Programmable thermostat (can set it to automatically change temperature at specific times)	42%	40%	36%	29%	46%	44%	34%	28%	48%	45%	49%	45%	41%	40%
Basic networked or Wi-Fi enabled thermostat (has remote control, but no occupancy sensing or learning features)	4%	7%	4%	9%	3%	6%	4%	10%	4%	6%	4%	6%	2%	5%
Advanced smart thermostat which includes advanced features such as occupancy sensing, schedule learning, etc., (e.g., Nest, Ecobee, Honeywell, Lyric, Emerson Sensi, etc.)	16%	34%	15%	34%	16%	34%	15%	33%	16%	35%	16%	35%	17%	33%
Not sure / Not applicable (n)	20	9	5	4	14	5	2	1	9	6	6	3	4	2
Respondents (n)	**617**	**1,289**	**206**	**356**	**390**	**870**	**167**	**288**	**310**	**756**	**270**	**660**	**102**	**123**

TABLE E-9. TEMPERATURE CONTROL BY INCOME TYPE – MULTIFAMILY

A14 / Q20: What type of temperature control do you use for the main heating / cooling system at your home? Answer	MF-LI	MF-NLI	Ameren -E-MF-LI	Ameren -E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren -G-MF-LI	Ameren -G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Simple on / off switch with no specific temperature control	19%	10%	21%	13%	19%	10%	24%	13%	15%	8%	15%	8%	25%	11%
Non-programmable thermostat (temperature is manually set and does not change automatically)	36%	28%	45%	39%	35%	28%	45%	40%	38%	27%	37%	27%	31%	26%
Programmable thermostat (can set it to automatically change temperature at specific times)	35%	32%	27%	21%	36%	32%	22%	23%	40%	36%	39%	36%	32%	30%
Basic networked or Wi-Fi enabled thermostat (has remote control, but no occupancy sensing or learning features)	2%	4%	2%	3%	2%	4%	0%	0%	2%	5%	2%	5%	4%	3%

A14 / Q20: What type of temperature control do you use for the main heating / cooling system at your home? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Advanced smart thermostat which includes advanced features such as occupancy sensing, schedule learning, etc., (e.g., Nest, Ecobee, Honeywell, Lyric, Emerson Sensi, etc.)	8%	26%	5%	24%	8%	26%	10%	23%	6%	24%	6%	24%	8%	29%
Not sure / Not applicable (n)	101	58	1	0	100	58	0	0	29	7	29	7	66	47
Respondents (n)	**775**	**959**	**66**	**38**	**701**	**909**	**51**	**30**	**362**	**387**	**350**	**372**	**279**	**465**

TABLE E-10. WINTER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY HOUSING TYPE

A15 / Q21: How do you most frequently manage the temperature at your home during the winter heating season? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Keep it at a constant temperature	31%	34%	36%	39%	29%	33%	36%	36%	29%	35%	30%	35%	28%	33%
Manually adjust thermostat to desire temperature as needed	28%	44%	31%	49%	27%	43%	32%	51%	25%	44%	24%	44%	37%	41%
Create customized / programmed settings to automatically change temperatures at different times of the day	25%	12%	18%	6%	28%	13%	17%	3%	28%	13%	29%	13%	20%	14%
Use an app on a smartphone to control the temperature	6%	4%	6%	3%	6%	4%	5%	5%	6%	3%	6%	4%	5%	5%
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	11%	6%	10%	4%	11%	6%	9%	5%	11%	5%	11%	5%	11%	8%
Respondents (n)	**2,016**	**1,911**	**593**	**114**	**1,336**	**1,775**	**477**	**88**	**1,124**	**801**	**977**	**771**	**246**	**849**

Tables E-11 through E-13 list how frequently survey participants manage the temperature at their homes during the winter heating season.

TABLE E-11. WINTER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY INCOME TYPE - SINGLE FAMILY

A15 / Q21: How do you most frequently manage the temperature at your home during the winter heating season? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Keep it at a constant temperature	38%	27%	39%	34%	38%	24%	38%	35%	39%	24%	39%	25%	33%	24%
Manually adjust thermostat to desire temperature as needed	37%	23%	42%	24%	34%	23%	45%	25%	32%	21%	31%	21%	43%	29%
Create customized / programmed settings to automatically change temperatures at different times of the day	15%	30%	10%	22%	17%	34%	10%	21%	20%	33%	20%	33%	9%	30%
Use an app on a smartphone to control the temperature	4%	7%	4%	8%	3%	7%	4%	6%	3%	8%	3%	7%	4%	6%
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	6%	13%	5%	13%	7%	13%	4%	13%	6%	14%	6%	14%	10%	11%
Respondents (n)	**634**	**1,294**	**210**	**358**	**402**	**873**	**168**	**287**	**317**	**760**	**274**	**661**	**106**	**125**

TABLE E-12. WINTER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY INCOME TYPE – MULTIFAMILY

A15 / Q21: How do you most frequently manage the temperature at your home during the winter heating season? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Keep it at a constant temperature	37%	31%	45%	26%	36%	31%	39%	27%	37%	33%	36%	32%	38%	30%
Manually adjust thermostat to desire temperature as needed	51%	38%	51%	49%	51%	37%	55%	50%	52%	36%	52%	36%	48%	37%
Create customized / programmed settings to automatically change temperatures at different times of the day	8%	17%	4%	8%	8%	17%	4%	0%	7%	19%	7%	19%	9%	17%
Use an app on a smartphone to control the temperature	2%	5%	0%	8%	3%	5%	2%	10%	2%	5%	2%	5%	3%	5%

A15 / Q21: How do you most frequently manage the temperature at your home during the winter heating season?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	2%	9%	0%	10%	3%	9%	0%	13%	2%	8%	2%	8%	3%	10%
Respondents (n)	**852**	**1,002**	**67**	**39**	**777**	**951**	**51**	**30**	**386**	**393**	**374**	**377**	**326**	**499**

TABLE E-13. SUMMER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY HOUSING TYPE

A16 / Q22: How do you most frequently manage the temperature at your home during the summer cooling season?	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Answer														
Keep it at a constant temperature	30%	28%	36%	34%	27%	27%	37%	39%	29%	30%	28%	30%	24%	24%
Manually adjust thermostat to desire temperature as needed	32%	49%	34%	54%	31%	49%	35%	49%	29%	49%	29%	49%	41%	49%
Create customized / programmed settings to automatically change temperatures at different times of the day	22%	12%	16%	8%	25%	12%	15%	5%	25%	13%	25%	13%	20%	13%
Use an app on a smartphone to control the temperature	6%	4%	6%	2%	6%	5%	5%	3%	7%	4%	7%	4%	6%	5%
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	10%	6%	8%	2%	11%	7%	8%	4%	11%	5%	11%	5%	10%	8%
Respondents (n)	**1,961**	**1,588**	**588**	**99**	**1,286**	**1,468**	**474**	**75**	**1,105**	**712**	**959**	**684**	**217**	**653**

Tables E-14 through E-16 list how frequently survey participants manage the temperature at their homes during the summer cooling season.

TABLE E-14. SUMMER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY INCOME TYPE - SINGLE FAMILY

A16 / Q22: How do you most frequently manage the temperature at your home during the summer cooling season?	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Answer														
Keep it at a constant temperature	38%	25%	39%	33%	37%	22%	38%	35%	40%	23%	40%	23%	28%	21%
Manually adjust thermostat to desire temperature as needed	42%	27%	43%	28%	41%	27%	47%	27%	36%	26%	37%	26%	53%	30%
Create customized / programmed settings to automatically change temperatures at different times of the day	12%	28%	10%	20%	13%	31%	8%	19%	15%	29%	15%	29%	7%	31%
Use an app on a smartphone to control the temperature	4%	8%	4%	8%	4%	8%	4%	7%	3%	9%	3%	8%	6%	6%
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	4%	12%	3%	11%	5%	13%	2%	12%	5%	13%	5%	13%	6%	13%
Respondents (n)	**601**	**1,275**	**207**	**359**	**372**	**853**	**167**	**288**	**307**	**751**	**265**	**652**	**86**	**117**

TABLE E-15. SUMMER SEASON FREQUENCY OF TEMPERATURE MANAGEMENT BY INCOME TYPE – MULTIFAMILY

A16 / Q22: How do you most frequently manage the temperature at your home during the summer cooling season?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
Keep it at a constant temperature	31%	25%	33%	29%	30%	25%	36%	29%	31%	29%	31%	28%	31%	21%
Manually adjust thermostat to desire temperature as needed	58%	43%	62%	47%	57%	43%	57%	50%	57%	40%	57%	40%	56%	43%
Create customized / programmed settings to automatically change temperatures at different times of the day	7%	17%	5%	12%	7%	17%	5%	4%	7%	19%	7%	19%	8%	17%

A16 / Q22: How do you most frequently manage the temperature at your home during the summer cooling season?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Answer														
Use an app on a smartphone to control the temperature	3%	6%	0%	6%	3%	6%	0%	8%	3%	4%	3%	5%	3%	7%
Smart/learning thermostat manages the temperature from learning preferences and/or detecting when home or away	2%	10%	0%	6%	2%	10%	2%	8%	2%	8%	2%	8%	3%	11%
Respondents (n)	**678**	**858**	**58**	**34**	**613**	**812**	**44**	**24**	**334**	**360**	**323**	**344**	**226**	**403**

APPENDIX F Water Heating

Appendix F includes tables of water heating equipment asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type. The analysis team developed adjustment factors to reconcile online responses with site visits. See Section 3.4 for further details on how these adjustments were made.

Tables F-1 and F-2 provide the percentage of multifamily homes with water heating equipment in their unit. This question did not apply to single family survey participants.

TABLE F-1. PERCENTAGE OF MULTIFAMILY HOMES WITH WATER HEATING EQUIPMENT IN THEIR UNIT BY HOUSING TYPE

B1 / Q23: Do you have water heating equipment in your apartment or unit? Do not include water heaters that are not in your apartment or unit or those that serve multiple units. Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Yes	NR	47%	NR	72%	NR	45%	NR	74%	NR	60%	NR	59%	NR	32%
No	NR	53%	NR	28%	NR	55%	NR	26%	NR	40%	NR	41%	NR	68%
Don't know (n)	NR	187	NR	13	NR	174	NR	12	NR	59	NR	59	NR	103
Respondents (n)	**0**	**1,732**	**0**	**95**	**0**	**1,616**	**0**	**70**	**0**	**734**	**0**	**705**	**0**	**770**

TABLE F-2. PERCENTAGE OF MULTIFAMILY HOMES WITH WATER HEATING EQUIPMENT IN THEIR UNIT BY INCOME TYPE - MULTIFAMILY

B1 / Q23: Do you have water heating equipment in your apartment or unit? Do not include water heaters that are not in your apartment or unit or those that serve multiple units. Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Yes	44%	50%	68%	77%	41%	48%	72%	73%	53%	66%	52%	65%	27%	34%
No	56%	50%	32%	23%	59%	52%	28%	27%	47%	34%	48%	35%	73%	66%
Don't know (n)	97	80	5	5	92	75	4	6	40	17	40	17	44	54
Respondents (n)	**759**	**923**	**59**	**31**	**693**	**880**	**43**	**22**	**340**	**373**	**328**	**358**	**299**	**450**

Tables F-3 through F-5 include the primary water heater type in survey participants' homes.

TABLE F-3. WATER HEATER TYPE BY HOUSING TYPE

B2 / Q24: What best describes the main water heater in your home? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Heat pump water heater with a tank	1%	1%	1%	2%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%
Electric water heater with a tank	10%	20%	21%	61%	6%	17%	19%	56%	6%	16%	5%	16%	7%	11%
Natural gas water heater with a tank	81%	74%	70%	31%	86%	77%	74%	36%	87%	80%	88%	80%	83%	80%
Propane water heater with a tank	1%	0%	2%	0%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Electric tankless / on-demand	2%	2%	3%	2%	2%	2%	2%	2%	1%	1%	1%	1%	3%	2%
Natural gas tankless / on-demand	3%	2%	3%	0%	3%	2%	2%	0%	4%	1%	3%	1%	4%	3%
Solar water heater	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other (please specify)	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No water heater	0%	1%	0%	4%	0%	1%	0%	5%	0%	0%	0%	0%	1%	2%
Don't know (n)	25	20	8	1	17	19	5	1	12	9	10	9	6	7
Respondents (n)	**2,053**	**779**	**567**	**52**	**1,390**	**706**	**465**	**42**	**1,190**	**431**	**1,038**	**406**	**239**	**245**

TABLE F-4. WATER HEATER TYPE BY INCOME TYPE - SINGLE FAMILY

B2 / Q24: What best describes the main water heater in your home? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Heat pump water heater with a tank	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%
Electric water heater with a tank	14%	8%	28%	17%	8%	5%	26%	16%	7%	5%	6%	5%	10%	5%
Natural gas water heater with a tank	78%	83%	64%	72%	84%	87%	67%	78%	86%	88%	87%	89%	80%	85%
Propane water heater with a tank	1%	1%	1%	3%	1%	1%	1%	1%	0%	0%	0%	0%	1%	0%

B2 / Q24: What best describes the main water heater in your home?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Electric tankless / on-demand	2%	2%	2%	3%	1%	2%	3%	2%	2%	1%	1%	1%	1%	5%
Natural gas tankless / on-demand	3%	4%	3%	3%	3%	4%	3%	2%	2%	4%	2%	4%	5%	3%
Solar water heater	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other (please specify)	0%	0%	1%	1%	1%	0%	0%	0%	1%	0%	1%	0%	0%	0%
No water heater	1%	0%	1%	0%	1%	0%	0%	0%	1%	0%	1%	0%	1%	2%
Don't know (n)	16	8	7	1	9	7	5	0	6	5	4	5	4	2
Respondents (n)	**606**	**1,362**	**186**	**357**	**396**	**934**	**152**	**293**	**320**	**824**	**279**	**718**	**98**	**126**

TABLE F-5. WATER HEATER TYPE BY INCOME TYPE – MULTIFAMILY

B2 / Q24: What best describes the main water heater in your home?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Heat pump water heater with a tank	1%	1%	1%	2%	2%	1%	1%	3%	1%	1%	1%	1%	2%	1%
Electric water heater with a tank	26%	16%	63%	58%	22%	15%	53%	65%	20%	14%	19%	15%	16%	8%
Natural gas water heater with a tank	68%	79%	29%	40%	72%	80%	38%	32%	76%	83%	77%	82%	76%	82%
Propane water heater with a tank	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Electric tankless / on-demand	2%	1%	3%	0%	2%	1%	4%	0%	1%	1%	1%	1%	1%	2%
Natural gas tankless / on-demand	1%	2%	0%	0%	1%	2%	0%	0%	1%	1%	1%	2%	1%	3%
Solar water heater	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other (please specify)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
No water heater	2%	1%	3%	0%	2%	1%	4%	0%	1%	0%	1%	0%	3%	2%
Don't know (n)	11	9	1	0	10	9	1	0	6	3	6	3	2	5
Respondents (n)	**301**	**455**	**30**	**19**	**264**	**423**	**26**	**12**	**175**	**247**	**167**	**231**	**73**	**164**

APPENDIX G Appliances & Lighting

Appendix G includes tables of penetrations of appliances and LED lighting asked about in the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables G-1 through G-3 provide the percentage of homes surveyed that have certain appliances. 39% of single-family homes surveyed and 9.8% of multifamily homes have a free-standing individual freezer. Of these homes with free-standing freezers, 88% of single-family homes and 96% of multifamily homes have just one freezer, with the remainder having more than one freezer. Over 99% of surveyed homes have a refrigerator. 27.5% of single-family homes and 3.8% of multifamily homes have a secondary refrigerator. Of the homes with secondary refrigerators, 83% of single-family and 80% of multifamily homes have just one secondary refrigerator, with the remainder having more than one.

TABLE G-1. KITCHEN APPLIANCES BY HOUSING TYPE

C1 / Q25: Which of the following kitchen appliances are used in your household?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Refrigerator	99%	100%	99%	99%	99%	100%	99%	100%	99%	100%	100%	100%	98%	100%
Free-standing individual freezer(s)(Please specify how many)	39%	10%	46%	9%	35%	10%	46%	9%	37%	14%	36%	14%	30%	6%
Other refrigerator(s) (Please specify how many)	27%	4%	28%	4%	26%	4%	29%	3%	30%	5%	30%	5%	13%	3%
Mini-fridge / dorm refrigerator or wine fridge	23%	9%	20%	7%	24%	10%	20%	6%	24%	10%	24%	10%	21%	9%
Traditional electric range (combines oven and stovetop; non-induction)	19%	25%	39%	67%	10%	23%	40%	69%	11%	24%	10%	24%	6%	16%
Natural gas range (combines oven and stovetop)	61%	59%	43%	19%	70%	61%	41%	20%	70%	62%	71%	62%	75%	68%
Electric cooktop/stovetop (coil or smooth top; no oven)	6%	7%	10%	14%	5%	6%	9%	10%	5%	6%	4%	6%	5%	5%
Natural gas cooktop/stovetop (no oven)	11%	6%	4%	1%	14%	6%	5%	2%	13%	7%	14%	7%	9%	7%
Induction range (electromagnetic)	2%	1%	3%	1%	2%	1%	4%	1%	1%	1%	1%	1%	2%	2%
Induction cooktop (electromagnetic)	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%	2%	1%
Wall oven: electric	11%	7%	8%	3%	13%	7%	9%	2%	12%	6%	13%	6%	7%	8%
Wall oven: natural gas	5%	3%	2%	3%	6%	3%	2%	2%	6%	3%	6%	4%	5%	3%
Dishwasher	59%	59%	55%	37%	61%	61%	55%	34%	65%	64%	66%	64%	40%	58%
Respondents (n)	**2,005**	**1,934**	**590**	**112**	**1,329**	**1,800**	**473**	**86**	**1,121**	**801**	**974**	**771**	**243**	**874**

TABLE G-2. KITCHEN APPLIANCES BY INCOME TYPE – SINGLE FAMILY

C1 / Q25: Which of the following kitchen appliances are used in your household? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Refrigerator	98%	100%	98%	99%	99%	100%	99%	100%	99%	99%	99%	100%	96%	100%
Free-standing individual freezer(s)(Please specify how many)	36%	41%	38%	52%	34%	36%	38%	52%	36%	38%	36%	38%	31%	29%
Other refrigerator(s) (Please specify how many)	15%	34%	15%	36%	15%	32%	15%	36%	16%	36%	17%	36%	11%	15%
Mini-fridge / dorm refrigerator or wine fridge	18%	26%	18%	22%	18%	27%	18%	22%	19%	27%	18%	27%	17%	23%
Traditional electric range (combines oven and stovetop; non-induction)	22%	18%	42%	37%	11%	9%	43%	39%	13%	11%	12%	9%	8%	4%
Natural gas range (combines oven and stovetop)	62%	61%	43%	43%	73%	69%	44%	40%	72%	68%	75%	70%	74%	78%
Electric cooktop/stovetop (coil or smooth top; no oven)	7%	6%	9%	10%	7%	4%	7%	10%	6%	4%	5%	4%	8%	2%
Natural gas cooktop/stovetop (no oven)	7%	13%	2%	4%	9%	17%	2%	6%	9%	15%	10%	17%	8%	10%
Induction range (electromagnetic)	1%	3%	1%	4%	1%	2%	1%	5%	0%	2%	0%	2%	1%	3%
Induction cooktop (electromagnetic)	1%	2%	2%	2%	1%	2%	1%	2%	1%	2%	1%	2%	0%	3%
Wall oven: electric	6%	14%	5%	10%	6%	16%	6%	10%	6%	15%	7%	16%	4%	10%
Wall oven: natural gas	3%	6%	1%	2%	4%	7%	1%	3%	4%	7%	4%	7%	3%	6%
Dishwasher	39%	69%	38%	66%	39%	71%	37%	66%	46%	74%	46%	74%	20%	57%
Respondents (n)	**636**	**1,298**	**211**	**360**	**403**	**875**	**169**	**289**	**319**	**762**	**276**	**663**	**106**	**125**

TABLE G-3. KITCHEN APPLIANCES BY INCOME TYPE –MULTIFAMILY

C1 / Q25: Which of the following kitchen appliances are used in your household?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Refrigerator	99%	100%	100%	97%	99%	100%	100%	100%	99%	100%	99%	100%	99%	100%
Free-standing individual freezer(s)(Please specify how many)	11%	9%	9%	8%	11%	9%	12%	3%	14%	13%	13%	13%	8%	4%
Other refrigerator(s) (Please specify how many)	4%	4%	4%	3%	4%	4%	4%	3%	4%	5%	4%	5%	3%	3%
Mini-fridge / dorm refrigerator or wine fridge	6%	12%	6%	10%	6%	12%	6%	7%	8%	12%	7%	12%	4%	12%
Traditional electric range (combines oven and stovetop; non-induction)	29%	22%	76%	56%	24%	21%	76%	57%	27%	21%	26%	21%	16%	16%
Natural gas range (combines oven and stovetop)	55%	63%	15%	26%	58%	65%	18%	27%	57%	66%	58%	66%	67%	69%
Electric cooktop/stovetop (coil or smooth top; no oven)	7%	6%	12%	15%	7%	6%	8%	13%	7%	6%	7%	6%	6%	5%
Natural gas cooktop/stovetop (no oven)	6%	6%	1%	0%	6%	6%	4%	0%	5%	8%	5%	7%	8%	6%
Induction range (electromagnetic)	1%	2%	0%	3%	1%	2%	0%	3%	1%	1%	1%	1%	1%	2%
Induction cooktop (electromagnetic)	1%	2%	0%	3%	1%	2%	0%	3%	1%	2%	1%	2%	1%	1%
Wall oven: electric	5%	9%	3%	3%	5%	9%	4%	0%	4%	8%	4%	8%	4%	10%
Wall oven: natural gas	4%	3%	4%	0%	4%	3%	4%	0%	4%	4%	3%	4%	5%	3%
Dishwasher	44%	72%	28%	46%	45%	73%	27%	37%	52%	75%	52%	76%	36%	73%
Respondents (n)	**870**	**1,018**	**67**	**39**	**795**	**967**	**51**	**30**	**390**	**394**	**378**	**378**	**341**	**513**

Tables G-4 through G-6 describe how survey participants use their kitchen exhaust fans. The most common response for the survey participants (42% of single-family and 39% of multifamily participants) was that they sometimes turn on the kitchen exhaust fan when using the stove. For the survey participants that answered, “something else”, responses included that the fan was broken, the fan automatically turned on when needed, or that the fan is never needed or used.

TABLE G-4. KITCHEN EXHAUST FAN BY HOUSING TYPE

C2 / Q26: Which of the following best describes how you use your kitchen exhaust fan?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Do not have a kitchen exhaust fan	20%	22%	29%	16%	16%	23%	29%	18%	16%	16%	15%	16%	22%	31%
Almost always turn on the kitchen exhaust fan when using the stove	19%	20%	17%	26%	20%	19%	16%	27%	19%	21%	20%	21%	20%	17%
Sometimes turn on the kitchen exhaust fan when using the stove	42%	39%	36%	47%	45%	39%	36%	45%	46%	43%	48%	43%	35%	34%
Almost never turn on the kitchen exhaust fan when using the stove	18%	16%	18%	7%	18%	17%	18%	8%	17%	17%	17%	17%	20%	16%
Something else (please specify)	1%	2%	1%	3%	2%	2%	1%	2%	1%	2%	1%	2%	4%	2%
Respondents (n)	**1,910**	**1,807**	**565**	**110**	**1,260**	**1,675**	**453**	**85**	**1,073**	**748**	**929**	**718**	**223**	**812**

TABLE G-5. KITCHEN EXHAUST FAN BY INCOME TYPE – SINGLE FAMILY

C2 / Q26: Which of the following best describes how you use your kitchen exhaust fan?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Do not have a kitchen exhaust fan	30%	15%	39%	23%	25%	12%	39%	23%	24%	13%	23%	11%	30%	16%
Almost always turn on the kitchen exhaust fan when using the stove	18%	19%	16%	17%	20%	20%	18%	15%	19%	20%	20%	20%	16%	22%
Sometimes turn on the kitchen exhaust fan when using the stove	34%	46%	30%	40%	35%	49%	28%	42%	39%	49%	38%	51%	28%	40%
Almost never turn on the kitchen exhaust fan when using the stove	17%	18%	15%	19%	19%	18%	14%	20%	18%	17%	19%	17%	18%	21%
Something else (please specify)	1%	1%	0%	1%	2%	1%	1%	1%	0%	1%	0%	1%	7%	2%
Respondents (n)	**594**	**1,255**	**203**	**346**	**369**	**847**	**163**	**278**	**300**	**737**	**258**	**640**	**92**	**121**

TABLE G-6. KITCHEN EXHAUST FAN BY INCOME TYPE – MULTIFAMILY

C2 / Q26: Which of the following best describes how you use your kitchen exhaust fan?	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Do not have a kitchen exhaust fan	26%	20%	17%	18%	27%	20%	16%	23%	19%	15%	19%	15%	40%	26%
Almost always turn on the kitchen exhaust fan when using the stove	22%	17%	24%	31%	22%	17%	24%	33%	26%	17%	25%	17%	17%	16%
Sometimes turn on the kitchen exhaust fan when using the stove	34%	43%	44%	49%	34%	43%	45%	43%	37%	48%	38%	48%	28%	38%
Almost never turn on the kitchen exhaust fan when using the stove	14%	18%	11%	3%	15%	19%	12%	0%	16%	19%	16%	19%	13%	19%
Something else (please specify)	3%	1%	5%	0%	3%	1%	4%	0%	2%	1%	2%	1%	3%	2%
Respondents (n)	**789**	**977**	**66**	**39**	**715**	**926**	**51**	**30**	**355**	**379**	**343**	**363**	**303**	**490**

Tables G-7 through G-9 explain if the households' kitchen exhaust fans are connected to a duct. Only 69% of single-family and 55% of multifamily households' fans are connected to a duct, and the remainder are not.

TABLE G-7. KITCHEN FAN CONNECTION TO DUCT BY HOUSING TYPE

C3 / Q27: Is your kitchen exhaust fan connected to a duct?														
Answer	SF	MF	Amere n-E-SF	Amere n-E-MF	ComEd-SF	ComEd-MF	Amere n-G-SF	Amere n-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Yes, the exhaust from the fan goes outdoors or to the attic	69%	55%	57%	56%	74%	55%	56%	57%	74%	62%	76%	61%	67%	48%
No, the fan is not connected to a duct	31%	45%	43%	44%	26%	45%	44%	43%	26%	38%	24%	39%	33%	52%
I'm not sure (n)	193	444	69	39	119	403	50	34	97	182	79	179	33	188
Respondents (n)	**1,333**	**950**	**332**	**52**	**939**	**880**	**269**	**35**	**801**	**442**	**712**	**419**	**141**	**371**

TABLE G-8. KITCHEN FAN CONNECTION TO DUCT BY INCOME TYPE – SINGLE FAMILY

C3 / Q27: Is your kitchen exhaust fan connected to a duct?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Yes, the exhaust from the fan goes outdoors or to the attic	61%	73%	54%	57%	63%	79%	50%	58%	68%	77%	68%	79%	52%	77%
No, the fan is not connected to a duct	39%	27%	46%	43%	37%	21%	50%	42%	32%	23%	32%	21%	48%	23%
I'm not sure (n)	86	97	29	35	55	59	20	26	43	50	35	41	17	14
Respondents (n)	**328**	**966**	**94**	**232**	**220**	**687**	**78**	**188**	**184**	**591**	**163**	**527**	**46**	**88**

TABLE G-9. KITCHEN FAN CONNECTION TO DUCT BY INCOME TYPE – MULTIFAMILY

C3 / Q27: Is your kitchen exhaust fan connected to a duct? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Yes, the exhaust from the fan goes outdoors or to the attic	56%	54%	65%	45%	55%	54%	59%	64%	62%	61%	62%	61%	46%	47%
No, the fan is not connected to a duct	44%	46%	35%	55%	45%	46%	41%	36%	38%	39%	38%	39%	54%	53%
I'm not sure (n)	208	221	24	11	182	210	21	11	96	79	94	79	68	115
Respondents (n)	**369**	**560**	**31**	**20**	**332**	**529**	**22**	**11**	**191**	**245**	**183**	**230**	**112**	**249**

Tables G-10 through G-12 provide the breakdown of washers and dryers in survey participants' homes. 96% of single-family and 58% of multifamily respondents have washers. 95% of single-family and 57% of multifamily respondents have dryers.

TABLE G-10. LAUNDRY APPLIANCES BY HOUSING TYPE

C4 / Q28: Which of the following laundry appliances are used in your household (do not include those in areas shared with other households)? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Washer: top-loading	65%	38%	69%	44%	63%	37%	68%	44%	65%	49%	63%	48%	61%	27%
Washer: front-loading	32%	22%	28%	9%	34%	22%	29%	9%	34%	17%	35%	17%	26%	28%
Dryer: natural gas	54%	27%	25%	9%	67%	28%	22%	6%	69%	37%	71%	36%	57%	24%
Dryer: electric	41%	29%	71%	43%	27%	28%	74%	47%	28%	28%	25%	28%	30%	27%
Dryer: heat pump	1%	1%	1%	0%	1%	1%	1%	0%	0%	0%	1%	0%	0%	2%
None of the above	4%	41%	2%	46%	4%	41%	3%	44%	2%	34%	2%	34%	13%	46%
Respondents (n)	**1,997**	**1,915**	**589**	**112**	**1,322**	**1,781**	**472**	**86**	**1,117**	**796**	**970**	**766**	**240**	**861**
Percent With Washer - Subtotal	96%	58%	97%	53%	95%	58%	97%	53%	98%	65%	98%	64%	86%	54%
Percent With Dryer - Subtotal	95%	57%	96%	52%	94%	57%	96%	52%	96%	64%	96%	63%	85%	52%

TABLE G-11. LAUNDRY APPLIANCES BY INCOME TYPE – SINGLE FAMILY

C4 / Q28: Which of the following laundry appliances are used in your household (do not include those in areas shared with other households)? Answer	SF-LI	SF-NLI	Ameren -E-SF-LI	Ameren -E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren -G-SF-LI	Ameren -G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Washer: top-loading	69%	62%	76%	64%	65%	61%	73%	64%	68%	63%	65%	62%	66%	57%
Washer: front-loading	23%	37%	18%	35%	25%	38%	21%	35%	27%	37%	30%	38%	13%	36%
Dryer: natural gas	48%	57%	20%	28%	63%	70%	18%	24%	64%	70%	67%	73%	55%	59%
Dryer: electric	43%	40%	73%	71%	27%	26%	74%	75%	30%	27%	26%	24%	27%	32%
Dryer: heat pump	1%	0%	0%	0%	1%	1%	1%	0%	1%	0%	1%	0%	1%	0%
None of the above	7%	2%	4%	1%	10%	2%	5%	1%	4%	1%	5%	1%	20%	8%
Respondents (n)	**630**	**1,297**	**210**	**360**	**398**	**874**	**168**	**289**	**315**	**762**	**272**	**663**	**105**	**124**
Percent With Washer - Subtotal	91%	98%	94%	99%	90%	98%	94%	99%	94%	99%	94%	99%	78%	92%
Percent With Dryer - Subtotal	90%	97%	93%	98%	87%	96%	93%	98%	93%	97%	92%	97%	78%	90%

TABLE G-12. LAUNDRY APPLIANCES BY INCOME TYPE –MULTIFAMILY

C4 / Q28: Which of the following laundry appliances are used in your household (do not include those in areas shared with other households)? Answer	MF-LI	MF-NLI	Ameren -E-MF-LI	Ameren -E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren -G-MF-LI	Ameren -G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Washer: top-loading	34%	41%	42%	51%	33%	40%	43%	50%	43%	55%	42%	55%	23%	30%
Washer: front-loading	11%	31%	6%	15%	11%	32%	6%	13%	10%	24%	10%	23%	11%	38%
Dryer: natural gas	18%	35%	6%	15%	20%	35%	4%	10%	25%	48%	25%	46%	15%	29%
Dryer: electric	25%	34%	42%	49%	22%	33%	45%	50%	27%	29%	26%	30%	16%	34%
Dryer: heat pump	1%	1%	0%	0%	1%	1%	0%	0%	1%	0%	1%	0%	1%	2%
None of the above	55%	28%	51%	31%	56%	29%	49%	33%	47%	21%	48%	22%	67%	32%
Respondents (n)	**860**	**1,011**	**67**	**39**	**785**	**960**	**51**	**30**	**388**	**391**	**376**	**375**	**334**	**509**
Percent With Washer - Subtotal	44%	71%	48%	67%	43%	71%	49%	63%	52%	78%	51%	77%	33%	67%

C4 / Q28: Which of the following laundry appliances are used in your household (do not include those in areas shared with other households)? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Percent With Dryer - Subtotal	43%	69%	48%	64%	42%	69%	49%	60%	51%	76%	50%	75%	31%	65%

When asked about air purifiers, 69% of single-family households, and 71% of multifamily households said they did not have an air purifier. The remaining respondents either have an electric air purifier attached to a furnace, a portable air purifier, or both.

Tables G-13 through G-15 list renewable energy technologies that survey respondents have. Of the EV chargers located at survey participants' homes, 14% of single-family respondents had a Level 1 charger and 86% had a Level 2 charger. For multifamily homes, 17% had a Level 1 charger, 76% had a Level 2 charger, and 7% had a Level 3 charger.

TABLE G-13. RENEWABLE ENERGY TECHNOLOGIES BY HOUSEHOLD TYPE

C7 / Q31: Do you have any of the following technologies at your household? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Solar panels for home electricity	9%	0%	10%	0%	9%	0%	10%	0%	10%	0%	10%	0%	5%	0%
Battery to store electricity from solar panels	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	1%	0%	0%	0%
Electric Vehicle (EV)	6%	2%	4%	2%	7%	3%	4%	1%	7%	2%	8%	2%	5%	3%
EV charger	5%	2%	4%	1%	6%	2%	4%	0%	5%	2%	6%	2%	6%	2%
Solar water heating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
None of the above	86%	97%	88%	98%	85%	97%	88%	99%	84%	96%	84%	96%	90%	96%
Respondents (n)	**1,912**	**1,870**	**562**	**110**	**1,270**	**1,739**	**445**	**85**	**1,073**	**781**	**930**	**752**	**233**	**836**

TABLE G-14. RENEWABLE ENERGY TECHNOLOGIES BY INCOME TYPE – SINGLE FAMILY

C7 / Q31: Do you have any of the following technologies at your household?														
Answer	SF-LI	SF-NLI	Ameren -E-SF-LI	Ameren -E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren -G-SF-LI	Ameren -G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Solar panels for home electricity	6%	11%	6%	13%	5%	11%	5%	13%	7%	11%	6%	11%	2%	8%
Battery to store electricity from solar panels	1%	1%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	0%
Electric Vehicle (EV)	1%	9%	0%	6%	2%	10%	0%	6%	2%	10%	2%	10%	0%	10%
EV charger	1%	7%	0%	5%	2%	8%	1%	6%	1%	7%	2%	8%	2%	10%
Solar water heating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
None of the above	93%	82%	93%	85%	93%	81%	94%	84%	92%	81%	92%	80%	96%	86%
Respondents (n)	**614**	**1,242**	**204**	**344**	**388**	**841**	**163**	**272**	**306**	**732**	**264**	**636**	**105**	**119**

TABLE G-15. RENEWABLE ENERGY TECHNOLOGIES BY INCOME TYPE –MULTIFAMILY

C7 / Q31: Do you have any of the following technologies at your household?														
Answer	MF-LI	MF-NLI	Ameren -E-MF-LI	Ameren -E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren -G-MF-LI	Ameren -G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Solar panels for home electricity	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	0%	0%	0%
Battery to store electricity from solar panels	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Electric Vehicle (EV)	1%	4%	1%	3%	1%	4%	2%	0%	2%	3%	2%	3%	1%	4%
EV charger	1%	3%	0%	3%	1%	3%	0%	0%	1%	3%	1%	3%	1%	3%
Solar water heating	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
None of the above	98%	95%	99%	97%	98%	95%	98%	100%	98%	95%	98%	95%	99%	95%
Respondents (n)	**852**	**986**	**67**	**39**	**777**	**935**	**51**	**30**	**384**	**385**	**372**	**369**	**330**	**492**

Tables G-16 through G-18 include the approximate percentage of light bulbs that are high-efficiency LEDs. The most common response to this question (41.2% for single-family and 31.1% for multifamily) was that most light bulbs in the home were LEDs.

TABLE G-16. LIGHTING BY HOUSEHOLD TYPE

C8 / Q32: Considering all currently installed bulbs in all fixtures and lamps at your household, indoors as well as outdoors: Approximately what percentage of light bulbs are high-efficiency LEDs? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
None	3%	10%	2.4%	17.6%	2.9%	9.7%	2.2%	13.3%	2.1%	8.8%	2.0%	8.2%	7.5%	10.7%
Few (<25%)	8%	11%	8.1%	10.2%	7.8%	11.1%	8.0%	10.8%	7.3%	11.7%	7.5%	11.5%	10.0%	10.9%
Some (about 25%)	8%	12%	9.3%	13.9%	8.0%	12.0%	8.9%	18.1%	7.7%	11.6%	7.7%	11.5%	9.1%	13.1%
About half	15%	13%	13.8%	14.8%	16.2%	13.4%	14.5%	15.7%	15.8%	13.2%	15.9%	13.5%	15.8%	13.0%
Most (about 75%)	41%	31%	41.6%	28.7%	40.7%	31.4%	40.8%	25.3%	42.2%	32.0%	41.7%	32.6%	38.2%	30.6%
All	25%	22%	24.7%	14.8%	24.5%	22.3%	25.7%	16.9%	25.0%	22.7%	25.3%	22.6%	19.5%	21.6%
Respondents (n)	**1,981**	**1,907**	**579**	**108**	**1,316**	**1,777**	**463**	**83**	**1,110**	**794**	**964**	**764**	**241**	**860**

TABLE G-17. LIGHTING BY INCOME TYPE – SINGLE FAMILY

C8 / Q32: Considering all currently installed bulbs in all fixtures and lamps at your household, indoors as well as outdoors: Approximately what percentage of light bulbs are high-efficiency LEDs? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
None	5%	2%	3.8%	1.1%	5.3%	1.8%	3.6%	0.7%	2.9%	1.7%	2.6%	1.7%	12.3%	4.0%
Few (<25%)	12%	5%	13.9%	5.0%	11.3%	5.7%	14.4%	4.5%	11.1%	5.3%	11.0%	5.4%	11.3%	8.8%
Some (about 25%)	10%	7%	11.1%	8.4%	9.5%	7.0%	10.8%	8.0%	10.2%	6.7%	9.2%	7.1%	11.3%	6.4%
About half	16%	15%	12.5%	14.5%	18.0%	15.3%	13.8%	15.0%	16.9%	15.3%	18.8%	14.7%	17.0%	14.4%
Most (about 75%)	36%	44%	37.5%	44.7%	33.8%	43.8%	37.7%	43.2%	35.0%	45.0%	33.8%	44.8%	34.0%	42.4%

C8 / Q32: Considering all currently installed bulbs in all fixtures and lamps at your household, indoors as well as outdoors: Approximately what percentage of light bulbs are high-efficiency LEDs? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
All	22%	26%	21.2%	26.3%	22.1%	26.3%	19.8%	28.6%	23.9%	26.1%	24.6%	26.3%	14.2%	24.0%
Respondents (n)	**629**	**1,294**	**208**	**358**	**399**	**873**	**167**	**287**	**314**	**760**	**272**	**661**	**106**	**125**

TABLE G-18. LIGHTING BY INCOME TYPE –MULTIFAMILY

C8 / Q32: Considering all currently installed bulbs in all fixtures and lamps at your household, indoors as well as outdoors: Approximately what percentage of light bulbs are high-efficiency LEDs? Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
None	14%	7%	13.8%	20.5%	14.1%	6.1%	8.2%	20.0%	11.3%	6.3%	10.4%	6.3%	17.2%	6.1%
Few (<25%)	14%	9%	10.8%	10.3%	13.9%	8.8%	12.2%	10.0%	14.9%	8.6%	14.9%	8.2%	13.3%	9.4%
Some (about 25%)	13%	11%	13.8%	15.4%	13.1%	11.0%	18.4%	20.0%	13.4%	9.9%	13.3%	9.8%	14.5%	12.0%
About half	12%	15%	13.8%	15.4%	12.2%	14.5%	16.3%	13.3%	11.1%	15.0%	11.4%	15.1%	13.0%	13.4%
Most (about 75%)	27%	35%	32.3%	23.1%	26.5%	35.7%	26.5%	23.3%	28.6%	35.5%	29.0%	36.5%	23.4%	35.8%
All	20%	24%	15.4%	15.4%	20.3%	23.8%	18.4%	13.3%	20.6%	24.6%	21.0%	24.1%	18.6%	23.4%
Respondents (n)	**862**	**1,014**	**65**	**39**	**789**	**963**	**49**	**30**	**388**	**394**	**376**	**378**	**338**	**509**

APPENDIX H Building Shell

Appendix H includes tables of penetrations of building shell measures asked about on the online and on-site surveys. Results from the surveys are provided by utility and a combined total, by housing type, and by income type. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Tables H-1 through H-3 include the percentage of respondents' homes occupied year-round versus seasonally.

TABLE H-1. YEAR-ROUND VS. SEASONAL OCCUPATION BY HOUSING TYPE

D1 / Q33: Is your home occupied year-round or is it a seasonal home?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Year-round	98%	97%	97%	97%	98%	97%	97%	98%	98%	97%	98%	97%	99%	97%
Seasonal	2%	3%	3%	3%	2%	3%	3%	2%	2%	3%	2%	3%	1%	3%
Respondents (n)	**1,967**	**1,897**	**573**	**108**	**1,308**	**1,767**	**460**	**84**	**1,102**	**790**	**959**	**761**	**238**	**854**

TABLE H-2. YEAR-ROUND VS. SEASONAL OCCUPATION BY INCOME TYPE - SINGLE FAMILY

D1 / Q33: Is your home occupied year-round or is it a seasonal home?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Year-round	99%	97%	98%	97%	99%	97%	98%	97%	99%	98%	99%	97%	98%	100%
Seasonal	1%	3%	2%	3%	1%	3%	2%	3%	1%	3%	1%	3%	2%	0%
Respondents (n)	**626**	**1,293**	**204**	**358**	**400**	**872**	**164**	**287**	**314**	**760**	**273**	**661**	**106**	**124**

TABLE H-3. YEAR-ROUND VS. SEASONAL OCCUPATION BY INCOME TYPE – MULTIFAMILY

D1 / Q33: Is your home occupied year-round or is it a seasonal home?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Year-round	98%	96%	99%	95%	98%	96%	98%	97%	99%	96%	99%	96%	98%	97%
Seasonal	2%	4%	1%	5%	2%	4%	2%	3%	1%	4%	1%	4%	2%	3%
Respondents (n)	**854**	**1,018**	**67**	**39**	**779**	**967**	**51**	**30**	**385**	**394**	**373**	**378**	**332**	**513**

Tables H-4 and H-5 provide the year ranges that the survey participants' homes were built. Note that the number of multifamily survey participants that knew what year their home was built was very low for all utilities.

TABLE H-4. AGE OF HOME BY HOUSING TYPE

D2 / Q34: Approximately what year was your home built?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
1800 - 1850	1%	0%	1%	0%	1%	0%	0%	0%	1%	0%	0%	0%	2%	0%
1851 - 1900	6%	13%	5%	0%	6%	15%	5%	0%	4%	6%	3%	7%	22%	27%
1901 - 1950	24%	28%	27%	0%	22%	33%	29%	0%	19%	25%	19%	27%	42%	36%
1951 - 1970	24%	16%	24%	20%	25%	15%	25%	25%	25%	25%	25%	27%	20%	0%
1971 - 1990	19%	19%	16%	60%	20%	11%	15%	75%	22%	19%	23%	20%	5%	0%
1991 - 2010	20%	19%	19%	20%	21%	19%	19%	0%	24%	25%	24%	20%	6%	18%
2011 - 2020	5%	3%	7%	0%	4%	4%	5%	0%	4%	0%	4%	0%	2%	9%
2021- Present	2%	3%	2%	0%	1%	4%	2%	0%	1%	0%	1%	0%	2%	9%
Respondents (n)	**1,776**	**32**	**532**	**5**	**1,162**	**27**	**427**	**4**	**1,001**	**16**	**867**	**15**	**191**	**11**

TABLE H-5. AGE OF HOME BY INCOME TYPE - SINGLE FAMILY

D2 / Q34: Approximately what year was your home built?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
1800 - 1850	1%	0%	0%	1%	2%	0%	0%	0%	1%	0%	1%	0%	4%	0%
1851 - 1900	8%	5%	6%	5%	10%	5%	6%	4%	5%	4%	5%	3%	21%	24%
1901 - 1950	30%	21%	37%	22%	26%	20%	41%	23%	23%	17%	23%	17%	36%	47%
1951 - 1970	30%	22%	28%	22%	31%	22%	27%	24%	34%	22%	33%	23%	26%	15%
1971 - 1990	15%	21%	15%	16%	15%	23%	14%	16%	17%	24%	17%	25%	9%	2%
1991 - 2010	12%	24%	10%	24%	14%	24%	8%	25%	18%	26%	19%	26%	2%	9%
2011 - 2020	2%	6%	3%	8%	2%	4%	2%	7%	2%	5%	2%	5%	1%	2%
2021- Present	2%	2%	3%	2%	1%	2%	2%	2%	1%	2%	0%	2%	1%	2%
Respondents (n)	**542**	**1,197**	**189**	**334**	**332**	**803**	**154**	**266**	**268**	**710**	**231**	**616**	**81**	**105**

Tables H-6 through H-8 show the square footage of survey participants' homes.

TABLE H-6. SQUARE FOOTAGE BY HOUSING TYPE

D3 / Q35: How many square feet of heated / cooled space does your home have? (Do not include unfinished basements or crawlspaces) Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Under 1,000	10%	39%	12%	55%	9%	38%	13%	61%	7%	32%	7%	33%	15%	42%
1,000 - 1,500	28%	39%	32%	35%	27%	39%	32%	32%	27%	41%	27%	41%	31%	38%
1,501 - 2,000	26%	14%	27%	6%	26%	15%	26%	5%	27%	18%	27%	18%	25%	13%
2,001 - 3,000	26%	7%	22%	2%	27%	7%	20%	1%	28%	7%	28%	6%	20%	6%
More than 3,000	10%	2%	7%	2%	11%	2%	8%	1%	10%	2%	11%	2%	10%	2%
Respondents (n)	**1,958**	**1,876**	**575**	**105**	**1,298**	**1,749**	**461**	**82**	**1,097**	**779**	**953**	**750**	**235**	**848**

TABLE H-7. SQUARE FOOTAGE BY INCOME TYPE - SINGLE FAMILY

D3 / Q35: How many square feet of heated / cooled space does your home have? (Do not include unfinished basements or crawlspaces) Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Under 1,000	20%	5%	22%	6%	18%	5%	23%	7%	16%	4%	16%	4%	22%	9%
1,000 - 1,500	41%	22%	44%	26%	39%	21%	45%	26%	42%	21%	41%	21%	37%	25%
1,501 - 2,000	23%	27%	25%	28%	23%	27%	24%	27%	24%	28%	24%	28%	21%	27%
2,001 - 3,000	12%	33%	8%	29%	14%	33%	6%	29%	13%	34%	14%	34%	13%	26%
More than 3,000	4%	13%	1%	10%	6%	14%	2%	11%	4%	12%	5%	13%	7%	13%
Respondents (n)	**620**	**1,289**	**204**	**359**	**395**	**867**	**164**	**288**	**313**	**755**	**272**	**656**	**103**	**124**

TABLE H-8. SQUARE FOOTAGE BY INCOME TYPE – MULTIFAMILY

D3 / Q35: How many square feet of heated / cooled space does your home have? (Do not include unfinished basements or crawlspaces) Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Under 1,000	50%	29%	66%	33%	48%	29%	69%	46%	42%	23%	41%	24%	54%	33%
1,000 - 1,500	37%	40%	30%	47%	37%	40%	27%	39%	43%	39%	43%	39%	32%	41%
1,501 - 2,000	9%	19%	3%	11%	9%	19%	2%	11%	9%	27%	9%	27%	9%	15%
2,001 - 3,000	3%	9%	1%	3%	3%	10%	2%	0%	4%	9%	4%	9%	3%	9%
More than 3,000	2%	2%	0%	6%	2%	2%	0%	4%	3%	2%	3%	2%	2%	2%
Respondents (n)	**848**	**1,004**	**67**	**36**	**773**	**956**	**51**	**28**	**382**	**387**	**370**	**371**	**330**	**509**

Tables H-9 and H-10 list the types of basements in single family respondents' homes.

TABLE H-9. BASEMENT TYPE BY HOUSING TYPE

D4 / Q36: What type of basement does your home have? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
None	14%	NR	20%	NR	12%	NR	20%	NR	13%	NR	12%	NR	8%	NR
Finished	29%	NR	17%	NR	34%	NR	16%	NR	32%	NR	33%	NR	43%	NR
Unfinished	27%	NR	30%	NR	26%	NR	29%	NR	26%	NR	25%	NR	27%	NR
Partially finished	20%	NR	19%	NR	21%	NR	20%	NR	21%	NR	22%	NR	19%	NR
Crawlspace	8%	NR	13%	NR	6%	NR	14%	NR	7%	NR	7%	NR	1%	NR
Other	1%	NR	1%	NR	1%	NR	1%	NR	1%	NR	1%	NR	2%	NR
Respondents (n)	**1,977**	**0**	**579**	**0**	**1,313**	**0**	**464**	**0**	**1,107**	**0**	**963**	**0**	**239**	**0**

TABLE H-10. BASEMENT TYPE BY INCOME TYPE - SINGLE FAMILY

D4 / Q36: What type of basement does your home have?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
None	22%	11%	31%	14%	18%	10%	30%	15%	22%	9%	21%	9%	8%	7%
Finished	22%	33%	13%	20%	27%	37%	11%	19%	24%	36%	25%	36%	30%	54%
Unfinished	31%	25%	33%	28%	30%	24%	34%	25%	28%	25%	28%	24%	35%	22%
Partially finished	16%	22%	11%	23%	19%	22%	10%	26%	18%	22%	18%	23%	25%	14%
Crawlspace	8%	8%	11%	15%	5%	6%	14%	14%	8%	7%	8%	7%	0%	2%
Other	1%	1%	1%	0%	1%	1%	2%	0%	0%	1%	0%	1%	2%	2%
Respondents (n)	**631**	**1,297**	**208**	**359**	**402**	**875**	**167**	**288**	**316**	**762**	**275**	**663**	**106**	**125**

Tables H-11 through H-13 provide whether the attic walls/floor, exterior walls, crawlspace, basement walls/ceiling, and garage walls/door are insulated.

TABLE H-11. INSULATION BY HOUSING TYPE

D5 / Q37: Indicate whether the following areas of your home are insulated?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Attic Walls:														
Yes, all	42%	NR	38%	NR	44%	NR	39%	NR	44%	NR	45%	NR	39%	NR
Yes, some	14%	NR	14%	NR	14%	NR	15%	NR	14%	NR	14%	NR	16%	NR
No	26%	NR	30%	NR	24%	NR	29%	NR	27%	NR	26%	NR	20%	NR
Not applicable	18%	NR	18%	NR	18%	NR	17%	NR	16%	NR	15%	NR	25%	NR
Don't know (n)	382	0	142	0	221	0	109	0	187	0	152	0	55	0
Respondents (n)	**1,496**	**0**	**410**	**0**	**1,024**	**0**	**335**	**0**	**863**	**0**	**762**	**0**	**171**	**0**
Attic Floor:														
Yes, all	65%	NR	67%	NR	65%	NR	65%	NR	71%	NR	70%	NR	38%	NR
Yes, some	13%	NR	12%	NR	12%	NR	13%	NR	12%	NR	12%	NR	15%	NR
No	11%	NR	12%	NR	11%	NR	11%	NR	10%	NR	10%	NR	20%	NR
Not applicable	11%	NR	9%	NR	12%	NR	11%	NR	8%	NR	8%	NR	28%	NR
Don't know (n)	328	0	114	0	196	0	94	0	162	0	135	0	52	0
Respondents (n)	**1,588**	**0**	**453**	**0**	**1,069**	**0**	**360**	**0**	**913**	**0**	**799**	**0**	**172**	**0**

D5 / Q37: Indicate whether the following areas of your home are insulated?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Exterior (Outside) Walls:														
Yes, all	74%	NR	78%	NR	72%	NR	77%	NR	77%	NR	76%	NR	46%	NR
Yes, some	16%	NR	15%	NR	17%	NR	15%	NR	15%	NR	15%	NR	28%	NR
No	8%	NR	6%	NR	9%	NR	7%	NR	7%	NR	7%	NR	20%	NR
Not applicable	2%	NR	1%	NR	2%	NR	1%	NR	1%	NR	1%	NR	6%	NR
Don't know (n)	358	0	125	0	220	0	99	0	172	0	140	0	70	0
Respondents (n)	**1,568**	**0**	**441**	**0**	**1,055**	**0**	**356**	**0**	**907**	**0**	**799**	**0**	**160**	**0**
Crawlspace:														
Yes, all	26%	NR	25%	NR	25%	NR	27%	NR	24%	NR	25%	NR	50%	NR
Yes, some	22%	NR	20%	NR	25%	NR	18%	NR	24%	NR	26%	NR	50%	NR
No	50%	NR	55%	NR	45%	NR	56%	NR	48%	NR	45%	NR	0%	NR
Not applicable	2%	NR	0%	NR	5%	NR	0%	NR	3%	NR	4%	NR	0%	NR
Don't know (n)	35	0	20	0	12	0	18	0	14	0	11	0	0	0
Respondents (n)	**121**	**0**	**55**	**0**	**60**	**0**	**45**	**0**	**62**	**0**	**53**	**0**	**2**	**0**
Basement Walls:														
Yes, all	38%	NR	28%	NR	41%	NR	24%	NR	42%	NR	42%	NR	36%	NR
Yes, some	21%	NR	18%	NR	22%	NR	19%	NR	22%	NR	23%	NR	19%	NR
No	39%	NR	52%	NR	35%	NR	54%	NR	34%	NR	33%	NR	42%	NR
Not applicable	2%	NR	2%	NR	2%	NR	3%	NR	2%	NR	2%	NR	3%	NR
Don't know (n)	231	0	71	0	152	0	57	0	108	0	92	0	48	0
Respondents (n)	**1,240**	**0**	**297**	**0**	**886**	**0**	**234**	**0**	**746**	**0**	**655**	**0**	**160**	**0**
Basement Ceiling:														
Yes, all	20%	NR	12%	NR	23%	NR	12%	NR	22%	NR	24%	NR	26%	NR
Yes, some	13%	NR	12%	NR	14%	NR	12%	NR	13%	NR	13%	NR	15%	NR
No	64%	NR	72%	NR	60%	NR	72%	NR	62%	NR	61%	NR	56%	NR
Not applicable	3%	NR	3%	NR	3%	NR	3%	NR	3%	NR	3%	NR	3%	NR
Don't know (n)	243	0	68	0	168	0	53	0	123	0	106	0	51	0
Respondents (n)	**1,199**	**0**	**291**	**0**	**852**	**0**	**231**	**0**	**715**	**0**	**626**	**0**	**156**	**0**

D5 / Q37: Indicate whether the following areas of your home are insulated? Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Garage Walls (for attached garages only):														
Yes, all	27%	NR	26%	NR	27%	NR	25%	NR	31%	NR	32%	NR	5%	NR
Yes, some	11%	NR	10%	NR	12%	NR	11%	NR	14%	NR	14%	NR	3%	NR
No	24%	NR	19%	NR	27%	NR	19%	NR	26%	NR	27%	NR	26%	NR
Not applicable	38%	NR	45%	NR	35%	NR	45%	NR	28%	NR	27%	NR	66%	NR
Don't know (n)	224	0	74	0	140	0	50	0	141	0	114	0	13	0
Respondents (n)	**1,643**	**0**	**474**	**0**	**1,099**	**0**	**388**	**0**	**911**	**0**	**801**	**0**	**207**	**0**
Garage Door (for attached garages only):														
Yes, all	24%	NR	23%	NR	23%	NR	22%	NR	28%	NR	28%	NR	5%	NR
Yes, some	4%	NR	3%	NR	4%	NR	3%	NR	5%	NR	5%	NR	1%	NR
No	34%	NR	28%	NR	36%	NR	29%	NR	38%	NR	38%	NR	25%	NR
Not applicable	39%	NR	45%	NR	36%	NR	45%	NR	30%	NR	29%	NR	69%	NR
Don't know (n)	193	0	60	0	125	0	43	0	115	0	96	0	16	0
Respondents (n)	**1,657**	**0**	**481**	**0**	**1,103**	**0**	**390**	**0**	**928**	**0**	**810**	**0**	**203**	**0**

TABLE H-12. INSULATION BY INCOME TYPE - SINGLE FAMILY

D5 / Q37: Indicate whether the following areas of your home are insulated? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Attic Walls:														
Yes, all	37%	44%	30%	41%	40%	45%	32%	42%	41%	45%	43%	45%	38%	40%
Yes, some	16%	13%	14%	14%	17%	13%	14%	15%	16%	13%	15%	14%	22%	12%
No	25%	26%	31%	29%	24%	24%	31%	29%	26%	27%	26%	26%	19%	20%
Not applicable	21%	17%	25%	15%	19%	18%	23%	14%	18%	15%	16%	15%	21%	28%
Don't know (n)	169	205	63	78	100	114	47	61	81	101	67	80	27	26
Respondents (n)	**440**	**1,042**	**138**	**269**	**287**	**726**	**117**	**216**	**222**	**631**	**196**	**557**	**77**	**93**
Attic Floor:														
Yes, all	51%	72%	52%	74%	50%	71%	49%	73%	59%	75%	59%	75%	26%	47%

D5 / Q37: Indicate whether the following areas of your home are insulated? Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Yes, some	14%	12%	11%	13%	14%	11%	13%	14%	13%	12%	13%	12%	18%	11%
No	18%	7%	18%	8%	19%	7%	20%	6%	14%	7%	15%	7%	30%	12%
Not applicable	17%	9%	19%	5%	17%	10%	18%	6%	14%	6%	13%	6%	26%	30%
Don't know (n)	139	185	51	63	83	109	40	54	65	93	54	77	25	27
Respondents (n)	**478**	**1,092**	**155**	**294**	**307**	**748**	**125**	**232**	**243**	**659**	**213**	**576**	**77**	**92**
Exterior (Outside) Walls:														
Yes, all	64%	79%	70%	81%	60%	77%	69%	80%	66%	81%	67%	80%	39%	52%
Yes, some	20%	15%	18%	13%	20%	16%	17%	14%	21%	13%	19%	14%	25%	29%
No	13%	5%	11%	4%	15%	6%	13%	4%	11%	5%	12%	5%	26%	15%
Not applicable	3%	1%	1%	1%	4%	1%	1%	2%	2%	1%	2%	1%	10%	3%
Don't know (n)	159	192	63	60	91	124	49	49	69	98	55	81	32	37
Respondents (n)	**461**	**1,092**	**142**	**297**	**302**	**740**	**116**	**238**	**241**	**656**	**214**	**575**	**72**	**86**
Crawlspace:														
Yes, all	24%	27%	21%	28%	25%	26%	28%	26%	23%	26%	26%	24%	NR	50%
Yes, some	19%	24%	16%	22%	25%	26%	11%	22%	23%	26%	26%	27%	NR	50%
No	52%	47%	63%	50%	40%	46%	61%	52%	50%	46%	42%	45%	NR	0%
Not applicable	5%	1%	0%	0%	10%	3%	0%	0%	5%	3%	5%	3%	NR	0%
Don't know (n)	8	27	4	16	2	10	5	13	3	11	2	9	0	0
Respondents (n)	**42**	**78**	**19**	**36**	**20**	**39**	**18**	**27**	**22**	**39**	**19**	**33**	**0**	**2**
Basement Walls:														
Yes, all	30%	41%	18%	33%	34%	43%	14%	29%	36%	44%	38%	44%	26%	43%
Yes, some	18%	22%	13%	21%	19%	23%	15%	21%	19%	23%	19%	24%	18%	20%
No	49%	35%	66%	45%	43%	32%	68%	47%	41%	32%	39%	32%	51%	34%
Not applicable	4%	2%	3%	2%	4%	2%	3%	3%	4%	1%	4%	1%	4%	2%
Don't know (n)	78	144	25	46	52	91	17	40	35	67	30	56	18	28
Respondents (n)	**346**	**882**	**90**	**203**	**247**	**631**	**72**	**159**	**180**	**558**	**161**	**487**	**76**	**83**
Basement Ceiling:														
Yes, all	18%	21%	8%	14%	22%	24%	4%	16%	22%	23%	24%	24%	19%	33%

D5 / Q37: Indicate whether the following areas of your home are insulated?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Yes, some	15%	13%	15%	11%	14%	13%	13%	12%	16%	12%	13%	13%	17%	14%
No	62%	64%	73%	72%	58%	61%	78%	70%	57%	63%	56%	62%	60%	50%
Not applicable	5%	2%	3%	3%	6%	2%	4%	3%	6%	1%	6%	2%	4%	3%
Don't know (n)	79	155	26	41	52	108	18	35	39	77	33	67	16	34
Respondents (n)	**340**	**847**	**86**	**202**	**245**	**598**	**69**	**159**	**174**	**534**	**156**	**463**	**78**	**76**
Garage Walls (for attached garages only):														
Yes, all	15%	33%	12%	34%	17%	32%	10%	34%	21%	36%	23%	36%	3%	7%
Yes, some	9%	13%	6%	12%	10%	12%	7%	13%	11%	15%	11%	14%	5%	1%
No	25%	24%	20%	19%	28%	26%	18%	20%	27%	26%	27%	27%	32%	21%
Not applicable	51%	31%	62%	35%	45%	30%	64%	33%	41%	24%	39%	23%	60%	71%
Don't know (n)	65	153	22	51	43	92	12	38	41	94	35	74	5	8
Respondents (n)	**528**	**1,101**	**174**	**297**	**335**	**753**	**146**	**239**	**258**	**645**	**225**	**568**	**94**	**111**
Garage Door (for attached garages only):														
Yes, all	13%	28%	10%	31%	15%	27%	8%	31%	18%	32%	19%	32%	5%	5%
Yes, some	3%	4%	2%	4%	4%	4%	1%	4%	4%	5%	4%	5%	2%	0%
No	29%	36%	24%	31%	32%	38%	23%	33%	33%	39%	33%	40%	27%	22%
Not applicable	55%	31%	64%	33%	50%	31%	68%	32%	44%	24%	43%	23%	65%	74%
Don't know (n)	66	120	20	39	46	73	15	28	38	71	35	56	7	9
Respondents (n)	**524**	**1,120**	**175**	**303**	**329**	**764**	**142**	**245**	**260**	**660**	**223**	**579**	**91**	**110**

Tables H-13 and H-14 show whether the multifamily respondents' exterior walls are insulated.

TABLE H-13. EXTERIOR INSULATION BY HOUSING TYPE

D6 / Q38: Are the exterior (outside) walls of your apartment or unit insulated?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Yes	NR	75%	NR	82%	NR	74%	NR	81%	NR	85%	NR	85%	NR	65%
No	NR	25%	NR	18%	NR	26%	NR	19%	NR	15%	NR	15%	NR	35%
Don't Know (n)	0	882	0	58	0	821	0	42	0	340	0	332	0	415
Respondents (n)	**0**	**987**	**0**	**44**	**0**	**925**	**0**	**36**	**0**	**437**	**0**	**417**	**0**	**432**

TABLE H-14. EXTERIOR INSULATION BY INCOME TYPE – MULTIFAMILY

D6 / Q38: Are the exterior (outside) walls of your apartment or unit insulated?														
Answer	MF-LI	MF-NLI	Ameren-E-MF-LI	Ameren-E-MF-NLI	ComEd-MF-LI	ComEd-MF-NLI	Ameren-G-MF-LI	Ameren-G-MF-NLI	Nicor-MF-LI	Nicor-MF-NLI	ComEd-Nicor-MF-LI	ComEd-Nicor-MF-NLI	ComEd-Peoples Gas-MF-LI	ComEd-Peoples Gas-MF-NLI
Yes	67%	80%	73%	90%	66%	80%	74%	86%	79%	89%	79%	89%	51%	73%
No	33%	20%	27%	10%	34%	20%	26%	14%	21%	11%	21%	11%	49%	27%
Don't Know (n)	453	418	42	16	410	400	28	14	188	145	183	142	178	235
Respondents (n)	**391**	**582**	**22**	**20**	**363**	**552**	**19**	**14**	**189**	**244**	**182**	**232**	**158**	**267**

Tables H-15 and H-16 list whether any energy efficiency improvements have been made at single family respondents' homes in the last 10 years.

TABLE H-15. ENERGY EFFICIENCY IMPROVEMENTS BY HOUSING TYPE

D7 / Q39: Which of the following energy efficiency improvements have been made at your home in the last 10 years?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Added caulking or weather-stripping	37%	NR	34%	NR	38%	NR	36%	NR	35%	NR	36%	NR	43%	NR
Added duct sealing or duct insulation	12%	NR	10%	NR	12%	NR	12%	NR	12%	NR	12%	NR	15%	NR

D7 / Q39: Which of the following energy efficiency improvements have been made at your home in the last 10 years?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
Had a home energy audit / inspection	10%	NR	8%	NR	11%	NR	10%	NR	9%	NR	10%	NR	16%	NR
Installed higher-efficiency window(s) or door(s)	33%	NR	27%	NR	36%	NR	26%	NR	35%	NR	36%	NR	37%	NR
Installed water / energy-savings faucet head(s) / aerator(s) / showerhead(s)	29%	NR	25%	NR	30%	NR	24%	NR	30%	NR	31%	NR	30%	NR
Installed extra insulation to ceiling / attic	20%	NR	15%	NR	23%	NR	15%	NR	21%	NR	22%	NR	20%	NR
Installed extra insulation walls	8%	NR	6%	NR	9%	NR	6%	NR	7%	NR	8%	NR	15%	NR
Installed insulation in foundation / basement / crawlspace / rim joints	9%	NR	9%	NR	9%	NR	9%	NR	9%	NR	9%	NR	8%	NR
Installed hot-water pipe insulation	12%	NR	10%	NR	12%	NR	11%	NR	12%	NR	13%	NR	10%	NR
Installed / seasonally installed temporary plastic sheeting to insulate window(s)	10%	NR	10%	NR	9%	NR	10%	NR	9%	NR	9%	NR	13%	NR
None of these	29%	NR	33%	NR	27%	NR	32%	NR	29%	NR	29%	NR	20%	NR
Don't know (n)	239	NR	87	NR	141	NR	71	NR	103	NR	86	NR	46	NR
Respondents (n)	**1,696**	**0**	**478**	**0**	**1,145**	**0**	**382**	**0**	**982**	**0**	**859**	**0**	**186**	**0**

TABLE H-16. ENERGY EFFICIENCY IMPROVEMENTS BY INCOME TYPE - SINGLE FAMILY

D7 / Q39: Which of the following energy efficiency improvements have been made at your home in the last 10 years?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Added caulking or weather-stripping	36%	37%	35%	33%	36%	39%	34%	37%	35%	36%	33%	37%	42%	44%
Added duct sealing or duct insulation	12%	12%	10%	10%	13%	12%	12%	13%	10%	12%	12%	13%	15%	14%
Had a home energy audit / inspection	12%	9%	11%	6%	13%	10%	15%	7%	10%	9%	11%	10%	19%	14%

D7 / Q39: Which of the following energy efficiency improvements have been made at your home in the last 10 years?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
Installed higher-efficiency window(s) or door(s)	26%	36%	22%	30%	28%	39%	21%	29%	26%	38%	27%	39%	33%	40%
Installed water / energy-savings faucet head(s) / aerator(s) / showerhead(s)	27%	29%	29%	22%	26%	32%	27%	22%	28%	31%	27%	33%	28%	30%
Installed extra insulation to ceiling / attic	14%	23%	13%	17%	13%	26%	15%	15%	12%	24%	14%	25%	12%	27%
Installed extra insulation walls	8%	8%	6%	6%	9%	9%	6%	6%	7%	7%	8%	8%	14%	15%
Installed insulation in foundation / basement / crawlspace / rim joints	8%	10%	7%	11%	8%	9%	8%	10%	7%	10%	8%	9%	9%	8%
Installed hot-water pipe insulation	11%	12%	10%	11%	11%	13%	10%	12%	11%	13%	11%	14%	10%	10%
Installed / seasonally installed temporary plastic sheeting to insulate window(s)	13%	8%	14%	8%	13%	8%	13%	9%	13%	7%	12%	8%	14%	13%
None of these	31%	27%	35%	32%	29%	26%	34%	31%	32%	28%	31%	27%	23%	17%
Don't know (n)	111	124	40	46	67	71	31	39	45	55	38	45	25	21
Respondents (n)	**512**	**1,165**	**167**	**308**	**328**	**801**	**135**	**245**	**267**	**703**	**233**	**615**	**78**	**104**

Tables H-17 and H-18 list the electric panel capacity for single family respondents' homes. Note that roughly half of survey participants did not know their electric panel capacity. For the respondents who selected "something else", 33% of those respondents answered 33% and 14% of those respondents answered 150 Amps.

TABLE H-17. ELECTRIC PANEL CAPACITY BY HOUSING TYPE

D8 / Q40: What is the capacity of your electric panel?														
Answer	SF	MF	Ameren-E-SF	Ameren-E-MF	ComEd-SF	ComEd-MF	Ameren-G-SF	Ameren-G-MF	Nicor-SF	Nicor-MF	ComEd-Nicor-SF	ComEd-Nicor-MF	ComEd-Peoples Gas-SF	ComEd-Peoples Gas-MF
100 Amps	29%	NR	26%	NR	30%	NR	30%	NR	29%	NR	30%	NR	39%	NR
200 Amps	67%	NR	68%	NR	67%	NR	65%	NR	68%	NR	68%	NR	54%	NR
Something else (please specify)	4%	NR	6%	NR	3%	NR	4%	NR	3%	NR	2%	NR	7%	NR
Don't know (n)	954	NR	283	NR	626	NR	224	NR	502	NR	420	NR	158	NR
Respondents (n)	**982**	**0**	**285**	**0**	**657**	**0**	**231**	**0**	**582**	**0**	**522**	**0**	**74**	**0**

TABLE H-18. ELECTRIC PANEL CAPACITY BY INCOME TYPE - SINGLE FAMILY

D8 / Q40: What is the capacity of your electric panel?														
Answer	SF-LI	SF-NLI	Ameren-E-SF-LI	Ameren-E-SF-NLI	ComEd-SF-LI	ComEd-SF-NLI	Ameren-G-SF-LI	Ameren-G-SF-NLI	Nicor-SF-LI	Nicor-SF-NLI	ComEd-Nicor-SF-LI	ComEd-Nicor-SF-NLI	ComEd-Peoples Gas-SF-LI	ComEd-Peoples Gas-SF-NLI
100 Amps	38%	26%	33%	23%	39%	27%	43%	25%	36%	27%	36%	28%	59%	29%
200 Amps	59%	70%	62%	71%	59%	70%	51%	71%	61%	70%	61%	70%	36%	63%
Something else (please specify)	3%	4%	5%	6%	3%	3%	6%	4%	2%	3%	3%	2%	5%	8%
Don't know (n)	393	546	124	157	256	357	99	124	192	300	162	249	81	74
Respondents (n)	**233**	**741**	**84**	**199**	**140**	**511**	**68**	**161**	**122**	**455**	**110**	**407**	**22**	**51**

Appendix I Willingness to Participate

Appendix I includes tables of penetrations of building shell measures asked about on the online surveys. Results from the surveys are provided by housing type, and by income type. Results are not included by utility, because for some questions there was a very small sample size when broken out by utility. Note that some survey participants did not include their income in the survey, so those participants are not included in the tables of results by income type.

Table I-1 reports the likelihood of certain barriers preventing participants from replacing a broken central heating system with a high-efficiency model.

TABLE I-1. LIKELIHOOD OF CERTAIN BARRIERS PREVENTING PARTICIPANTS FROM REPLACING BROKEN CENTRAL HEATING SYSTEM WITH A HIGH-EFFICIENCY MODEL BY HOUSING AND INCOME TYPE

HV1 / Q1: How likely is it that the following factors would prevent you from replacing your broken central heating system with a high-efficiency model?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Higher Purchase Price:						
Extremely likely	25%	25%	42%	17%	36%	17%
Very likely	21%	23%	20%	22%	20%	24%
Moderately likely	24%	27%	18%	27%	22%	30%
Slightly likely	15%	15%	10%	18%	12%	18%
Not at all likely	14%	10%	10%	16%	9%	11%
Total	**365**	**317**	**119**	**246**	**127**	**190**
Difficulty in Accessing Money or Financing:						
Extremely likely	23%	23%	41%	14%	37%	14%
Very likely	16%	16%	23%	12%	15%	16%
Moderately likely	13%	22%	13%	14%	29%	16%
Slightly likely	19%	18%	9%	24%	9%	24%
Not at all likely	29%	21%	14%	36%	10%	28%
Total	**361**	**311**	**119**	**242**	**123**	**188**
Difficulty finding information about energy efficient options:						
Extremely likely	7%	8%	8%	7%	11%	5%
Very likely	11%	15%	9%	11%	17%	13%
Moderately likely	26%	28%	23%	27%	27%	29%
Slightly likely	26%	23%	28%	24%	22%	24%
Not at all likely	31%	26%	32%	30%	22%	29%
Total	**364**	**308**	**120**	**244**	**122**	**186**
Uncertainty about the amount of energy or utility bill savings:						
Extremely likely	12%	12%	20%	8%	16%	9%
Very likely	19%	19%	21%	18%	20%	18%
Moderately likely	25%	27%	22%	26%	28%	27%
Slightly likely	21%	26%	15%	24%	23%	29%
Not at all likely	23%	16%	22%	23%	14%	17%
Total	**366**	**314**	**122**	**244**	**123**	**191**

HV1 / Q1: How likely is it that the following factors would prevent you from replacing your broken central heating system with a high-efficiency model?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Concern over the appearance of the high efficiency option:						
Extremely likely	3%	3%	6%	1%	6%	1%
Very likely	5%	7%	9%	2%	11%	4%
Moderately likely	5%	11%	7%	4%	16%	7%
Slightly likely	14%	18%	14%	15%	14%	21%
Not at all likely	73%	61%	64%	78%	52%	66%
Total	**360**	**309**	**119**	**241**	**122**	**187**

Table I-2 reports the likelihood of certain factors motivating participants to replace a broken central heating system with a high-efficiency model.

TABLE I-2. LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN CENTRAL HEATING SYSTEM WITH A HIGH-EFFICIENCY MODEL BY HOUSING AND INCOME TYPE

How likely is it that the following factors would motivate you to replace your broken central heating system with a high-efficiency model?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Energy or utility bill savings:						
Extremely likely	51%	57%	56%	48%	64%	52%
Very likely	31%	26%	26%	33%	22%	29%
Moderately likely	14%	13%	17%	13%	8%	15%
Slightly likely	2%	3%	1%	3%	3%	3%
Not at all likely	2%	2%	1%	2%	3%	1%
Total	**368**	**312**	**120**	**248**	**120**	**192**
Progress toward personal sustainability or environmental goals:						
Extremely likely	24%	24%	26%	23%	22%	26%
Very likely	23%	27%	19%	25%	28%	26%
Moderately likely	23%	24%	29%	19%	20%	27%
Slightly likely	15%	14%	13%	16%	18%	11%
Not at all likely	15%	11%	13%	16%	13%	11%
Total	**360**	**307**	**116**	**244**	**120**	**187**
Improved occupant comfort:						
Extremely likely	36%	37%	40%	35%	36%	38%
Very likely	32%	36%	28%	33%	36%	37%
Moderately likely	20%	17%	21%	19%	15%	17%
Slightly likely	8%	7%	8%	9%	8%	6%
Not at all likely	4%	3%	3%	4%	4%	3%
Total	**358**	**308**	**116**	**242**	**119**	**189**
Reduce fossil fuel consumption:						

How likely is it that the following factors would motivate you to replace your broken central heating system with a high-efficiency model? Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	27%	30%	27%	27%	29%	31%
Very likely	23%	28%	26%	22%	29%	28%
Moderately likely	24%	21%	27%	22%	17%	24%
Slightly likely	14%	14%	14%	15%	18%	11%
Not at all likely	12%	6%	6%	14%	7%	6%
Total	**362**	**307**	**117**	**245**	**119**	**188**
Increased system reliability:						
Extremely likely	38%	38%	44%	35%	33%	42%
Very likely	38%	39%	30%	42%	42%	38%
Moderately likely	15%	14%	15%	16%	14%	14%
Slightly likely	5%	5%	7%	4%	8%	4%
Not at all likely	3%	3%	3%	3%	4%	2%
Total	**359**	**308**	**115**	**244**	**120**	**188**
Quieter operation than your current system:						
Extremely likely	24%	29%	28%	22%	26%	32%
Very likely	26%	28%	25%	27%	25%	30%
Moderately likely	21%	24%	17%	23%	27%	22%
Slightly likely	18%	10%	19%	18%	11%	10%
Not at all likely	11%	8%	11%	11%	12%	6%
Total	**358**	**309**	**116**	**242**	**120**	**189**

Tables I-3 through I-7 report the likelihood of survey participants purchasing high-efficiency HVAC systems at different incentive levels. Note that if a survey participant answered “extremely likely”, they were not asked their willingness to purchase equipment at higher incentive levels.

TABLE I-3. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY HVAC WITH NO INCENTIVE BY HOUSING AND INCOME TYPE

HV7a / Q7a: How likely would you be to purchase a high efficiency model if you received no incentive? You would pay the full additional cost of $1,000 to upgrade to the energy-efficient model? Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	12%	10%	11%	13%	10%	10%
Very likely	18%	18%	13%	21%	14%	20%
Moderately likely	28%	36%	19%	32%	34%	37%
Slightly likely	21%	20%	24%	20%	19%	21%
Not at all likely	21%	17%	33%	14%	22%	13%
Total	**384**	**335**	**127**	**257**	**135**	**200**

TABLE I-4. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY HVAC WITH $250 INCENTIVE BY HOUSING AND INCOME TYPE

HV7b / Q7b: How likely would you be to purchase a high efficiency model if you received an incentive for ONE-QUARTER ($250) of the additional cost of a high-efficiency model? You would pay the additional $750 to upgrade to the energy-efficient model, resulting in five-year simple payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	9%	11%	10%	9%	9%	12%
Very likely	26%	29%	22%	28%	25%	32%
Moderately likely	35%	32%	28%	38%	32%	32%
Slightly likely	19%	19%	24%	17%	23%	17%
Not at all likely	11%	9%	16%	8%	12%	7%
Total	**337**	**300**	**113**	**224**	**120**	**180**

TABLE I-5. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY HVAC WITH $500 INCENTIVE BY HOUSING AND INCOME TYPE

HV7c / Q7c: How likely would you be to purchase a high efficiency model if you received an incentive for HALF ($500) of the additional cost of a high-efficiency model? You would pay the additional $500 to upgrade to a high-efficiency model, resulting in about a three-year simple payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	17%	17%	13%	19%	15%	18%
Very likely	38%	40%	33%	41%	32%	46%
Moderately likely	26%	26%	31%	24%	29%	23%
Slightly likely	11%	11%	13%	9%	13%	9%
Not at all likely	8%	6%	11%	6%	11%	3%
Total	**303**	**266**	**101**	**202**	**108**	**158**

TABLE I-6. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY HVAC WITH $750 INCENTIVE BY HOUSING AND INCOME TYPE

HV7d / Q7d: How likely would you be to purchase a high efficiency model if you received an incentive for THREE-QUARTERS ($750) of the additional cost of a high-efficiency model? You would pay the additional $250 to upgrade to a high-efficiency model, resulting in about a 1.5-year simple payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	30%	33%	22%	35%	22%	41%
Very likely	36%	33%	39%	34%	34%	33%
Moderately likely	21%	20%	25%	19%	26%	16%

Slightly likely	7%	6%	8%	6%	7%	6%
Not at all likely	6%	7%	7%	6%	12%	4%
Total	**251**	**220**	**88**	**163**	**92**	**128**

TABLE I-7. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY HVAC WITH $1000 INCENTIVE BY HOUSING AND INCOME TYPE

HV7e / Q7e: How likely would you be to purchase a high efficiency model if you received an incentive for ALL ($1,000) of the additional cost of a high-efficiency model? This would be an instant payback on all the costs.	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	49%	51%	42%	53%	47%	54%
Very likely	26%	27%	32%	22%	26%	28%
Moderately likely	14%	10%	13%	14%	8%	12%
Slightly likely	5%	4%	4%	6%	6%	3%
Not at all likely	6%	8%	9%	5%	13%	4%
Total	**174**	**148**	**69**	**105**	**72**	**76**

Table I-8 reports if survey participants answered that they already had a heat pump in their home.

TABLE I-8. HEAT PUMP SATURATION BY HOUSING AND INCOME TYPE

HV9 / Q9: Do you currently have a heat pump installed in your home?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Yes	6%	6%	6%	6%	7%	5%
No	83%	71%	71%	89%	66%	74%
Don't know	11%	24%	23%	5%	27%	21%
Total	**383**	**325**	**126**	**257**	**131**	**194**

Table I-9 shows the survey participants' satisfaction who already own a heat pump.

TABLE I-9. HEAT PUMP SATISFACTION BY HOUSING AND INCOME TYPE

HV9a / Q9a: Given your experience with the heat pump, how satisfied are you with your heat pump?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely satisfied	33%	28%	38%	31%	11%	44%
Very satisfied	42%	22%	38%	44%	44%	0%
Moderately satisfied	21%	39%	13%	25%	44%	33%
Slightly satisfied	0%	6%	0%	0%	0%	11%
Not at all satisfied	4%	6%	13%	0%	0%	11%
Total	**24**	**18**	**8**	**16**	**9**	**9**

Table I-10 reports the likelihood of certain barriers preventing participants from replacing a broken water heater with a high-efficiency model.

TABLE I-10. LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM REPLACING BROKEN WATER HEATER WITH A HIGH-EFFICIENCY WATER HEATER BY HOUSING AND INCOME TYPE

WH2 / Q14: How likely is it that the following factors will prevent you from replacing your broken water heater with a high efficiency water heater instead of a standard-efficiency water heater?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Higher Purchase Price:						
Extremely likely	31%	24%	41%	26%	30%	21%
Very likely	24%	23%	21%	26%	22%	23%
Moderately likely	25%	31%	21%	27%	28%	32%
Slightly likely	13%	13%	11%	14%	9%	15%
Not at all likely	7%	9%	5%	7%	9%	9%
Total	**364**	**291**	**121**	**243**	**116**	**175**
Difficulty in accessing money or financing:						
Extremely likely	22%	19%	41%	13%	30%	11%
Very likely	15%	16%	22%	12%	17%	15%
Moderately likely	15%	25%	14%	16%	25%	24%
Slightly likely	15%	16%	10%	17%	12%	19%
Not at all likely	33%	25%	13%	42%	16%	31%
Total	**358**	**289**	**116**	**242**	**117**	**172**
Plumbing or structural changes needed to your home:						
Extremely likely	25%	30%	29%	23%	32%	30%
Very likely	24%	29%	31%	21%	29%	30%
Moderately likely	25%	21%	19%	28%	18%	23%
Slightly likely	12%	9%	9%	14%	9%	9%
Not at all likely	14%	10%	13%	14%	12%	9%
Total	**360**	**292**	**117**	**243**	**117**	**175**
Uncertainty about the amount of energy or utility bill savings:						
Extremely likely	14%	12%	18%	12%	16%	10%
Very likely	20%	21%	19%	21%	21%	22%
Moderately likely	33%	35%	36%	32%	36%	34%
Slightly likely	20%	18%	11%	24%	15%	20%
Not at all likely	13%	13%	16%	12%	12%	15%
Total	**360**	**289**	**118**	**242**	**117**	**172**
Lack of knowledge about high efficiency water heaters:						
Extremely likely	9%	11%	15%	7%	14%	8%
Very likely	18%	19%	17%	19%	24%	16%
Moderately likely	24%	30%	25%	23%	31%	30%
Slightly likely	21%	22%	21%	21%	18%	25%
Not at all likely	27%	18%	21%	30%	13%	21%

Total	**361**	**292**	**117**	**244**	**119**	**173**

Table I-11 reports the likelihood of certain factors motivating participants to replace a broken water heater with a high-efficiency model.

TABLE I-11. LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN WATER HEATER WITH A HIGH-EFFICIENCY MODEL BY HOUSING AND INCOME TYPE

WH5 / Q17: How likely is it that the following factors would motivate you to replace your broken water heater with a high efficiency model? Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Energy or utility bill savings:						
Extremely likely	40%	37%	44%	39%	40%	35%
Very likely	33%	38%	34%	33%	38%	39%
Moderately likely	20%	17%	17%	22%	12%	20%
Slightly likely	4%	4%	3%	5%	5%	3%
Not at all likely	2%	4%	3%	2%	5%	3%
Total	**368**	**289**	**119**	**249**	**113**	**176**
Progress toward personal sustainability goals:						
Extremely likely	21%	22%	25%	20%	16%	26%
Very likely	23%	23%	19%	25%	27%	20%
Moderately likely	22%	28%	28%	19%	29%	28%
Slightly likely	17%	17%	13%	18%	18%	16%
Not at all likely	17%	10%	15%	18%	10%	10%
Total	**360**	**284**	**116**	**244**	**111**	**173**
Improved home comfort:						
Extremely likely	29%	28%	30%	28%	23%	31%
Very likely	35%	42%	38%	33%	42%	41%
Moderately likely	21%	20%	18%	23%	21%	20%
Slightly likely	10%	7%	7%	11%	10%	5%
Not at all likely	6%	4%	8%	5%	4%	3%
Total	**361**	**284**	**117**	**244**	**112**	**172**
Improved water heater reliability:						
Extremely likely	38%	38%	41%	36%	38%	39%
Very likely	37%	32%	34%	39%	29%	35%
Moderately likely	16%	19%	15%	17%	20%	18%
Slightly likely	7%	6%	5%	8%	8%	5%
Not at all likely	2%	4%	4%	1%	6%	3%
Total	**365**	**285**	**119**	**246**	**112**	**173**

Tables I-12 through I-16 report the likelihood of survey participants purchasing high-efficiency water heaters at different incentive levels. Note that if a survey participant answered “extremely likely”, they were not asked their willingness to purchase equipment at higher incentive levels.

TABLE I-12. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY WATER HEATER WITH NO INCENTIVE BY HOUSING AND INCOME TYPE

WH8a / Q20a: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received no incentive and you paid the additional $900 to purchase a high-efficiency water heater? Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	8%	7%	9%	8%	5%	8%
Very likely	13%	16%	8%	16%	14%	17%
Moderately likely	25%	27%	17%	29%	26%	27%
Slightly likely	25%	25%	22%	27%	27%	23%
Not at all likely	29%	25%	44%	21%	27%	24%
Total	**374**	**311**	**123**	**251**	**125**	**186**

TABLE I-13. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY WATER HEATER WITH $225 INCENTIVE BY HOUSING AND INCOME TYPE

WH8b / Q20b: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received an incentive for ONE-QUARTER ($225) of the additional cost of the high-efficiency water heater? You would pay the additional $675 to upgrade to a high-efficiency water heater. This is a 4.5-year simple payback. Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	8%	10%	5%	9%	7%	12%
Very likely	20%	17%	16%	21%	17%	18%
Moderately likely	32%	33%	24%	36%	31%	34%
Slightly likely	27%	28%	31%	25%	32%	25%
Not at all likely	14%	13%	23%	9%	13%	12%
Total	**343**	**290**	**111**	**232**	**119**	**171**

TABLE I-14. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY WATER HEATER WITH $450 INCENTIVE BY HOUSING AND INCOME TYPE

WH8c / Q20c: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received an incentive for HALF ($450) of the additional cost of the high-efficiency water heater? You would pay the additional $450 to upgrade to a high-efficiency water heater. This is a 3-year simple payback. Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	16%	13%	13%	18%	11%	15%
Very likely	26%	28%	19%	30%	23%	32%

WH8c / Q20c: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received an incentive for HALF ($450) of the additional cost of the high-efficiency water heater? You would pay the additional $450 to upgrade to a high-efficiency water heater. This is a 3-year simple payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Moderately likely	35%	31%	33%	36%	33%	30%
Slightly likely	13%	17%	20%	10%	21%	13%
Not at all likely	9%	10%	16%	6%	11%	10%
Total	**312**	**258**	**102**	**210**	**108**	**150**

TABLE I-15. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY WATER HEATER WITH $675 INCENTIVE BY HOUSING AND INCOME TYPE

WH8d / Q20d: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received an incentive for THREE-QUARTERS ($675) of the additional cost of the high-efficiency heat pump water heater? You would pay the additional $225 to upgrade to a high-efficiency water heater. This is a 1.5-year simple payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	22%	21%	9%	29%	11%	28%
Very likely	38%	32%	36%	39%	30%	33%
Moderately likely	27%	28%	40%	20%	34%	23%
Slightly likely	7%	8%	4%	8%	13%	5%
Not at all likely	6%	11%	10%	4%	11%	11%
Total	**260**	**224**	**89**	**171**	**96**	**128**

TABLE I-16. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY WATER HEATER WITH $900 INCENTIVE BY HOUSING AND INCOME TYPE

WH8e / Q20e: How likely would you be to purchase a high-efficiency water heater instead of a standard-efficiency water heater if you received an incentive for ALL ($900) of the additional cost of the high-efficiency water heater? This is an instant payback.

Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	55%	51%	44%	62%	50%	52%
Very likely	25%	20%	37%	17%	17%	23%
Moderately likely	12%	12%	14%	11%	14%	10%
Slightly likely	5%	6%	0%	9%	8%	3%
Not at all likely	2%	11%	5%	1%	11%	12%

Total	**203**	**176**	**81**	**122**	**84**	**92**

Table I-17 provides the heat pump water heater saturation for survey participants.

TABLE I-17. HEAT PUMP WATER HEATER SATURATION BY HOUSING AND INCOME TYPE

WH10 / Q22: Do you currently have a heat pump water heater installed in your home?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Answer						
Yes	4%	3%	6%	3%	3%	3%
No	86%	72%	75%	91%	65%	76%
Don't know	10%	25%	19%	6%	33%	21%
Total	**370**	**306**	**121**	**249**	**120**	**186**

Table I-18 shows the satisfaction of survey participants who already own a heat pump water heater.

TABLE I-18. HEAT PUMP WATER HEATER SATISFACTION BY HOUSING AND INCOME TYPE

WH10a / Q22a: Given your experience with the heat pump water heater, how satisfied are you with your heat pump water heater?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Answer						
Extremely satisfied	43%	44%	43%	43%	0%	67%
Very satisfied	29%	22%	29%	29%	33%	17%
Moderately satisfied	21%	11%	14%	29%	0%	17%
Slightly satisfied	0%	22%	0%	0%	67%	0%
Not at all satisfied	7%	0%	14%	0%	0%	0%
Total	**14**	**9**	**7**	**7**	**3**	**6**

Table I-19 reports the likelihood of certain barriers preventing participants from making improvements to their home's ceiling insulation or air sealing.

TABLE I-19. LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM MAKING IMPROVEMENTS TO THEIR HOME'S CEILING INSULATION OR AIR SEALING BY HOUSING AND INCOME TYPE

I2 / Q27: How likely is it that the following factors would prevent you from making improvements to your home's ceiling insulation or air sealing?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Answer						
Cost:						
Extremely likely	41%	38%	63%	30%	42%	36%
Very likely	20%	24%	17%	22%	25%	24%
Moderately likely	24%	20%	10%	30%	20%	20%
Slightly likely	8%	7%	3%	11%	3%	11%
Not at all likely	7%	10%	7%	7%	10%	10%
Total	**355**	**281**	**117**	**238**	**111**	**170**

I2 / Q27: How likely is it that the following factors would prevent you from making improvements to your home's ceiling insulation or air sealing?						
Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Difficulty in accessing money or financing:						
Extremely likely	26%	23%	48%	16%	34%	15%
Very likely	11%	18%	17%	9%	17%	19%
Moderately likely	19%	22%	12%	22%	27%	18%
Slightly likely	14%	16%	7%	17%	11%	19%
Not at all likely	30%	22%	16%	37%	11%	28%
Total	**348**	**278**	**114**	**234**	**109**	**169**
Disruption in the home during the work:						
Extremely likely	8%	15%	11%	6%	15%	15%
Very likely	13%	21%	16%	12%	22%	20%
Moderately likely	26%	28%	26%	26%	28%	27%
Slightly likely	29%	20%	28%	30%	19%	20%
Not at all likely	24%	16%	19%	26%	16%	17%
Total	**349**	**280**	**116**	**233**	**109**	**171**
Uncertainty about the amount of energy or money savings:						
Extremely likely	13%	16%	18%	10%	18%	15%
Very likely	31%	27%	30%	32%	30%	25%
Moderately likely	29%	34%	23%	33%	30%	37%
Slightly likely	14%	10%	16%	14%	11%	10%
Not at all likely	12%	12%	13%	12%	12%	13%
Total	**347**	**282**	**115**	**232**	**113**	**169**
Lack of knowledge about the insulation needed:						
Extremely likely	15%	19%	22%	12%	22%	18%
Very likely	17%	25%	17%	17%	21%	28%
Moderately likely	27%	31%	22%	29%	34%	29%
Slightly likely	15%	12%	17%	15%	11%	12%
Not at all likely	25%	13%	21%	27%	12%	14%
Total	**349**	**278**	**116**	**233**	**109**	**169**
Uncertainty on how to find a qualified contractor:						
Extremely likely	22%	28%	29%	18%	28%	28%
Very likely	23%	24%	25%	22%	19%	28%
Moderately likely	22%	21%	22%	23%	25%	18%
Slightly likely	14%	10%	10%	16%	11%	9%
Not at all likely	19%	17%	14%	21%	17%	17%
Total	**347**	**278**	**114**	**233**	**109**	**169**

Table I-20 reports the likelihood of certain factors motivating participants to improve ceiling insulation or air sealing.

TABLE I-20. LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO IMPROVE CEILING INSULATION OR AIR SEALING BY HOUSING AND INCOME TYPE

I5 / Q30: How likely is it that the following factors would motivate you to make improvements to your home's ceiling insulation or air sealing?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Energy or utility bill savings:						
Extremely likely	42%	35%	51%	38%	37%	35%
Very likely	33%	32%	25%	37%	32%	32%
Moderately likely	16%	20%	17%	16%	19%	22%
Slightly likely	7%	5%	7%	7%	3%	7%
Not at all likely	1%	7%	1%	1%	9%	5%
Total	**350**	**279**	**114**	**236**	**108**	**171**
Progress toward personal sustainability goals:						
Extremely likely	20%	24%	25%	18%	23%	25%
Very likely	18%	14%	15%	19%	19%	11%
Moderately likely	26%	29%	28%	25%	31%	28%
Slightly likely	19%	19%	19%	19%	13%	23%
Not at all likely	16%	14%	12%	18%	15%	14%
Total	**347**	**275**	**113**	**234**	**108**	**167**
Improved occupant comfort:						
Extremely likely	37%	32%	38%	37%	26%	36%
Very likely	36%	34%	33%	38%	38%	32%
Moderately likely	19%	22%	19%	19%	22%	23%
Slightly likely	5%	7%	7%	3%	8%	6%
Not at all likely	3%	4%	4%	2%	6%	3%
Total	**346**	**277**	**113**	**233**	**109**	**168**
Reduce ice dams, condensation, or solve other physical problems:						
Extremely likely	37%	33%	41%	34%	29%	36%
Very likely	28%	28%	30%	28%	28%	28%
Moderately likely	20%	22%	15%	23%	25%	19%
Slightly likely	9%	8%	7%	9%	6%	9%
Not at all likely	6%	9%	7%	6%	13%	7%
Total	**349**	**278**	**114**	**235**	**108**	**170**

Tables I-21 through I-24 report the likelihood of survey participants upgrading their ceiling insulation or air sealing at different incentive levels. Note that if a survey participant answered “extremely likely”, they were not asked their willingness to purchase equipment at higher incentive levels.

TABLE I-21. LIKELIHOOD OF SURVEY PARTICIPANTS UPGRADE CEILING INSULATION OR AIR SEALING WITH NO INCENTIVE BY HOUSING AND INCOME TYPE

I8a / Q33a: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received no incentive and paid the $2,000 to install upgraded ceiling insulation or complete air sealing?						
Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	4%	5%	3%	4%	3%	6%
Very likely	8%	7%	4%	10%	9%	5%
Moderately likely	21%	26%	18%	22%	20%	29%
Slightly likely	29%	27%	26%	31%	29%	26%
Not at all likely	38%	36%	48%	33%	38%	34%
Total	**363**	**298**	**119**	**244**	**117**	**181**

TABLE I-22. LIKELIHOOD OF SURVEY PARTICIPANTS UPGRADE CEILING INSULATION OR AIR SEALING WITH $500 INCENTIVE BY HOUSING AND INCOME TYPE

I8b / Q33b: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received an incentive for ONE-QUARTER (~$500) of the cost of the project? You would pay the additional ~$1,500 to upgrade your home's ceiling insulation or complete air sealing, resulting in a six-year simple payback.						
(ASK IF I8a < Extremely Likely) Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	4%	6%	3%	4%	6%	6%
Very likely	15%	13%	12%	17%	10%	15%
Moderately likely	30%	29%	26%	32%	28%	29%
Slightly likely	34%	34%	33%	34%	37%	32%
Not at all likely	17%	18%	25%	12%	19%	18%
Total	**350**	**284**	**115**	**235**	**113**	**171**

TABLE I-23. LIKELIHOOD OF SURVEY PARTICIPANTS UPGRADE CEILING INSULATION OR AIR SEALING WITH $1000 INCENTIVE BY HOUSING AND INCOME TYPE

I8c / Q33c: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received an incentive for ONE-HALF ($1,000) of the cost of the project? You would pay the additional $1,000 to upgrade your home's ceiling insulation or air sealing, resulting in a four-year simple payback.						
(ASK IF I8b < Extremely Likely) Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	13%	8%	8%	15%	5%	10%
Very likely	22%	24%	17%	24%	22%	26%
Moderately likely	38%	37%	37%	38%	37%	37%
Slightly likely	15%	16%	19%	14%	20%	14%

I8c / Q33c: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received an incentive for ONE-HALF ($1,000) of the cost of the project? You would pay the additional $1,000 to upgrade your home's ceiling insulation or air sealing, resulting in a four-year simple payback.

(ASK IF I8b < Extremely Likely) Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Not at all likely	12%	15%	19%	9%	17%	13%
Total	**332**	**267**	**111**	**221**	**106**	**161**

TABLE I-24. LIKELIHOOD OF SURVEY PARTICIPANTS UPGRADE CEILING INSULATION OR AIR SEALING WITH $1500 INCENTIVE BY HOUSING AND INCOME TYPE

I8d / Q33d: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received an incentive for THREE-QUARTERS (~$1,500) of the cost of the project? You would pay the additional ~$500 to upgrade your home's ceiling insulation or air sealing, resulting in a two-year simple payback.

(ASK IF I8c < Extremely Likely) Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	20%	21%	14%	23%	16%	24%
Very likely	37%	32%	30%	41%	29%	34%
Moderately likely	24%	23%	33%	19%	27%	21%
Slightly likely	10%	11%	8%	11%	16%	8%
Not at all likely	9%	13%	15%	6%	13%	13%
Total	**289**	**245**	**102**	**187**	**101**	**144**

TABLE I-24. LIKELIHOOD OF SURVEY PARTICIPANTS UPGRADE CEILING INSULATION OR AIR SEALING WITH $2000 INCENTIVE BY HOUSING AND INCOME TYPE

I8e / Q33e: How likely would you be to upgrade your home's ceiling insulation or air sealing if you received an incentive for ALL ($2,000) of the cost of the upgraded ceiling insulation or air sealing? This provides an immediate payback.

(ASK IF I8d < Extremely Likely) Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	53%	44%	44%	59%	39%	49%
Very likely	23%	19%	30%	19%	21%	17%
Moderately likely	13%	20%	13%	13%	21%	18%
Slightly likely	4%	6%	3%	4%	5%	6%
Not at all likely	7%	12%	10%	6%	14%	10%
Total	**232**	**194**	**88**	**144**	**85**	**109**

Table I-25 reports the likelihood of certain barriers preventing participants from replacing a broken appliance with a high-efficiency model.

TABLE I-25. LIKELIHOOD OF CERTAIN BARRIERS PREVENTING SURVEY PARTICIPANTS FROM REPLACING BROKEN HOUSEHOLD APPLIANCE WITH A HIGH-EFFICIENCY MODEL INSTEAD OF A STANDARD-EFFICIENCY MODEL BY HOUSING AND INCOME TYPE

AP1 / Q35: How likely is it that the following factors will prevent you from replacing a broken major household appliance with a high-efficiency model instead of a standard-efficiency model?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
High purchase price:						
Extremely likely	34%	32%	47%	28%	36%	29%
Very likely	24%	24%	28%	22%	24%	24%
Moderately likely	22%	24%	15%	26%	24%	24%
Slightly likely	11%	12%	4%	14%	9%	14%
Not at all likely	9%	9%	6%	10%	7%	10%
Total	**353**	**286**	**115**	**238**	**110**	**176**
Availability of features you want:						
Extremely likely	17%	17%	15%	18%	16%	18%
Very likely	32%	37%	34%	32%	34%	39%
Moderately likely	34%	30%	33%	35%	33%	28%
Slightly likely	9%	11%	7%	10%	14%	10%
Not at all likely	7%	5%	12%	5%	4%	5%
Total	**350**	**283**	**113**	**237**	**110**	**173**
Uncertainty about the amount of energy or money savings:						
Extremely likely	8%	12%	14%	5%	18%	8%
Very likely	25%	21%	24%	26%	25%	19%
Moderately likely	36%	34%	36%	36%	29%	37%
Slightly likely	17%	21%	12%	20%	20%	22%
Not at all likely	14%	12%	14%	14%	8%	14%
Total	**348**	**281**	**112**	**236**	**110**	**171**
Lack of knowledge about the performance of the high efficiency appliance:						
Extremely likely	8%	12%	13%	6%	16%	10%
Very likely	15%	18%	15%	15%	18%	18%
Moderately likely	29%	32%	30%	28%	35%	30%
Slightly likely	22%	19%	17%	24%	20%	18%
Not at all likely	26%	19%	25%	26%	10%	24%
Total	**346**	**281**	**112**	**234**	**110**	**171**

Table I-26 reports the likelihood of certain factors motivating participants to replace a broken appliance with a high-efficiency model.

TABLE I-26. LIKELIHOOD OF CERTAIN FACTORS MOTIVATING SURVEY PARTICIPANTS TO REPLACE BROKEN APPLIANCE WITH A HIGH-EFFICIENCY MODEL BY HOUSING AND INCOME TYPE

AP4 / Q38: How likely is it that the following factors will motivate you to replace a broken major appliance with a high-efficiency model instead of a standard-efficiency model? Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Energy or utility bill savings						
Extremely likely	32%	38%	41%	28%	39%	38%
Very likely	36%	33%	31%	39%	35%	32%
Moderately likely	23%	21%	20%	25%	19%	23%
Slightly likely	6%	4%	6%	6%	2%	6%
Not at all likely	2%	3%	2%	3%	5%	2%
Total	**351**	**289**	**115**	**236**	**112**	**177**
Progress toward personal sustainability goals:						
Extremely likely	18%	24%	22%	15%	21%	26%
Very likely	23%	19%	19%	24%	24%	15%
Moderately likely	24%	30%	24%	24%	26%	32%
Slightly likely	18%	15%	17%	19%	14%	16%
Not at all likely	18%	13%	19%	17%	15%	11%
Total	**346**	**280**	**113**	**233**	**108**	**172**
Ease of installation:						
Extremely likely	23%	27%	32%	18%	27%	28%
Very likely	32%	34%	30%	33%	34%	34%
Moderately likely	26%	22%	23%	27%	23%	22%
Slightly likely	14%	10%	9%	17%	10%	10%
Not at all likely	6%	6%	6%	5%	6%	6%
Total	**345**	**281**	**113**	**232**	**108**	**173**
Improved performance:						
Extremely likely	39%	43%	39%	39%	39%	46%
Very likely	39%	35%	41%	38%	31%	38%
Moderately likely	17%	14%	12%	19%	16%	13%
Slightly likely	3%	5%	3%	3%	7%	3%
Not at all likely	3%	2%	5%	1%	6%	0%
Total	**349**	**281**	**115**	**234**	**108**	**173**

Tables I-27 through I-31 report the likelihood of survey participants purchasing a high-efficiency appliance at different incentive levels. Note that if a survey participant answered “extremely likely”, they were not asked their willingness to purchase equipment at higher incentive levels.

TABLE I-27. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY APPLIANCE WITH NO INCENTIVE BY HOUSING AND INCOME TYPE

AP7a / Q41a: How likely would you be to purchase a high-efficiency model instead of a standard-efficiency model if you received no incentive and paid an additional $300 to purchase a high-efficiency appliance?						
Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	7%	10%	6%	8%	8%	12%
Very likely	16%	22%	8%	20%	19%	23%
Moderately likely	27%	29%	19%	31%	29%	29%
Slightly likely	27%	23%	29%	27%	24%	23%
Not at all likely	22%	16%	37%	15%	20%	13%
Total	**359**	**295**	**118**	**241**	**114**	**181**

TABLE I-28. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY APPLIANCE WITH $75 INCENTIVE BY HOUSING AND INCOME TYPE

AP7b / Q41b: How likely would you be to purchase a high-efficiency model instead of a standard-efficiency model if you received an incentive for ONE-QUARTER ($75) of the additional cost of a high-efficiency model? You would pay the remaining $225 to upgrade to a high-efficiency model.						
Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	5%	10%	3%	5%	8%	11%
Very likely	24%	24%	18%	27%	20%	27%
Moderately likely	32%	33%	27%	35%	31%	34%
Slightly likely	27%	23%	31%	26%	30%	19%
Not at all likely	12%	10%	22%	8%	11%	9%
Total	**333**	**264**	**111**	**222**	**105**	**159**

TABLE I-29. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY APPLIANCE WITH $150 INCENTIVE BY HOUSING AND INCOME TYPE

AP7c / Q41c: How likely would you be to purchase a high-efficiency model instead of a standard-efficiency model if you received an incentive for HALF ($150) of the additional cost of a high-efficiency model? You would pay the remaining $150 to upgrade to a high-efficiency model.						
Answer	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	16%	15%	12%	18%	10%	18%
Very likely	32%	34%	23%	37%	26%	39%
Moderately likely	29%	29%	32%	27%	34%	26%
Slightly likely	15%	14%	20%	11%	20%	11%
Not at all likely	8%	8%	12%	6%	10%	6%
Total	**317**	**238**	**108**	**209**	**97**	**141**

TABLE I-30. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY APPLIANCE WITH $225 INCENTIVE BY HOUSING AND INCOME TYPE

AP7d / Q41d: How likely would you be to purchase a high-efficiency model instead of a standard-efficiency model if you received an incentive for THREE-QUARTERS ($225) of the additional cost of a high-efficiency model? You would pay the remaining $75 to upgrade to a high-efficiency model.	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	27%	25%	19%	31%	15%	33%
Very likely	35%	33%	26%	39%	32%	34%
Moderately likely	23%	26%	32%	19%	29%	23%
Slightly likely	10%	7%	14%	8%	13%	3%
Not at all likely	6%	8%	9%	4%	11%	6%
Total	**266**	**202**	**95**	**171**	**87**	**115**

TABLE I-31. LIKELIHOOD OF SURVEY PARTICIPANTS PURCHASING HIGH-EFFICIENCY APPLIANCE WITH $300 INCENTIVE BY HOUSING AND INCOME TYPE

AP7e / Q41e: How likely would you be to purchase a high-efficiency model instead of a standard-efficiency model if you received an incentive for ALL ($300) of the additional cost of an energy-efficient model?	SF	MF	SF-LI	SF-NLI	MF-LI	MF-NLI
Extremely likely	51%	48%	45%	55%	41%	56%
Very likely	27%	23%	32%	23%	22%	25%
Moderately likely	14%	19%	14%	15%	24%	13%
Slightly likely	4%	2%	1%	5%	1%	3%
Not at all likely	4%	8%	6%	3%	12%	4%
Total	**194**	**151**	**77**	**117**	**74**	**77**

PREPARED BY GDS ASSOCIATES, INC.

2023-2024 ILLINOIS BASELINE STUDY

AMEREN ILLINOIS, COMMONWEALTH EDISON, AND NICOR GAS

Residential Baseline Results

FINAL October 31, 2024

GDS Associates, Inc. ENGINEERS & CONSULTANTS

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