




NEW HAMPSHIRE RESIDENTIAL BASELINE STUDY

Submitted to:
New Hampshire Evaluation, Measurement and Verification Working Group

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EXECUTIVE SUMMARY

This report presents the results of a residential energy efficiency baseline study conducted by Itron for the New Hampshire Evaluation, Measurement, and Verification Working Group as part of a team led by Dunsky Energy Consulting (Dunsky). The study was designed to characterize the energy-using equipment present in New Hampshire homes (including their efficiency and age) and assess the extent to which these equipment baselines differ from those in neighboring jurisdictions where similar studies have been conducted.

The data developed for this study were collected using a mobile-optimized web survey that was fielded in December 2019 through January 2020. The survey targeted a stratified random sample of residential customers across all electric and gas utility service territories in New Hampshire – Eversource, Unitil, Liberty, and New Hampshire Electric Cooperative. While we have attempted to present a comprehensive set of results in this report, it should be noted that these results are only a subset of the possible analyses that can be done using the large volume of primary data collected for this study. To this end, Itron's deliverables include the full primary data set so that other analyses can be explored by the sponsors post-project. That said, there are several high-level themes that emerge from the detailed results presented in the main body of this report, which we summarize below.

Homes in northern New Hampshire are different from those in the southern part of the state

While this finding may be intuitive, the results of this study provide some quantitative metrics of exactly how and to what extent homes differ between New Hampshire's northern climate zone (CZ6) and southern climate zone (CZ5). Among the key differences are the following:

- Homes in north are ~12% smaller on average in terms of average floor area
- A larger portion of homes in the north have had insulation, ventilation, and envelope sealing work completed in the last 5 years compared to homes in the south
- A larger portion of homes in the north use of boilers for space heating compared to homes in the south (37% vs. 30%)
- A significantly higher share of residential furnaces and boilers in the north use delivered fuels (i.e. fuel oil and propane) than those in the south (75% vs. 63%)
- While the mix of water heating technologies is quite similar, the use of gas for water heating is much higher in the south compared to the north (22% vs. 6%)
- The share of homes with central cooling is significantly higher in homes in the south compared to homes in the north (27% vs. 9%)

Taken together, the findings summarized above indicate that HVAC programs need to be cognizant of these fundamental differences and explore ways to appropriately customize HVAC efficiency offers and program marketing to the northern and southern markets.

Multifamily and low-income homes are different than single family and non-low-income homes

Again, while this finding may be intuitive, the results of this study provide several specific quantitative metrics of exactly how and to what extent multi-family (MF) and low-income (LI) homes differ from their single family (SF) and non-low-income (non-LI) counterparts. Among the key differences are the following:

- MF and LI homes are ~25% smaller on average compared to SF and non-LI homes, respectively
- The share of renters in MF homes is 3x higher compared to the share of renters in SF homes and 2x higher in LI homes compared to non-LI homes
- The share of MF and LI homes with predominantly single-pane windows is 2x higher than in SF and non-LI homes
- MF and LI homes have significantly higher shares of electric baseboard heating compared to SF and non-LI homes (16% and 12% vs. 6% and 6%, respectively)
- The use of electricity for water heating is much higher in MF and LI homes despite a similar mix of water heating technologies compared to SF and non-LI homes (48% and 49% vs. 31% and 28%, respectively)
- The saturation of central cooling is significantly lower in MF homes compared to SF homes (14% vs. 21%) and LI homes compared to non-LI homes (8% vs. 24%)
- Conversely, the ownership of room air conditioners is significantly higher in MF and LI homes compared to SF and non-LI homes (27% and 23% vs. 19% and 19%, respectively)
- The saturation of major appliances is consistently lower in MF and LI homes compared to SF and non-LI homes – particularly second refrigerators and dishwashers

These results indicate that the energy efficiency opportunities and barriers in MF and LI homes are fundamentally different than those in SF and non-LI homes and in turn provide a quantitative basis to further customize and optimize programs targeting MF and LI homes in New Hampshire.

Interior lighting has shifted rapidly towards LEDs across all residential segments

The saturation of LED lamps in New Hampshire homes is estimated to be just over 50% – which is a large change from the saturation of LED lamps estimated in New Hampshire's 2009 baseline study (<1%). This

result indicates that the residential lighting market has undergone a rapid transformation away from both incandescents and CFLs towards LEDs. Despite significant differences across segments in the number of sockets per home, the relative share of LEDs in homes is remarkably consistent. This result indicates that the shift to LEDs has been comprehensive across the entire residential market – a finding that is further highlighted when examining the relative share of LEDs by lamp shape.

While this result is based on self-reported data (rather than nameplate data) and therefore subject to self-report bias, this result starts to look more reasonable when taken in the context of recent estimates from other jurisdictions and trends in the larger LED market. First, LED prices have declined significantly over the past decade – to the point that LED general service lamps now average close to $3 (Apex Analytics, 2019).[1] At the same time, consumer acceptance of LEDs has been high – particularly when compared to CFLs (Kelly and Rosenberg, 2016).[2] Together with utility rebates and marketing campaigns, these forces have combined to help drive rapid growth in LED adoption across the country. In the Northeast, the annual residential lighting market assessments sponsored by the Program Administrators in Massachusetts estimate that LED saturation there has grown from 18% in 2017, to 27% in 2018, to 34% in 2019 (NMR, 2019).[3] If this trend continues (as expected), the saturation of LEDs in Massachusetts will likely exceed 40% in 2020. In this sense, the results of this study are less surprising when viewed against the backdrop of trends in the larger LED market.

It is also worth considering the LED results in the context of the different histories residential lighting programs across the region, particularly with respect to CFLs. In particular, Massachusetts has one of the longest-running residential lighting programs in the nation and aggressively pushed CFLs beginning in the last 1990s and into the mid-2010s – achieving one of the highest CFL socket saturation rates in the country (33%) by 2014. In contrast, New Hampshire had a shorter history with residential CFL programs, with CFLs being offered only through NHSaves starting in the late 2000s (and then limited to only downstream programs until the mid-2010s). Because of the relatively long useful life of CFLs compared to incandescents and halogen (4-6 years compared to 1-2 years), it is reasonable to infer that the number of annual replace-on-burnout opportunities (on a per-home basis) were more limited in Massachusetts compared to New Hampshire by the time that LEDs became the preferred high-efficiency lighting technology for residential programs in the late 2010s. In this sense, it is perhaps more appropriate to compare the combined saturation of "efficient lighting" (i.e. LEDs and CFLs) in aggregate to take these program histories and stock-turnover dynamics into account. Indeed, as Table 4-1 shows, the combined

[1] https://neea.org/img/documents/Results-of-the-2018-Northwest-Residential-Lighting-Long-term-Montioring-and-Tracking-Study_190820_160415.pdf

[2] https://www.aceee.org/files/proceedings/2016/data/papers/7_703.pdf

[3] http://ma-eeac.org/wordpress/wp-content/uploads/RLPNC_1810_LtgMarketAssessment_FINAL_2019.03.29.pdf

saturation of LEDs and CFLs in Massachusetts and New Hampshire are more similar (57% and 62%, respectively) than when comparing only LED saturation (52% and 34%, respectively).

The residential heat pump market in New Hampshire is still in development

The results of our survey indicate that the saturation of heat pumps in New Hampshire's residential sector is now just over 2% statewide. This result is roughly twice the saturation estimated New Hampshire's 2009 baseline study, which indicates that the market for heat pumps among New Hampshire's residential customers has grown over the last decade but only slowly. Indeed, the survey results also indicate that only a small portion of customers in New Hampshire would strongly consider switching from oil/gas heat to heat pumps in the future, primarily due to concerns about cost-effectiveness (and secondarily performance and feasibility). However, the vintage data for furnaces and boilers indicate that a significant share of those systems are more than 20 years old, which should present a steady stream of opportunities in the near-term to replace those systems with heat pumps as these older boilers and furnaces are retired.

1 INTRODUCTION

The New Hampshire Evaluation, Measurement, and Verification Working Group contracted with a team lead by Dunsky Energy Consulting to conduct energy efficiency baseline studies and quantify remaining energy efficiency potential in New Hampshire that can be realized during the 2021-2023 period. As part of the Dunsky team, Itron was responsible for the residential baseline portion of the overall study scope, including primary data collection and analysis.

The primary research questions that Itron's baseline research and analysis were designed to answer (as stated in the Request for Proposals) were:

- What energy-using equipment is present in New Hampshire homes, and what is the efficiency and age of that equipment?
- To what extent does this differ from neighboring jurisdictions where on-site studies have been done?

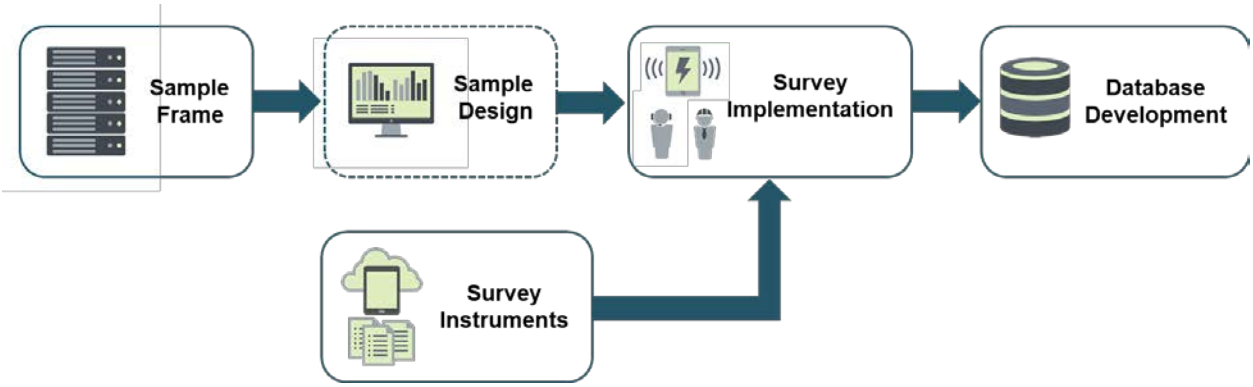
This report presents the methods and results of Itron's residential baseline research. The modeling and analysis of remaining energy efficiency potential are presented in separate report authored by Dunsky. The remainder of this report is organized as follows:

- Section 2: Overview of Data Collection Approach
- Section 3: Detailed Baseline Results
- Section 4: Regional Comparisons
- Appendix A: Final Survey Instrument
- Appendix B: Final Expansion Weights
- Appendix C: Detailed Results Tables

2 OVERVIEW OF DATA COLLECTION APPROACH

This section provides a high-level overview of the primary data collection approach used for this study. When conducting any type of primary data collection to establish statistically representative estimates of baseline end-use equipment ownership and efficiency, there are five key steps that are common no matter what specific survey mode or approach is used, as illustrated in Figure 2-1 below.

FIGURE 2-1: OVERVIEW OF KEY STEPS IN CONDUCTING DATA COLLECTION SURVEYS



Our primary data collection for this engagement followed these same core steps. The remainder of this chapter documents the specific activities and outcomes of each step in the overall primary data collection effort conducted for this study.

2.1 SAMPLE FRAME DEVELOPMENT

In order to develop the sample frame for this survey, we requested specific extracts of each sponsor utility's billing and customer information system (CIS). These data formed the basis for the population frame – i.e. a comprehensive database of all current utility customer accounts in New Hampshire.

Once the population frame had been constructed, we then applied a data attrition process, the goal of which is to ensure that our survey recruitment efforts are focused on: 1) unique, active residential accounts with complete 2018 and 2019 billing histories; and 2) accounts with complete service addresses. In other words, data attrition seeks to eliminate or minimize the possibility that we recruit inactive accounts, duplicate accounts, nonresidential accounts, or accounts with incomplete or undeliverable addresses. We reviewed the results of each of these steps with the sponsor utilities to ensure that the outcomes of the data attrition process were consistent with their own understanding of their customer bases and limited any potential biasing. The specific data attrition steps that we applied were:

- **Separating residential accounts from nonresidential accounts**. For this step, we leveraged each sponsor utilities rate codes and/or sector flags that were available in their CIS or billing data. Nonresidential accounts were removed from the sample frame.

- **Billing analysis to identify inactive accounts**. Inactive accounts were identified as those with less than 1 kWh/month during the summer and winter months. Inactive accounts were removed from the sample frame.

- **Billing analysis to identify accounts with negative bills**. Accounts with negative bills in any month are an indicator of customers with behind-the-meter solar and/or accounts with large bill corrections or credits. Including such accounts in the sample frame can introduce complications associated with weighting and correctly dividing the population into High-Medium-Low consumption segments. To avoid these complications, accounts with negative bills in any month were removed from the sample frame.

- **Address analysis to identify accounts with incomplete/undeliverable service addresses.** Since the front end of our survey involves mailing postcards to customers' homes (i.e. where they receive service), we used fuzzy logic algorithms to identify and remove accounts with incomplete or otherwise undeliverable service addresses.

- **Address matching across utilities to identify unique customers**. The objective of this step was to use customer service address to identify customers who receive electric service from one company and gas service from another company – so that we avoid mailing multiple postcards to the same customer and/or pay multiple participation incentives to the same customer. This step was effort-intensive due to significant differences in the quality and format of each sponsor utility's customer address data, which required extensive data cleaning and harmonization. We then developed and applied fuzzy logic to identify common service addresses across utilities. We supplemented this address matching with phone-number matching.[1]

[1] The fuzzy logic was successful in matching 90+% of gas accounts to unique electric accounts. However, we were unable to identify matching electric accounts for ~10,000 gas accounts. After discussions with Liberty and Unitil, we agreed that there are no true "gas only" customers in New Hampshire, and the unmatched gas accounts are most likely an artifact of the differences in utility CIS data. Although we removed these unmatched gas accounts from the sample frame, we believe that all of those customers do indeed receive electric service and are therefore adequately represented in the sample frame.

Table 2-1 below summarizes the results of the data attrition process and the resulting sample frame.

TABLE 2-1: DATA ATTRITION SUMMARY

Utility	Total Accounts		Have Gas Service		Robust Home Type	1 Year of Billing Data	Negative Bills	Sample Frame
Eversource	456,595	72%	83,713	18%	271,688	267,663	4,594	186,969
Liberty	38,178	6%	1,031	3%	38,178	33,412	337	33,409
NHEC	70,301	11%	12	0%	70,301	68,157	47	57,862
Unitil	65,350	10%	22,492	34%	65,350	28,662	810	27,923
Total	630,424	-	107,248	17%	445,517	397,894	5,788	306,163

2.2 SAMPLE DESIGN

With this sample frame in place, we then developed flags for each sampling variable of interest to the study sponsors, i.e. building type, low income, climate zone, and High-Medium-Low consumption. The specific steps that were taken to develop these flags were:

- **Address analysis to identify building type**. For Eversource and Unitil, the CIS data provided to Itron included flags that identified residential accounts as either single family (SF) or multi-family (MF) homes.[2] For Liberty and NHEC, such flags were not available in their CIS data, so we developed and implemented a fuzzy logic algorithm to identify SF and MF homes based on service address. *This algorithm specifically categorized addresses with apartment/unit numbers and addresses shared between more than four accounts as multi-family buildings.*

- **Low income rate flags**. Each sponsor utility provided flags for accounts that receive service on low-income assistance rates (known as Energy Assistance Program or EAP). We used these flags to identify low income customers.

- **Zip code mapping for climate zone**. To account for differences in climate between the northern and southern part of New Hampshire, we mapped service address to climate zones based on a zip code and county. All accounts in the sample frame were mapped to either climate zone 5 (south) or climate zone 6 (north).

- **Billing analysis to develop High-Medium-Low consumption segments for each utility**. In order to ensure that our sampling is well-balanced between high-consuming and low-consuming customers, we developed flags for High, Medium, and Low consumption for each customer in the sample frame using billing data. For each sponsor utility, residential customers were first rank ordered from highest to lowest consumption. The top third of customers were given a

[2] Eversource's building type flags were developed from Experian data, not through their CIS system.

"High" consumption flag, the next third were given a "Medium" consumption flag, and the bottom third were given a "Low" consumption flag.

Table 2-2 below summarizes how the sample frame breaks downs according to the sample variables described above.

TABLE 2-2: SAMPLE FRAME SUMMARY

Utility	Sample Frame	Building Type			EAP	% EAP	Climate Zone		
		SF	MF	% SF			5	6	% CZ5
Eversource	186,969	167,207	19,762	89%	6,295	3%	143,861	43,108	77%
Liberty	33,409	22,746	10,663	68%	1,067	3%	19,444	13,965	58%
NHEC	57,862	56,917	945	98%	2,263	4%	10,260	47,602	18%
Unitil	27,923	22,978	4,945	82%	2,187	8%	16,948	10,975	61%
Total	306,163	269,848	36,315	88%	11,812	4%	190,513	115,650	62%

The final step was to allocate the total number of completes scoped for this survey (1,000) across each survey stratum. To do this, we began with a proportional allocation approach where each stratum was assigned a share of completes that was proportional to the share of *electric* customers in that stratum compared to the total sample frame. At the request of the study sponsors, we then strategically over-allocated the target number of completes for specific, under-populated strata (e.g. MF and EAP) in order to maximize the possibility of being able to develop estimates at the 90/10 precision level for as many individual strata as possible.[3] To enable these strategic over-allocations, the total sample size for the Eversource-SF cohort was reduced from its true population share. However, this reduced sample size (455) is still more than adequate to support 90/10 precision estimates for Eversource across a variety of possible segmentations.

TABLE 2-3: FINAL SAMPLE DESIGN

Utility	Sample Allocation	Building Type			EAP	% EAP	Climate Zone			Gas	% Gas
		SF	MF	% SF			5	6	% CZ5		
Eversource	523	455	68	87%	59	11%	412	111	66%	96	18%
Liberty	136	68	68	50%	5	4%	68	68	85%	0	0%
NHEC	150	147	3	98%	30	20%	68	82	45%	0	0%
Unitil	191	123	68	64%	30	16%	123	68	82%	96	50%
Total	1,000	793	207	79%	124	12%	671	329	67%	192	19%

[3] For a population the size of New Hampshire, the minimum sample size needed to support 90/10 precision is 68.

2.3 MULTI-MODAL SURVEY DESIGN

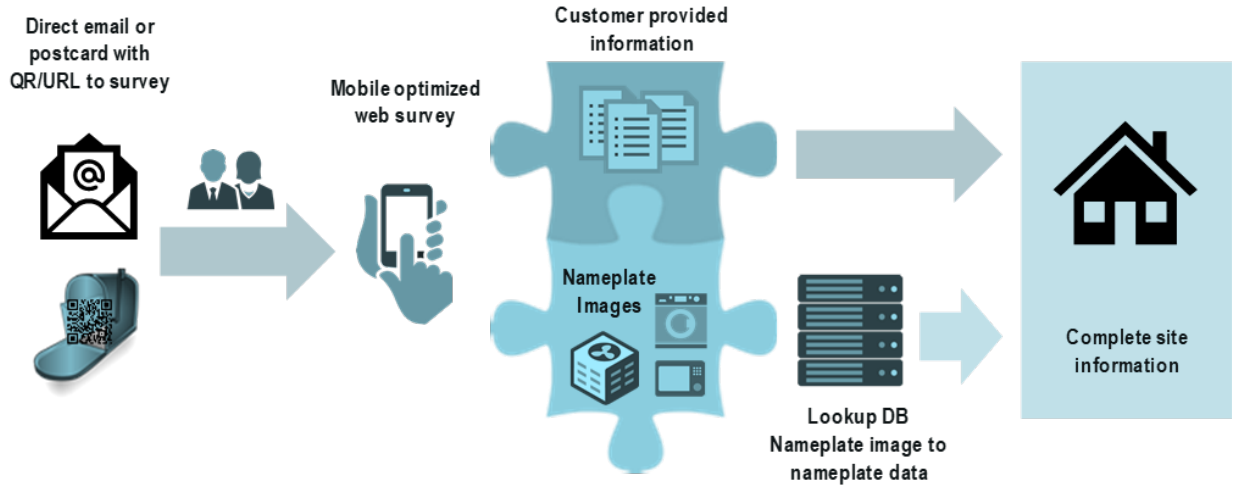
The overall survey design used for this study was a multi-modal approach that featured two main components: 1) using mass mailings of postcards to recruit customers into a web survey; and 2) optimizing the web survey for mobile devices.

The first aspect is designed to address the fact that most utilities have incomplete email addresses for their customers. In our approach, customers are mailed postcards that advertise the opportunity to participate in the survey in exchange for a $25 gift card to a popular retail chain (e.g., Amazon). The postcards include the survey URL and the logo of each of the survey sponsors. To launch the web survey, customers entered a unique identification code supplied on the postcard.

The second aspect – optimization for mobile devices – is what enables our approach to generate "on-site quality" baseline information at the cost and scale of telephone surveys. Optimizing for mobile allows the web survey to leverage device mobility (to conduct guided, room-by-room lighting inventories, for example) and take direct advantage of the technologies that are standard on today's mobile devices, including cameras for taking photos and location services.

As shown in Figure 2-2 below, this approach allows our mobile-optimized web surveys to be designed to use "self-report" style questions only for information that customers know with a high degree of accuracy (e.g. number of occupants, home size, rent vs. own, etc.). To collect detailed equipment characteristics, participants are asked to take and upload photos of the nameplate on each major piece of end-use equipment, i.e. the metal badge or sticker that contains the equipment's make and model number. Itron then uses image recognition to extract the make/model number from each nameplate image and then cross-references those make/model numbers against an extensive database of make/model-level equipment performance data to append model-specific information on rated annual consumption, rated efficiency, rated capacity, and other key performance parameters. Itron also uses the geotag data in each photo to verify that each photo was taken at the customer's actual service address.

FIGURE 2-2: MULTI-MODAL SURVEY DESIGN



For this study, we used a mobile-optimized web survey instrument previously developed by Itron in close collaboration with Survox, Inc. (now part of Enghouse Interactive). The questions in the survey were customized to collect all the data necessary to characterize end-use baselines for each in-scope technology, as defined in the Final Measure List approved by the study sponsors. Additionally, the web survey instrument was skinned with NHSaves logos and color schemes (per NHSaves' branding guidelines) and linked to a NHSaves-hosted vanity URL (with a re-direct Survox's production URL), so that participants had a fully NHSaves-branded experience. The instrument also allowed participants to pause and resume the survey on demand.

Due to the length and complexity of the web survey, we pre-tested the survey with a group of 32 staff from the study sponsors, as well as the contractor team – some of whom were directly involved in the project and some of whom were not. We collected feedback from each pre-tester, which then drove refinements in the survey's skip patterns, question order, question wording, photo-taking and uploading functionality, pause and resume functionality, and overall survey length and flow. An MS Word version of final web survey instrument provided in Appendix A.

2.4 SURVEY IMPLEMENTATION

Once the sample design, survey instrument, and postcard design were finalized, we then printed and mailed 48,000 postcards in December 2019 and early January 2020 to customers randomly selected within each sample stratum. As customers completed the web survey, we processed the survey responses on a daily basis in order to: 1) determine eligibility for and issue participation incentives, and 2) process

customer-provided equipment nameplate images. To determine eligibility for participation incentives, we first used geotagged data to validate that the survey was completed at a given customer's service address. All participants that completed the entire survey and passed this location validation step were then emailed their participation incentives in the form of a unique Amazon.com gift card redemption code.

2.5 FINAL SURVEY DISPOSITION

Table 2-4 shows the final disposition of the web survey by survey stratum. As the table shows, the 48,000 postcard mailers resulted in 889 fully completed surveys – for an overall completion rate of roughly 2%.

TABLE 2-4: FINAL WEB SURVEY DISPOSITION (FULL COMPLETES)

Utility	Total	House Type		EAP (subset)	Climate Zone		Gas (subset)
		SF	MF		5	6	
Eversource	487	428	59	52	396	91	86
Liberty	125	62	63	2	61	64	1
NHEC	138	136	2	27	68	70	0
Unitil	139	117	22	24	88	51	74
Total Statewide	889	743	146	105	613	276	161

It is important to note, however, that many customers clicked into the survey, began answering questions and submitting nameplate photos, but never completed the survey in its entirety. One of the key features of web surveys (in comparison to telephone and mail-based surveys) is that we are able to capture a significant amount of data from partially completed surveys. Table 2-5 shows the final disposition of "partial completes" captured for this study. When the data in Table 2-4 and Table 2-5 are considered in aggregate, the total "click-in" rate for the survey was just over 4%.

TABLE 2-5: FINAL WEB SURVEY DISPOSITION (PARTIAL COMPLETES)

Utility	Total	House Type		EAP (subset)	Climate Zone		Gas (subset)
		SF	MF		5	6	
Eversource	712	645	67	34	572	140	133
Liberty	178	109	69	4	122	56	2
NHEC	177	175	2	23	97	80	0
Unitil	172	131	41	29	111	61	87
Total Statewide	1,239	1,060	179	90	902	337	222

These partially completed surveys effectively increase the size of the analytic data sets beyond those represented by the full completes shown in Table 2-4, particularly for the question batteries in the beginning of the survey (i.e. building characteristics, HVAC, water heating, and laundry appliances). Conversely, these partially completed surveys do not significantly impact the sample sizes for question batteries towards the end of the survey (lighting, room HVAC, water fixtures, electronics, and propensity for demand response and fuel-switching).

Table 2-6 shows the final disposition of the nameplate images collected through the web survey. As the table shows, just over 4,000 nameplate images were submitted by survey participants, and we were able to match 65% of those nameplate images to unique make/model in our lookup library. Note that this overall match rate includes images that were unusable for purposes of identifying the unit's model number. Unusable images generally fell into three categories: overly blurry images, nameplates that were illegible due to wear/age, and images that were not of the unit's nameplate (often just the brand badge on the front of the unit). Within just usable images, we were able to match 81% of those images to unique make/model numbers in our lookup library.

TABLE 2-6: FINAL NAMEPLATE IMAGE DISPOSITION

End-Use Technology	Nameplate Images Submitted	Nameplate Images Matched	% Submitted Nameplate Images Matched	% Usable Nameplate Images Matched
Central AC & Heat Pumps	113	84	74%	83%
Furnaces	277	89	32%	100%
Boilers	322	261	77%	100%
Water Heaters	539	249	46%	100%
Refrigerators	820	589	72%	77%
Freezers	71	48	68%	77%
Dishwashers	537	393	73%	83%
Clothes Washers	606	466	77%	86%
Clothes Dryers	604	372	62%	66%
Room AC	79	36	46%	55%
Dehumidifiers	77	50	65%	72%
Total	**4,062**	**2,637**	**65%**	**81%**

As can be expected, not all participants provided nameplate images – either at all or for specific types of equipment.[4] In anticipation of this outcome, the survey included batteries of questions on self-reported equipment age, physical size, and product features. We used these self-reported data to impute rated equipment efficiency for these customers using a technique called "hot deck imputation". This technique involves using the characteristics from equipment of similar age (i.e. rated efficiency) to populate the missing equipment characteristics for customers that did not provide nameplate images. This approach helps to mitigate bias in key summary statistics of interest such as weighted averages.

Table 2-7 shows the number of equipment-specific efficiency records that were imputed in this manner, and the resulting size of the final equipment-level efficiency dataset that we were able to develop from the survey (over 4,400 records).

TABLE 2-7: FINAL EQUIPMENT-LEVEL ENERGY EFFICIENCY DATASET

End-Use Technology	Nameplate Images Matched	No Nameplate Image Submitted, Imputed from similar vintage	Total EE Records (matched + imputed)
Central AC & Heat Pumps	84	213	297
Furnaces	89	167	256
Boilers	261	103	364
Water Heaters	249	211	460
Refrigerators	589	209	798
Freezers	48	86	134
Dishwashers	393	163	556
Clothes Washers	466	270	736
Clothes Dryers	372	209	581
Room AC	36	161	197
Dehumidifiers	50	55	105
Total	**2,637**	**1,792**	**4,484**

[4] Participants that did not submit nameplate images were asked to provide the main reason for not doing so. The most frequent reasons given were inability to access the unit (e.g. AC compressors located on a roof or behind a locked gate) or inability to locate the nameplate on the unit.

2.6 WEIGHTING

The raw survey results were then weighted according to the number of respondents in a given sample stratum relative to the number of premises in that stratum in the population in order to develop final estimates at the segment and population level. This approach is sometimes referred to as "site weighting".

The project sponsors also wanted to ensure that our results were aligned with statewide estimates available from the US Census Bureau's American Communities Survey (ACS) for two specific demographic variables: 1) the share of renters and 2) the share of low-income (LI) customers. For low income, recall from section 2.2 that our low-income population flags reflect customers currently enrolled on EAP rates. Because not all customers that are eligible for EAP rates are enrolled, the population of EAP enrollees underestimates the true population of income-eligible customers. However, the survey included a question on household income that was designed to identify income-eligible households.[5] These self-reported income data allowed us to design and implement a two-step process to ensure that our weighted results were consistent with ACS estimates of the share of low-income customers in New Hampshire. First, we assigned all self-reported LI customers not on EAP rates into a set of redefined LI strata (such that LI = EAP + non-EAP self-reported LI) and adjusted the expansion weights for both the redefined LI strata (upward) and the original, non-LI strata (downward) so that total expanded population numbers remain the same but LI vs. non-LI share aligns with ACS aggregate estimate. Second, we examined the rent vs. own share after the LI-adjustments above and then adjusted the expansion weights for self-reported renters such that overall expanded rent vs. own share aligned with ACS aggregate estimate.

The project sponsors also sought to ensure that the final survey sample did not include a disproportionately high share of past program participants compared to non-participants, which could bias the results towards a more efficient baseline. We investigated this potential bias using program participation data from Eversource from 2016 through 2019 but found that the overall share of past program participants in the survey was very close to the overall share of program participants in the Eversource customer population (8% vs. 7%). Since Eversource accounts for well over half of all electric customers in New Hampshire, we concluded that re-weighting the results to further align the share of program participants vs. non-participants in the survey with those shares in the population would have no material benefit for the study.

[5] Since eligibility for EAP rates in New Hampshire depends on household size (e.g. number of occupants), this question was coded to use the previous response on household occupancy to determine the income ranges shown in the available responses. This allowed the available responses to be directly aligned with customer specific EAP eligibility thresholds.

Finally, due to the nature of the web survey designed for this study, we were able to record responses from participants that completed the entire survey as well as from participants that only completed a portion of the survey. As such, we developed separate weights for each section of the survey. The complete set of weights that we used to expand the results from each sample stratum and each survey section are provided in Appendix B.

3 DETAILED BASELINE RESULTS

In this section, we present the detailed results of our residential data collection. We start with reviewing some high-level housing characteristics and then present results for each of the major residential end-uses by segment. Complete results in tabulated form are provided in Appendix C.

Please note that in all the figures shown in this section, an asterisk in the column label indicates a result that has less than 90/10 precision and should be interpreted with appropriate caution. Conversely, all results shown without an asterisk meet or exceed the 90/10 precision threshold.

It is also important to note that the results shown for Liberty and Unitil customers represent the results for those companies' *electric* customers, as our sample frame was based on the electric customer population in New Hampshire (since only a subset of customers in New Hampshire receive gas service). Conversely, the results for Liberty and Unitil's gas-only customers are subsumed within the results for their respective electricity providers (i.e. Eversource and NHEC). In this respect, the utility-specific results for electric end uses can be interpreted literally, while the utility-specific results for gas end uses should interpreted with the knowledge that the results for Eversource and NHEC (who are electric service providers) include customers who receive gas service from Liberty or Unitil. To facilitate more direct comparisons of results between customers that receive gas service and those that do not, we show "gas" versus "non-gas" comparisons throughout this section where appropriate.

Finally, note that we use the terms "saturation" and "penetration" throughout this report. Saturation refers to the percentage of homes with a specific technology, whereas penetration refers to the percentage of homes with one or more of a specific technology. For end uses where customers typically only have one type of system per home (e.g. water heating), these terms are interchangeable. For end uses such as lighting where customer can have multiple types of technologies per home, however, these terms are not interchangeable and have very different meanings. For example, the saturation of CFLs refers the percentage of lighting sockets occupied by CFLs, whereas the penetration of CFLs refers to the percentage of homes that have at least one CFL installed.

3.1 HOME CHARACTERISTICS

Figure 3-1 and Figure 3-2 show the average size of homes (in square feet) in New Hampshire for each major residential customer segment we analyzed. As the figures show, the average size of single-family (SF) homes is significantly higher than the average size of multi-family (MF) homes – 1,815 ft^2 vs. 1,335 ft^2, respectively. Similarly, the average size of non-low income-eligible (non-LI) homes is significantly higher than the average size of low-income-eligible (LI) homes (1,827 ft2 versus 1,322 ft2, respectively).

Another key take-away from Figure 3-1 and Figure 3-2 is that homes in the northern climate zone (CZ6) are ~12% smaller on average than homes in the southern climate zone (CZ5).

FIGURE 3-1: AVERAGE HOME SIZE – STATEWIDE AGGREGATES

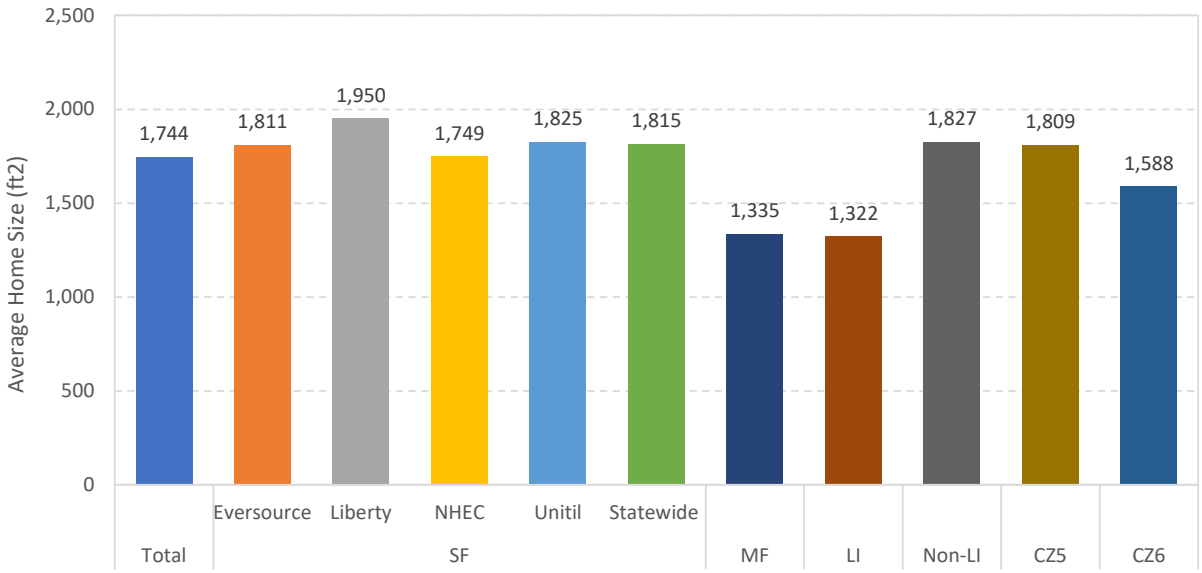


FIGURE 3-2: AVERAGE HOME SIZE – STATEWIDE AGGREGATES BY BUILDING TYPE

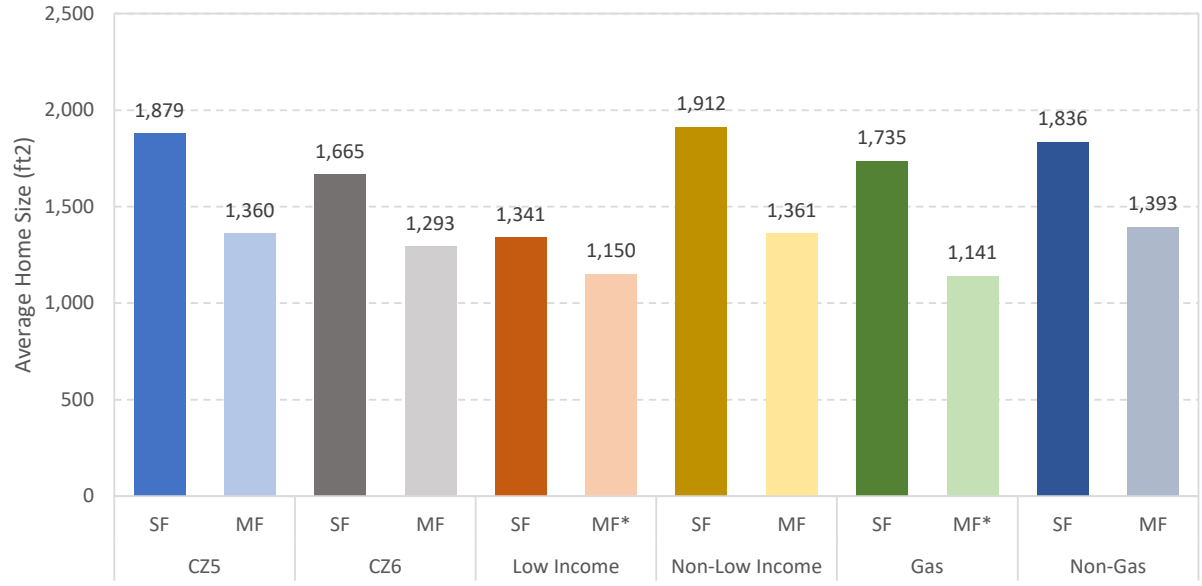


Figure 3-3 and Figure 3-4 present the relative shares of homeowners versus renters by segment. As the figures show, home ownership hovers roughly between 70% and 80% across customer segments, with the exception of MF homes and LI homes, where homeownership is significantly lower (27% and 54%, respectively).

FIGURE 3-3: SHARES OF HOME OWNERSHIP – STATEWIDE AGGREGATES

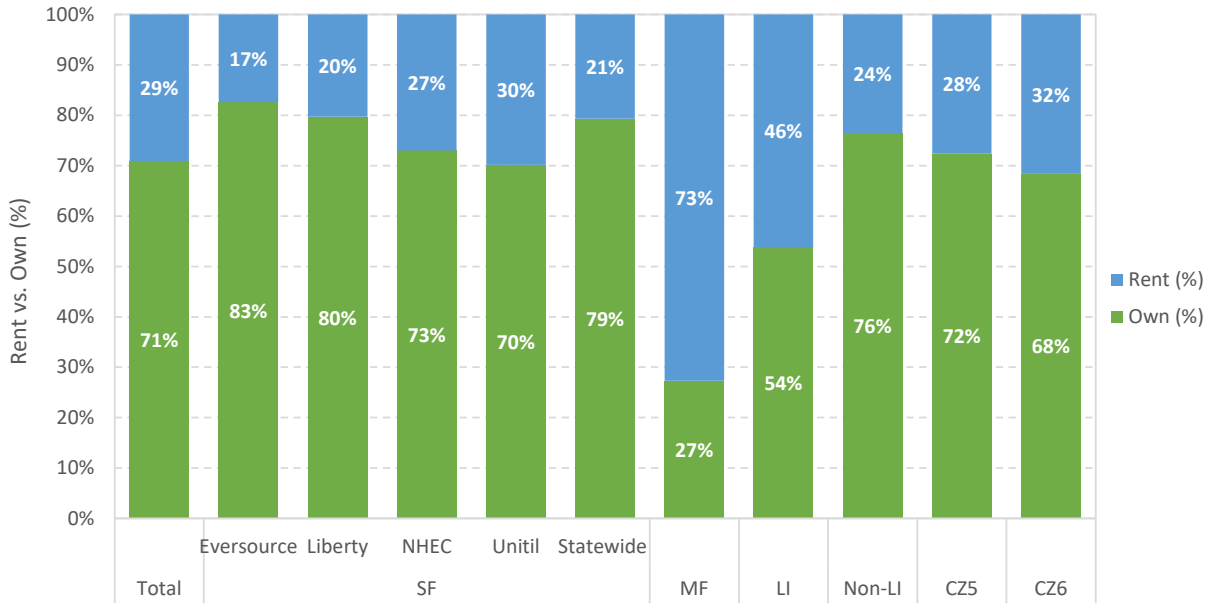


FIGURE 3-4: SHARES OF HOME OWNERSHIP – STATEWIDE AGGREGATES BY BUILDING TYPE

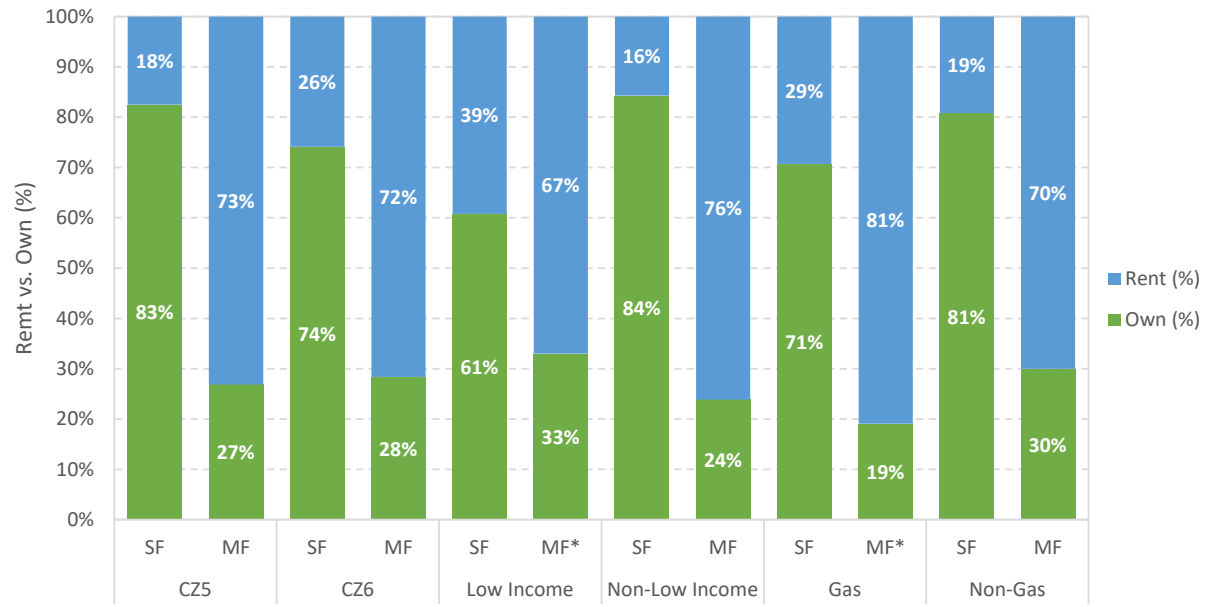
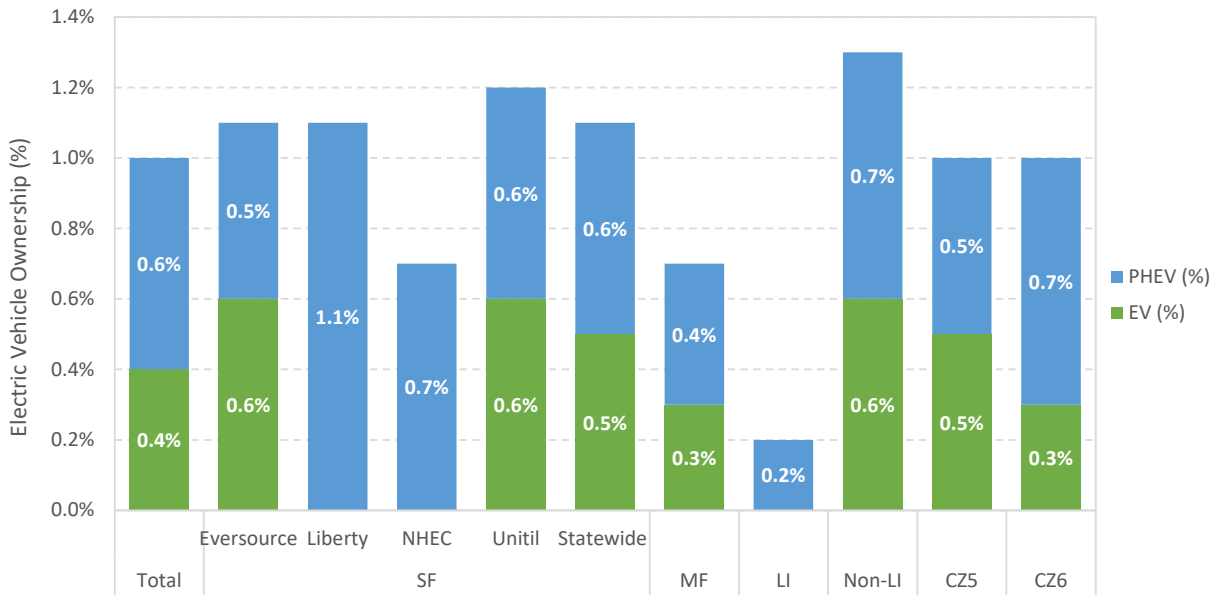


Figure 3-5 below shows the penetration of plug-in electric vehicles (PHEV) and all-electric vehicles (EV) owned by residential customers in New Hampshire. Overall, ownership of PHEV and EV among New Hampshire's residential customers is still low – 1% of all households statewide. As might be expected, EV ownership is higher in single-family homes compared to multi-family homes and low-income homes. Across utility service territories, residential EV ownership is highest among Eversource customers, with zero reported EV ownership among Liberty and NHEC customers. Given the largely rural nature of NHEC's service territory, this result is not surprising, as the limited range of EVs likely presents a major barrier to adoption for those customers. The result for Liberty, however, should be interpreted with caution, as Liberty's service territory includes several urban areas (e.g. Salem) where EV range is much less of a barrier to adoption.

FIGURE 3-5: ELECTRIC VEHICLE PENETRATION – STATEWIDE AGGREGATES



3.2 BUILDING ENVELOPE

A key limitation of our multi-modal survey approach is related to collecting high-quality data on building envelope. Most customers, even homeowners, do not know the R-values of their insulation. Moreover, the presence and thickness of insulation are difficult to observe directly, and we believe it is unreasonable to ask survey participants to climb into their attics, drill holes in their walls, wiggle into crawl spaces, and otherwise directly observe the presence of insulation in their homes.[6] As such, we limited the web survey

[6] These barriers are also present and largely insurmountable when conducting on-site surveys. The one exception is attic insulation, which on-site surveyors can often readily observe, assuming attic access is a non-issue.

to asking about building envelope characteristics that customers know with a reasonable degree of certainty or can otherwise observe readily. Specifically, these characteristics were: 1) the prevailing window type at their home, and 2) whether (and what kind of) major insulation work has been conducted at their home in the last 5 years.

Figure 3-6 and Figure 3-7 show that the majority of homes have all or mostly double-pane windows. However, it is notable that nearly a quarter of all homes in New Hampshire still have all or mostly single-pane windows, and over 40% of MF and LI homes have all or mostly single-pane windows.

FIGURE 3-6: PREVAILING WINDOW TYPE – STATEWIDE AGGREGATES

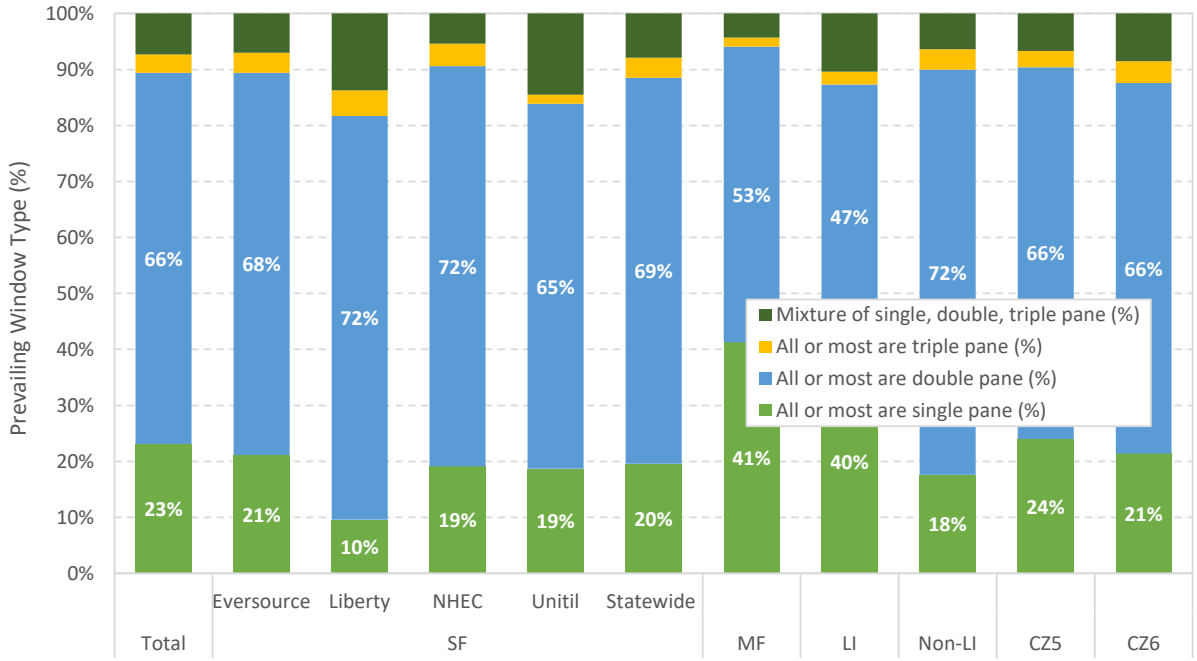


FIGURE 3-7: PREVAILING WINDOW TYPE – STATEWIDE AGGREGATES BY BUILDING TYPE

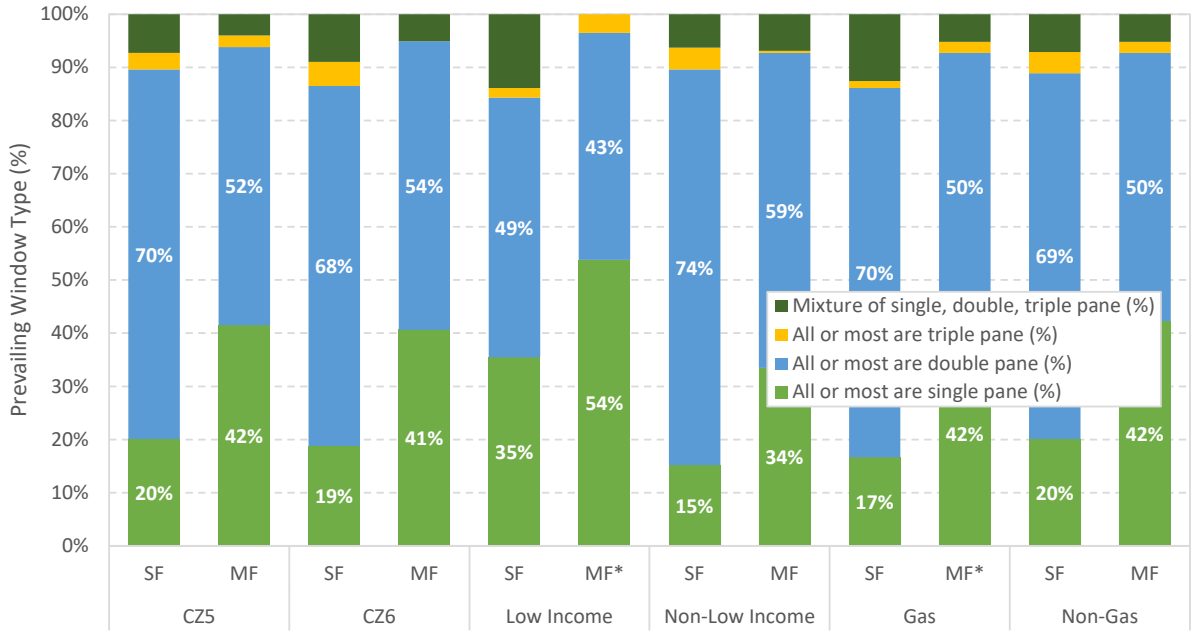
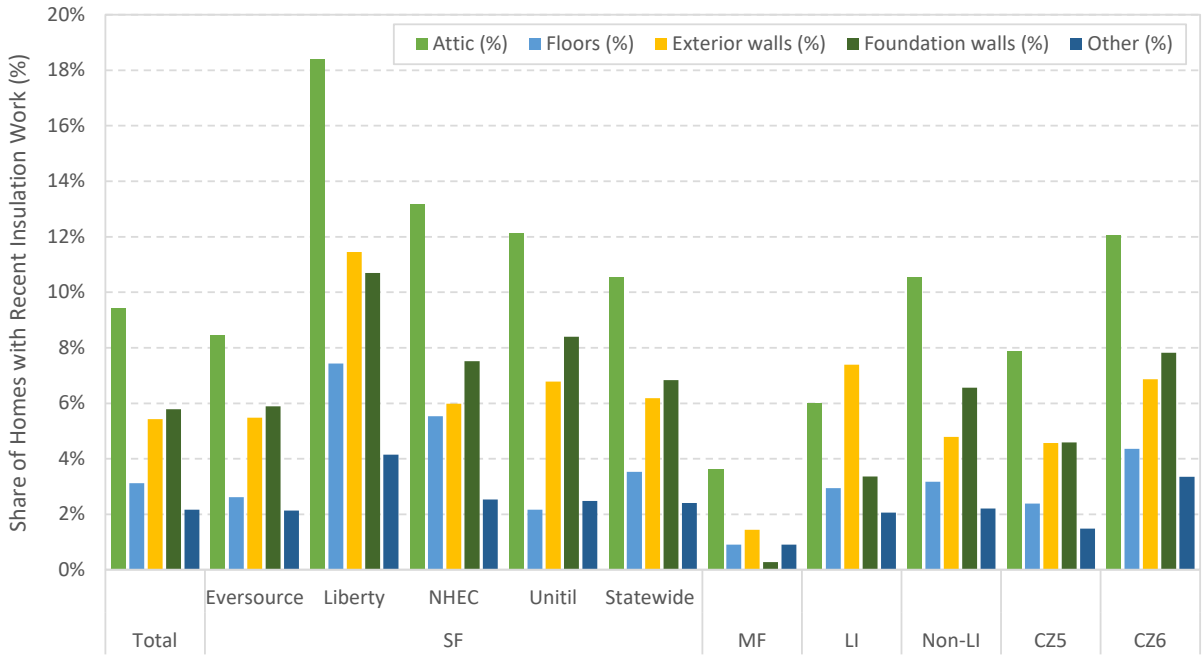


Figure 3-8 shows the share of homes that have recently had insulation work completed (by type of insulation). As the figure shows, the frequency of attic insulation interventions is significantly higher than any other type of insulation intervention. This makes intuitive sense from the perspective of feasibility and cost. Attic insulation retrofits are relatively inexpensive and tend to be feasible do-it-yourself projects, whereas floor and wall insulation retrofits are major efforts that are costly, disruptive, and often bundled with larger home renovation projects. That said, it should be noted that the share of New Hampshire homes reporting recent exterior wall and foundation wall insulation work are 3-4 times higher than what Itron recently observed in a similar study in the Midwest – consistent with the harsher winter seasons in the Northeast compared to the Midwest. Similarly, the share of homes with recent insulation work in the northern climate zone of New Hampshire (CZ6) are significantly higher than those in the southern climate zone of the state (CZ5).

FIGURE 3-8: SHARES OF HOMES WITH RECENT INSULATION WORK BY TYPE – STATEWIDE AGGREGATES



The web survey also collected similar information on whether any envelope sealing work (i.e. window and door sealing) or ventilation sealing work has been conducted at the participant's home in the last 5 years – summarized in Figure 3-9 and Figure 3-10 below. As the figures show, 11% of respondents statewide reported having recently done window and/or door sealing work in their homes in the last 5 years and 10% reported having recently done ventilation testing and sealing work, with higher shares among SF homes (compared to MF homes) and homes in CZ6 (compared to homes in CZ5).

FIGURE 3-9: SHARES OF HOMES WITH RECENT ENVELOPE TESTING & SEALING – STATEWIDE AGGREGATES

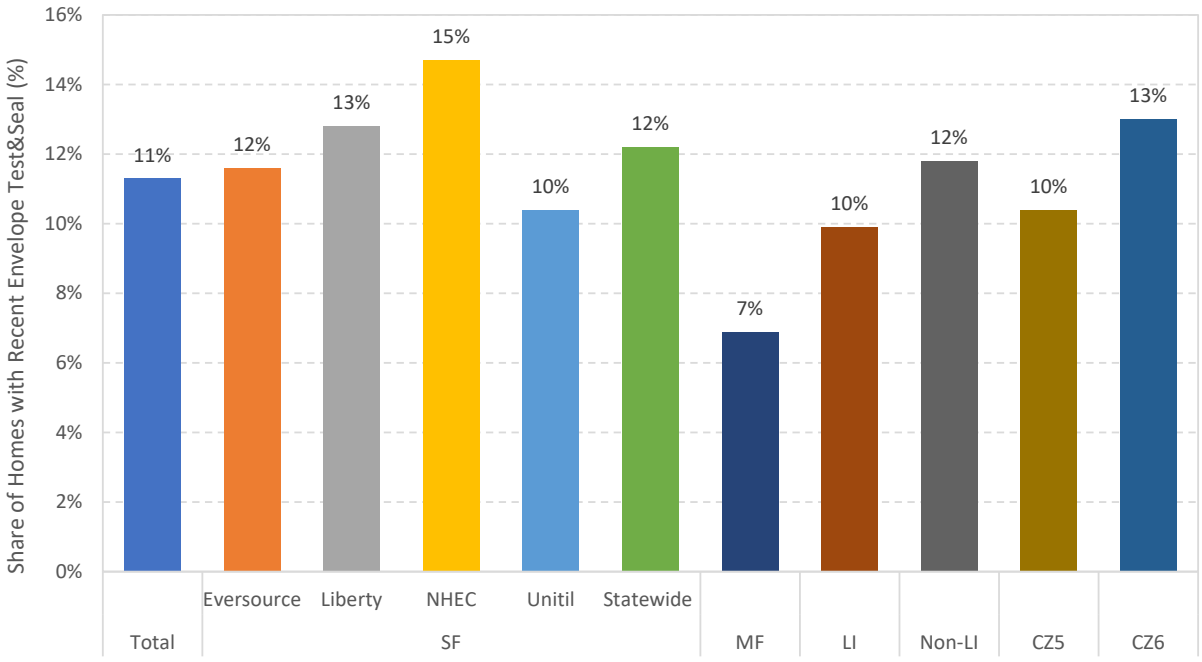
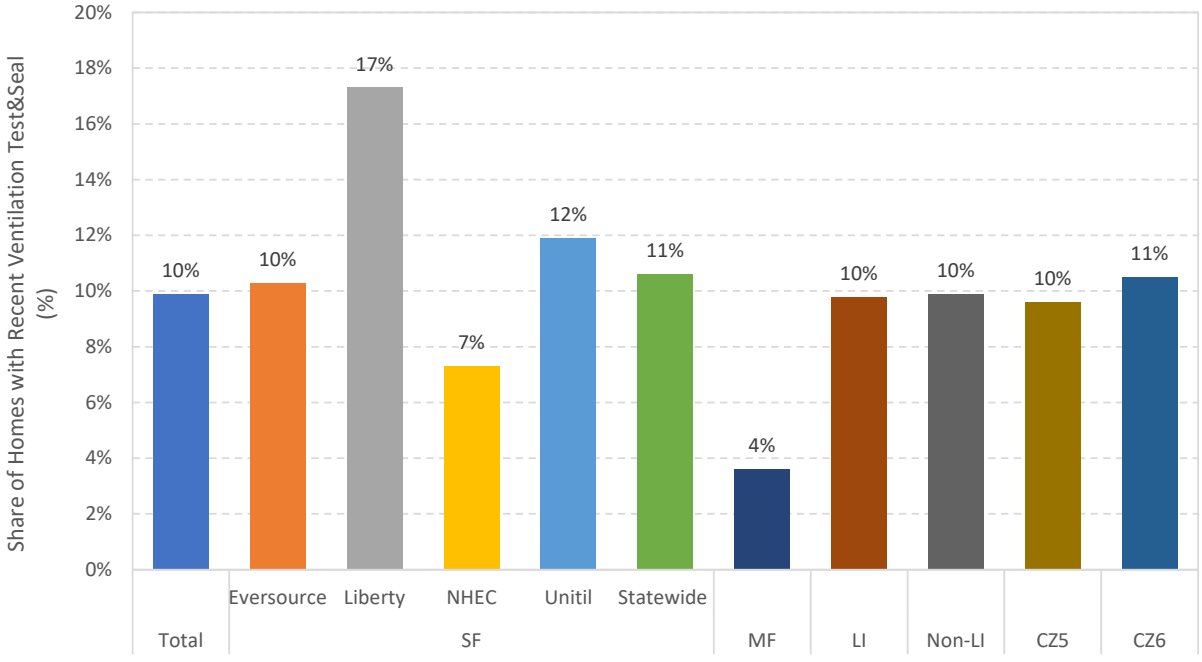


FIGURE 3-10: SHARES OF HOMES WITH RECENT VENTILATION TESTING & SEALING – STATEWIDE AGGREGATES



3.3 CENTRAL SPACE COOLING

Figure 3-11 and Figure 3-12 show the saturation of central cooling in New Hampshire by system type and segment. As the figures show, the overall saturation of central cooling is 20% but varies significantly across building type, income level, and climate zone.

FIGURE 3-11: SATURATION OF CENTRAL COOLING BY TYPE – STATEWIDE AGGREGATES

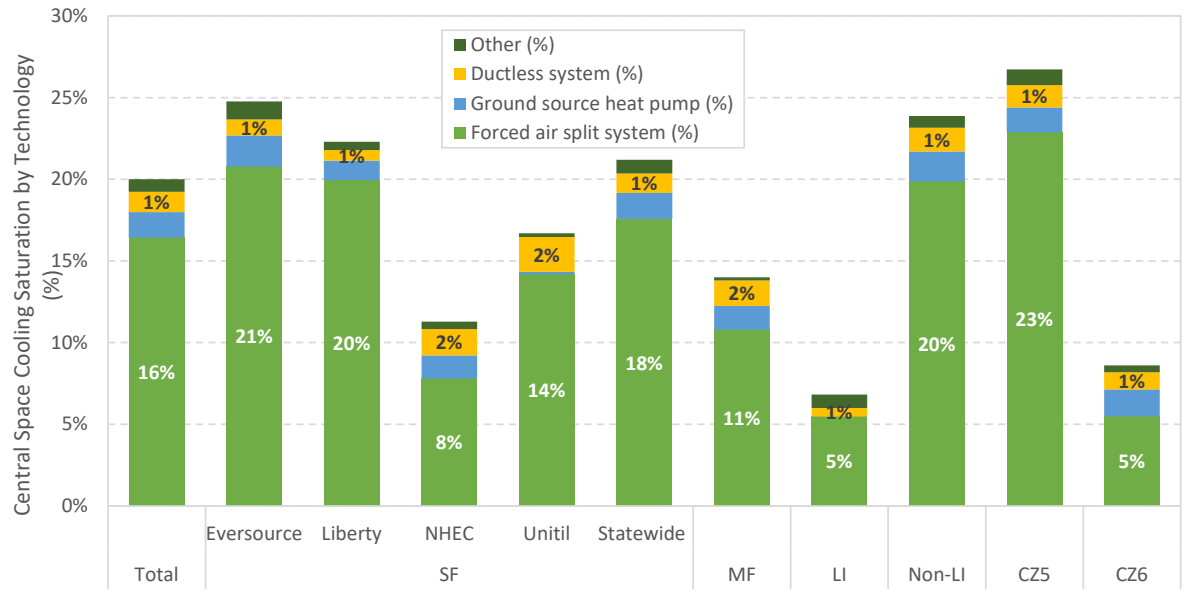
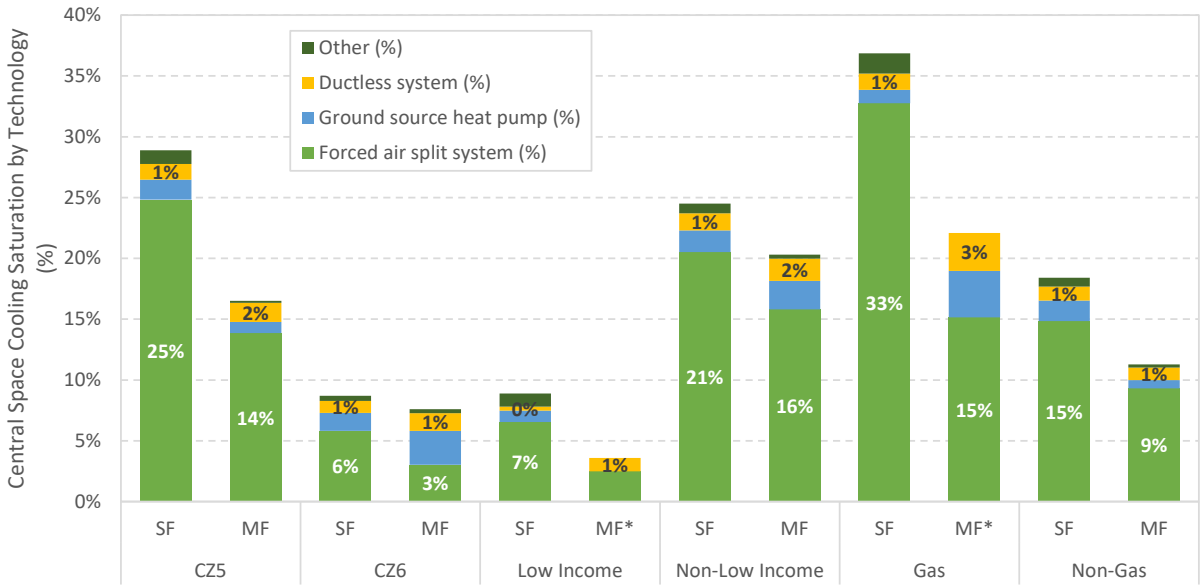


FIGURE 3-12: SATURATION OF CENTRAL COOLING BY TYPE – STATEWIDE AGGREGATES BY BUILDING TYPE



One consistent finding across segments is that the dominant cooling technology in New Hampshire homes is forced-air split systems.[7] Figure 3-13 below shows the distribution of rated system efficiency (expressed as Seasonal Energy Efficiency Ratio or SEER) of forced-air split systems observed in the survey. As the figure shows, the distribution of rated system efficiency appears to be concentrated around the historical minimum code levels that have been enforced for central air conditioning systems since 1992 (10 SEER, 13 SEER, and 14 SEER), with an overall average of 12.31 SEER for all units observed. Note, however, that more than half of the observations shown in Figure 3-13 are imputed values, which are concentrated exclusively in the 10-10.5, 10.6-11.0, and 13.0-13.5 SEER buckets.[8] The true population of rated SEER is likely to be less concentrated around 10 and 13 SEER.

FIGURE 3-13: DISTRIBUTION OF FORCED-AIR SPLIT SYSTEM RATED EFFICIENCY (SEER)

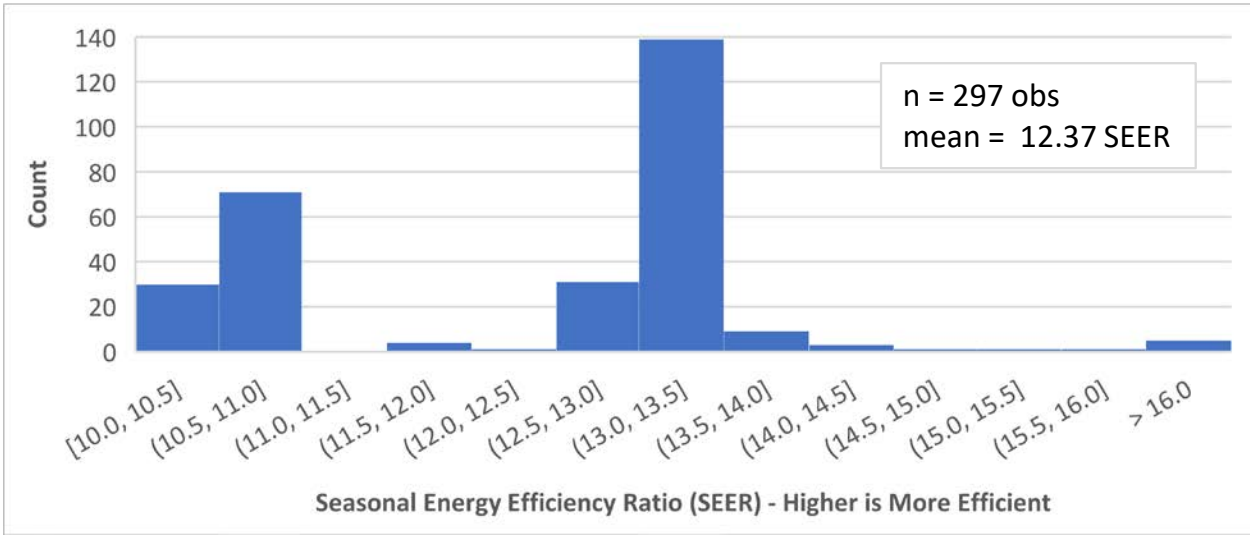


Figure 3-14 shows the distribution of the vintage of the forced-air split systems observed in this study.[9] As the figure shows, the vintage of split-system air conditioners in New Hampshire ranges widely – with a

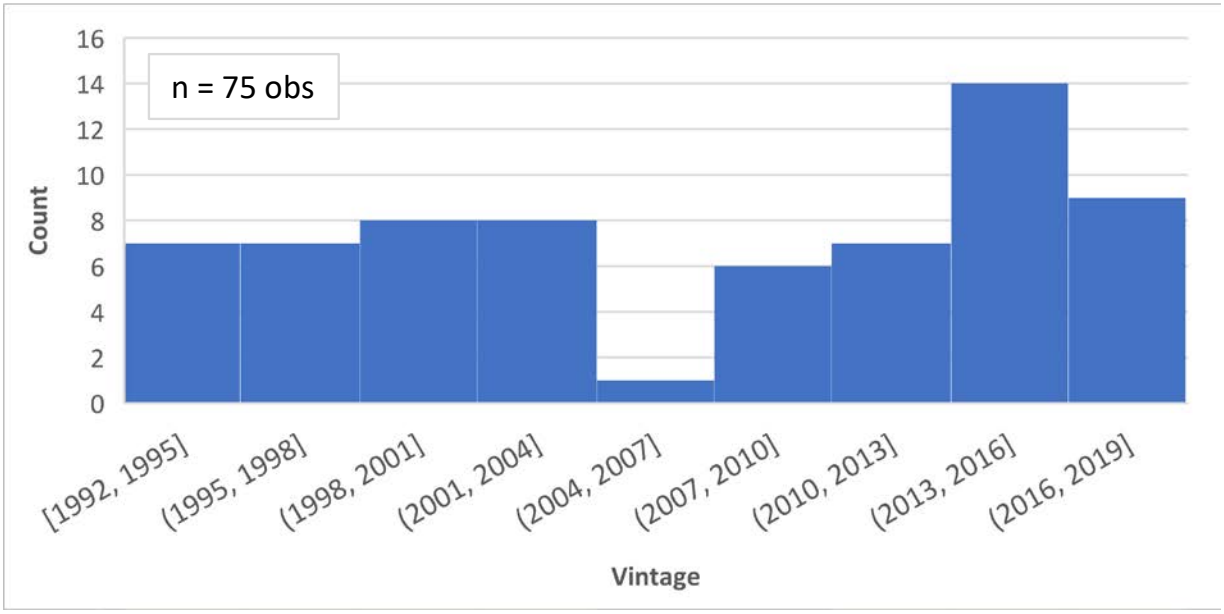
[7] Note that while air-source heat pumps are a subset of forced-air split systems, very few of these technologies were observed in the survey (<2%).

[8] The number of nameplate images of split-system air conditioners submitted relative to overall self-reported ownership was quite low – which resulted in the large number of imputed estimates shown in Figure 3-13. We believe that the low number of nameplate images submitted for split-system air conditioners is related to the fact that our survey was fielded in December 2019 and early January 2020 – a period of severe weather in NH which likely discouraged respondents from taking photos of outdoor condenser units (where the nameplates are typically located).

[9] Note that all of the vintage histograms in this report only show vintage data for units that we were able to identify a make/model number and for which we had reliable vintage data for those specific models.

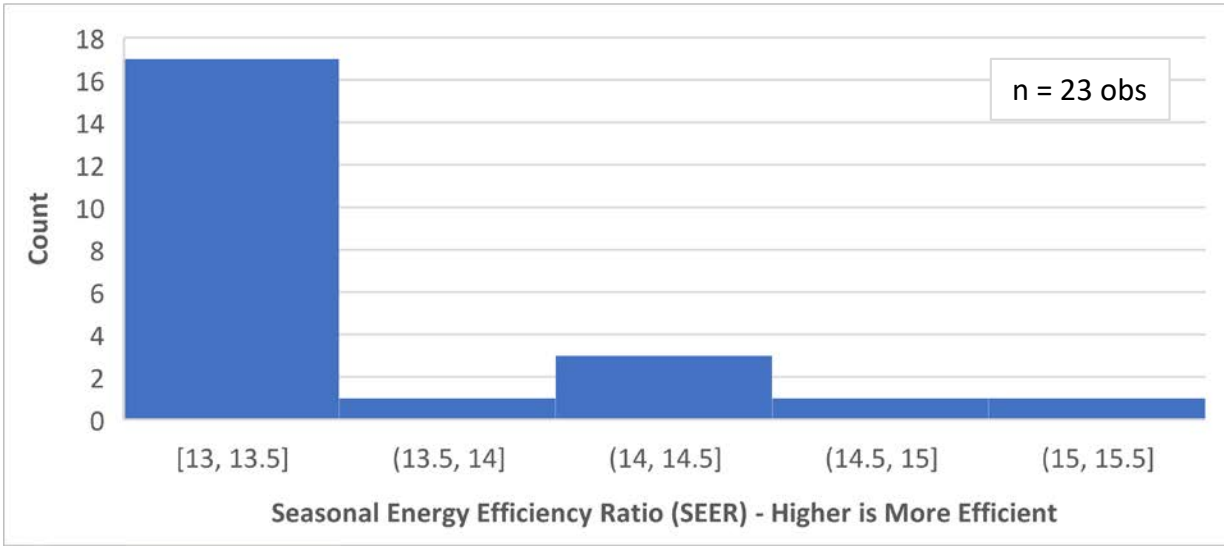
significant share of models older than 20 years. Overall, the vintage distribution is largely uniformly distributed, with a slight skew towards newer models (i.e. those 5 years old or less).

FIGURE 3-14: DISTRIBUTION OF FORCED-AIR SPLIT SYSTEM VINTAGE



To provide an indication of marginal market shares of high-efficiency split-system air conditioners, Figure 3-14 shows the distribution of the rated SEER only for newer systems, i.e. 5 years old or less. As the figure shows, roughly 20% of the newer split systems observed in our study are rated 14 SEER or higher.

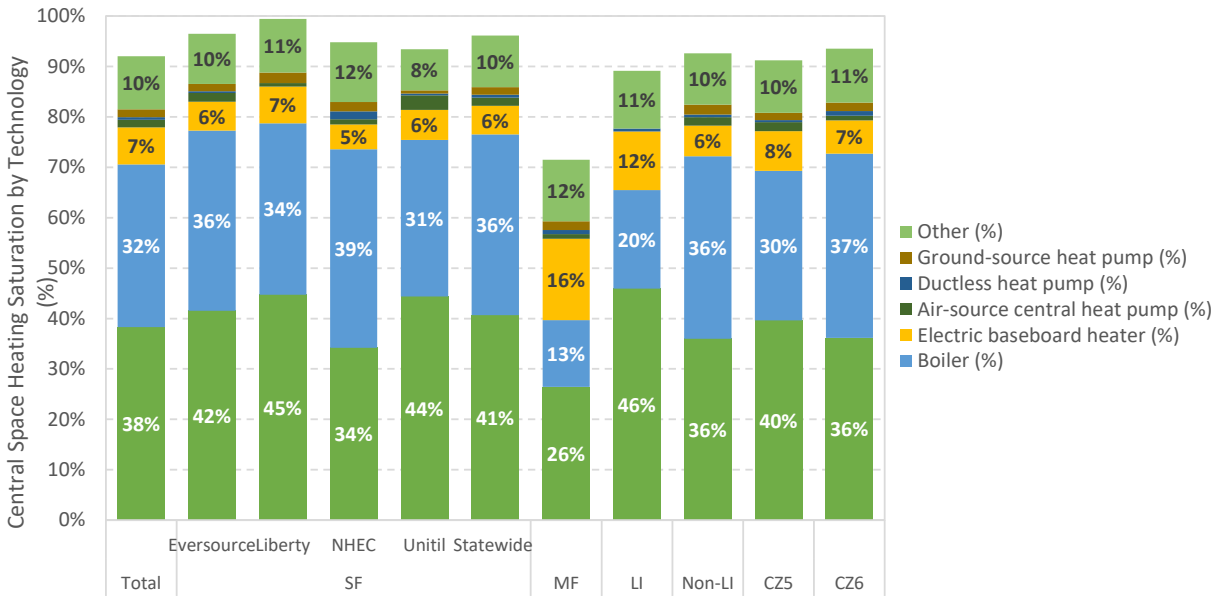
FIGURE 3-15: DISTRIBUTION OF FORCED-AIR SPLIT SYSTEM RATED EFFICIENCY (SEER) – UNITS ≤5 YEARS OLD



3.4 CENTRAL SPACE HEATING

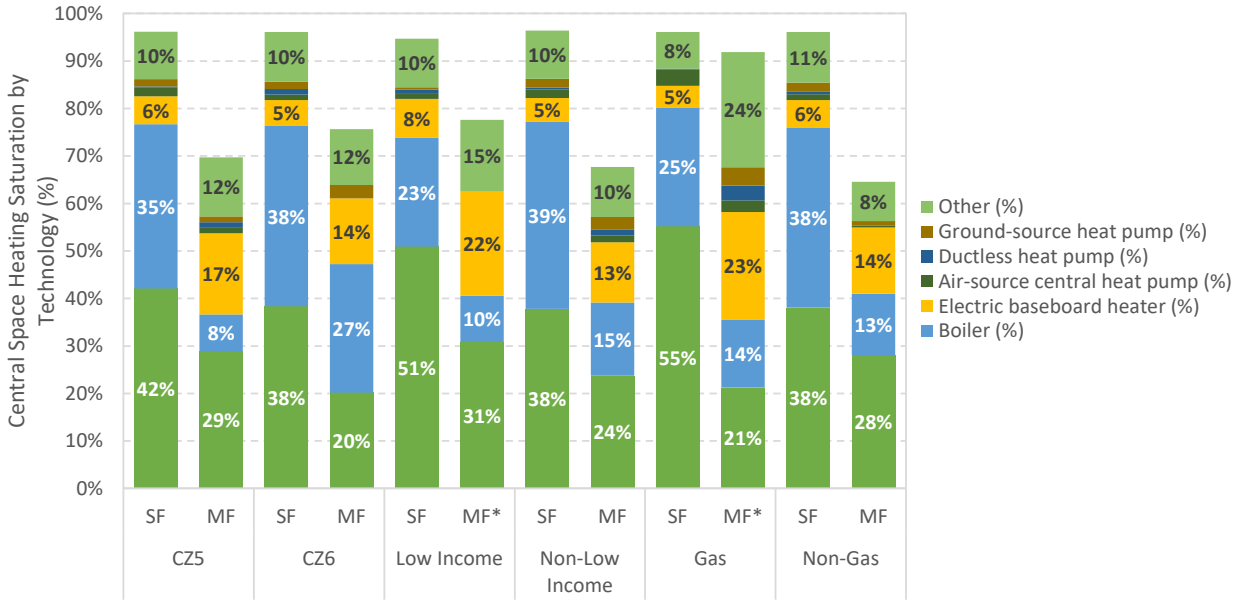
Figure 3-16 and Figure 3-17 show the saturation of central space heating by technology and segment. As the figures show, nearly all homes in New Hampshire have dedicated central heating systems of some kind, with 96% of SFD homes and 71% of MFD homes having central heating (92% overall).[10] The figures also show that furnaces and boilers are the dominant space heating technologies used (77% of all homes with central heat), while air-source heat pumps (ducted and ductless) account for only 2% (of all homes with central heat). Note that the "other" technology category – which accounts for 10% of heating systems – is likely to be mostly wood-burning stoves, as wood is the fuel source for nearly 60% of those systems. Across customer segments, the most important variation in space heating technologies is between SF and MF homes, where the saturation of electric baseboard heating in MF homes is significantly higher than in SF homes (16% vs. 6%, respectively). Other noteworthy differences are the high share of furnaces in SF homes with gas service (55%) and the high share of boilers in homes with no gas service (38%).

FIGURE 3-16: SATURATION OF CENTRAL HEATING BY TYPE – STATEWIDE AGGREGATES



[10] Note that this saturation estimate only reflects MF homes that have their own dedicated central heating system and does not include MF homes with shared central systems.

FIGURE 3-17: SATURATION OF CENTRAL HEATING BY TYPE – STATEWIDE AGGREGATES BY BUILDING TYPE



Given the importance of furnaces and boilers in New Hampshire, the next figures explore the fuel sources used for those technologies. Figure 3-18 and Figure 3-19 show that units fueled by "delivered fuels" (fuel oil and propane) account for 75% of all furnaces statewide and 88% of units in climate zone 6. The key exception is homes with gas service, where furnaces are almost exclusively gas-fired units.

FIGURE 3-18: FURNACE FUEL SHARES – STATEWIDE AGGREGATES

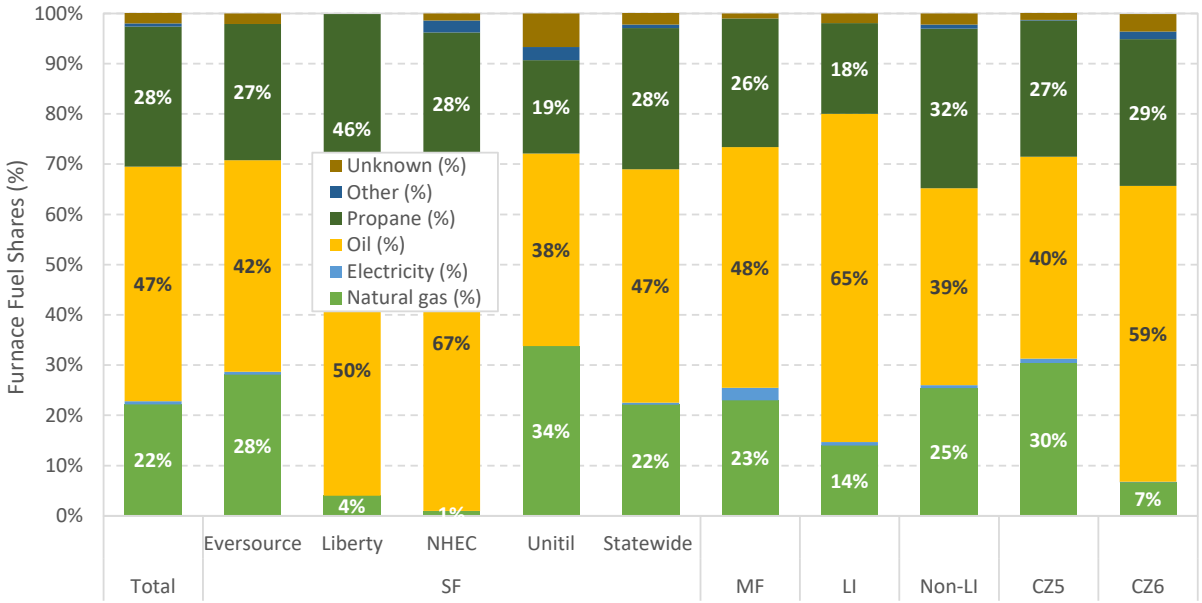


FIGURE 3-19: FURNACE FUEL SHARES – STATEWIDE AGGREGATES BY BUILDILNG TYPE

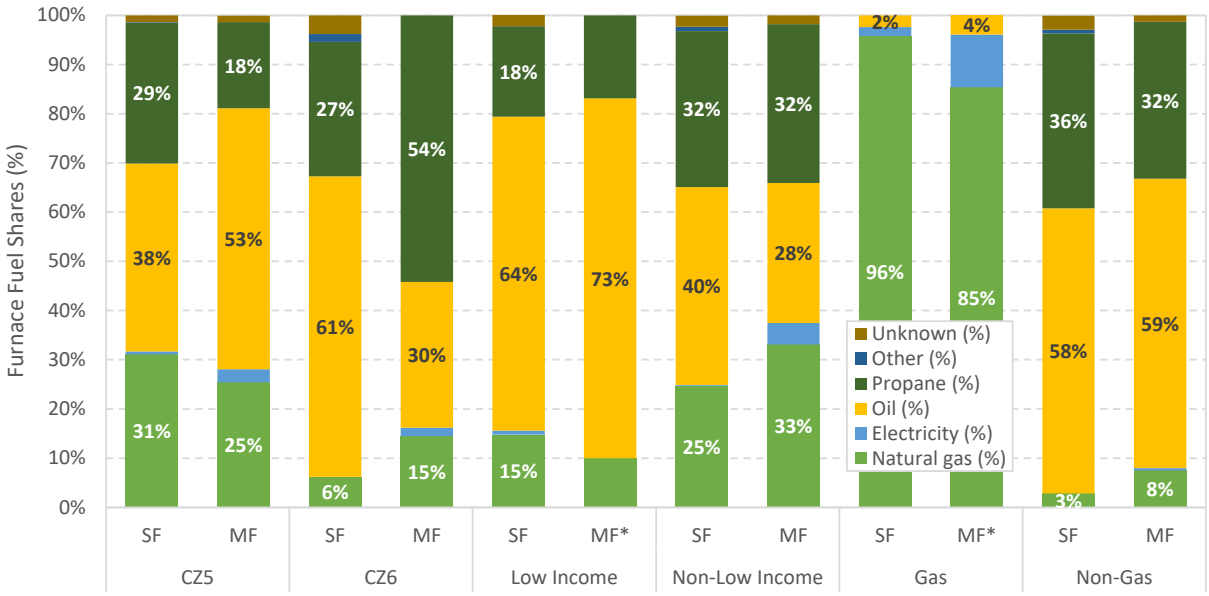


Figure 3-20 below shows the distribution of rated system efficiency (expressed as Annual Fuel Utilization Efficiency or AFUE) of furnaces observed in the survey. As the figure shows, the distribution of rated furnace efficiency appears to be concentrated around the historical minimum code levels that have been enforced for residential furnaces since 1992 – 78 AFUE (oil and gas, 1992), 80 AFUE (gas, 2012), and 83 AFUE (oil, 2012) – but with a significant share of very high efficiency condensing units (i.e. AFUE >90). This results in an overall weighted average of 83.13 AFUE for all units observed.

FIGURE 3-20: DISTRIBUTION OF FURNACE SYSTEM RATED EFFICIENCY (AFUE)

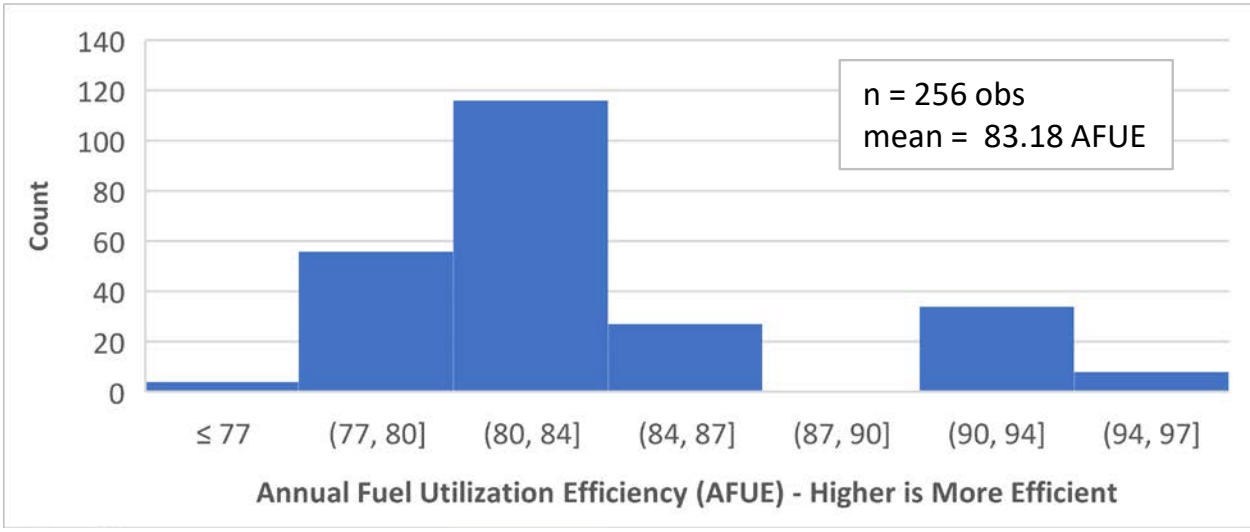
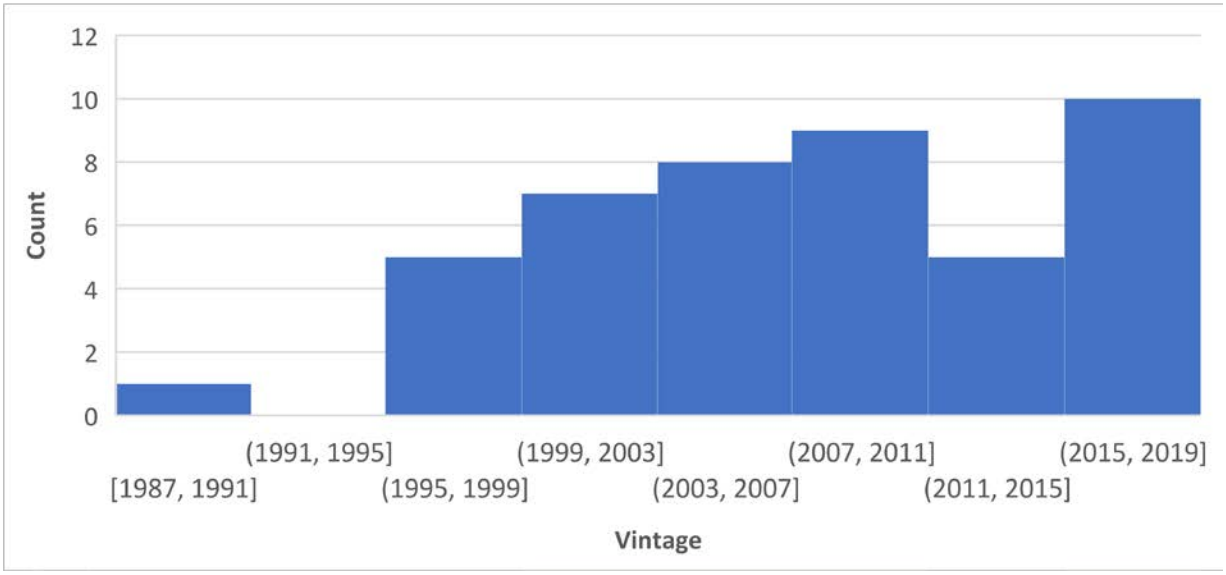


Figure 3-21 shows that furnace vintage in New Hampshire is distributed across a wide range (including units greater than 20 years old) and more than half of all units observed were greater than 10 years old.

FIGURE 3-21: DISTRIBUTION OF FURNACE VINTAGE



To provide an indication of marginal market shares of high-efficiency furnaces, Figure 3-22 shows the distribution of the rated AFUE only for systems 5 years old or less. As the figure shows, roughly 30% of the newer furnaces observed in our study are high efficiency systems with a rated AFUE exceeding 90.

FIGURE 3-22: DISTRIBUTION OF FURNACE SYSTEM RATED EFFICIENCY (AFUE) – UNITS ≤5 YEARS OLD

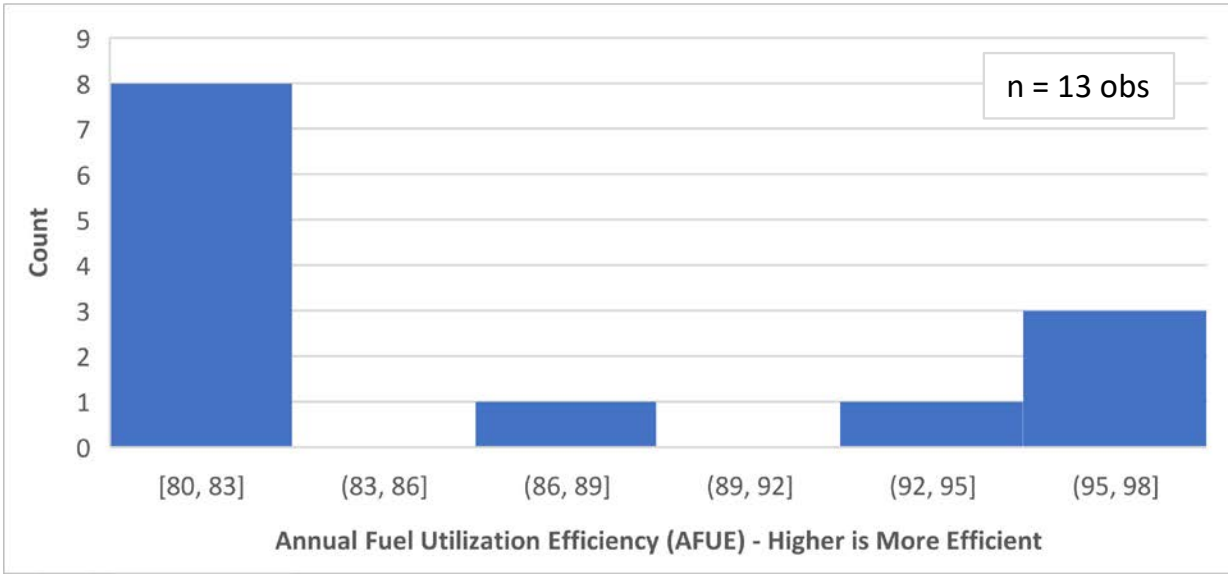


Figure 3-23 and Figure 3-24 show the fuel shares for residential boilers by customer segment. The figures show a similar story for boilers as for furnaces, i.e. that units fueled by "delivered fuels" (fuel oil and propane) account for 86% of all boilers statewide and 87% of units in climate zone 6. Again, the key exception is homes with gas service, where residential boilers are almost exclusively gas-fired units.

FIGURE 3-23: BOILER FUEL SHARES – STATEWIDE AGGREGATES

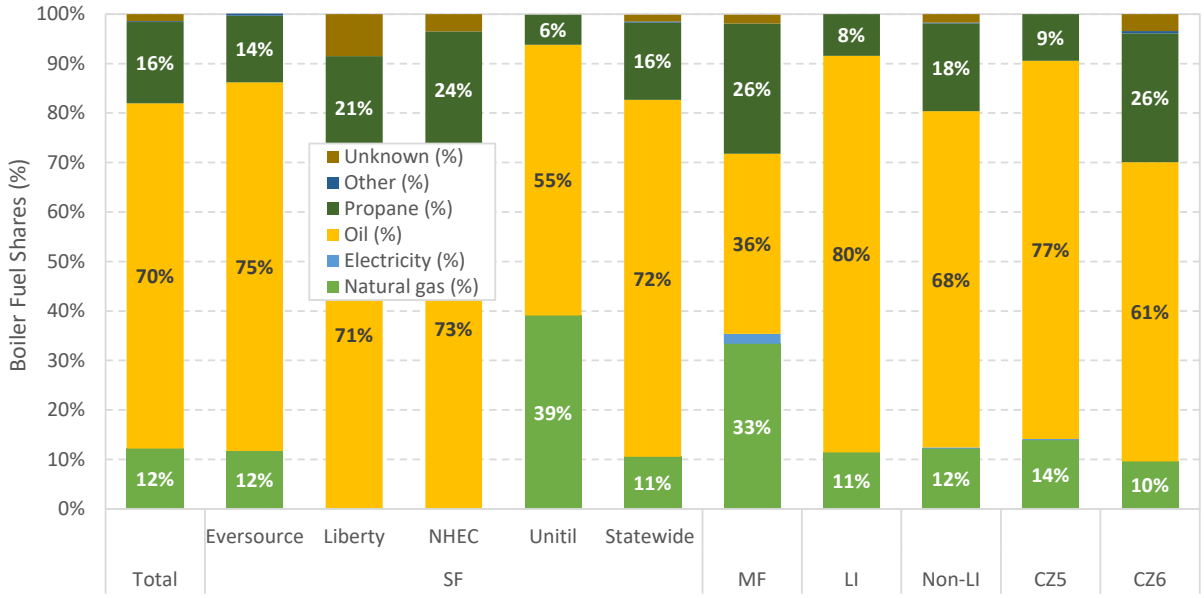


FIGURE 3-24: BOILER FUEL SHARES – STATEWIDE AGGREGATES BY BUILDING TYPE

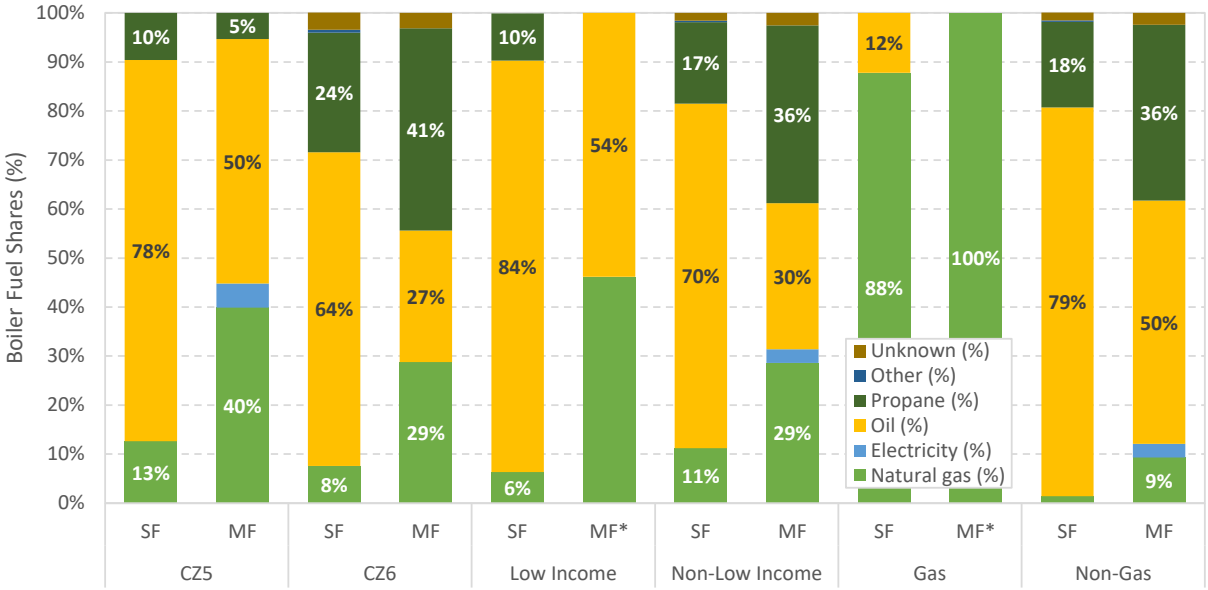


Figure 3-25 below shows that the distribution of rated system efficiency of boilers observed in the survey (expressed as AFUE) is largely concentrated around the historical minimum code levels that have been enforced for residential boilers since 1992 – 80 AFUE (oil and gas, 1992), 82 AFUE (gas, 2012), and 84 AFUE (oil, 2012). However, a significant share of units are very high efficiency condensing units (i.e. AFUE >90), which results in an overall weighted average of 84.44 AFUE for all units observed.

FIGURE 3-25: DISTRIBUTION OF BOILER RATED EFFICIENCY (AFUE)

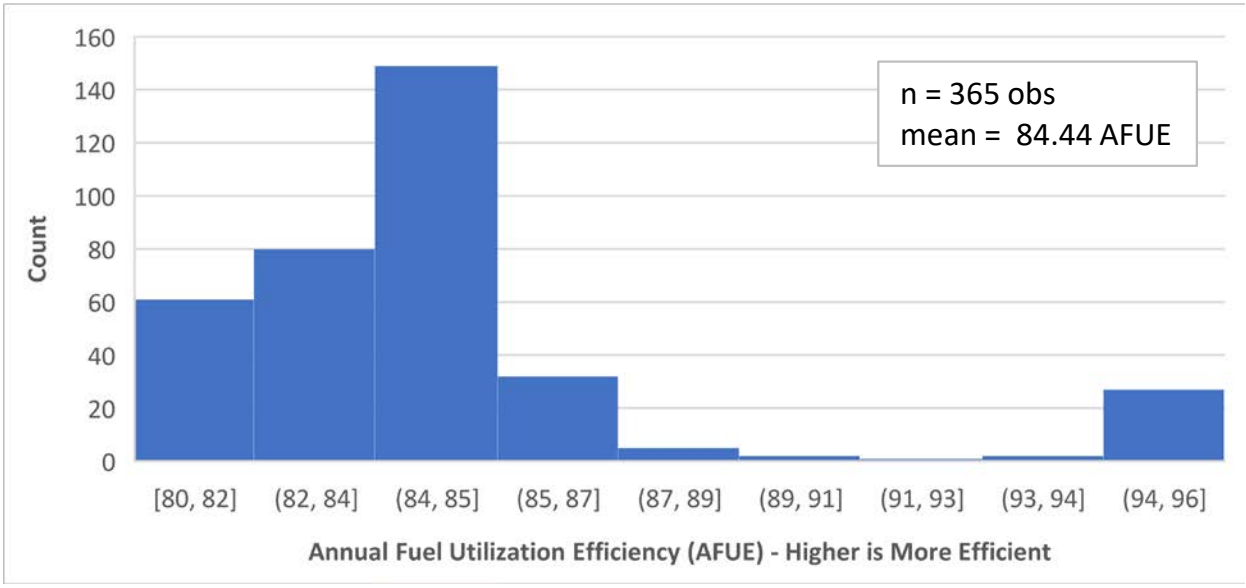


FIGURE 3-26: DISTRIBUTION OF BOILER VINTAGE

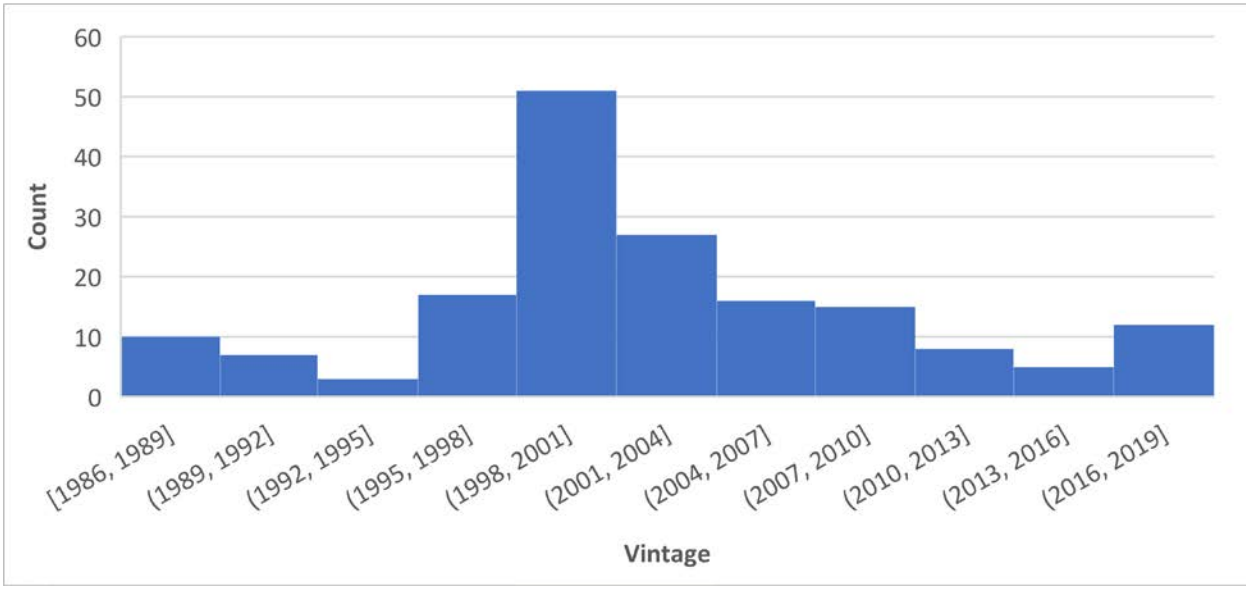


Figure 3-26 above shows that boiler vintage in New Hampshire is distributed across a wide range (including units more than 30 years old) and more than half of all units observed were greater than 15 years old. To provide an indication of marginal market shares of high-efficiency boilers, Figure 3-27 below shows the distribution of the rated AFUE only for boilers 5 years old or less. As the figure shows, roughly 30% of the newer boilers observed in our study are high-efficiency condensing units with a rated AFUE exceeding 90.

FIGURE 3-27: DISTRIBUTION OF BOILER SYSTEM RATED EFFICIENCY (AFUE) – UNITS ≤5 YEARS OLD

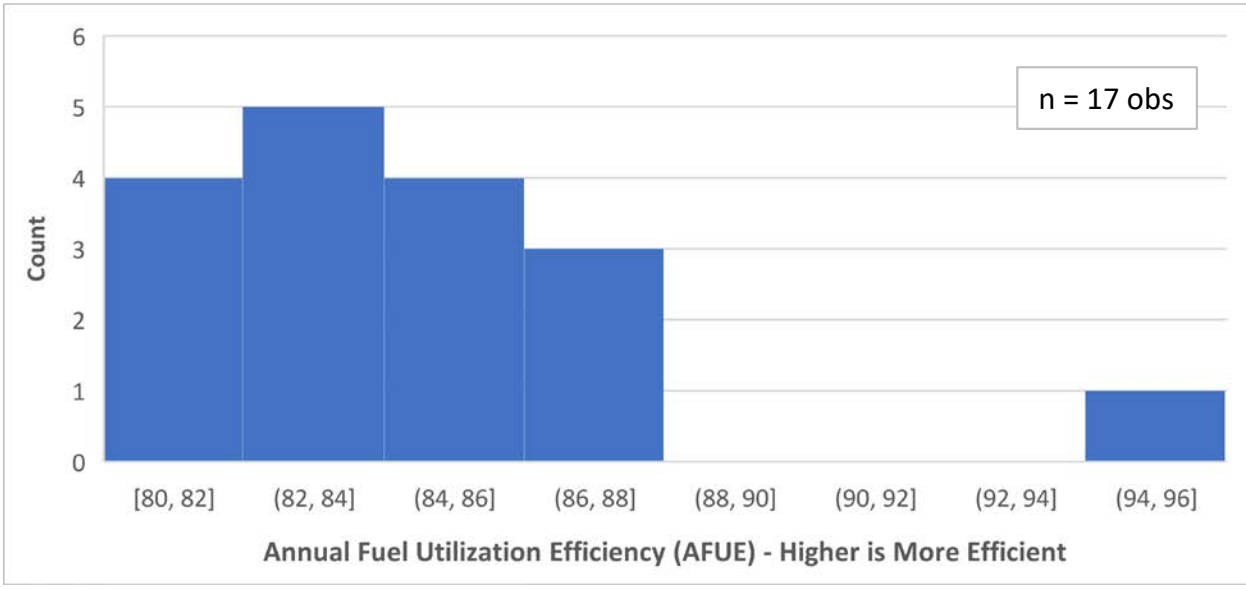
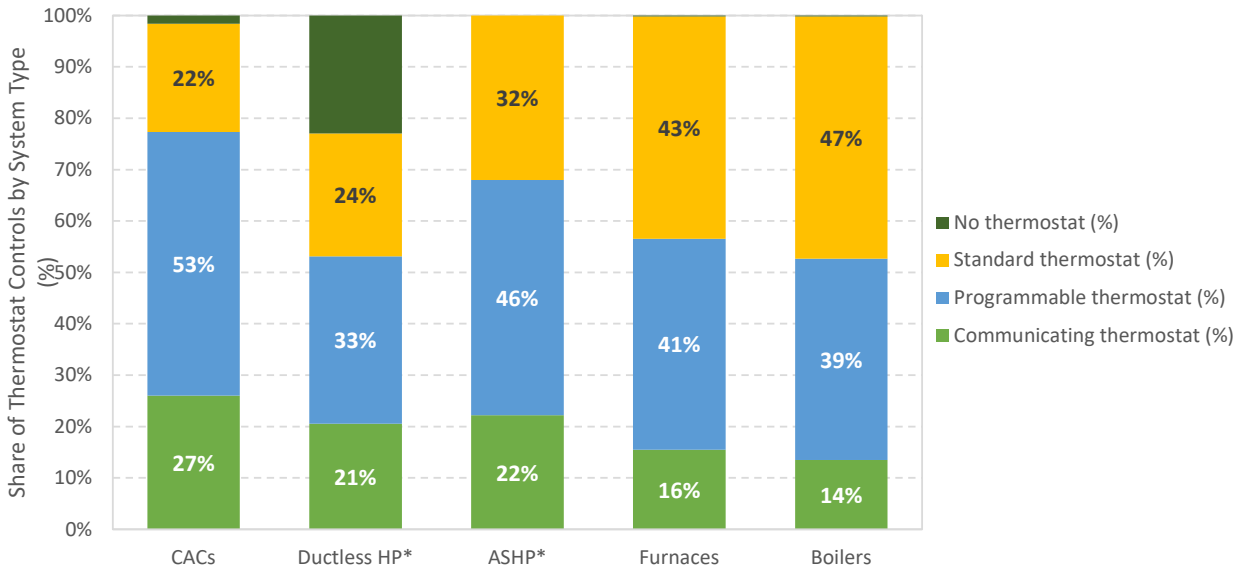


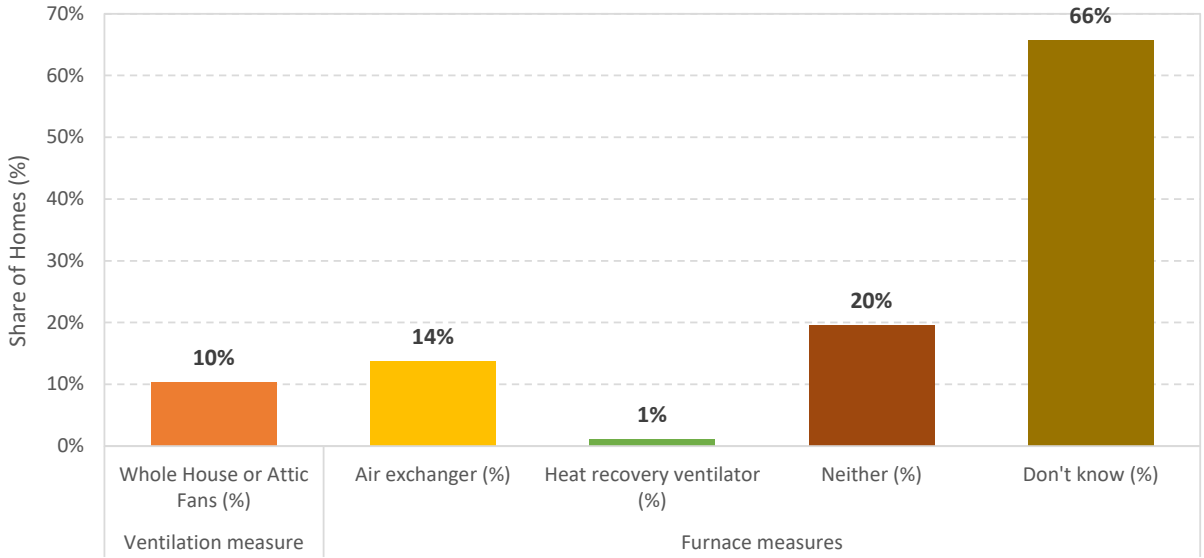
Figure 3-28 shows the saturation of thermostats by type (e.g. standard, programmable, or communicating) and by the specific types of systems controlled. As the figure shows, communicating thermostats (e.g. Nest, Ecobee) and programmable thermostats are used to control a significantly higher share of split-system air conditioning systems and heat pumps compared to boilers and furnaces. Conversely, standard thermostats (i.e. those with only manual controls) are used to control a significantly higher share of boilers and furnaces compared to split system air conditioners and heat pumps.

FIGURE 3-28: SATURATION OF THERMOSTATS BY TYPE AND SYSTEM CONTROLLED



The survey also included a battery of questions related to the use of two specific ventilation and heating efficiency measures – whole-house or attic fans and heat recovery ventilators (HRVs). Figure 3-29 shows that the saturation of whole-house and attic fans is low but significant (10%), while the saturation of HRVs is less than 1%.

FIGURE 3-29: SATURATION OF VENTILATION AND FURNACE MEASURES



3.5 WATER HEATING

Figure 3-30 and Figure 3-31 show the saturation of residential water heating by technology in New Hampshire. While conventional storage water heaters are the most common technology, nearly a quarter of homes use indirect storage or tankless coil water heaters – technologies that are paired with boilers.

FIGURE 3-30: SATURATION OF WATER HEATING BY TYPE – STATEWIDE AGGREGATES

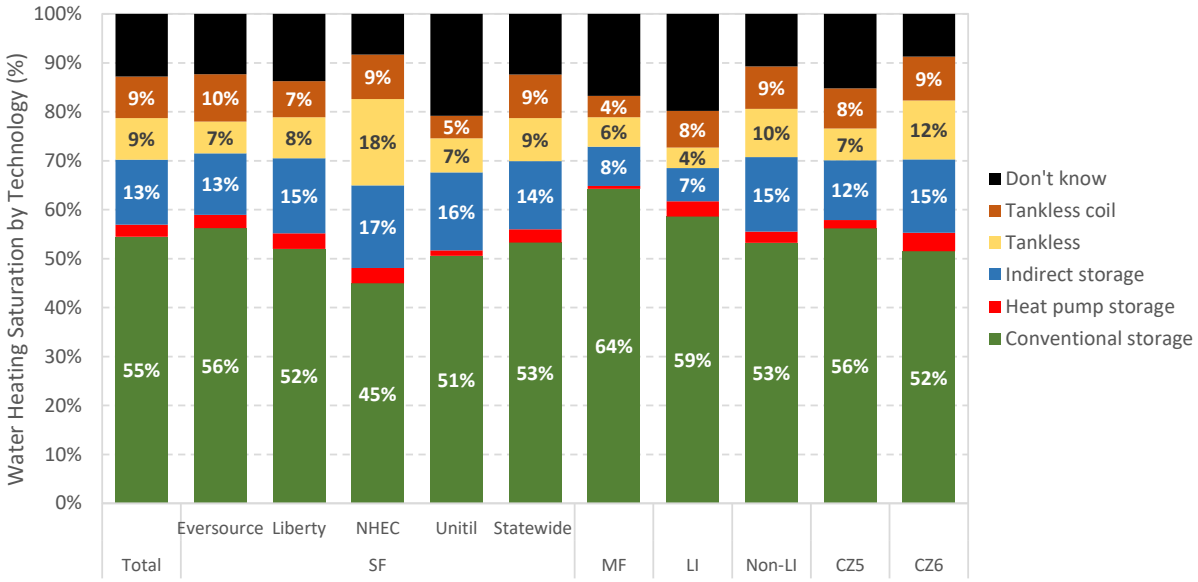


FIGURE 3-31: SATURATION OF WATER HEATING BY TYPE – STATEWIDE AGGREGATES BY BUILDING TYPE

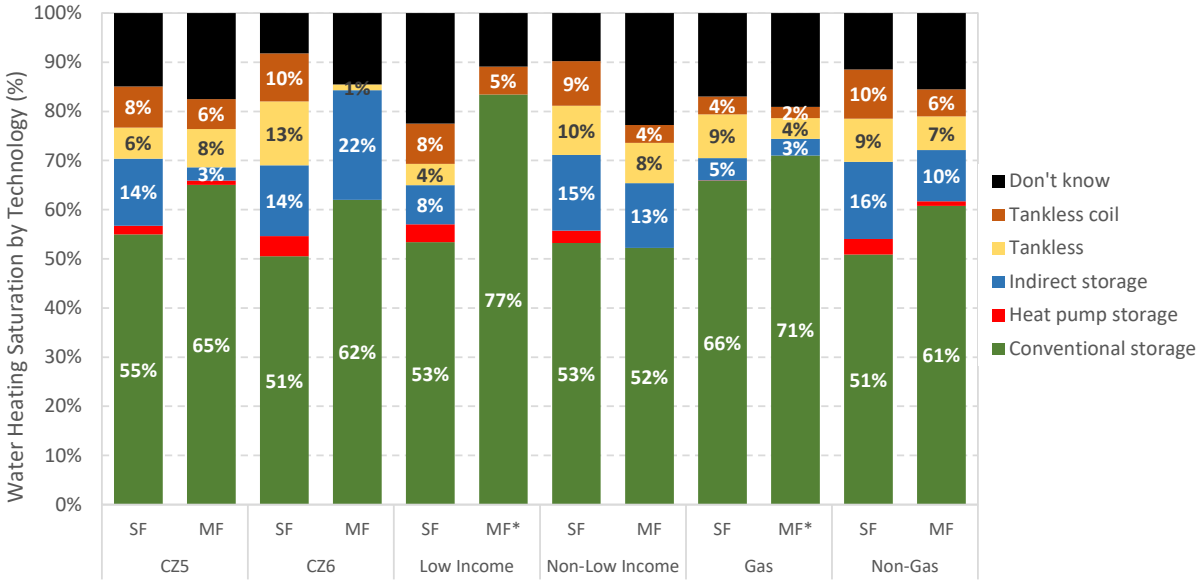


Figure 3-32 and Figure 3-33 show the fuel shares for residential water heating. As the figures show, delivered fuels (i.e. propane and fuel oil) provide water heating in just under half of homes in New Hampshire, while electricity provides water heating in roughly a third of homes.

FIGURE 3-32: WATER HEATER FUEL SHARES – STATEWIDE AGGREGATES

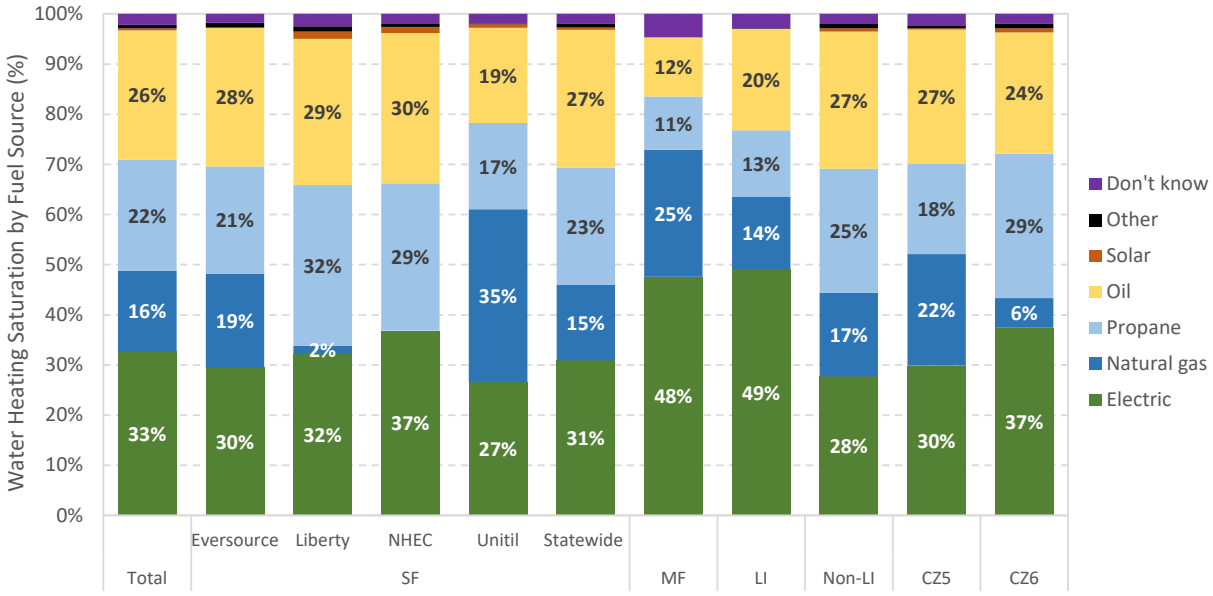


FIGURE 3-33: WATER HEATER FUEL SHARES – STATEWIDE AGGREGATES BY BUILDING TYPE

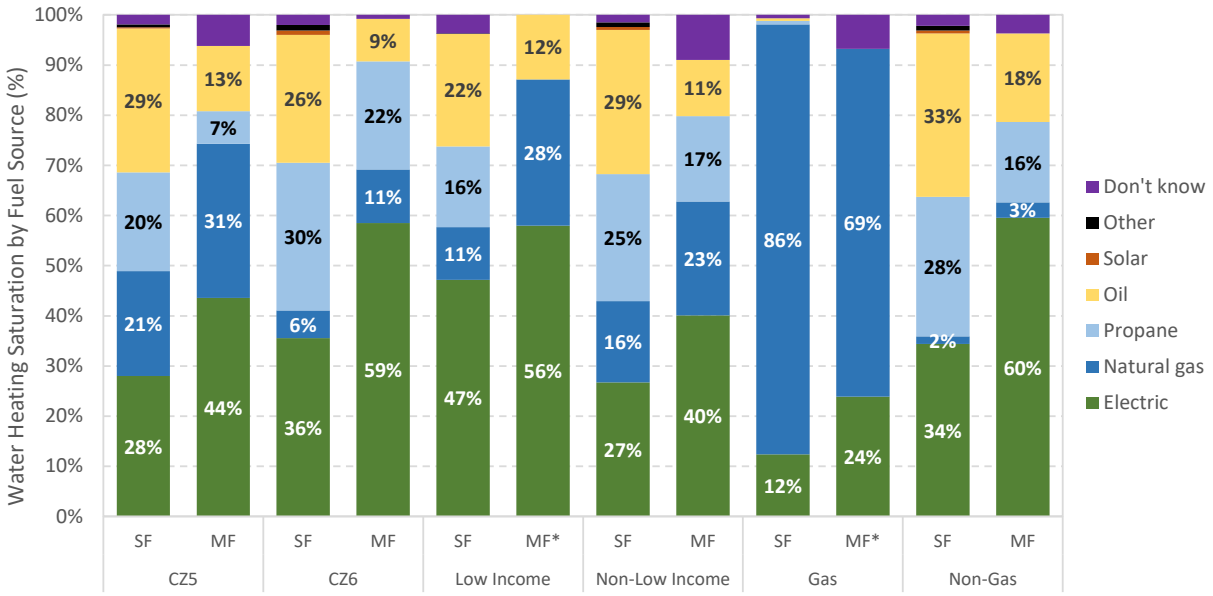


Figure 3-34 and Figure 3-35 combine the technology saturation and fuel share results to provide a picture of how fuel shares vary according to the water heating technology used. While most conventional storage water heaters in New Hampshire use electricity or gas, the fuel mixes used for indirect storage and tankless coil systems are dominated by delivered fuels (consistent with those for boilers and furnaces).

FIGURE 3-34: WATER HEATER FUEL SHARES BY TECHNOLOGY – STATEWIDE AGGREGATES

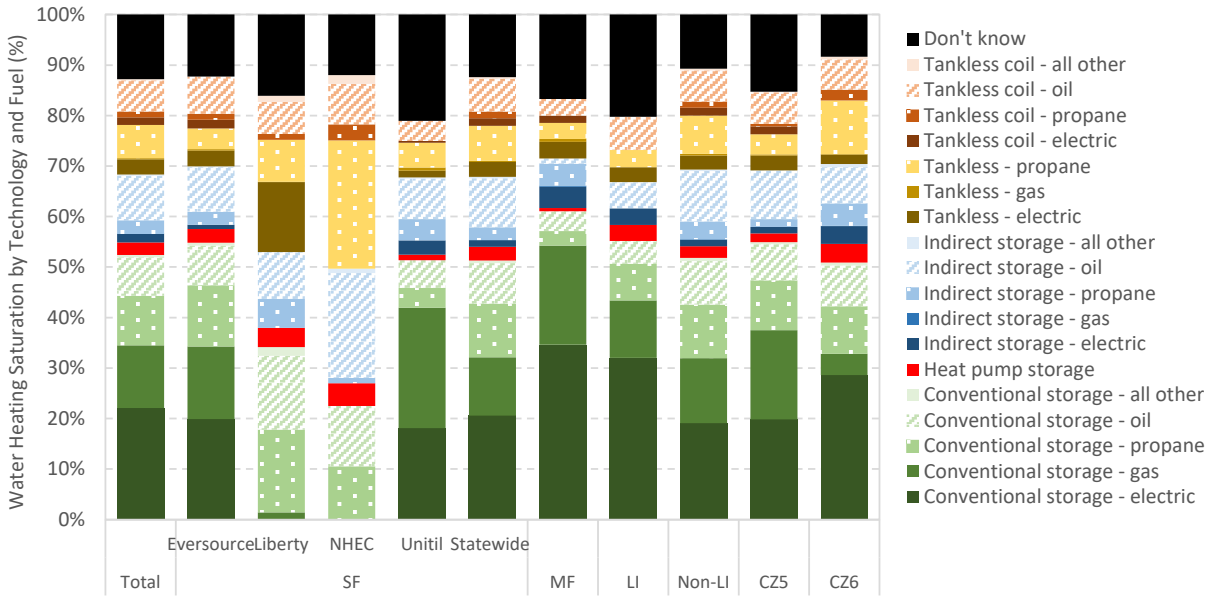


FIGURE 3-35: WATER HEATER FUEL SHARES BY TECHNOLOGY – STATEWIDE AGGREGATES BY BUILDING TYPE

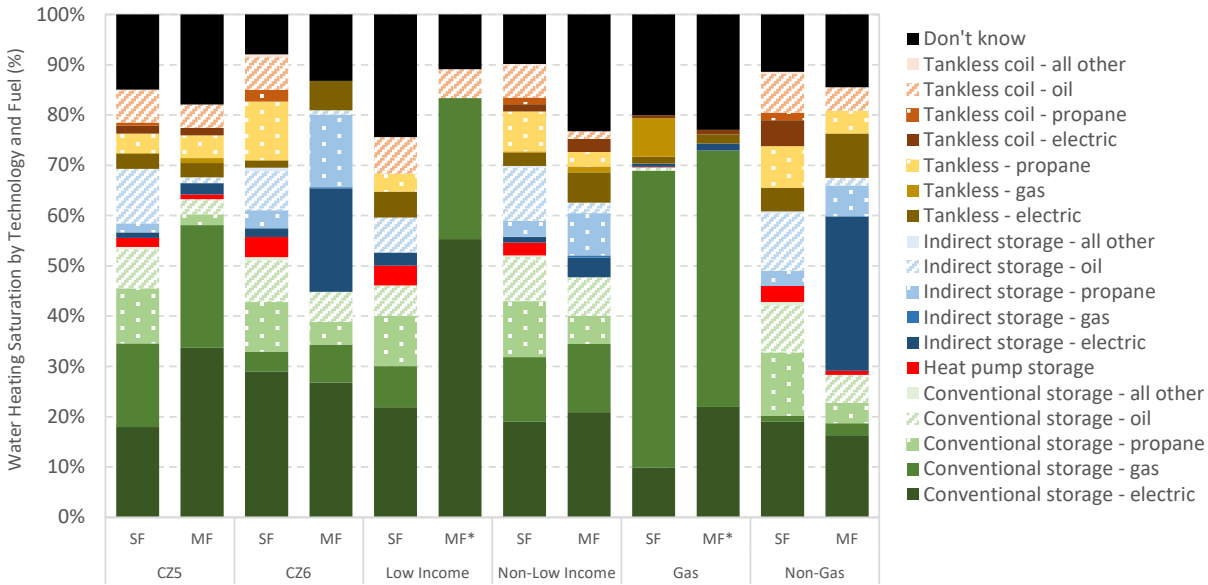
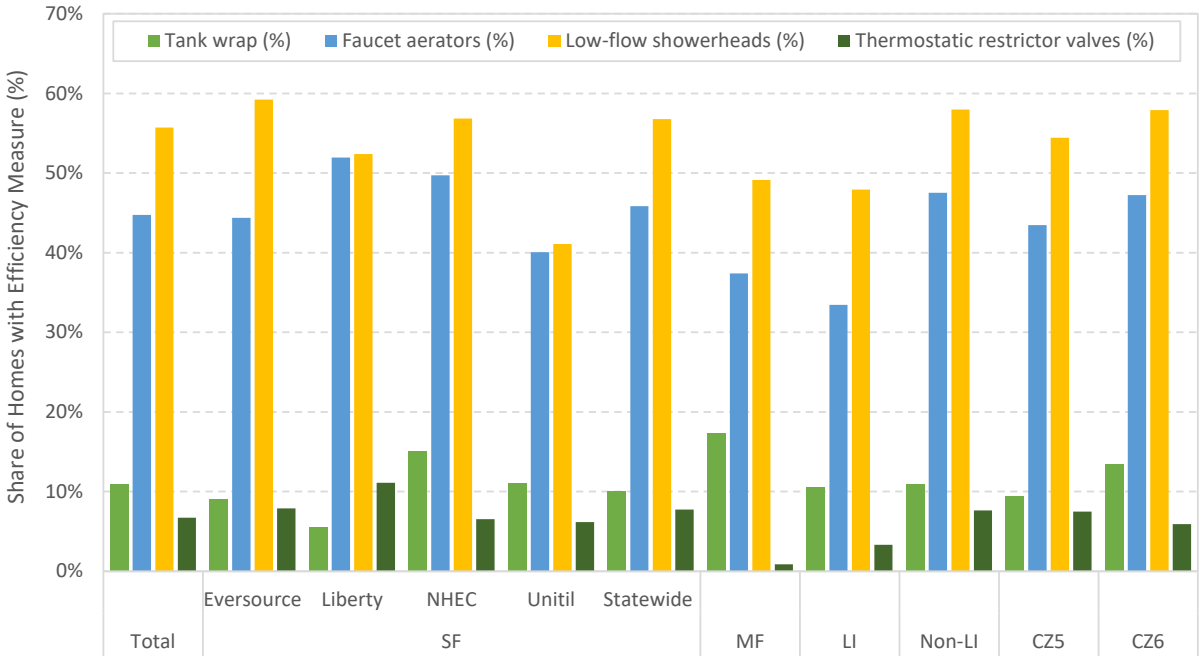


Figure 3-36 presents the self-reported saturation of a select set of add-on water heating efficiency measures – storage tank insulation wrap, faucet aerators, low-flow showerheads, and thermostatic restrictor valves (for shower fixtures). As the figure shows, low-flow showerheads and faucet aerators are fairly well penetrated in New Hampshire homes, with higher relative penetrations in SF compared to MF homes and non-LI compared to LI homes. In contrast, the penetration of thermostatic restrictor valves is low overall, installed on less than 7% of residential showerheads statewide.

FIGURE 3-36: SHARE OF HOMES WITH WATER HEATING EFFICIENCY MEASURES – STATEWIDE AGGREGATES



3.6 APPLIANCES

Figure 3-37 below shows the saturation of refrigerators among residential customers in New Hampshire, as well as the relative share of home with multiple refrigerators. While nearly all homes have at least one refrigerator, the share of homes with more than one refrigerator is 12% on a statewide basis. As can be expected, the SF and non-LI customer segments have highest shares of homes with more than one refrigerator, while MF and LI homes have the lowest shares of home with multiple refrigerators.

FIGURE 3-37: SATURATION OF REFRIGERATORS – STATEWIDE AGGREGATES

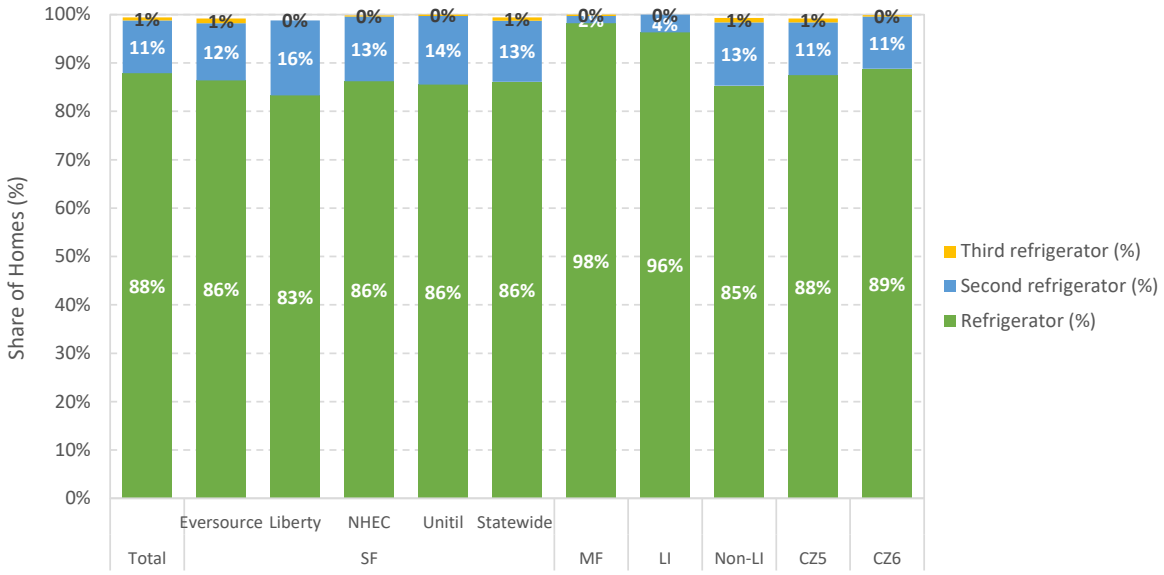


Figure 3-38 below shows the distribution of rated annual consumption for refrigerators observed in our survey. This figure implies a high concentration of units with rated annual consumption of 457-496 kWh/yr or 574-613 kWh/yr. However, note that roughly half of the counts in those specific buckets reflect values imputed for respondents that did not provide nameplate images, and the true distribution of rated consumption for refrigerators is likely to be more normally distributed than shown below.

FIGURE 3-38: DISTRIBUTION OF REFRIGERATOR RATED ANNUAL CONSUMPTION

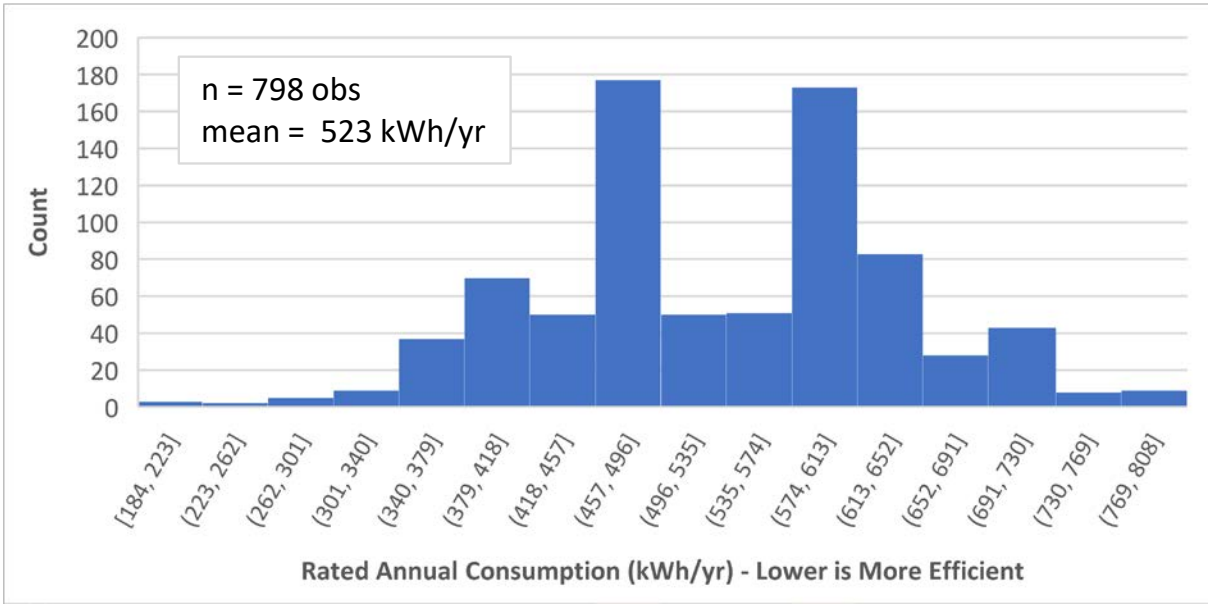


Figure 3-39 below shows that refrigerator age in New Hampshire is distributed across a wide range (including units more than 20 years old), but roughly half of units are less than 10 years old. To provide an indication of marginal market shares of efficient refrigerators, Figure 3-40 below shows the distribution of the rated annual consumption for refrigerators 5 years old or less. Note that the annual consumption of refrigerators reflects both its efficiency as well as its size (i.e. volume) and features (i.e. door configuration, through-the-door water and ice, etc.). In this sense, Figure 3-40 would seem to indicate that a significant share of newer refrigerators are large, feature-rich units.

FIGURE 3-39: DISTRIBUTION OF REFRIGERATOR VINTAGE

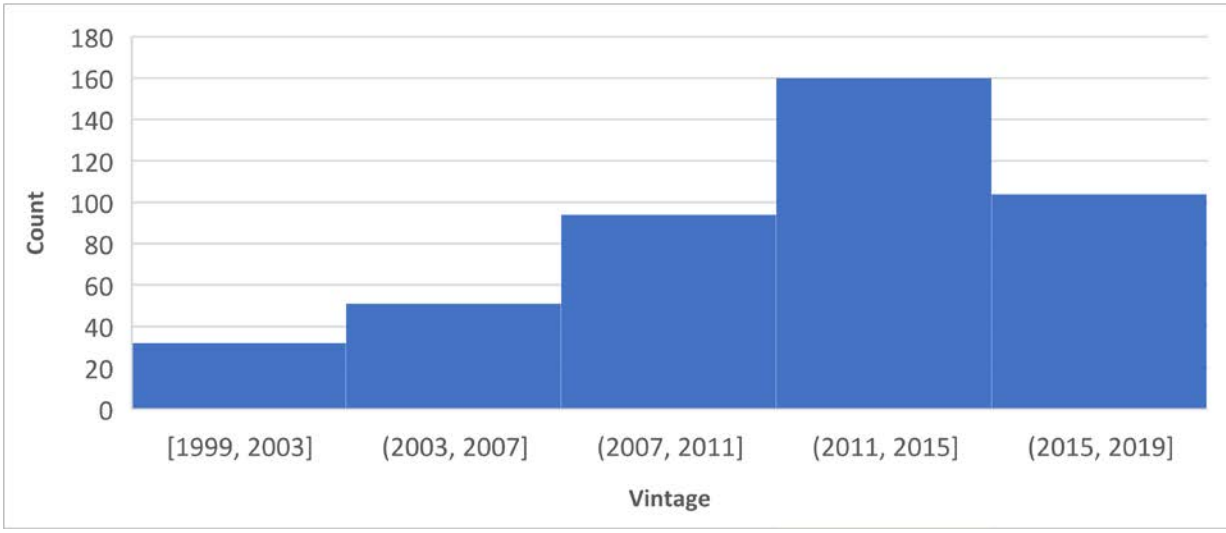


FIGURE 3-40: DISTRIBUTION OF REFRIGERATORS RATED ANNUAL CONSUMPTION – UNITS ≤5 YEARS OLD

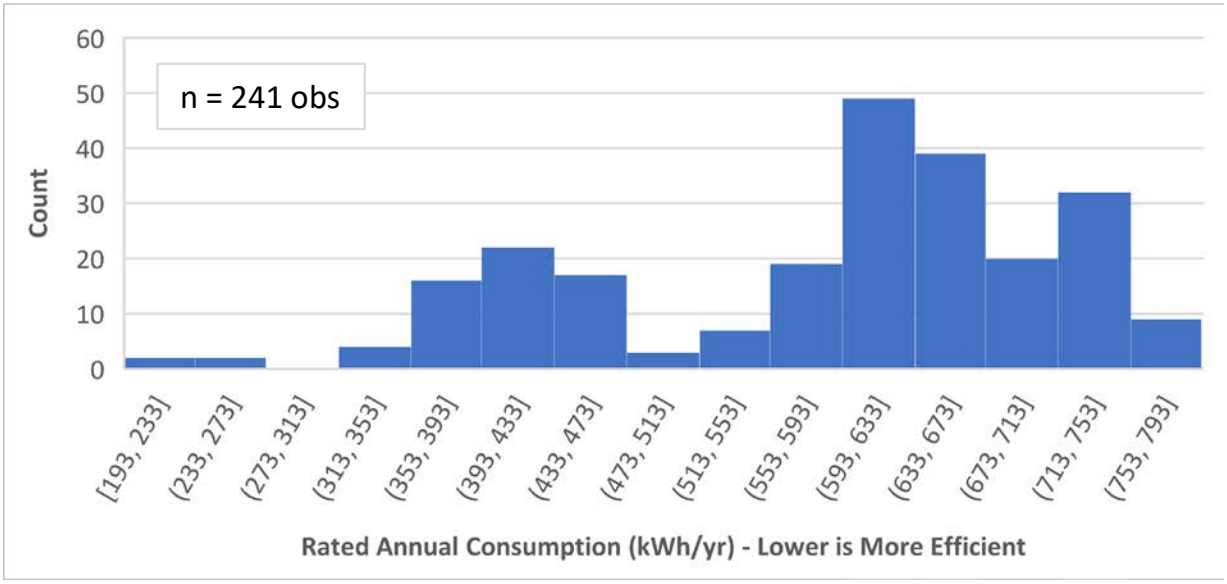


Figure 3-41 shows the saturation of stand-alone freezers in New Hampshire is just over 15% statewide, and the share of homes with more than one freezer is 1%. Figure 3-42 shows the distribution of rated annual energy consumption for stand-alone freezers. Note that roughly half of the counts in those specific buckets reflect values imputed for respondents that did not provide nameplate images, and the true distribution of rated consumption for freezers is likely to be more normally distributed than shown below.

FIGURE 3-41: SATURATION OF STAND-ALONE FREEZERS – STATEWIDE AGGREGATES

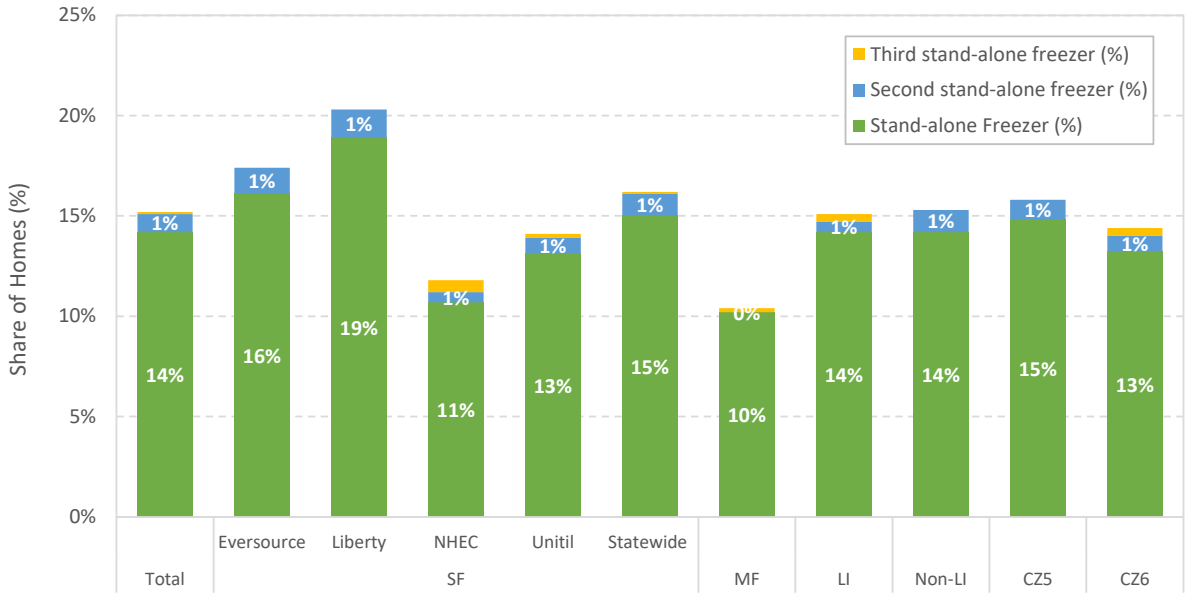


FIGURE 3-42: DISTRIBUTION OF STAND-ALONE FREEZER RATED ANNUAL CONSUMPTION

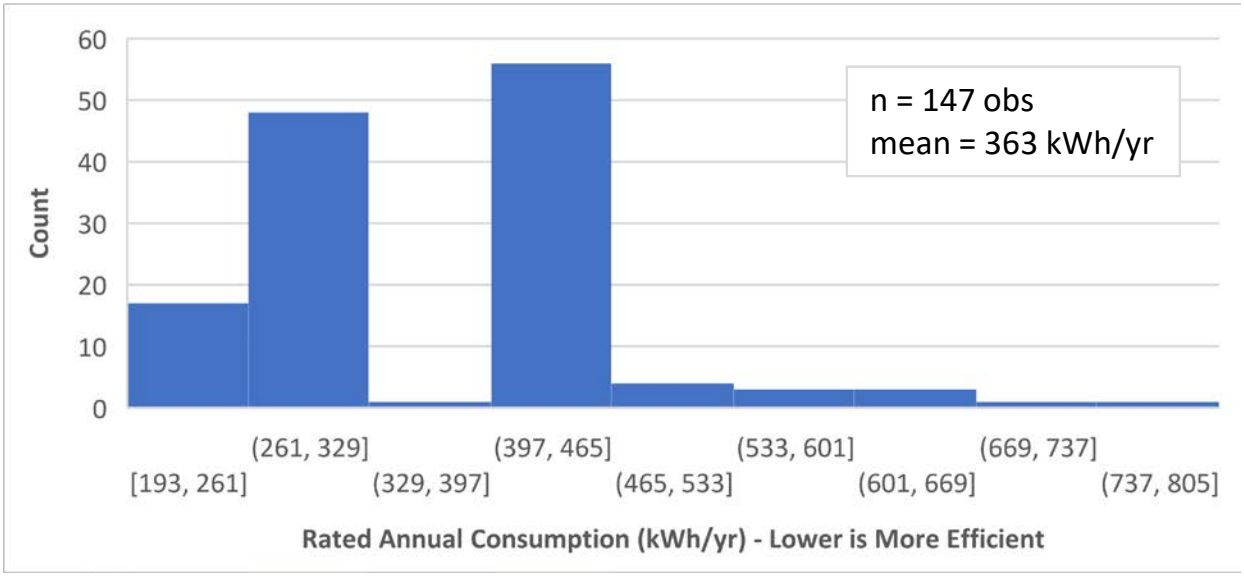


Figure 3-43 below shows that freezer age in New Hampshire is distributed across a narrower range compared to refrigerators (with no units more than 12 years old). To provide an indication of marginal market shares of high-efficiency freezer, Figure 3-44 below shows the distribution of the rated annual consumption for freezers 5 years old or less. As with refrigerators, the annual consumption of freezers reflects both its efficiency as well as its size (i.e. volume). From this perspective, Figure 3-40 indicates that the majority of newer freezers are standard-size units with annual consumption less than 358 kWh/yr.

FIGURE 3-43: DISTRIBUTION OF STAND-ALONE FREEZER VINTAGE

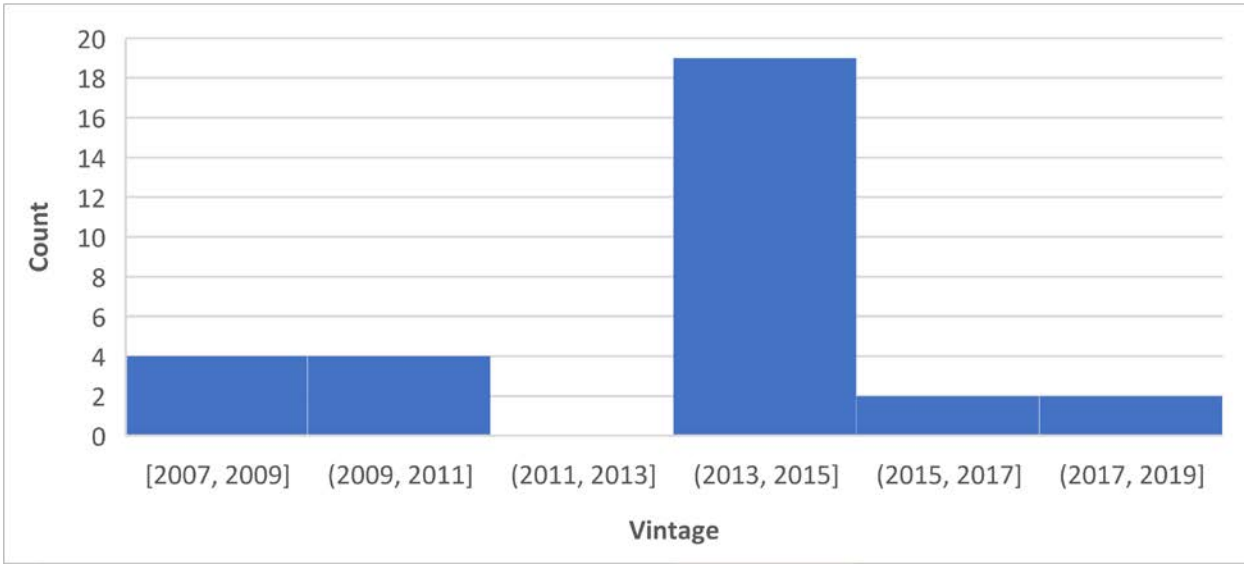


FIGURE 3-44: DISTRIBUTION OF FREEZER RATED ANNUAL CONSUMPTION – UNITS ≤5 YEARS OLD

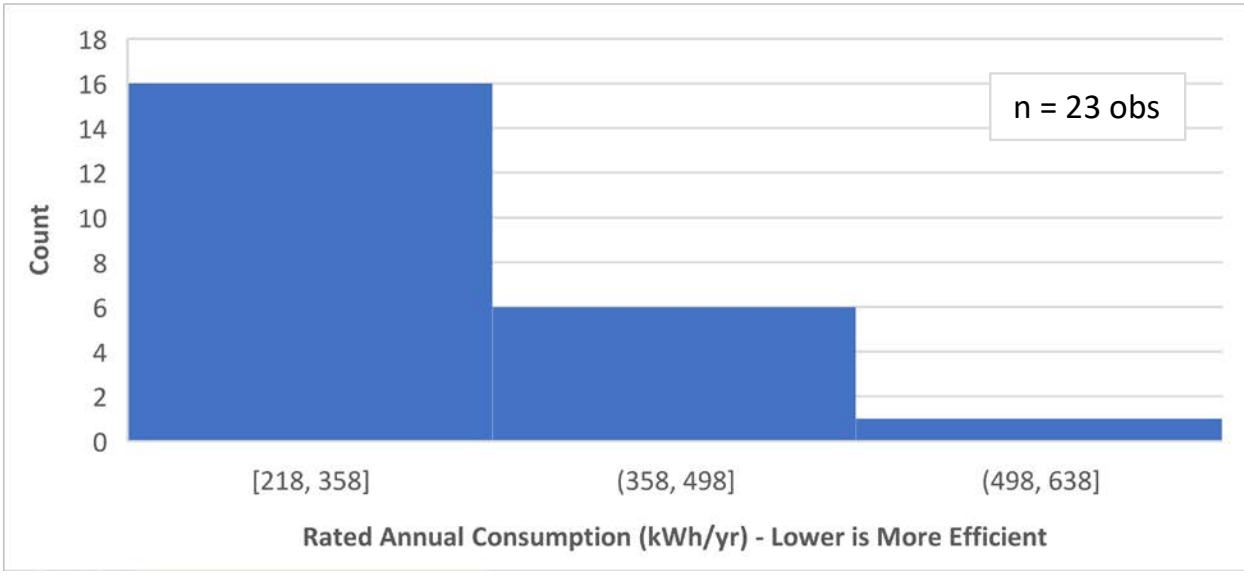


Figure 3-45 shows the saturation of clothes washer and dishwashers in New Hampshire is 91% and 69%, respectively, statewide, with significantly lower saturation in MF and LI homes. Figure 3-46 below shows the distribution of clothes washer rated efficiency (expressed as Modified Energy Factor or MEF). Note that the concentration of units with 1.9-21 MEF or 2.7-2.9 MEF is artificially amplified due to the inclusion of imputed values for respondents that did not provide nameplate images, and the true distribution of rated MEF for clothes washer is likely to be more normally distributed than shown below.

FIGURE 3-45: SATURATION OF CLOTHES WASHERS AND DISHWASHERS – STATEWIDE AGGREGATES

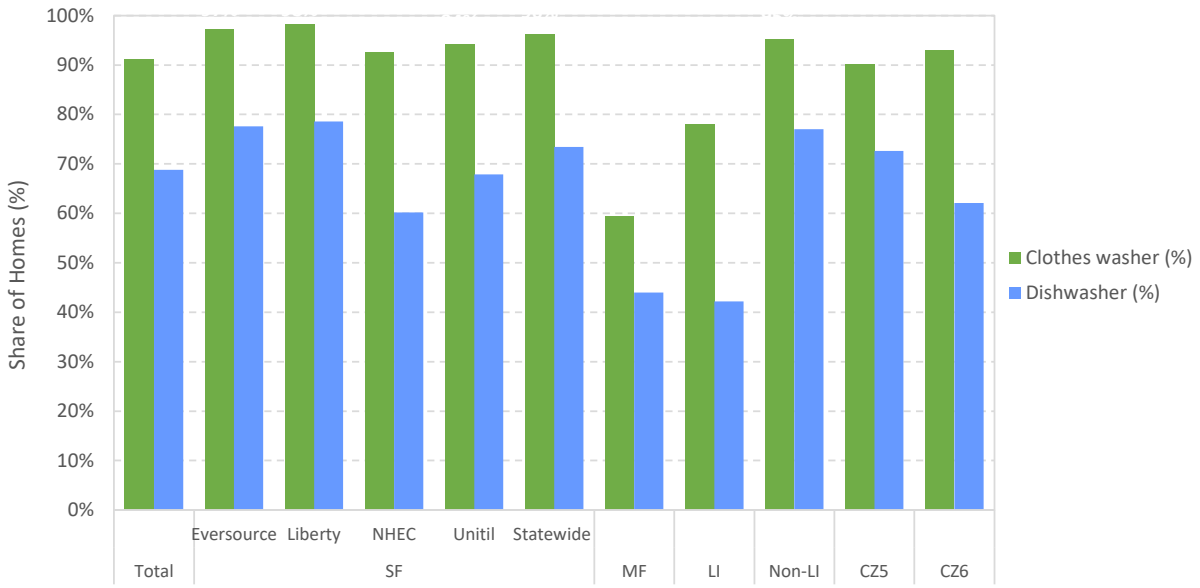


FIGURE 3-46: DISTRIBUTION OF CLOTHES WASHER RATED EFFICIENCY (MODIFIED ENERGY FACTOR)

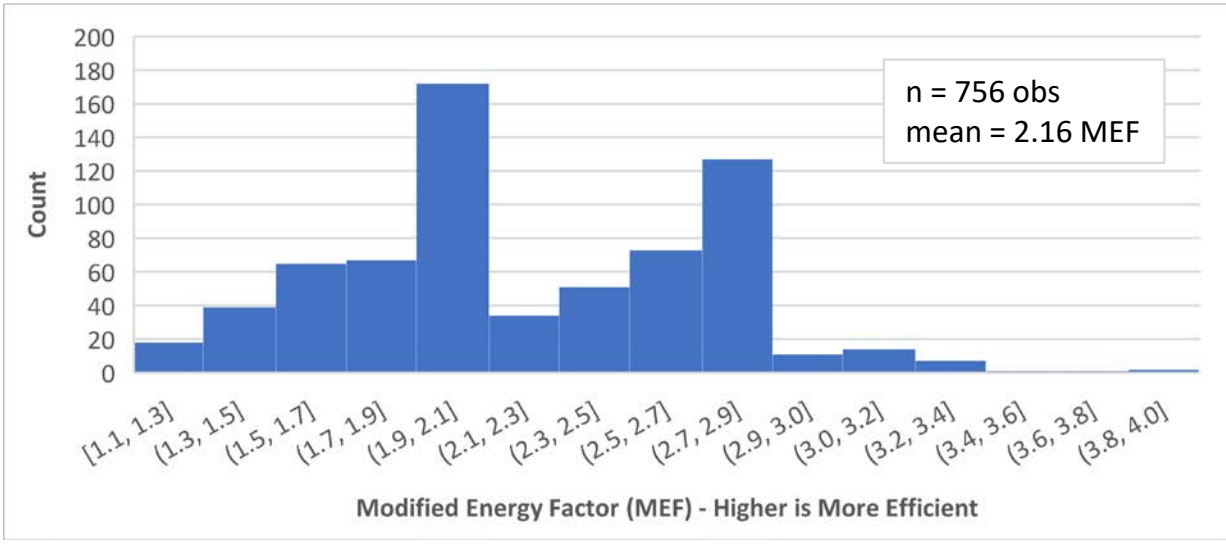


Figure 3-43 below shows that clothes washer age in New Hampshire is distributed across a wide range, although overall the distribution is skewed toward units purchased within the last 3-7 years. Figure 3-44 below shows the distribution of the rated MEF for clothes washers 5 years old or less. While the distribution of rated efficiency of newer clothes washers is slightly skewed towards higher-efficiency units (i.e. MEF>2.6), there is still a small share of inefficient units (i.e. MEF <1.6) among this cohort.

FIGURE 3-47: DISTRIBUTION OF CLOTHES WASHER VINTAGE

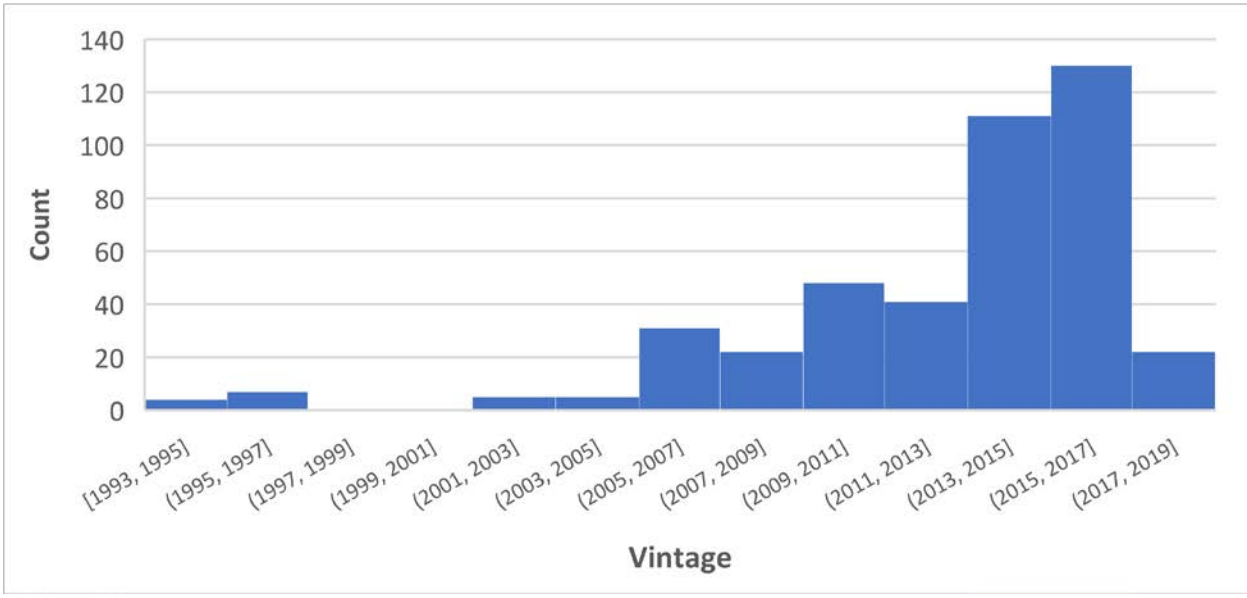


FIGURE 3-48: DISTRIBUTION OF CLOTHES WASHER EFFICIENCY (MEF) – UNITS ≤5 YEARS OLD

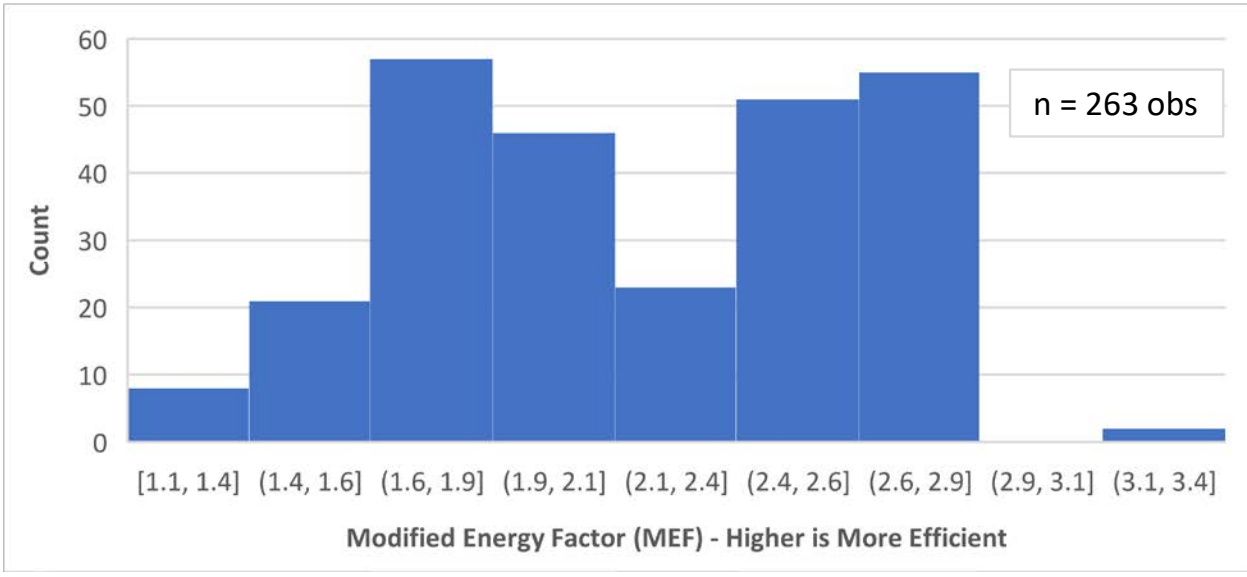


Figure 3-49 below shows the distribution of the rated annual consumption of the dishwashers observed in our survey, which is concentrated around the three previous federal efficiency standard levels. The largest mode in the distribution (297-321 kWh/yr) reflects units compliant with the most recent federal efficiency standard that took effect in 2015. This finding is consistent with the vintage distribution shown in Figure 3-50, which shows a strong skew towards dishwashers less than 5 years old.

FIGURE 3-49: DISTRIBUTION OF DISHWASHER RATED ANNUAL CONSUMPTION

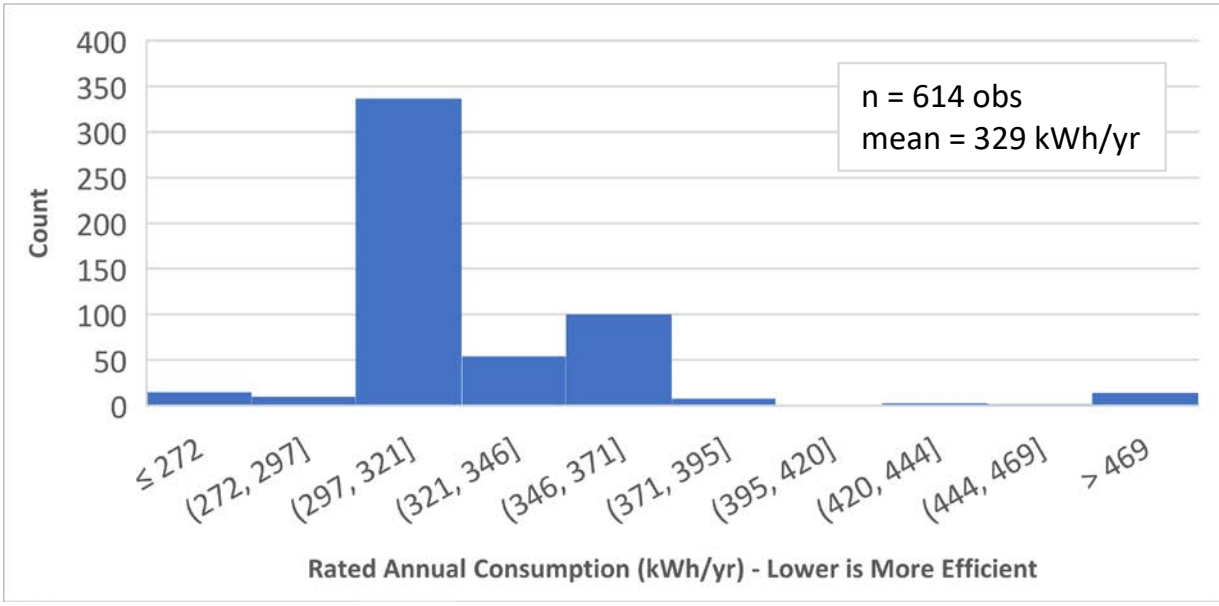


FIGURE 3-50: DISTRIBUTION OF DISHWASHER VINTAGE

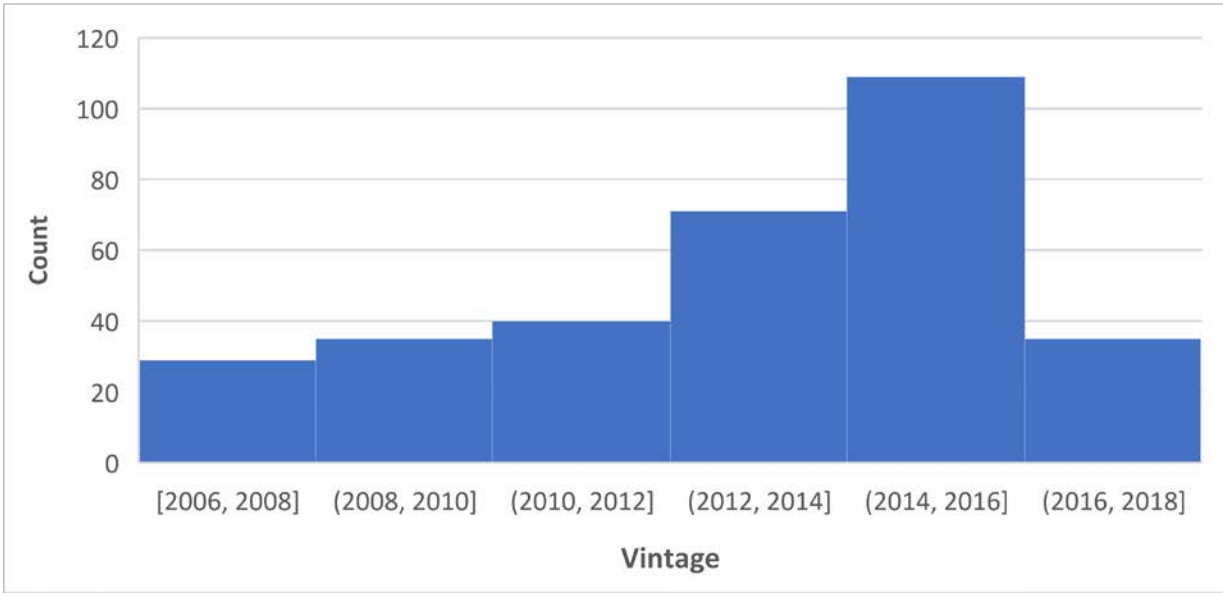


Figure 3-51 below shows the distribution of the rated annual consumption for dishwashers 5 years old or less. As the figure shows, the distribution of rated annual consumption of newer dishwashers is concentrated almost exclusively around the current federal efficiency standard level (307 kWh/yr), with only one higher-efficiency unit observed within this cohort (222 kWh/yr).

FIGURE 3-51: DISTRIBUTION OF DISHWASHER RATED ANNUAL CONSUMPTION – UNITS ≤5 YEARS OLD

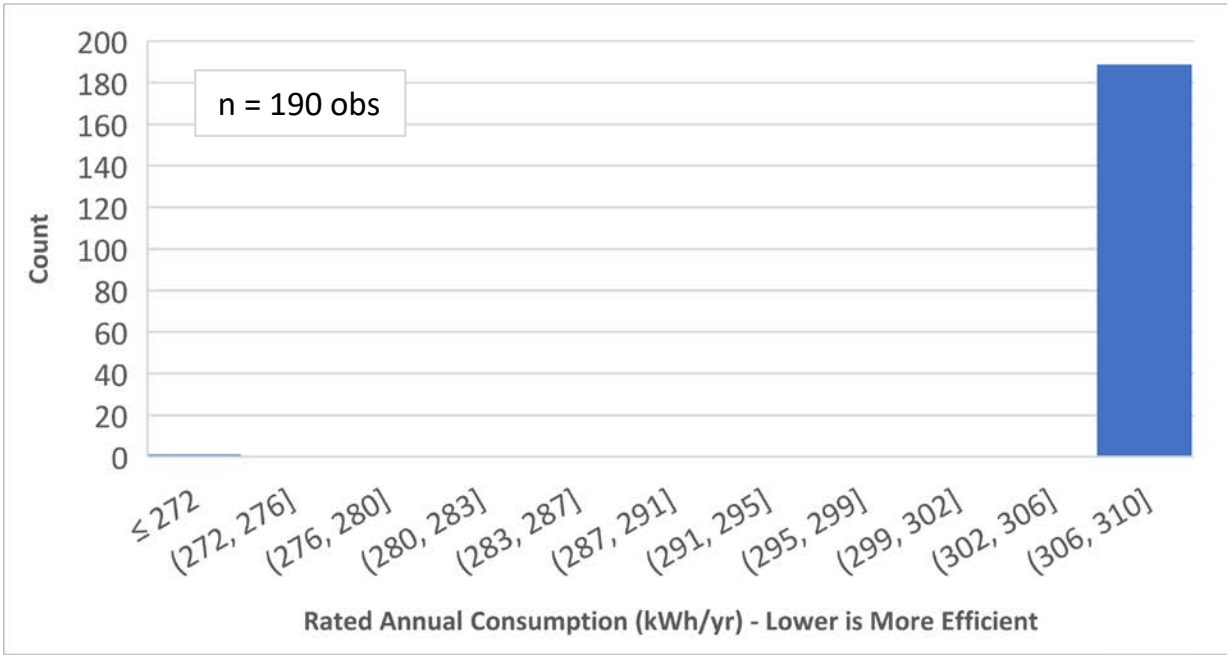


Figure 3-52 below shows the saturation of clothes dryers in New Hampshire by fuel type. As the figure shows, nearly all residential customers in New Hampshire have a clothes dryer in their homes, with the exceptions being in MF and LI homes where clothes dryer saturation is 77% and 86%, respectively. The figure also shows that electric clothes dryers enjoy a majority market share in New Hampshire, accounting for 79% of the total residential market. The share of clothes dryers that use bottled gas (i.e. propane), while small overall, varies significantly between the northern and southern climate zones (10% vs. 6%, respectively).

FIGURE 3-52: SATURATION OF CLOTHES DRYERS BY FUEL AND TYPE – STATEWIDE AGGREGATES

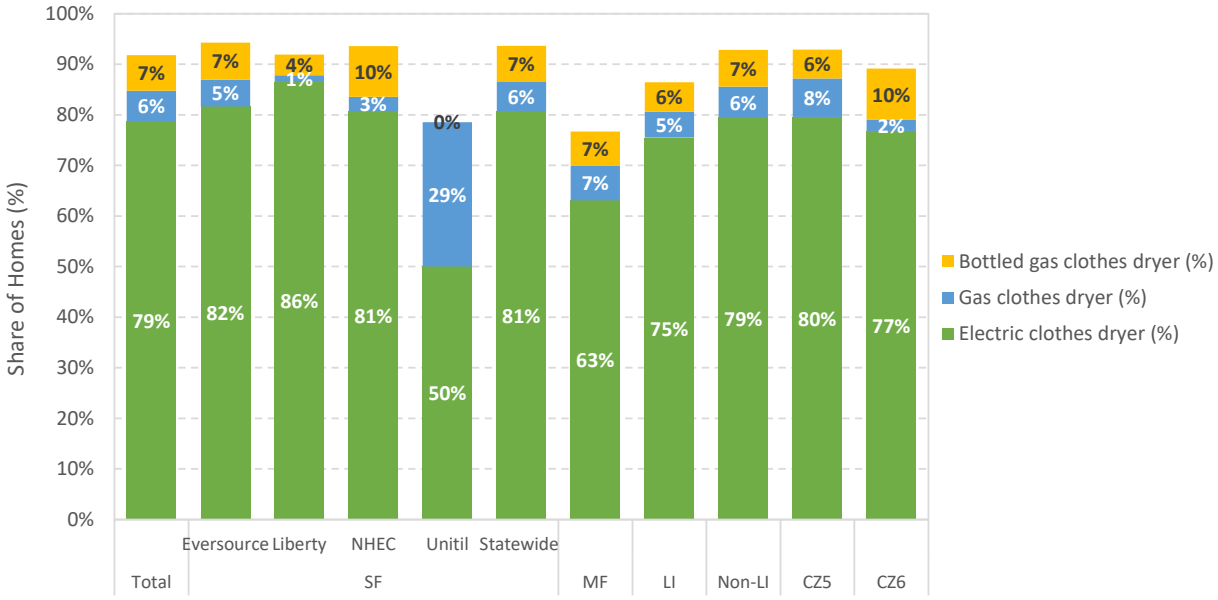


Figure 3-53 below shows the distribution of clothes dryers rated efficiency (expressed as Combined Energy Factor or CEF) for the clothes dryers observed in the survey. As the figure shows, the distribution of rated efficiency is strongly bimodal around the two most recent federal minimum efficiency standards (3.01 CEF in 1994 and 3.72 CEF in 2015).

FIGURE 3-53: DISTRIBUTION OF CLOTHES DRYER RATED EFFICIENCY (COMBINED ENERGY FACTOR)

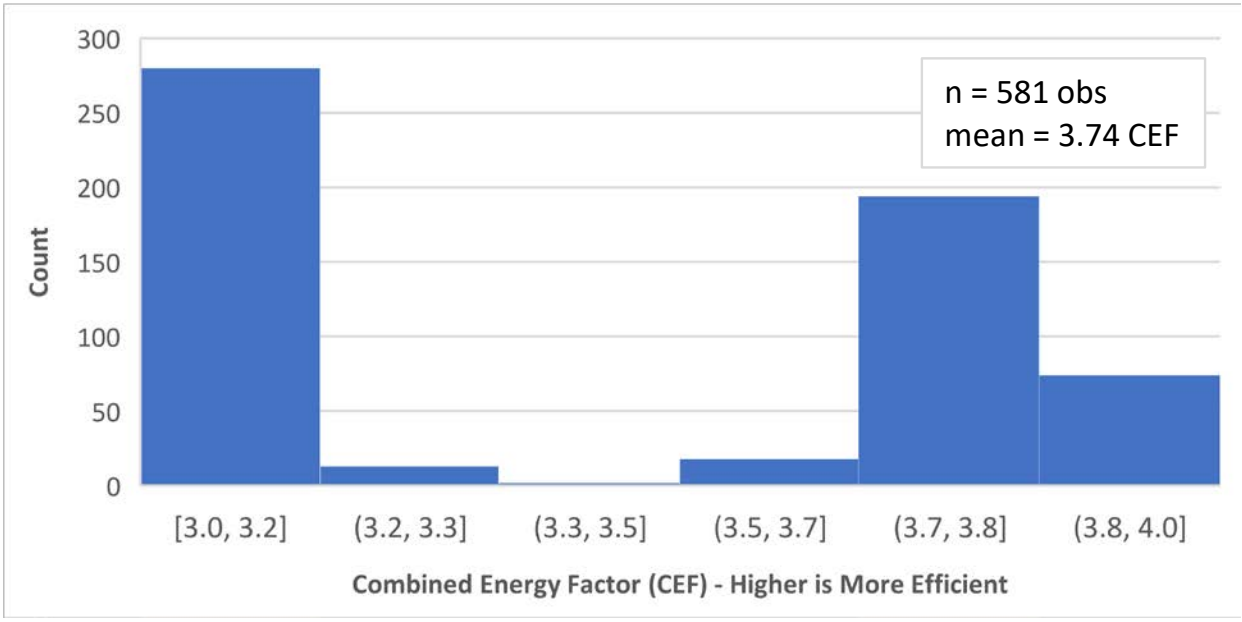


Figure 3-54 below shows that clothes dryer age in New Hampshire is distributed across a wide range, although overall the distribution is skewed toward units purchased within the last 3-7 years – much like clothes washers. Figure 3-55 below shows the distribution of the rated CEF for clothes dryers 5 years old or less, which is strongly skewed towards units that meet or exceed current federal efficiency standards (i.e. CEF ≥3.73).

FIGURE 3-54: DISTRIBUTION OF CLOTHES DRYER VINTAGE

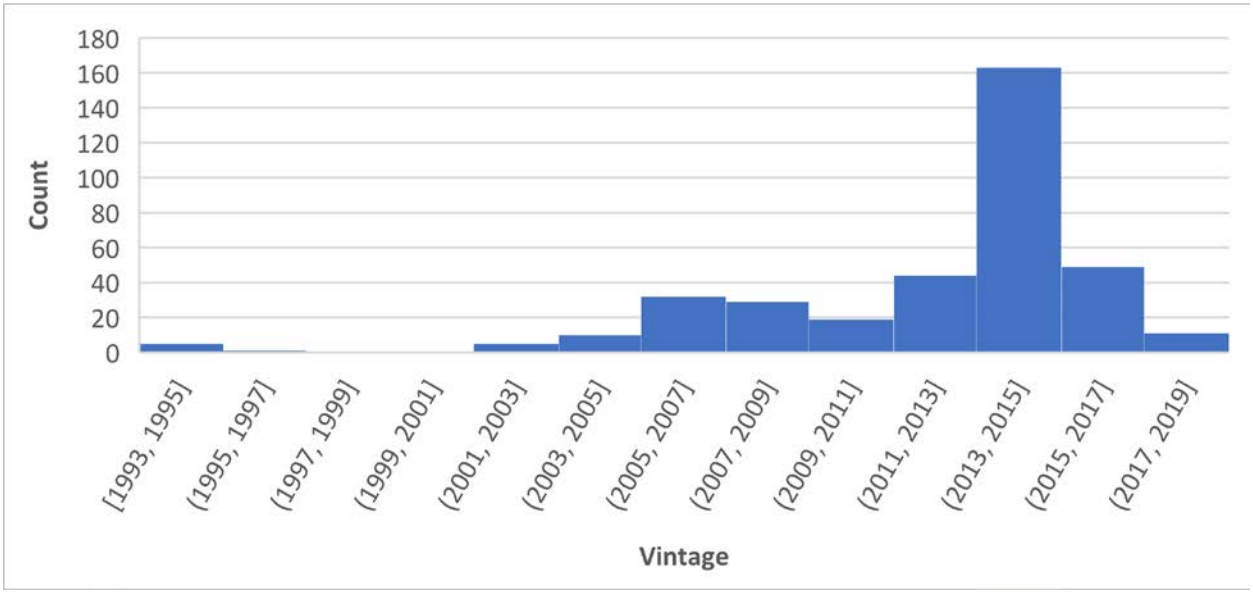
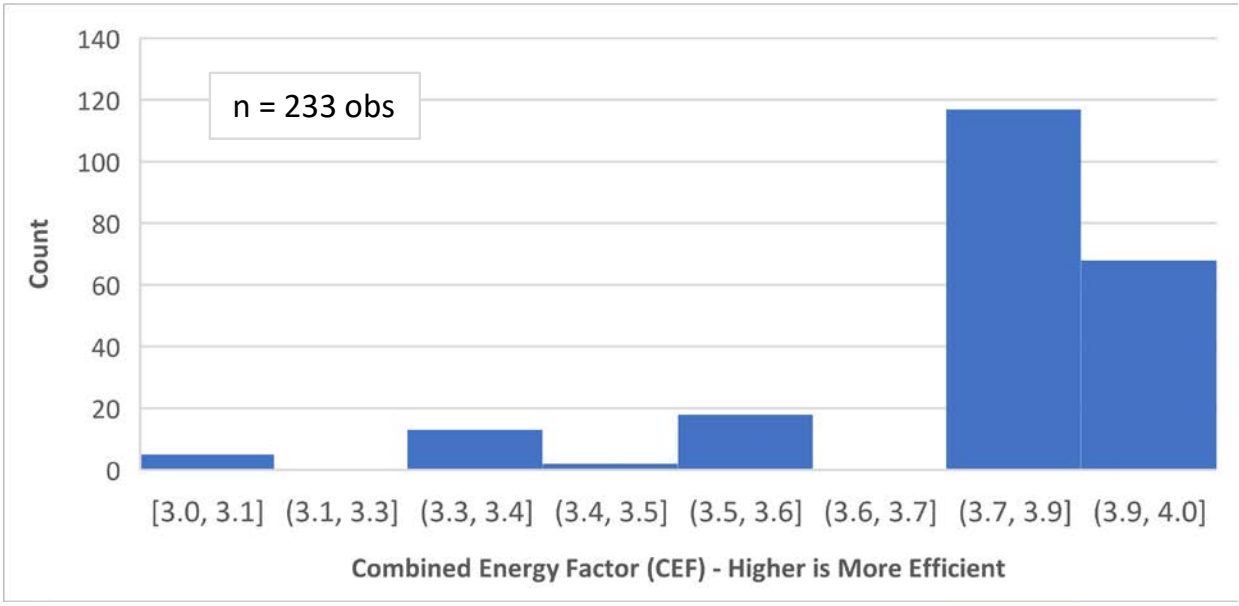


FIGURE 3-55: DISTRIBUTION OF CLOTHES DRYER RATED EFFICIENCY (CEF) – UNITS ≤5 YEARS OLD

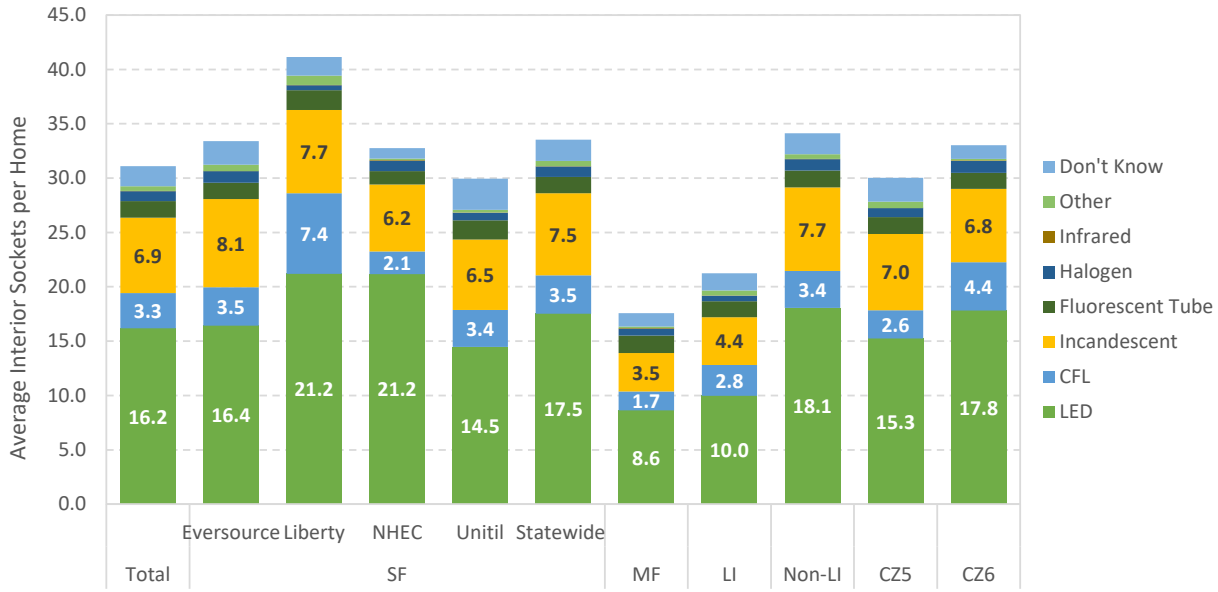


3.7 INTERIOR LIGHTING

Figure 3-56 shows the average number of interior lighting sockets by lighting technology. As the figure shows, saturation of LED lamps in residential interior lighting sockets in New Hampshire is just over 50% – which is a large change from the saturation of LED lamps estimated in New Hampshire's 2009 baseline study (<1%). This result indicates that the residential interior lighting market has undergone a rapid transformation away from both incandescents and CFLs and towards LEDs. Interestingly, incandescent lamps now account for a larger relative share of interior sockets than CFLs (22% vs. 10%, respectively).

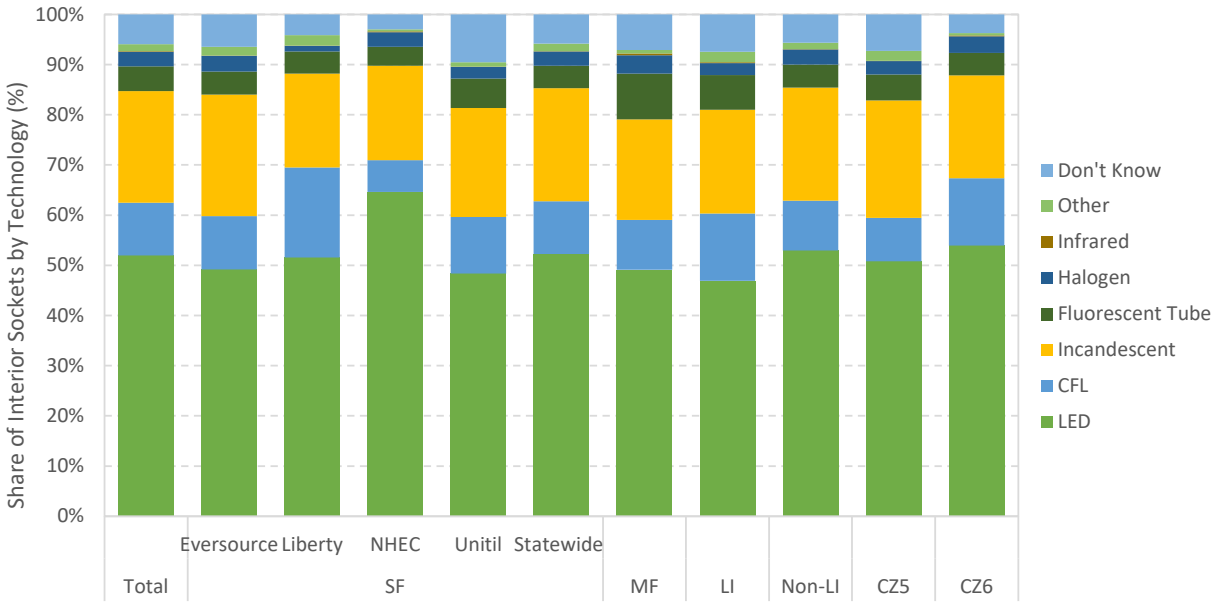
When viewed in the context of recent LED saturation estimates from other states in the Northeast, this result could be considered reasonable and somewhat expected, especially given the larger dynamics occurring in the LED market (see discussion later in Section 4). However, it is also important to acknowledge that these results are based on self-reported data (rather than nameplate data) and are therefore subject to self-report bias. While our web survey included example photos and descriptive text to help respondents differentiate between LED, CFL, halogen, and incandescent lamps, it is not guaranteed that a given respondent will accurately identify each technology or that they will provide an accurate count of all lighting sockets in their homes. Indeed, in a recent baseline study Itron performed for a utility in the Midwest, we conducted a small sample of on-site verification surveys (48 total) to assess the accuracy of its mobile-optimized web surveys and found that respondents under-reported the total number of sockets in their homes by roughly 15%, with incandescent and halogen lamps accounting for most of the under-counted sockets.

FIGURE 3-56: AVERAGE NUMBER OF INTERIOR LIGHTING SOCKETS BY TECHNOLOGY – STATEWIDE AGGREGATES



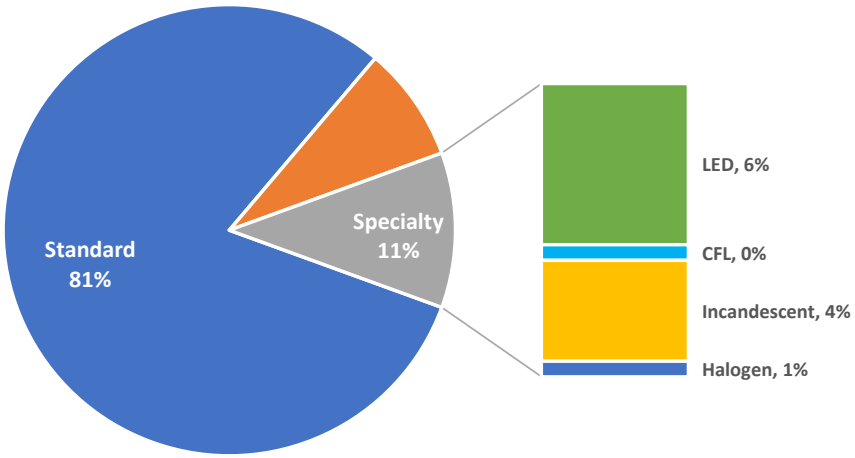
Given these caveats, it is interesting to note that despite significant differences in the average number of interior lighting sockets across customer segments (e.g. SF vs. MF, LI vs. non-LI), the relative share of LEDs is quite similar across segments, as shown in Figure 3-57 below. The relative shares of CFLs, halogens, and incandescents are also quite similar across customer segments.

FIGURE 3-57: SHARE OF INTERIOR LIGHTING SOCKETS BY TECHNOLOGY – STATEWIDE AGGREGATES



Going one level deeper, Figure 3-58 below shows that the vast majority of residential interior lighting lamps are standard shape, with specialty lamps accounting for 11% of all sockets on average. Within specialty lamps, over half of these lamps are already LED, but over 40% are still incandescent.

FIGURE 3-58: SHARE OF INTERIOR LIGHTING SOCKETS BY TECHNOLOGY AND LAMP SHAPE

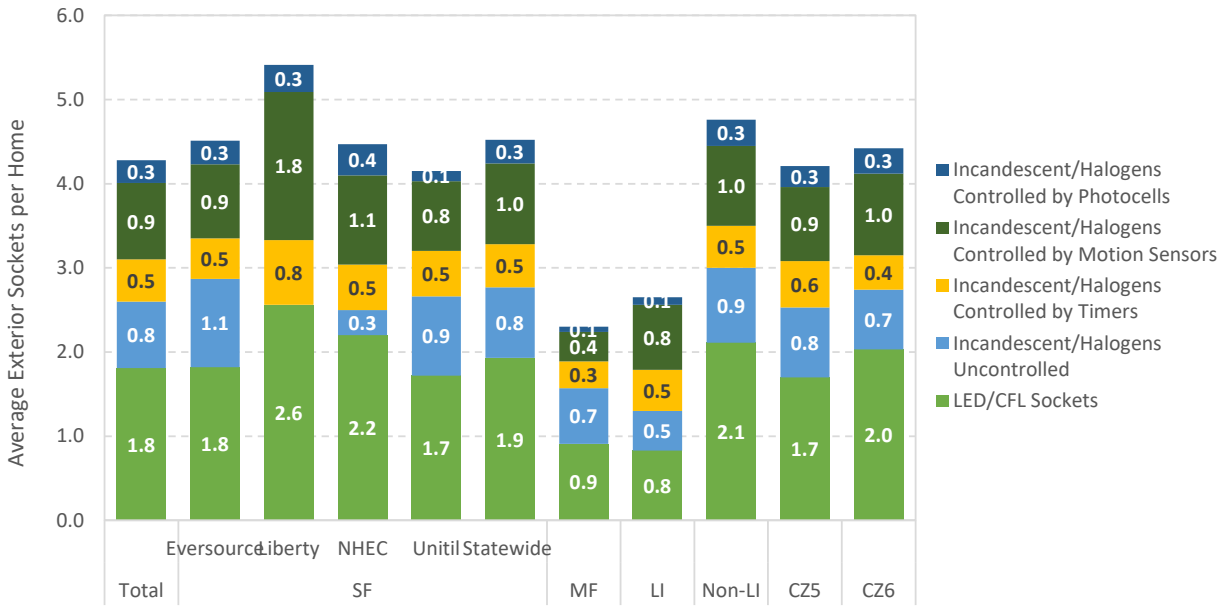


3.8 EXTERIOR LIGHTING

In our effort to minimize the overall length of the web survey (with an eye toward respondent fatigue), we focused on the exterior lighting questions on characterizing the size of the replacement market, i.e. exterior lighting sockets with incandescent or halogen lamps. As such, we did not collect data specifically on exterior lighting sockets with LED or CFL lamps specifically, and we assumed that exterior lighting sockets not populated with incandescent or halogen lamps have either LED or CFL lamps installed, since the use of linear fluorescent lamps for exterior residential lighting is negligible and infrared lamps are only used in interior applications (mostly bathrooms).

Figure 3-59 shows that the market share of LED and CFL lamps in the residential exterior lighting market is significant (roughly 40% overall), but incandescent and halogen lamps still account for a majority of exterior sockets. Further, the figure also shows that roughly one third of exterior incandescent and halogen lamps are not controlled by timers, motion sensors, or photocells.

FIGURE 3-59: AVERAGE NUMBER OF EXTERIOR LIGHTING SOCKETS BY TECHNOLOGY – STATEWIDE AGGREGATES



3.9 MISCELLANEOUS END USES

Figure 3-60 below shows the saturation of room HVAC technologies (portable space heaters, air purifiers, dehumidifiers, room air conditioners, and fans) in New Hampshire's residential sector. As the figure shows, ceiling fans are the most common room HVAC technology found in homes across all major customer segments (40% statewide). The saturation of room air conditioners is also significant (20%

statewide), particularly in MF (27%) and LI (23%) homes where the saturation of central cooling systems is lowest. Also of note are the differences – albeit slight – between the saturation of room HVAC technologies in the norther climate zone (CZ6) and the southern climate zone (CZ5), in particular portable space heaters (14% vs. 11%, respectively) and room air conditioners (18% vs. 21%, respectively).

FIGURE 3-60: SATURATION OF ROOM HVAC – STATEWIDE AGGREGATES

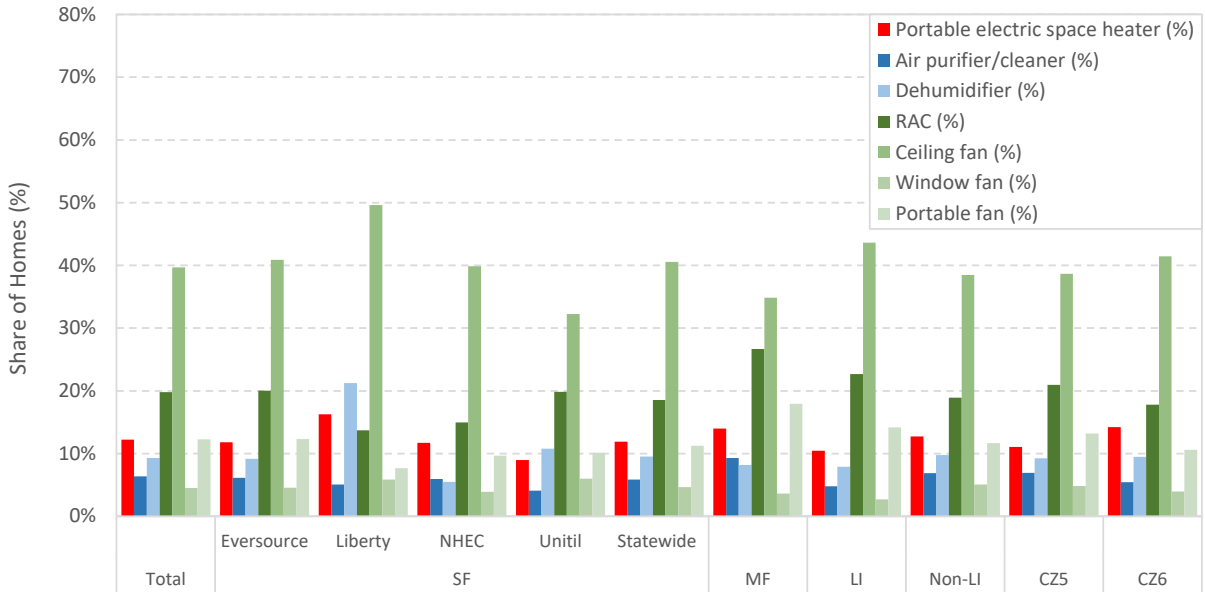


Figure 3-61 shows the share of homes in New Hampshire with pools (8%) and the distribution of pumps used in those pools by type. As the figure shows, roughly two-thirds of pool pumps are single-speed, indicating a non-negligible program opportunity going forward.

FIGURE 3-61: SATURATION OF POOL PUMPS BY PUMP TYPE

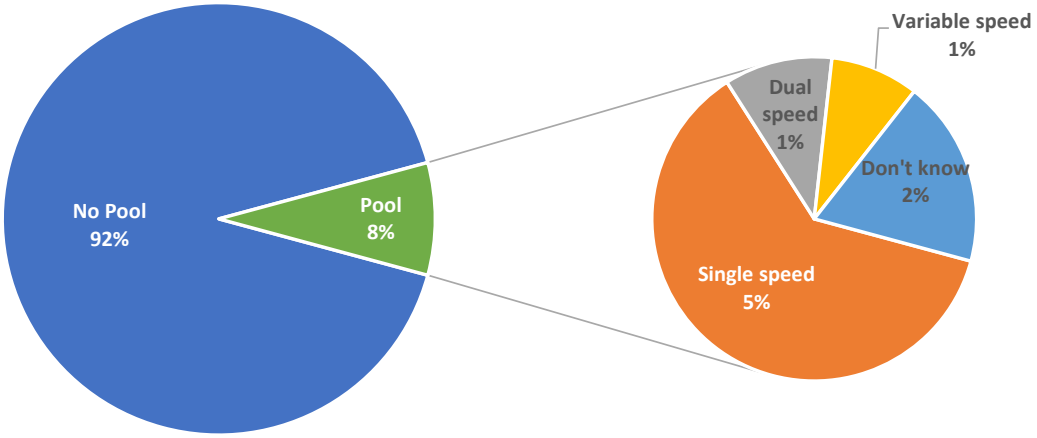
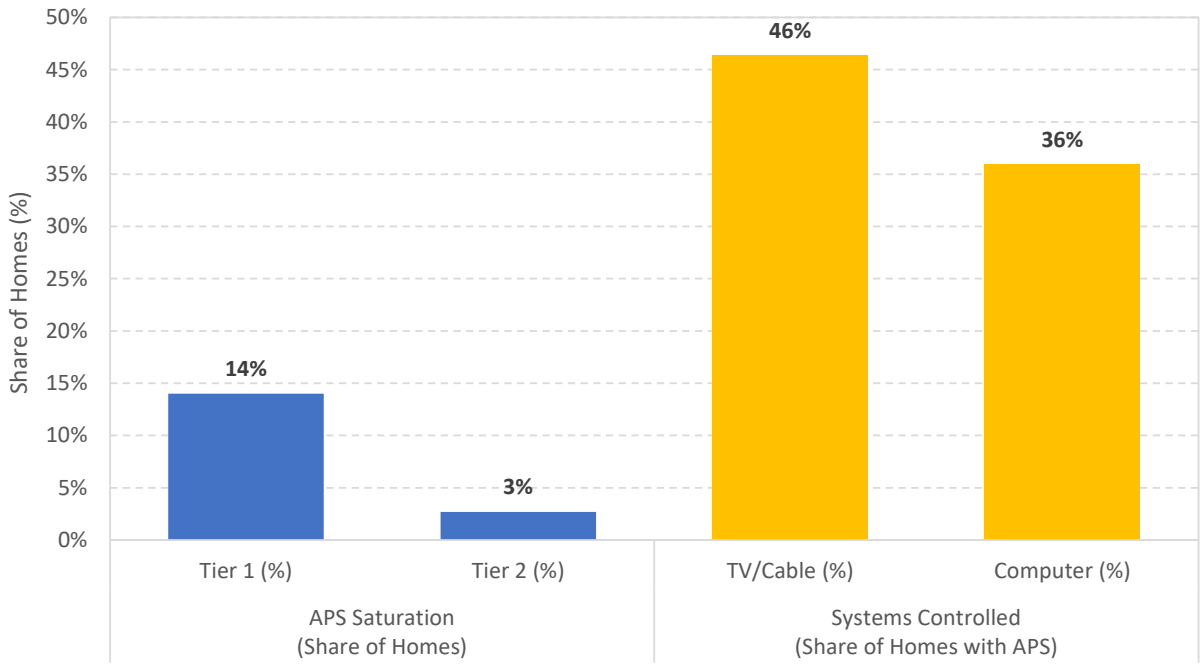


Figure 3-62 shows the saturation of advanced power strips (APS) – both Tier 1 and Tier 2 – among New Hampshire's residential customers. As the figure shows, ownership of APS appears significant despite the relative newness of the technology – 17% overall. While the survey included information to help customers reasonably differentiate between APS and standard power strips, it should be noted that this result should be interpreted with caution, as a recent comparison of self-report and on-site data in Connecticut found that customers overreported ownership of APS by more than a factor of 10.[11]

FIGURE 3-62: SATURATION OF ADVANCED POWER STRIPS AND SYSTEMS CONTROLLED IN THOSE HOMES



3.10 DEMAND RESPONSE AND FUEL SWITCHING

Finally, the survey concluded with a battery of questions designed to explore customers' willingness to enroll in demand response (DR) programs and consider fuel switching either from oil to gas heat or from oil/gas heat to electric heat pumps. Due to the overall length of the survey, this battery of questions was kept to a strict minimum so as not exacerbate respondent fatigue. As a result, these questions were not designed to develop quantitative estimates of propensity that could be used for modeling future program participation under specific incentive scenarios. Rather, these questions were designed to provide high-

[11] See https://www.energizect.com/sites/default/files/R1706%20and%20R1616-R1708%20CT%20RASS%20Lighting_Final%20Report_10.1.19.pdf

level indicators of customer willingness and rough estimates of the market sizes that could be addressable by demand response and fuel switching programs going forward.

Customers were first asked to "select all types of equipment that you would be willing enroll in a peak demand reduction program in exchange for financial incentives".[12] Figure 3-63 shows that the overall willingness to enroll in demand response programs is rather low, with only 7% of customers with electric storage water heaters stating a willingness to consider letting their utility control those equipment for DR events (and less for air conditioners, dehumidifiers, pool pumps, and electric vehicles). Interestingly, a much higher share (16%) stated a willingness to adjust their equipment settings themselves in response to DR events.

FIGURE 3-63: WILLINGNESS TO ENROLL IN DEMAND RESPONSE BY TECHNOLOGY TYPE

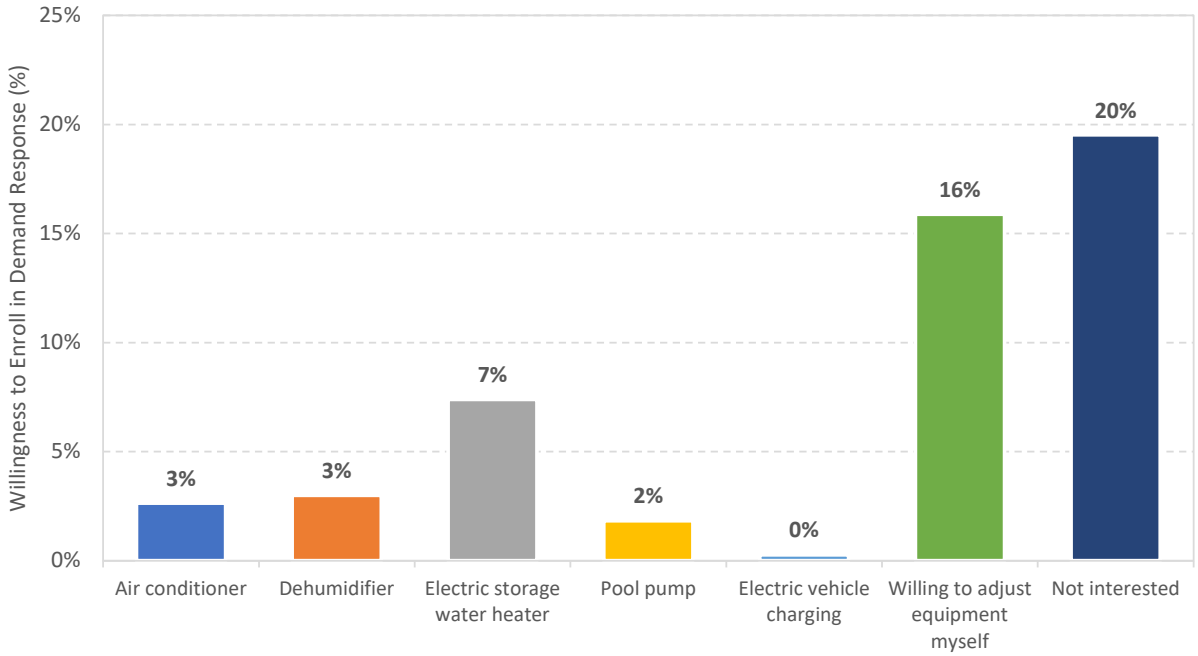


Figure 3-64 summarizes participants' stated willingness to consider switching from oil-fired heating to gas (given availability of gas service), which shows 21% would strongly consider switching from oil to natural gas and an additional 21% might consider switching from oil to gas.

[12] This question was only asked if the respondent had previously reported owning specific DR-eligible equipment.

FIGURE 3-64: WILLINGNESS TO CONSIDER SWITCHING FROM OIL HEAT TO NATURAL GAS HEAT

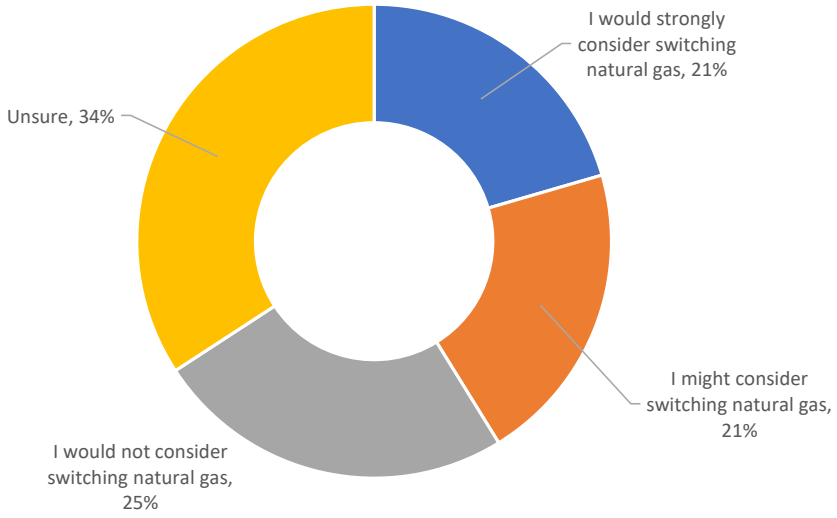


Figure 3-65 summarizes participants' stated willingness to consider switching from oil-fired or gas-fired heating to electric heat pumps. As the figure shows, only 7% of respondents stated they would strongly consider switching from oil or gas-fired heat to electric heat pumps, while another 6% stated they would strongly consider augmenting their current oil or gas-fired systems with an electric heat pump. The most important factors preventing switching to heat pumps were concerns related to cost-effectiveness, followed by concerns related to performance and feasibility (as shown in Figure 3-66 below).

FIGURE 3-65: WILLINGNESS TO CONSIDER SWITCHING FROM OIL OR GAS HEATING TO ELECTRIC HEAT PUMPS

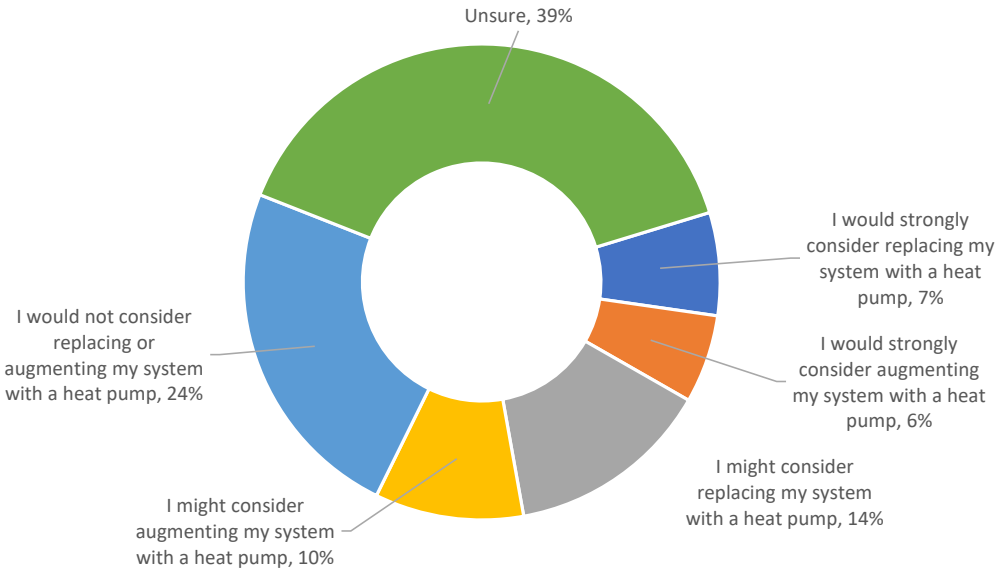
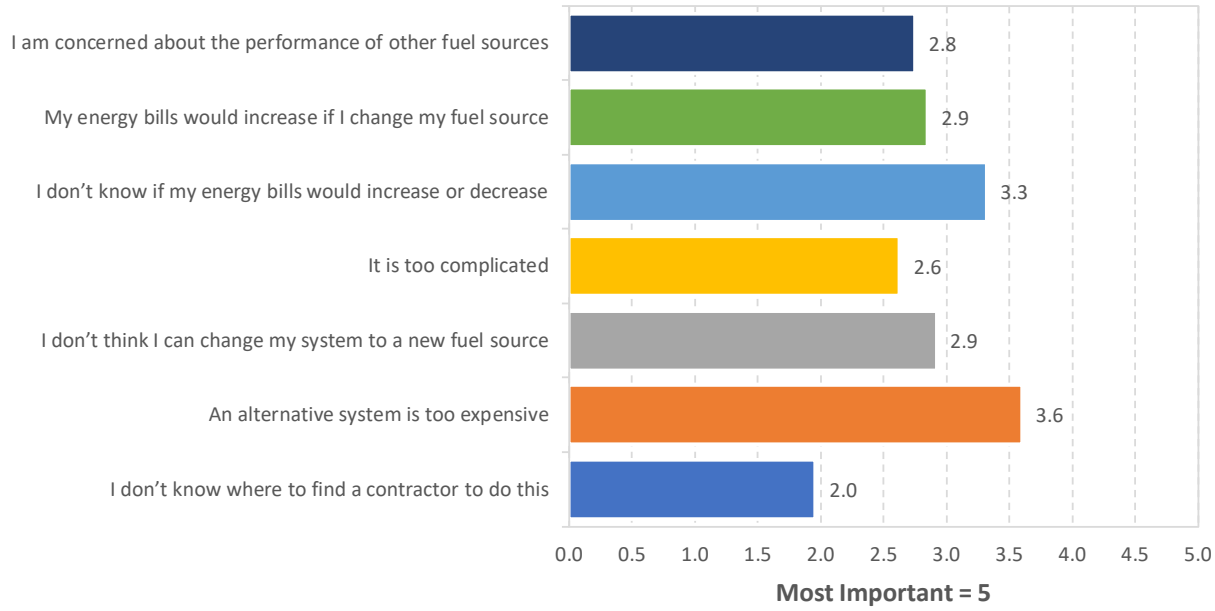


FIGURE 3-66: IMPORTANCE OF FACTORS PREVENTING SWITCHING TO ELECTRIC HEAT PUMPS



4 REGIONAL COMPARIONS OF KEY RESULTS

In addition to analyzing the baseline results for New Hampshire on their own, it is also valuable to put these results in the context of results from other jurisdictions in the Northeast. Below, we compare some of the key baseline results for New Hampshire to those from recent baseline studies conducted in Massachusetts, Connecticut, and Rhode Island. These other studies included relatively large samples of on-site surveys (e.g. 100-400 homes) and therefore provide meaningful benchmarks for many of the technology-level estimates produced in this study. Table 4-1 below presents comparisons of the results for several key residential end-use technologies. Note that the years in the column headers below refer to the vintage of the source data, not the report publication date.

TABLE 4-1: REGIONAL COMPARISON OF KEY BASELINE RESULTS

End Use	Metric	NH 2019/20	MA 2018	CT 2017/18	RI 2018
Space cooling	Central cooling (% of homes)	19%	39%	40%	-
	Average SEER of CAC	12.4	-	13.1	-
	Communicating thermostats (% of homes)	12%	16%	6%	-
Space heating	Furnace – gas (% of homes)	9%	24%	21%	-
	Furnace – oil (% of homes)	18%	4%	9%	-
	Furnace – electric (% of homes)	0.2%	2%	-	-
	Average AFUE of gas furnaces	83.2	-	88.4	-
	Average AFUE of oil furnaces		-	82.7	-
	Boiler – gas (% of homes)	4%	35%	20%	-
	Boiler – oil (% of homes)	23%	14%	22%	-
	Average AFUE of gas boilers	84.4	-	82.5	-
	Average AFUE of oil boilers		-	83.1	-
	Electric baseboard (% of homes)	7%	14%	12%	-
	Central ASHP (% of homes)	1%	2%	4%	-
Water heating	HPWH (% of homes)	3%	1%	-	-
Appliances	Primary refrigerators (% of homes)	99%	99%	100%	-
	Secondary refrigerators (% of homes)	11%	30%	-	-
	Freezers (% of homes)	14%	23%	20%	-
	Dishwashers (% of homes)	69%	74%	73%	-
	Clothes washers (% of homes)	91%	78%	79%	-
	Clothes dryers (% of homes)	92%	75%	77%	-
Interior lighting	LEDs (% of sockets)	52%	34%*	23%	33%
	CFLs (% of sockets)	10%	23%*	24%	22%

* Lighting saturation data were collected in 2019. Data for all other metrics for Massachusetts were collected in 2018.

Sources: RLPNC Study 18-10 2018-2019 Lighting Market Assessment Study (NMR, 2019); Massachusetts Residential Baseline Study (Navigant, 2019); R1706 Residential Appliance Saturation Survey & R1616/R1708 Residential Lighting Impact Saturation Studies (NMR, 2019); RI2311 National Grid Rhode Island Lighting Market Assessment (NMR, 2018).

As the table shows, the overall saturation and average efficiency of residential furnaces and boilers is similar in New Hampshire when compared to other states in the region, with the key difference being a higher share of fuel oil used for heating equipment in New Hampshire. The penetration of central air-source heat pumps and heat pump water heaters in New Hampshire is also similar to the rest of the region (1-4%). Across all HVAC technologies, the most significant difference in Table 4-1 is the significantly lower penetration of central air conditioning in New Hampshire (19%) compared to other states in the region (39% in Massachusetts and 40% in Connecticut).

Within appliances, the most notable difference shown in Table 4-1 is the higher saturation of clothes washers and clothes dryers in New Hampshire compared to other states in the region. While it was not within the scope of this study to determine the causal factors that explain this difference, this comparative result is consistent with the higher share of renters in Massachusetts (38%) and Connecticut (34%) compared to New Hampshire (29%) and the lower prevalence of laundry appliances in rented homes, particularly rented homes in multi-family buildings where shared laundry facilities are common.[13]

The most surprising comparison show in Table 4-1 is the much higher saturation of LEDs in New Hampshire compared to other states in the Northeast. As noted earlier, it is important to acknowledge that these results are based on self-reported data (rather than nameplate data) and are therefore subject to self-report bias. However, when taken in the context of recent estimates from other jurisdictions and trends in the larger LED market, this result starts to look more reasonable. First, LED prices have declined significantly over the past decade – to the point that LED general service lamps now average close to $3 (Apex Analytics, 2019).[14] At the same time, consumer acceptance of LEDs has been high – particularly when compared to CFLs (Kelly and Rosenberg, 2016).[15] Together with utility rebates and marketing campaigns, these forces have combined to help drive rapid growth in LED adoption across the country. Additionally, longitudinal lighting saturation data collected for the Program Administrators in Massachusetts estimate that LED saturation there has grown from 18% in 2017, to 27% in 2018, to 34% in 2019 (NMR, 2019).[16] If this trend continues (as expected), the saturation of LEDs in Massachusetts will likely exceed 40% in 2020. In this sense, the LED results from this study are less surprising when viewed against the backdrop of trends in the larger LED market.

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[13] https://data.census.gov/cedsci/table?q=owner-occupied&g=0400000US09,25,33&tid=ACSDP1Y2018.DP04&hidePreview=false&t=Housing&vintage=2018

[14] https://neea.org/img/documents/Results-of-the-2018-Northwest-Residential-Lighting-Long-term-Montioring-and-Tracking-Study_190820_160415.pdf

[15] https://www.aceee.org/files/proceedings/2016/data/papers/7_703.pdf

[16] http://ma-eeac.org/wordpress/wp-content/uploads/RLPNC_1810_LtgMarketAssessment_FINAL_2019.03.29.pdf

Finally, it is also worth considering the LED results in the context of the different histories residential lighting programs across the region, particularly with respect to CFLs. In particular, Massachusetts has one of the longest-running residential lighting programs in the nation and aggressively pushed CFLs beginning in the last 1990s and into the mid-2010s – achieving one of the highest CFL socket saturation rates in the country (33%) by 2014. In contrast, New Hampshire had a shorter history with residential CFL programs, with CFLs being offered only through NHSaves starting in the late 2000s (and then limited to only downstream programs until the mid-2010s). Because of the relatively long useful life of CFLs compared to incandescents and halogens (4-6 years compared to 1-2 years), it is reasonable to infer that the number of annual replace-on-burnout opportunities (on a per-home basis) were more limited in Massachusetts compared to New Hampshire by the time that LEDs became the preferred high-efficiency lighting technology for residential programs in the late 2010s. In this sense, it is perhaps more appropriate to compare the combined saturation of "efficient lighting" (i.e. LEDs and CFLs) in aggregate to take these program histories and stock-turnover dynamics into account. Indeed, as Table 4-1 shows, the combined saturation of LEDs and CFLs in Massachusetts and New Hampshire are more similar (57% and 62%, respectively) than when comparing only LED saturation (52% and 34%, respectively).

APPENDIX A SURVEY INSTRUMENT

Note that there are many terms in the survey that were also clickable links to pop-up screens that provided additional explanatory text and images. For this appendix, we hid the pop-up screen content in the survey instrument document itself to improve readability (pages 1-51 of Appendix A) and attached a separate output of just the pop-up screen content (pages 52-97 of Appendix A).

NHSAVES RESIDENTIAL SURVEY INSTRUMENT

[LANDING PAGE]
Please enter the participant ID number on the mailer you received – including the dashes – and then press the start button.

Participant ID: [RECORD]

[INTRO PAGE]
NHSaves is a collaboration of New Hampshire's electric and natural gas utilities. We are working together to identify new energy-saving opportunities and fine-tune our existing energy efficiency solutions. We are sponsoring this survey to gather more information on how our customers can save energy in their homes.

The data you provide for this survey will used for research purposes only in ways that will not reveal who you are. None of your personal data will be shared for third-party use.

If you have any questions about this survey, please call <UTILITY> customer service at <UTILITYPHONE>.

[WELCOME PAGE]
Thank you for participating in the NHSaves Home Energy Survey! Some things to know before you begin:

- The survey is designed to be completed on a mobile device and takes 30-45 minutes to complete.
- You may take a break from the survey at any time. If you exit the survey, you can return to where you left off by using the same link and participant ID number provided on the mailer sent to you.
- Use the **NEXT** and **PREVIOUS** buttons at the bottom of each page to navigate through the survey. Do not use the BACK and FORWARD buttons on your mobile browser.
- To be eligible for the $25 Amazon.com Gift Card, you must complete the entire survey, including the requested photos wherever possible.

P1 Your Name: [RECORD]

Enter the email address where the Amazon.com Gift Card should be sent.

P2 Email Address: [RECORD]
(Your email address will be collected for use by NHSaves only. It will not be shared for third-party use.)

[SHOW NEW PAGE]
QC_GEO This survey must be completed while in your home at <CUST_ADDRESS>. Is this your address?

1 Yes

2 No

[IF "No", SHOW FOLLOWING TEXT, THEN QUIT SURVEY & RE-ROUTE TO LOGIN-SCREEN]: You may have entered an incorrect participant ID. Please try again.

[SHOW NEW PAGE]

When you select "next" at the bottom of this page a pop-up screen will appear that asks you to enable location services.

Location services must be enabled to be eligible for the $25 Amazon.com Gift card. By clicking the checkbox below you indicate your understanding of this requirement.

1 Yes, I understand that location services must be enabled for eligibility to receive a $25 Amazon.com Gift Card [Make This Response A CHECK BOX] [Must click to advance]

[POP UP REQUEST TO ENABLE LOCATION SERVICES AFTER RESPONDENT HITS "next"]

1.1 YOUR HOME AND LIFESTYLE

A1 Which best describes the ownership of this home?

1 Own, either with a mortgage or outright
2 Rent/Lease

[IF A1 = 1 ELSE SKIP TO A2]

A10 Is this a secondary home or a vacation rental property?

1 This is my primary residence
2 This is my secondary/vacation home
3 This is a vacation rental property

A11 How many years have you [IF A10 = 1 SHOW: "lived in"; IF A10 = 2 or 3 SHOW: "owned"] this home? [RECORD]

A2 Is your home…

1 A single-family detached house
2 A townhouse, duplex, or row house
3 An apartment or condominium
4 A manufactured home (mobile or trailer)

A3 Approximately how many square feet of living space does your home have, including bathrooms, foyers and hallways? *(Exclude garages and other unfinished spaces)*

1 Less than 250
2 250 - 500
3 501 - 750
4 751 - 1,000
5 1,001 - 1,250
6 1,251 - 1,500
7 1,501 - 2,000
8 2,001 - 2,500
9 2,501 - 3,000
10 3,001 - 4,000
11 4,001 - 5,000
12 More than 5,000

A4 How many of the following rooms does your home have? *(Leave blank if 0; count half baths as rooms; count rooms in finished basements as rooms)*

a Bedrooms [RECORD #]
b Bathrooms [RECORD #]
c Kitchens [RECORD #]
d Living/Family Rooms [RECORD #]
e Dens/Offices [RECORD #]
f Dining Rooms [RECORD #]
g Hallways with light fixtures [RECORD #]

[ASK IF A2 <> "An apartment or condominium" or "A manufactured home (mobile or trailer)"]

A9 Do you have a garage?

1 Yes
2 No

[ASK IF A2 <> "An apartment or condominium" or "A manufactured home (mobile or trailer)"]

A5 Do you have a finished or unfinished basement?

1 No Basement
2 Unfinished basement
3 Finished basement

[SET TOTAL_ROOMS = SUM(A4a:A4f) + [1 IF A9 = 1] + [1 IF A5 <> 1]]

A6 Do you have an electric vehicle at your home?

1 Yes, I have an electric vehicle
2 Yes, I have a plug-in hybrid
3 I have a hybrid vehicle that does NOT need to be charged
4 No

[ASK IF A6 = 1 OR 2]

A6a What type of charger do you use to charge your vehicle at home? Chargers can be Level 1, Level 2, or Level 3.

0 None, I do not charge my vehicle at home.
1 Level 1 charger
2 Level 2 charger
3 Level 3 charger
98 I charge my vehicle at home, but I don't know the type of charger used

[ASK IF A10 = 1 ELSE SKIP TO B0]

O9 How many people, including yourself, usually live in this home? *(Exclude anyone away more than half the year)* [RECORD]

[SET LowIncome
IF O9 = 1, THEN $24,980
ELSE IF O9 = 2, THEN $33,820
ELSE IF O9 = 3, THEN $42,660
ELSE IF O9 = 4, THEN $51,500
ELSE IF O9 = 5, THEN $60,340
ELSE IF O9 = 6, THEN $69,180
ELSE IF O9 = 7, THEN $78,020
ELSE IF O9 = 8, THEN $86,860
ELSE $86,860 + (O9 – 8) * $8,840]

O12 What is your estimated annual household income?

1 Under [LowIncome]
2 [LowIncome] - $120,000
3 $120,000 - $250,000
4 Over $250,000

1.2 SPACE COOLING

B0 Do you pay for central air conditioning for your home?

1 Yes
2 No, it is part of my rent/condo fee
3 No, do not have central air conditioning in my home

[IF B0 = 2 OR 3, SKIP TO E0]

B2

[SHOW IF PRIMARY:] What is the PRIMARY central air conditioning system in your home? The most common types of central air conditioners are forced air split systems, ground source heat pumps, and ductless systems.

[SHOW IF SECONDARY:] Do you have SECONDARY central air conditioning system(s)? If so, please indicate the type(s). The most common types of central air conditioners are forced air split systems, ground source heat pumps, and ductless systems.

[Show: Radio button allowing a single choice for Primary. Show multi-select check boxes for allow multiple selections for Secondary]

	1. Primary	2. Secondary
a. Forced air split system		
b. Ground source heat pump		
c. Ductless system		
d. Other, specify: [RECORD] *(exclude window/room air conditioners)*		

[IF B2_Primary and B2_Secondary <> (a. forced air split system OR c. ductless system), THEN SKIP TO E0]

B3 How many outdoor compressors does your [IF a only, show: "forced air split system" IF c only, show: "ductless system", IF a and c show: "forced air split system and ductless system"] use?

1 1 [DON'T SHOW IF a and c]
2 2
3 3
4 4 or more

[SHOW IF B3>1 and #=1] It looks like you have multiple outdoor compressors in your home.
[SHOW IF B3>1 and #=1] Let's discuss the outdoor compressor of your [IF b2_primary = a SHOW: forced air split system] [IF b2_primary = a SHOW: ductless system] first.

[SHOW IF B3>1 and #=1 and (B2_Primary & B2_Secondary = a or c)] If your [IF b2_primary = a SHOW: forced air split system] [IF b2_primary = a SHOW: ductless system] has multiple compressors, answer questions regarding the most used compressor first.

[Loop through (B7_cc#-B11_cc#) for each cooling unit (up to 4), per answer to B3]

[SHOW IF B3=1 and #=1] We will now ask you to locate and take a picture of the model information on the nameplate found on the outdoor compressor of your central air conditioning system.

[SHOW IF B3>1 and #=1] We will now ask you to locate and take a picture of the model information on the nameplate found on each outdoor compressor of your central air conditioning system.

[SHOW IF B3>1 and #=1] Take a photo of the outdoor compressor of your [IF b2_primary = a SHOW: forced air split system] [IF b2_primary = a SHOW: ductless system] first.

[SHOW IF B3>1 and #=1 and (B2_Primary & B2_Secondary = a or c)] If your [IF b2_primary = a SHOW: forced air split system] [IF b2_primary = a SHOW: ductless system] has multiple compressors, take a photo of the most used compressor first.

B7_cc# The outdoor unit is usually mounted on a concrete slab on the ground next to your home or potentially on an exterior wall if you have a ductless system. The nameplate is a sticker or metal badge that contains the make/model information and should be in plain view on the side of the outdoor unit (<#>).

1 Ready to take photo of **UNIT (<#>)**
2 I am not able to take a photo

[ASK IF B7_cc# = 1]

B8_cc# Are there barcodes included on the nameplate on **UNIT (<#>)**?

1 Yes
2 No

[ASK IF B8_cc# = Yes]

B9_cc# Take a photo of the barcode(s) found on the nameplate of **UNIT (<#>)**:

1) Tap “BROWSE” or “CHOOSE FILE” (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap “UPLOAD”

4) Wait until upload is complete and tap "NEXT" when instructed
[TAKE PHOTO]

[ASK IF B7_cc# = 1]

B10_cc# Take a photo of the model number found on the nameplate of **UNIT (<#>)**:

- o [SHOW IF UPLOADED PHOTO IN B9_cc#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR B10_cc#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
    - Avoid taking the photo at an angle
    - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed
[TAKE PHOTO]

[ASK IF B7_cc# = 2]

B11_cc# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of **UNIT (<#>)**.

0 I changed my mind, I will take a photo of the nameplate
1 I don't know where the central AC unit is located
2 I cannot access the central AC unit
3 I cannot find the nameplate on the central AC unit
4 Other, specify: [RECORD]

[IF B11_cc# = 0, Go back to B8_cc#]

[SHOW IF B7_cc# = 2 OR B11_cc# <> 0]

B4_cc# How old is this central air conditioning **UNIT (<#>)**?

1 Less than 5 years
2 5-13 years
3 14-27 years
4 Over 27 years
98 Don't know

[ASK IF B0 = Yes, ELSE SKIP TO E0]

T1a What type of thermostat controls your air conditioning UNIT (<#>)? The main types of thermostats are communicating, programmable, and standard.

1 Communicating thermostat
2 Programmable (non-communicating) thermostat
3 Standard thermostat
4 No thermostat

[END LOOP]

1.3 SPACE HEATING

E0 Do you pay to heat your home?

1 Yes
2 No, it is part of my rent/condo fee
3 No, do not have a heating system

[IF E0 = 2 OR 3, SKIP TO F0]

E3 [SHOW IF PRIMARY:] What is the PRIMARY heating system in your home? The most common types of heating systems are furnaces, air-source heat pumps, ground-source heat pumps, ductless heat pumps, boilers, and baseboard heaters.

[SHOW IF SECONDARY:] Do you have SECONDARY heating system(s)? If so, please indicate the type(s). The most common types of heating systems are furnaces, air-source heat pumps, ground-source heat pumps, ductless heat pumps, boilers, and baseboard heaters.
[Show: Radio button allowing a single choice for Primary. Show multi-select check box to allow multiple selections for Secondary]

	1. Primary	2. Secondary
a. Forced air furnace		
d. Air-source central heat pump		
f. Ground-source heat pump		
e. Ductless heat pump		
b. Boiler (hot water or steam)		
c. Electric baseboard heaters		
h. Other, Specify: [RECORD] (exclude portable space heaters)		

[IF E3_primary = a, b, d, e or E3_secondary = a, b, d, e THEN loop through (E1a-E14) for each heating unit specified in E3a and E3b (up to 4)]

[ASK IF E3_primary = a, b, h or E3_secondary = a, b, or h]

E1 What is the fuel source used in your [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler] ?

1 Natural gas
2 Electricity
3 Oil
4 Propane
5 Wood
6 Other, specify: [OPEN]

[IF E3_primary = c, d, e, f THEN SET primary_heat = "Electricity", ELSE SET primary_heat = <E1_response>] [IF E3_secondary = c, d, e, f THEN SET secondary_heat ' "Electricity", ELSE SET secondary_heat = <E1 response>]

[ASK IF E3_primary = d or e or E3_secondary = d or e]

E1a Does your [IF E3_primary = d or e SHOW: primary heat pump] [IF E3_secondary = d or e SHOW: secondary heat pump] unit also provide central space cooling in the summer?

1 Yes
2 No

[IF E1a = 1 AND photo uploaded in B9_cc# or B10_cc#, SKIP TO E13]

E8 We now need you to locate and take a photo of the model information on the nameplate on your [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler] unit. The nameplate is a sticker or metal badge that contains the make/model information and is located on the outside of the unit or on the inside of the access door.

1 Ready to take photo
2 I am not able to take a photo

[ASK IF E8 = 1]

E9 Are there barcodes included on the nameplate?

1 Yes
2 No

[ASK IF E9 = 1]

E10 Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF E8 = 1]

E11 Take a photo of the model number name found on the nameplate:

o [SHOW IF UPLOADED PHOTO IN E10] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR E11]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF E8 = 2]

E12 Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the nameplate on your heat pump system.

0 I changed my mind, I will take a photo of the nameplate
1 I don't know where the [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler] is located
2 I cannot access the [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler]
3 I cannot find the nameplate on the [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler]
4 Other, specify: [RECORD]

[IF E12 = 0, Go back to E9]

[SHOW IF E8 = 2 OR E12 <> 0]

E4 How old is your primary heating system?

1 Less than 5 years
2 5-13 years
3 14-27 years
4 Over 27 years
98 Don't know

T1b What type of thermostat controls your [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] [IF E3_primary = b SHOW: boiler] [IF E3_secondary = b SHOW: boiler]? The main types of thermostats are communicating, programmable, and standard.

1 Communicating thermostat
2 Programmable (non-communicating) thermostat
3 Standard thermostat
4 No thermostat

[SHOW IF E3_primary = a, d OR IF E3_secondary = a, d]

E13 Does your [IF E3_primary = a SHOW: furnace] [IF E3_secondary = a SHOW: furnace] [IF E3_primary = d SHOW: heat pump] [IF E3_secondary = d SHOW: heat pump] have an air exchanger or a heat recovery ventilator ?

1 Air exchanger
2 Heat recovery ventilator
3 Neither
98 Don't know

[SHOW IF E3_primary = b or IF E3_secondary = b]

E14 Does your boiler have reset controls?

1 Yes
2 No
98 Don't know

[END LOOP]

1.4 WATER HEATING

F0 Do you pay for hot water at your residence?

1 Yes

2 No, it is part of my rent/condo fee

[IF F0 =2 SKIP TO D1]

F2 What fuel does your primary water heater use? The most common fuels used for water heating are natural gas, electricity, propane, oil, and solar.

1 Natural gas

2 Electric

3 Propane

4 Oil

5 Solar

6 Other, specify: [RECORD]

98 Don't know

F6 What type of water heater does your home use? The most common types of water heaters are conventional storage, heat pump storage, indirect storage, tankless, and tankless coil.

[ONLY SHOW Indirect storage IF E3_primary OR E3_secondary = a. forced air furnace OR b. boiler]

[ONLY SHOW Tankless Coil IF E3_primary OR E3_secondary = a. forced air furnace OR b. boiler]

1 Conventional storage

2 [SHOW IF F2 = 2] Heat pump storage

3 [SHOW IF E3_primary OR E3_secondary = a. forced air furnace OR b. boiler] Indirect storage *(combined with furnace or boiler)*

4 [SHOW IF F2 = 1, 2, or 3] Tankless

5 [SHOW IF E3_primary OR E3_secondary = a. forced air furnace OR b. boiler] Tankless coil *(combined with furnace or boiler)*

98 Don't know

[Ask IF F6 <> 4 or 5, ELSE SKIP TO F9]

F7 Does your water heater tank have an added insulation blanket or tank wrap?

1 Yes

2 No

98 Don't know

[ASK IF F7 = Yes]

F7a Please take a photo of the tank insulation on your primary water heater. *(Please try to capture the full height and width of the tank in the photo)*

[TAKE PHOTO]

[ASK IF F6 <>98, ELSE SKIP TO F14]

F9 Now we will need you to locate and take a picture of the model information on the nameplate found on your primary water heater. The nameplate is a sticker or metal badge that contains the make/model information and is located on the outside of the unit. If you have a storage water heater, the nameplate may be covered by insulation.

1 Ready to take photo

2 I am not able to take a photo

[ASK IF F9 = 1]

F10 Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF F10= Yes]

F11 Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF F9 = Ready to take photo]

F12 Take a photo of the model number found on the nameplate:

o [SHOW IF UPLOADED PHOTO IN F11] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR F12]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF F9 = I am not able to take a photo]

F13 Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the water heater nameplate.

0 I changed my mind, I will take a photo of the nameplate
1 I don't know where my primary water heater is located
2 I cannot have access my primary water heater
3 I cannot find the nameplate on my primary water heater
4 The nameplate is covered by insulation
5 Other, specify: [RECORD]

[IF F13 = 0, Go back to F10]

[SHOW IF F9 = 2 OR F13 <> 0]

F4 How old is your water heater?

1 Less than 5 years
2 5-15 years
3 More than 15 years
98 Don't know

1.5 LAUNDRY

G1a How many clothes washers do you have in your home?

0 0
1 1
2 2
3 3 or more

[IF G1a = 0 SKIP TO G1b]

[ASK IF G1a = 1]

G1aa_single Is the clothes washer ATTACHED to a clothes dryer as part of a single washer/dryer unit?

1 Yes
2 No

[ASK IF G1a >1]

G1aa_multi Are any of the <G1a response> clothes washers ATTACHED to a clothes dryer as part of a single washer/dryer unit? If yes, indicate the number of clothes washer units configured in this way.

0 No, 0
1 1
2 2
3 3 or more [SHOW IF G1a = 3]

[IF G1a=0 THEN SET NUM_COMBO = 0
IF G1a=1 & G1aa_single = Yes THEN SET NUM_COMBO = 1
IF G1a=1 & G1aa_single = No THEN SET NUM_COMBO = 0
IF G1a>1 THEN SET NUM_COMBO = G1aa_multi]

[Loop through (G2_cw#-G10_cw#) for each clothes washer per answer to G1a, up to 3]

G2_cw# Clothes washer <#> is a…
0 Top loading washer
1 Front loading washer

G6_cw# Please locate and take a photo of the model information on the nameplate on your clothes washer <#>. The nameplate is a sticker or metal badge that contains the make/model information. Tap on the legends below for guidance on where to find the nameplate on your clothes washer. [SHOW IF NUM_COMBO>0: In washer/dryer combo units, the nameplate may be found on the dryer only]

[SHOW IF G2_cw# = Top Loading Washer]

A | B | C | D

[SHOW IF G2_cw# = Front Loading Washer]

A | B | C | D

Ready to take a photo of the nameplate?

1 Ready to take photo

3 I am not able to take a photo

[ASK IF G6_cw# = 1]

G7_cw# Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF G7_cw#= Yes]

G8_cw# Take a photo of the barcode(s) found on the clothes washer nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF G6_cw# = 1]

G9_cw# Take a photo of the model number found on the clothes washer nameplate:

- o [SHOW IF UPLOADED PHOTO IN G8_cw#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR G9_cw#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF G6_cw# = 3]

G10_cw# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of clothes washer <#> nameplate.

0 I changed my mind, I will take a photo of the nameplate
1 I don't know where clothes washer <#> is located
2 I cannot access clothes washer <#>
3 I cannot find the nameplate on clothes washer <#>
4 Other, specify: [RECORD]

[IF G10_cw# = 0, Go back to G7_cw#]

[SHOW IF G6_cw# = 2 OR G10_cw# <> 0, ELSE SKIP TO G1b]

G3_cw# How old is clothes washer <#>?

2 Less than 2 years
3 2-4 years
4 5-12 years
5 13-15 years
98 16 years or more
99 Don't Know

[SHOW IF G6_cw# = 2 OR G10_cw# <> 0, ELSE SKIP TO G1b]

G4_cw# How large is clothes washer <#>?

1 Compact
2 Standard
98 Don't know

[END LOOP]

G1b

[SHOW IF NUM_COMBO = 0] How many clothes dryers do you have in your home?

[SHOW IF NUM_COMBO >0] How many clothes dryers do you have in your home that are NOT ATTACHED to clothes washers?

0	0
1	1
2	2
3	3 or more

[IF G1b = 0 SKIP TO T1]

[Loop through (G11_cd#-G18_cd#) for each clothes dryer per answer to G1b, up to 3]

[SHOW IF NUM_COMBO>0] Please answer some questions about DETACHED clothes dryer <#>.

G11_cd# Clothes dryer <#> is a…

1	Electric dryer
2	Natural gas dryer
3	Bottled gas dryer (propane, butane, LPG)

G14_cd# We now need you to locate and take a photo of the model information on the nameplate on your clothes dryer <#>. The nameplate is a sticker or metal badge that contains the make/model information. Tap on the legend below for guidance on where to find the nameplate on your clothes dryer.

A | B | C | D

Ready to take a photo of the nameplate?

1 Ready to take photo

3 I am not able to take a photo

[ASK IF G14_cd# = 1]

G15_cd# Are there barcodes included on the clothes dryer nameplate?

1 Yes

2 No

[ASK IF G15_cd#= Yes]

G16_cd# Take a photo of the barcode(s) found on the clothes dryer nameplate.

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF G14_cd# = 1]

G17_cd# Take a photo of the model number found on the clothes dryer nameplate:

o [SHOW IF UPLOADED PHOTO IN G16_cd#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR G17_cd#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF G14_cd# = 3]

G18_cd# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the clothes dryer <#> nameplate.

0 I changed my mind, I will take a photo of the nameplate

1 I don't know where clothes dryer <#> is located

2 I cannot access clothes dryer <#>

3 I cannot find the nameplate on clothes dryer <#>

4 Other, specify: [RECORD]

[IF G18_cd# = 0, Go back to G15_cd#]

[SHOW IF G11_cd# = 1 AND (G14_cd# = 2 OR G18_cd# <> 0]]

G12_cd# How old is clothes dryer <#>?

1 Less than 5 years

2 5 years or more

98 Don't know

[END LOOP]

1.6 INSULATION AND VENTILATION

D1 Have you had any insulation work completed in your home in the last 5 years? *(Include new insulation and any upgrades to existing insulation)*

1 Yes

2 No

98 Don't know

[ASK IF D1 = Yes]

D2 In which areas of your home was insulation work completed? *(Select all that apply)* [multi-select]

1 Attic

2 Floors

3 Exterior walls – between living space and unheated garages, shed roofs, or storage areas

4 Exterior walls – foundation walls in heated basements or above ground level

5 Other, specify: [OPEN]

[ASK IF E3_primary = (a. forced air furnace OR d. air source central heat pump OR f. ground source heat pump)

OR E3_secondary = (a. forced air furnace OR d. air source central heat pump OR f. ground source heat pump)

OR B2_Primary = (a. forced air split system or b. Ground source heat pump)

OR B2_secondary = (a. forced air split system or b. Ground source heat pump)]

D3 Have you had any work done to test and seal air leaks in your **ventilation system** within the last 5 years? *(Include any work done to seal leaks, fix holes, or connect poorly connected ducts in your home)*

1 Yes
2 No
98 Don't know

D4 Did you have any work done to test and seal air leaks from your **windows and exterior doors** within the last 5 years? *(Include any work done to install weather stripping, door gaskets, caulking, or foam sealant)*

1 Yes
2 No
98 Don't know

D5 Do you use a whole-house fan or attic fan to cool your home in summer months?

1 Yes
2 No

D6 Choose the statement that best describes the windows in your home.

1 All or most are single pane
2 All or most are double pane
3 All or most are triple pane
4 Mixture of single, double, triple pane

1.7 ROOM BY ROOM

[SHOW FOR 1st ROOM ONLY: We will now begin a walk-through tour of your home starting in your [IF A4c >1 show: MAIN] KITCHEN. As you enter each room of your home, continue filling out the survey. Enter information about each room as you move through your home.

Let's get started.

[SHOW FOR ALL ROOMS AFTER 1st:] Let's move into the next room.

[Loop through R1 through Ar12 (sections 1.6.1 through 1.6.8) until all rooms have been visited]
[Throughout this room-by-room loop, append room # at the end of the question #. For instance, R1 becomes R1_room1, R1_room2, R1_room3, etc. Similarly, K10 becomes K10_room1, K10_room2, K10_room3, etc.]

[IF 1st ROOM ASK R_First, ELSE ASK R1]

R_First

1 I am in the kitchen and ready to continue [THIS MUST BE SELECTED TO ADVANCE]

[IF 1st ROOM THEN Set <R1 Response>= Kitchen, SKIP TO R2]

[Show response options to R1 based on responses from A4 and rooms already visited. As visit the # of rooms indicated in A4 reduce the options shown in R1. E.g., if 2 bedrooms were indicated in R1, after 2 bedrooms were visited through the R1 room-by-room loop, remove "Bedroom" as an option from R1]

R1 What type of room are you in now?

1 Bathroom
2 Bedroom
3 Kitchen
4 Living/Family Room
5 Office/Den
6 Dining
7 Hallway with light fixtures
8 Garage [SHOW IF A9="yes"]
9 Basement [SHOW IF A5="unfinished basement"]
10 Other indoor space [RECORD]

R2 Does this <R1 Response> have:

[SHOW: Radio-button allowing a single selection for each row]

	1. Yes	2. No
Light bulbs in sockets *(including free standing lamps, ceiling fixtures, and recessed ceiling fixtures)*		
Refrigeration equipment *(refrigerators, freezers)* [DON'T SHOW IF R1 = Bathroom , Hallway with light fixtures]		
Kitchen/cooking appliances [DON'T SHOW IF R1 = Bathroom, Living/Family room, Office/Den, Dining, Hallway with light fixtures, Garage, Basement,]		
Room heating, cooling, or air quality equipment *(portable space heaters, room AC, humidifiers, dehumidifiers, air purifiers, ceiling fans)* [DON'T SHOW IF R1 = Kitchen]		
Water fixtures *(sinks, showers, toilets)* [DON'T SHOW IF R1 = Hallway with light fixtures, Living/Family room, Office/Den]		

Refrigeration

[Ask if R2b =Yes, ELSE SKIP TO K1]

H1a How many **refrigerators** does this <R1 Response> have?

0 0
1 1
2 2
3 3 or more

[IF H1a = 0 then SKIP TO H1b]

[Loop through (H2_rf#-H14_rf#) for each refrigerator per answer to H1a, up to 3]

Please answer a few questions regarding the general characteristics of each refrigerator in your <R1 Response>

H3_rf# How many months per year is refrigerator <#> **unplugged**?

0 It is always plugged in
1 Less than 1 month
2 1-3 months
3 3-5 months
4 Over 5 months

H10_rf# We now need you to locate and take a photo of the model information on the nameplate on your refrigerator <#>. The nameplate is a sticker or metal badge that contains the make/model information. Tap on the legend below for guidance on where to find the nameplate on your refrigerator.

A | B | C | D

Ready to take a photo of the nameplate?

1 Ready to take photo

3 I am not able to take a photo

[ASK IF H10_rf# = 1]

H11_rf# Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF H11_rf#= Yes]

H12_rf# Take a photo of the barcode(s) found on the nameplate:

1) Tap “BROWSE” or “CHOOSE FILE” (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap “UPLOAD”
4) Wait until upload is complete and tap “NEXT” when instructed

[TAKE PHOTO]

[ASK IF H10_rf# = 1]

H13_rf# Take a photo of the model number found on the nameplate:

- o [SHOW IF UPLOADED PHOTO IN H12_rf#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR H13_rf#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF H10_rf# = 3]

H14_rf# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the refrigerator <#> nameplate.

0 I changed my mind, I will take a photo of the nameplate
2 I cannot access refrigerator <#>
3 I cannot find the nameplate on refrigerator <#>
4 Other, specify: [RECORD]

[IF H14_rf# = 0, Go back to H11_rf#]

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H2_rf# Refrigerator <#>
How old is this refrigerator?

1 Less than 6 years
2 6 to 18 years
3 19 or more years
98 Don't know

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H4_rf# What is the door-style of refrigerator <#>?

1 Single door
2 Top freezer - bottom refrigerator

3 Top refrigerator - bottom freezer
4 Side-by-side (refrigerator/freezer)

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H5_rf# What is the approximate size of refrigerator <#>?
1 Compact
2 Small
3 Medium
4 Large
5 Very large
98 Don't know

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H6_rf# How does refrigerator <#> defrost?
1 Automatic defrost (frost-free)
2 Manual defrost
98 Don't know

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H7_rf# Does refrigerator <#> have a through-the-door ice and water dispenser?
1 Yes
2 No

[SHOW IF H10_rf# = 2 OR H14_rf# <> 0 ELSE SKIP TO H1_b]

H8_rf# Is refrigerator <#> freestanding or is it built-in?
1 Freestanding refrigerator
2 Built-in refrigerator
98 Don't know

[END LOOP]

H1b How many **stand-alone freezers** does this <R1 Response> have?
0 0
1 1

2 2

3 3 or more

[If H1b = 0 SKIP TO K1]

[Loop through (H15_fz#-H24_fz#) for each freezer per answer to H1b, up to 3]

Please answer a few questions regarding the general characteristics each freezer in <R1 Response>

H16_fz# How many months per year is the freezer <#> unplugged?

0 0, it is always plugged in

1 Less than 1 month

2 1-3 months

3 3-5 months

4 Over 5 months

H20_fz# We now need you to locate and take a photo of the model information on the nameplate on your freezer <#>. The nameplate is a sticker or metal badge that contains the make/model information. Tap on the legend below for guidance on where to find the nameplate on your freezer.

A | B | C

Ready to take a photo of the nameplate?

1 Ready to take photo

3 I am not able to take a photo

[ASK IF H20_fz# = 1]

H21_fz# Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF H21_fz#= Yes]

H22_fz# Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF H20_fz# = 1]

H23_fz# Take a photo of the model number found on the nameplate:

o [SHOW IF UPLOADED PHOTO IN H22_fz#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR H23_fz#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF H20_fz# = 3]

H24_fz# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the freezer <#> nameplate.

0 I changed my mind, I will take a photo of the nameplate

2 I cannot access freezer <#>

3 I cannot find the nameplate on freezer <#>

4 Other, specify: [RECORD]

[IF H24_fz# = 0, Go back to H21_fz#]

[SHOW IF H20_fz# = 2 OR H24_fz# <> 0 ELSE GO TO K1a]

H15_fz# How old is freezer <#>?

0 Less than 6 years
1 6 to 18 years
2 19 or more years
98 Don't know

[SHOW IF H20_fz# = 2 OR H24_fz# <> 0 ELSE GO TO K1a]

H17_fz# Indicate the style of freezer <#> …

1 Upright, frost-free (automatic defrost)
2 Upright, manual defrost
3 Chest
98 Don't know

[SHOW IF H20_fz# = 2 OR H24_fz# <> 0 ELSE GO TO K1a]

H18_fz# What is the approximate size of freezer <#>?

1 Compact
2 Small
3 Medium
4 Large
98 Don't know

[END LOOP]

1.7.1 Food Preparation

[Ask if R2c =Yes, ELSE SKIP TO c1]

K1a How many DISHWASHERS does this <R1 Response> have?

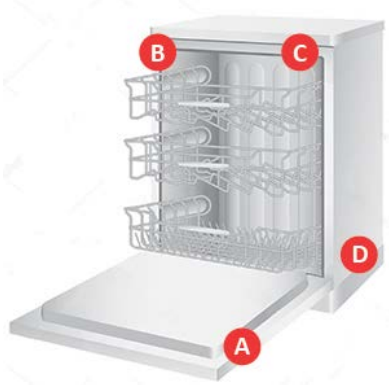
0 0
1 1
2 2
3 3 or more

[IF K1a = 0 SKIP TO ROOM HVAC]

[Loop through (K2_dw#-K9_dw#) for each dishwasher per answer to K1a, up to 3]

Please answer a few questions regarding the general characteristics each dishwasher in <R1 Response>

K5_dw# Please locate and take a photo of the model information on the nameplate on your dishwasher <#>. The nameplate is a sticker or metal badge that contains the make/model information. Tap on the legend below for guidance on where to find the nameplate on your dishwasher.



A | B | C | D

Ready to take a photo of the nameplate?

1 Ready to take photo

3 I am not able to take a photo

[ASK IF K5_dw# = 1]

K6_dw# Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF K6_dw#= Yes]

K7_dw# Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF K5_dw# = 1]

K8_dw# Take a photo of the model number found on the nameplate:

o [SHOW IF UPLOADED PHOTO IN K7_dw#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR k8_dw#]

1) Tap “BROWSE” or “CHOOSE FILE” (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
    - Avoid taking the photo at an angle
    - Make sure the model number is clear and in focus
3) After taking the photo, tap “UPLOAD”
4) Wait until upload is complete and tap “NEXT” when instructed

[TAKE PHOTO]

[ASK IF K5_dw# = 3]

K9_dw# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of the dishwasher <#> nameplate.

0 I changed my mind, I will take a photo of the nameplate
2 I cannot access dishwasher <#>
3 I cannot find the nameplate on dishwasher <#>
4 Other, specify: [RECORD]

[IF K9_dw# = 0, Go back to K6_dw#]

[SHOW IF K5_dw# = 2 OR K9_dw# <> 0 ELSE SKIP TO C1]

K2_dw# How old is dishwasher <#>?

1 Less than 6 years
2 6-8 years
3 9 years or more
98 Don’t know

[SHOW IF K5_dw# = 2 OR K9_dw# <> 0 ELSE SKIP TO C1]

K3_dw# What size is dishwasher <#>?

1 Compact
2 Standard
98 Don’t know

[END LOOP]

1.7.2 Room HVAC

[ASK IF R2f = Yes, ELSE SKIP TO J1]

C1 How many of each of the following does this <R1 Response> have:

(If 0, leave blank)

a Room air conditioner *(window/portable/through-the-wall)* [RECORD]

b Portable **electric** space heater [RECORD]

c Air purifier/cleaner [RECORD]

d Dehumidifier [RECORD]

e Ceiling fan [RECORD]

f Window fan [RECORD]

g Portable fan [RECORD]

[ASK IF C1b>0]

C2 How often do you **use** the electric portable space heater(s) during the heating season?

[SHOW: radio buttons that allow a single selection across the row]

[SHOW: # of rows that correspond to the # entered in C1b]

	0. Never	1. Rarely (Once a month)	2. Sometimes (once per week)	3. Often (2 to 4 days per week)	4. Always (5 to 7 days per week)
b_1. Portable electric space heater 1					
b_2. Portable electric space heater 2					
b_3. Portable electric space heater 3					

[IF C1d>0 or C1c>0 or C1e>0 or C1f>0 or C1g>0]

C3 How many months per year are the following technologies **plugged in** or **used**?

[SHOW: radio buttons that allow a single selection across the row]

[SHOW: # of rows that correspond to the # entered in C1c and C1d, respectively]

	0. 0, never	1. Less than 1 month	2. 1-3 months	3. 3-5 months	4. 6-8 months	5. 9-12 months
c_1. Air purifier/cleaner 1						
c_2. Air purifier/cleaner 2						
c_3. Air purifier/cleaner 3						
d_1. dehumidifier 1						

d_2. dehumidifier 2						
d_3. dehumidifier 3						
e_1. Ceiling fan 1						
e_2. Ceiling fan 2						
e_3. Ceiling fan 3						
f_1. Window fan 1						
f_2. Window fan 2						
f_3. Window fan 3						
g_1. Portable fan 1						
g_2. Portable fan 2						
g_3. Portable fan 3						

[IF C1a = 0 SKIP TO C14]

[Loop through (C4_rc#-C13_rc#) for each room ac per answer to c1a, up to 6]

C5_rc# What type of room air conditioner is room cooling unit <#>? The most common types are window units, portable units, and through-the-wall units.

1 Window air conditioner or heat pump
2 Portable air conditioner or heat pump
3 Through-the-wall air conditioner or heat pump
4 Other, specify: [RECORD]

C8_rc# How often is room cooling unit <#> turned on during the cooling season?

1 Never
2 Rarely (1-2 days per week)
3 Sometimes (3-4 days per week)
4 Often (5-6 days per week)
5 Always (7 days per week)

[ASK IF C5_rc# = 1 or 2, ELSE SKIP TO J1 (or C5_rc# if there are more #)]

C9_rc# We now need you to locate and take a photo of the model information on the nameplate on your room cooling unit <#>. The nameplate is a sticker or metal badge that contains the make/model information. The name plate can be found on the inside of the access door.

Ready to take a photo of the nameplate?

1 Ready to take photo

2 I am not able to take a photo

[ASK IF C9_rc# = 1]

C10_rc# Are there barcodes included on the nameplate?

1 Yes

2 No

[ASK IF C10_rc# = Yes]

C11_rc# Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF C9_rc# = 1]

C12_rc# Take a photo of the model number found on the nameplate:

o [SHOW IF UPLOADED PHOTO IN C11_rc#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR C12_rc#]

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

   [TAKE PHOTO]

[ASK IF C9_rc# = 2]

C13_rc# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of room cooling unit <#>.

0 I changed my mind, I will take a photo of the nameplate

1 I cannot access room cooling unit <#>

2 I cannot find the nameplate on room cooling unit <#>

3 Other, specify: [RECORD]

[IF C13_rc# = 0, Go back to C10_rc#]

[SHOW IF C9_rc# = 2 OR C13_rc# <> 0]

C6_rc# How old is room cooling unit <#>?

1 Less than 6 years
2 6-18 years
3 19 years or older
98 Don't know

[END LOOP]

[IF C1d = 0 SKIP TO J1]

[Loop through (C14_rc#-C13_rc#) for each dehumidifier per answer to c1d, up to 6]

C16_rc# We now need you to locate and take a photo of the model information on the nameplate on your dehumidifier <#>. The nameplate is a sticker or metal badge on the outside of the unit that contains the make/model information.

Ready to take a photo of the nameplate?

1 Ready to take photo
2 I am not able to take a photo

[ASK IF C16_rc# = 1]

C17_rc# Are there barcodes included on the nameplate?

1 Yes
2 No

[ASK IF C17_rc# = Yes]

C18_rc# Take a photo of the barcode(s) found on the nameplate:

1) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
2) Take the photo as close as possible while still capturing the entire barcode
   - Avoid taking the photo at an angle
   - Make sure the barcode is clear and in focus
3) After taking the photo, tap "UPLOAD"
4) Wait until upload is complete and tap "NEXT" when instructed

[TAKE PHOTO]

[ASK IF C16_rc# = 1]

C19_rc# Take a photo of the model number found on the nameplate:

- o [SHOW IF UPLOADED PHOTO IN C11_rc#] [CHECK BOX] Previous image already contains the model number [IF CHECKED, DO NOT REQUIRE PHOTO UPLOAD FOR C12_rc#]

5) Tap "BROWSE" or "CHOOSE FILE" (depending on your browser) and your camera will launch
6) Take the photo as close as possible while still capturing the entire model number
   - Avoid taking the photo at an angle
   - Make sure the model number is clear and in focus
7) After taking the photo, tap "UPLOAD"
8) Wait until upload is complete and tap "NEXT" when instructed
   [TAKE PHOTO]

[ASK IF C16_rc# = 2]

C20_rc# Getting photos of equipment model numbers is a critical aspect of this research, but we understand that it may not always be possible. Please select the reason why you are unable to take a photo of humidifier <#>.

0 I changed my mind, I will take a photo of the nameplate
1 I cannot access the dehumidifier <#>
2 I cannot find the nameplate on dehumidifier <#>
3 Other, specify: [RECORD]

[IF C20_rc# = 0, Go back to C17_rc#]

[SHOW IF C16_rc# = 2 OR C20_rc# <> 0]

C14_rc# How old is dehumidifier <#>?

1 Less than 1 year
2 2-7 years
3 8 years or older
99 Don't know

[END LOOP]

1.7.3 Lighting

[Ask if R2a =Yes, ELSE SKIP TO L1]

J1 How many light bulbs are in sockets in the <R1 Response>? *(Include all light bulbs that can be turned on. Including those in free standing lamps, ceiling fixtures, and recessed ceiling lighting)*

[Record #]

[IF J1 = 0 SKIP TO L1]

J2 What kind of light bulbs are installed in this room? The most common types of indoor lights are LEDs, CFLs, incandescent, fluorescent tubes, halogens, and infrared. *(Select all the apply)*

[multi-select] [IF J1 =1, only allow a single-selection]

1 LED
2 CFL
3 Incandescent
4 Fluorescent Tube
5 Halogen
6 Infrared (i.e., Heat Lamp)
7 Other
98 Don't know

[ASK IF more than 1 choice selected for J2, ELSE SKIP TO J4]
[Allow blanks, treat as 0]

J3 How MANY of the <J1 Response> light bulbs are:

a [SHOW IF J2 =1] LED [RECORD #]
b [SHOW IF J2 =2] CFL [RECORD #]
c [SHOW IF J2 =3] Incandescent [RECORD #]
d [SHOW IF J2 =4] Fluorescent tube [RECORD #]
e [SHOW IF J2 =5] Halogen [RECORD #]
f [SHOW IF J2 =6] Infrared (i.e., heat lamp) [RECORD #]
g [SHOW IF J2 =7] Other [RECORD #]
h [SHOW IF J2 =98] Don't know [RECORD #]

[CHECK SUM(J3[x])=J1 Response]

[IF more than 1 choice selected for J2, THEN SET:
COUNT_LED = J3a, COUNT_CFL=J3b, COUNT_INC=J3c, COUNT_FLU=J3d, COUNT_HAL=J3e, COUNT_INF = J3f, COUNT_OTH = J3g, COUNT_DKN = J3h
ELSE IF only 1 choice was selected for J2, THEN SET:
COUNT_<AAA> = J1
COUNT_<XYZ> = 0
Where <AAA> corresponds to selection in J2 and XYZ corresponds to all options not selected in J2]

[LOOP THROUGH J4_<code> and J5_<code> for each of the 6 following (code, text) pairs = {(LED, LED), (CFL, CFL), (INC, INCANDESCENT), (HAL, HALOGEN), (OTH, OTHER TECHNOLOGY), (DKN, DON'T KNOW TECHNOLOGY)}]

[ASK IF COUNT_<code> is GREATER THAN 0]

J4_<code> How many of the <COUNT_<CODE>> <text> bulbs in this room are standard shape?

0	0
1	1
2	2 [SHOW IF COUNT_<CODE> IS GREATER THAN 1]
3	3 [SHOW IF COUNT_<CODE> IS GREATER THAN 2]
4	4 [SHOW IF COUNT_<CODE> IS GREATER THAN 3]
5	5 [SHOW IF COUNT_<CODE> IS GREATER THAN 4]
6	6 [SHOW IF COUNT_<CODE> IS GREATER THAN 5]
7	7 [SHOW IF COUNT_<CODE> IS GREATER THAN 6]
8	8 [SHOW IF COUNT_<CODE> IS GREATER THAN 7]
9	9 [SHOW IF COUNT_<CODE> IS GREATER THAN 8]
10	10 [SHOW IF COUNT_<CODE> IS GREATER THAN 9]
11	11 [SHOW IF COUNT_<CODE> IS GREATER THAN 10]
12	12 [SHOW IF COUNT_<CODE> IS GREATER THAN 11]
13	13 [SHOW IF COUNT_<CODE> IS GREATER THAN 12]
14	14 [SHOW IF COUNT_<CODE> IS GREATER THAN 13]
15	15 [SHOW IF COUNT_<CODE> IS GREATER THAN 14]
16	16 [SHOW IF COUNT_<CODE> IS GREATER THAN 15]
17	17 [SHOW IF COUNT_<CODE> IS GREATER THAN 16]
18	18 [SHOW IF COUNT_<CODE> IS GREATER THAN 17]
19	19 [SHOW IF COUNT_<CODE> IS GREATER THAN 18]
20	20 [SHOW IF COUNT_<CODE> IS GREATER THAN 19]
997	More than 20, specify: [RECORD #] [SHOW IF COUNT_<CODE> IS GREATER THAN 20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO COUNT_<CODE>]
998	Don't know

[SET COUNT_<CODE>_STANDARD = J4_<code>
IF J4_<code> = 998 THEN SET COUNT_<CODE>_STANDARD = 0
IF J4_<code> = 997 THEN SET COUNT_<CODE>_STANDARD = <J4 RECORDED_RESPONSE>]

[SET COUNT_<CODE>_Remaining = COUNT_<CODE> - COUNT_<CODE>_STANDARD]

[ASK J5_<code> IF COUNT_<CODE> IS GREATER THAN COUNT_<CODE>_STANDARD]

J5_<code> How many of the <COUNT_<CODE>_Remaining> <text> bulbs remaining in this room are reflectors?

0 0
1 1
2 2 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 1]
3 3 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 2]
4 4 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 3]
5 5 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 4]
6 6 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 5]
7 7 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 6]
8 8 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 7]
9 9 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 8]
10 10 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 9]
11 11 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 10]
12 12 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 11]
13 13 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 12]
14 14 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 13]
15 15 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 14]
16 16 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 15]
17 17 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 16]
18 18 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 17]
19 19 [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 18]
20 20 or more [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 19]
997 More than 20, specify: [RECORD #] [SHOW IF COUNT_<CODE>_Remaining IS GREATER THAN 20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO COUNT_<CODE>_Remaining]
998 Don't know

[LOOP TO NEXT <CODE>]

1.7.4 Water Related Equipment

[ASK IF R2g = Yes, ELSE SKIP TO AR1]

L1 How many of each of the following does this <R1 Response> have:

a Faucet [RECORD #]
b Showerhead [RECORD #] [ASK IF R1 <> Kitchen or Bedroom]

[ASK IF L1a > 0]

L2 What is the number of faucets with water-saving faucet aerators in the room?

0 0
1 1
2 2 [SHOW IF L1a > 1]
3 3 [SHOW IF L1a > 2]
4 4 [SHOW IF L1a > 3]
5 5 or more [SHOW IF L1a > 4]
98 Don't Know

[ASK IF L1b>0 AND R1 <> "Kitchen" or bedroom]

L3 What is the number of showerheads with water-saving showerheads in the room?

0 0
1 1
2 2 [SHOW IF L1b > 1]
3 3 [SHOW IF L1b > 2]
4 4 [SHOW IF L1b > 3]
5 5 or more [SHOW IF L1b > 4]
98 Don't Know

[ASK IF L1b>0 AND R1 <> "Kitchen" or bedroom]

L5 Do these showerheads have thermostatic restrictor valves?

1 Yes
2 No
98 Don't know

[ASK IF R1 <> "Kitchen"]

L4 Does this room have a ventilation fan?

99 Yes
100 No
98 Don't know

1.7.5 Additional Rooms

[IF # rooms visited so far is less than TOTAL_ROOMS, then BEGIN LOOP AGAIN AT R1]

Ar1 Are there any additional rooms in this home?

1 Yes
2 No

[IF Ar1 = Yes, BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4b > sum(R1 == bathroom)]

Ar2 You reported <A4b_Response> bathrooms, but only visited <sum(R1 == bathroom)>. Have you visited all bathrooms in your home?

1 Yes

2 No

[ASK IF AR2 = NO]

Ar2a Continue the tour through your home. Please visit the next bathroom.

1 Ok

2 I am not able to visit the remaining bathroom(s) in this home.

[IF Ar2a= "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar2a = 2]

Ar2b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next bathroom

[IF Ar2b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4a > sum(R1== bedroom)]

Ar3 You reported <A4a_Response> bedrooms, but only visited <sum(R1==bedroom)>. Have you visited all bedrooms in your home?

1 Yes

2 No

[ASK IF AR3 = NO]

Ar3a Continue the tour through your home. Please visit the next bedroom.

1 Ok

2 I am not able to visit the remaining bedroom(s) in this home

[IF Ar3a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar3a = 2]

Ar3b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next bedroom

[IF Ar3b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4c > sum(R1==kitchen)]

Ar4 You reported <A4c_Response> kitchens, but only visited <sum(R1==kitchen)>. Have you visited all kitchens in your home?

1 Yes

2 No

[ASK IF AR4 = NO]

Ar4a Continue the tour through your home. Please visit the next kitchen.

1 Ok

2 I am not able to visit the remaining kitchen(s) in this home.

[IF Ar4a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar4a = 2]

Ar4b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next kitchen

[IF Ar4b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4d > sum(R1==living/family room)]

Ar5 You reported <A4d_Response> living/family rooms, but only visited <sum(R1==living/family room)>. Have you visited all living/family rooms in your home?

1 Yes

2 No

[ASK IF AR5 = NO]

Ar5a Continue the tour through your home. Please visit the next living/family room.

1 Ok

2 I am not able to visit the remaining living/family room(s) in this home

[IF Ar5a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar5a = 2]

Ar5b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next living/family room

[IF Ar5b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4e > sum(R1==den/office)]

Ar6 You reported <A4e_Response> den/offices, but only visited <sum(R1==den/office)>. Have you visited all den/offices in your home?

1 Yes

2 No

[ASK IF AR6 = NO]

Ar6a Continue the tour through your home. Please visit the next den/office.

1 Ok

2 I am not able to visit the remaining den/office(s) in this home

[IF Ar6a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar6a = 2]

Ar6b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next den/office

[IF Ar6b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A4f > sum(R1==dining room)]

Ar7 You reported <A4f_Response> dining rooms, but only visited <sum(R1==dining room)>. Have you visited all dining rooms in your home?

1 Yes

2 No

[ASK IF AR7 = NO]

Ar7a Continue the tour through your home. Please visit the next dining room.

1 Ok

2 I am not able to visit the remaining dining room(s) in this home

[IF Ar7a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar7a = 2]

Ar7b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the next dining room

[IF Ar7b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A5 = "Unfinished basement" and sum(R1 == basement)=0]

Ar8a You reported an unfinished basement in this home but have not visited one yet. Please visit the unfinished basement.

1 Ok

2 I am not able to visit the basement in this home

[IF Ar8a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar8a = 2]

Ar8b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the basement

[IF Ar8b = 2 BEGIN LOOP AGAIN AT R1]

[ASK IF AR1 = NO]

[ASK IF A9 ==YES and sum(R1 == garage)=0]

Ar9a You reported a garage in this home but have not visited one yet. Please visit the garage.

1 Ok

2 I am not able to visit the garage in this home

[IF Ar9a = "OK" BEGIN LOOP AGAIN AT R1]

[IF Ar9a = 2]

Ar9b If you do not visit all rooms in your home, you will not receive the full incentive.

1 I understand

2 Continue the tour with the garage

[IF Ar9b = 2 BEGIN LOOP AGAIN AT R1]

[END ROOM BY ROOM LOOP]

1.8 EXTERIOR LIGHTING

N1 Does your home have any outdoor lighting? *(If you live in an apartment or condominium, please answer for any outdoor lighting that you control)*

1 Yes

2 No

[IF N1 = No, SKIP TO NEXT SECTION]

N2 How many light bulbs are in sockets outside your home? *(Include all light bulbs that can be turned on; count string lights as one socket)* [Record #]

[ASK IF N2>0, ELSE SKIP TO I1]

N3 How many of the <N2> exterior bulbs are incandescent OR halogen lamps?

0 0
1 1
2 2 [SHOW IF <N2> IS GREATER THAN 1]
3 3 [SHOW IF <N2> IS GREATER THAN 2]
4 4 [SHOW IF <N2> IS GREATER THAN 3]
5 5 [SHOW IF <N2> IS GREATER THAN 4]
6 6 [SHOW IF <N2> IS GREATER THAN 5]
7 7 [SHOW IF <N2> IS GREATER THAN 6]
8 8 [SHOW IF <N2> IS GREATER THAN 7]
9 9 [SHOW IF <N2> IS GREATER THAN 8]
10 10 [SHOW IF <N2> IS GREATER THAN 9]
11 11 [SHOW IF <N2> IS GREATER THAN 10]
12 12 [SHOW IF <N2> IS GREATER THAN 11]
13 13 [SHOW IF <N2> IS GREATER THAN 12]
14 14 [SHOW IF <N2> IS GREATER THAN 13]
15 15 [SHOW IF <N2> IS GREATER THAN 14]
16 16 [SHOW IF <N2> IS GREATER THAN 15]
17 17 [SHOW IF <N2> IS GREATER THAN 16]
18 18 [SHOW IF <N2> IS GREATER THAN 17]
19 19 [SHOW IF <N2> IS GREATER THAN 18]
20 20 [SHOW IF <N2> IS GREATER THAN 19]
997 More than 20, specify: [RECORD #] [SHOW IF <N2> IS GREATER THAN 20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO <N2>]
998 Don't know

[SET TEMP_EXT_INCHAL = N3
IF N3 = 998 THEN TEMP_EXT_INCHAL = ""
IF N3 = 997 THEN TEMP _EXT_INCHAL = <N3 RECORDED_RESPONSE>]

[ASK IF N3>0 AND N3 <> Don't Know, ELSE SKIP TO I1]

N7 How many of the <TEMP_EXT_INCHAL> exterior incandescent/halogen lamps are controlled by… **timers**?

0 0
1 1
2 2 [SHOW IF TEMP _EXT_INCHAL >1]
3 3 [SHOW IF TEMP _EXT_INCHAL >2]
4 4 [SHOW IF TEMP _EXT_INCHAL >3]
5 5 [SHOW IF TEMP _EXT_INCHAL >4]
6 6 [SHOW IF TEMP _EXT_INCHAL >5]
7 7 [SHOW IF TEMP _EXT_INCHAL >6]
8 8 [SHOW IF TEMP _EXT_INCHAL >7]
9 9 [SHOW IF TEMP _EXT_INCHAL >8]
10 10 [SHOW IF TEMP _EXT_INCHAL >9]
11 11[SHOW IF TEMP _EXT_INCHAL >10]
12 12 [SHOW IF TEMP _EXT_INCHAL >11]
13 13 [SHOW IF TEMP _EXT_INCHAL >12]
14 14 [SHOW IF TEMP _EXT_INCHAL >13]
15 15 [SHOW IF TEMP _EXT_INCHAL >14]
16 16 [SHOW IF TEMP _EXT_INCHAL >15]
17 17 [SHOW IF TEMP _EXT_INCHAL >16]
18 18 [SHOW IF TEMP _EXT_INCHAL >17]
19 19 [SHOW IF TEMP _EXT_INCHAL >18]
20 20 [SHOW IF TEMP _EXT_INCHAL >19]
997 More than 20, specify: [RECORD #] [SHOW IF TEMP _EXT_INCHAL >20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO TEMP _EXT_INCHAL]
998 Don't Know

N8 How many of the < TEMP_EXT_INCHAL> exterior incandescent/halogen lamps are controlled by… **motion sensors**?

0 0
1 1
2 2 [SHOW IF TEMP _EXT_INCHAL >1]
3 3 [SHOW IF TEMP _EXT_INCHAL >2]
4 4 [SHOW IF TEMP _EXT_INCHAL >3]
5 5 [SHOW IF TEMP _EXT_INCHAL >4]
6 6 [SHOW IF TEMP _EXT_INCHAL >5]
7 7 [SHOW IF TEMP _EXT_INCHAL >6]
8 8 [SHOW IF TEMP _EXT_INCHAL >7]
9 9 [SHOW IF TEMP _EXT_INCHAL >8]
10 10 [SHOW IF TEMP _EXT_INCHAL >9]

11 11[SHOW IF TEMP _EXT_INCHAL >10]
12 12 [SHOW IF TEMP _EXT_INCHAL >11]
13 13 [SHOW IF TEMP _EXT_INCHAL >12]
14 14 [SHOW IF TEMP _EXT_INCHAL >13]
15 15 [SHOW IF TEMP _EXT_INCHAL >14]
16 16 [SHOW IF TEMP _EXT_INCHAL >15]
17 17 [SHOW IF TEMP _EXT_INCHAL >16]
18 18 [SHOW IF TEMP _EXT_INCHAL >17]
19 19 [SHOW IF TEMP _EXT_INCHAL >18]
20 20 [SHOW IF TEMP _EXT_INCHAL >19]
997 More than 20, specify: [RECORD #] [SHOW IF TEMP _EXT_INCHAL >20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO TEMP _EXT_INCHAL]
998 Don't Know

N9 How many of the < TEMP_EXT_INCHAL> exterior incandescent/halogen lamps are controlled by… **photocells**?

0 0
1 1
2 2 [SHOW IF TEMP _EXT_INCHAL >1]
3 3 [SHOW IF TEMP _EXT_INCHAL >2]
4 4 [SHOW IF TEMP _EXT_INCHAL >3]
5 5 [SHOW IF TEMP _EXT_INCHAL >4]
6 6 [SHOW IF TEMP _EXT_INCHAL >5]
7 7 [SHOW IF TEMP _EXT_INCHAL >6]
8 8 [SHOW IF TEMP _EXT_INCHAL >7]
9 9 [SHOW IF TEMP _EXT_INCHAL >8]
10 10 [SHOW IF TEMP _EXT_INCHAL >9]
11 11[SHOW IF TEMP _EXT_INCHAL >10]
12 12 [SHOW IF TEMP _EXT_INCHAL >11]
13 13 [SHOW IF TEMP _EXT_INCHAL >12]
14 14 [SHOW IF TEMP _EXT_INCHAL >13]
15 15 [SHOW IF TEMP _EXT_INCHAL >14]
16 16 [SHOW IF TEMP _EXT_INCHAL >15]
17 17 [SHOW IF TEMP _EXT_INCHAL >16]
18 18 [SHOW IF TEMP _EXT_INCHAL >17]
19 19 [SHOW IF TEMP _EXT_INCHAL >18]
20 20 [SHOW IF TEMP _EXT_INCHAL >19]

997 More than 20, specify: [RECORD #] [SHOW IF TEMP _EXT_INCHAL >20] [CHECK RESPONSE IS LESS THAN OR EQUAL TO TEMP _EXT_INCHAL]

998 Don't Know

1.9 ENTERTAINMENT & TECHNOLOGY

I6 Do you use "smart" power strips for home electronics?

1 Yes

2 No

98 Don't know

[ASK IF I6 = "Yes", ELSE SKIP TO I10]

I7 There are two types of smart power strips, Tier 1 and Tier 2. How many of each type of smart power strip do you use?

a Tier 1 [Record #]

b Tier 2 [Record #]

[Do not show Tier 1 option if I7a = 0, Do not show Tier 2 option if I7b = 0]

I8 What systems do you use the smart power strips for?

	1. Tier 1	2. Tier 2
a. Television/cable [Don't Show if I1 = None]		
b. Computing		
c. Other, specify: [Record]		

1.10 POOLS AND PUMPS

I10 Do you have the use of a swimming pool at your home?

1 Yes, and I pay for its energy use

2 Yes, but it is in a common area and I do not pay for its energy use

3 No pool

[ASK IF I10 = "Yes, and I pay for its energy use" ELSE SKIP TO O1]

I11 How is your pool heated?

1 Pool is not heated

2 Natural gas
3 Electricity
4 Solar heater (using solar collectors)
5 Bottled gas (propane, butane, LPG)
6 Other, specify: [Record]

I12 How many pool pumps do you have?
[RECORD #]
998 Don't know

[ASK IF I12 >0 and <> "don't know"]
I13 Indicate the quantity and type of pool pump(s) used in your home. *(Leave blank if 0)*
a. Single speed pool pump [RECORD #]
b. Dual speed pool pump [RECORD #]
c. Variable speed pool pump [RECORD #]
d. Don't know [RECORD #]
[Sum of I13 should equal response to I12]

I14 How many of the following pumps are used in your home. *(Leave blank if 0)*
a. Sump pump [RECORD #]
b. Well pump [RECORD #]
998 Don't know

1.11 MISCELLANEOUS

M1 Please select all types of equipment that you would be willing to enroll in a peak demand reduction program in exchange for financial incentives *(note the real-world impacts to equipment operation are shown in parentheses)*

[Multi-select]

1 Air conditioner *(temporarily increase indoor temperature by a few degrees)* [SHOW IF B2_primary or B2_secondary = a or c]
2 Dehumidifier *(turn off temporarily)* [SHOW IF C1d >=1]
3 Electric storage water heater *(temporarily cycle on-off, while maintaining tank temperature above a certain threshold)* [SHOW IF F2=2 and F6=1]
4 Pool pump *(turn off temporarily)* [SHOW IF I13 >=1]

5 Electric vehicle charging *(turn off temporarily, while guaranteeing a full charge by a given time)* [SHOW If A6a <> 0]

6 I would not consider letting the utility take control of any equipment, but I would be willing to adjust my own equipment given a signal from the utility

7 I would not be interested in participating

[ASK IF E3_primary = b and E1 = 3, 4, or 5 OR E3_primary <> b AND F2 = 3 or 4]

M2a If your home has access to natural gas service, how likely are you to consider replacing your [IF E3_primary = b and E1 = 3, 4, or 5, SHOW: boiler] [IF E3_secondary = b and E1 = 3, 4, or 5, SHOW: boiler] [IF E3_primary = b and E1 = 3, 4, or 5, AND F2 = 3 or 4, SHOW: and/or your water heater] [IF E3_secondary = b and E1 = 3, 4, or 5, AND F2 = 3 or 4, SHOW: and/or your water heater] [IF E3_primary <> b AND F2 = 3 or 4, SHOW: water heater] with a natural gas system in the future?

1 I would strongly consider switching natural gas

2 I might consider switching to natural gas

3 I would not consider switching to natural gas

4 Unsure

[ASK IF E3_primary = a or b and E1 = 1, 3, 4, or 5 OR E3_primary <> b or a AND F2 = 1, 3, or 4]

M2b Using a heat pump to partly or completely replace your current [IF E3_primary = b and E1 = 1, 3, 4, or 5, SHOW: boiler] [IF E3_secondary = b and E1 = 1, 3, 4, or 5, SHOW: boiler] [IF E3_primary = a and E1 = 1, 3, 4, or 5, SHOW: furnace] [IF E3_secondary = a and E1 = 1, 3, 4, or 5, SHOW: furnace] [IF E3_primary = b or a and E1 = 1, 3, 4, or 5, AND F2 = 1, 3 or 4, SHOW: and/or your current water heater] [IF E3_secondary = b or a and E1 = 1, 3, 4, or 5, AND F2 = 1, 3 or 4, SHOW: and/or your current water heater] [IF E3_primary <> b or a AND F2 = 1, 3 or 4, SHOW: water heater] fuel consumption is an alternate solution to meeting your household space heating/water heating needs. How likely are you to consider installing an electric heat pump for your [IF E3_primary = b or a and E1 = 1, 3, 4, or 5, SHOW: space heating] [IF E3_secondary = b or a and E1 = 1, 3, 4, or 5, SHOW: space heating] [IF E3_primary = b or a and E1 = 1, 3, 4, or 5, AND F2 = 1, 3 or 4, SHOW: and/or water heating] [IF E3_secondary = b or a and E1 = 1, 3, 4, or 5, AND F2 = 1, 3 or 4, SHOW: and/or water heating] [IF E3_primary <> b or a AND F2 = 1, 3 or 4, SHOW: water heating]?

1 I would strongly consider replacing my current system with a heat pump

2 I would strongly consider augmenting my current system with a heat pump *(and continue to use my current system as back-up)*

3 I might consider replacing my current system with a heat pump

4 I might consider augmenting my current system with a heat pump *(and continue to use my current system as back-up)*
5 I would not consider replacing or augmenting my current system with a heat pump
6 Unsure

[ASK IF E3_primary = a or b and E1 = 1, 3, 4, or 5 OR E3_primary <> b or a AND F2 = 1, 3, or 4]

M2d On a scale of 1 to 5 (5 being most important), please rank the factors that would prevent you from purchasing a [IF E3_primary = a or b and E1 = 3, 4, or 5 OR E3_primary <> b or a AND F2 = 3, or 4 SHOW: natural gas or electric heat pump] [IF E3_primary = a or b and E1 = 1 OR E3_primary <> b or a AND F2 = 1 SHOW: electric heat pump] system to replace all or a portion of your current heating system:

1 I don't know where to find a contractor to do this [RECORD #, limit response values to 1-5]
2 An alternative system is too expensive [RECORD #, limit response values to 1-5]
3 I don't think I can change my system to a new fuel source [RECORD #, limit response values to 1-5]
4 It is too complicated [RECORD #, limit response values to 1-5]
5 I don't know if my energy bills would increase or decrease if I change my fuel source [RECORD #, limit response values to 1-5]
6 My energy bills would increase if I change my fuel source [RECORD #, limit response values to 1-5]
7 I'm concerned about the performance of other fuel sources [RECORD #, limit response values to 1-5]
8 Other, specify: [RECORD]

1.12 END

END **Thank you for completing the NHSaves Home Energy Survey!**

We greatly appreciate your time and participation. Upon verification of your responses, a $25 Amazon.com Gift Card will be sent to: **<P2_Response>**. Please note that the email with your gift card redemption code will come from an "itron.com" email address (not an "nhsaves.com" email address).

Main document changes and comments

Page 4: Commented [TM1] **Ting, Michael** **2/26/2019 5:42:00 PM**

Level 1: Make this word a link to a pop-up with the following content:

Level 1 chargers take 8-15 hours for a full recharge and require only a standard 120v outlet.

Page 4: Commented [TM2] **Ting, Michael** **2/26/2019 5:43:00 PM**

Level 2: Make this word a link to a pop-up with the following content:

Level 2 chargers take 3-8 hours for a full recharge and require a 240v outlet.

Page 4: Commented [TM3] **Ting, Michael** **2/26/2019 5:44:00 PM**

Level 3: Make this word a link to a pop-up with the following content:

Level 3 chargers take 20 minutes to 1 hour for a full recharge and are also known as DC Fast Chargers.

Page 5: Commented [TM4] **Ting, Michael** **5/6/2019 10:26:00 AM**

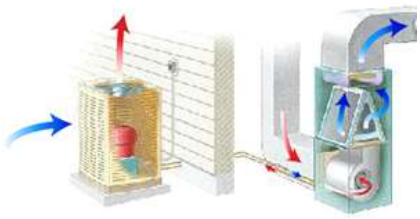
PRIMARY: Make this word a link to a pop-up with the following text:

Your PRIMARY system is the one that provides most or all of the space cooling for your home during the summer and is often controlled by your thermostat.

Page 5: Commented [RL5] **Robinson, Lauren** **2/14/2019 4:26:00 PM**

Forced air split system: Make this word a link that triggers a pop-up with the following text & image:

Forced-air split systems cool air and use a blower motor and a system of air ducts to distribute cool air throughout the house. These systems are also often called “split” systems because the compressor is located outdoors, usually mounted on the ground. Split systems include AC-only systems and heat pumps.



Page 5: Commented [RL6]	Robinson, Lauren	2/14/2019 4:27:00 PM

Ground source heat pump: Make this word a link that triggers a pop-up with the following text:

Ground-source heat pump systems work similarly to split systems in that they cool air and use a blower motor and a system of air ducts to circulate cool air throughout the house. In contrast to split systems, ground-source heat pumps do not use an outdoor condenser unit to produce the cool air. Instead they use loops of pipe buried in the ground. If your home is centrally cooled via a forced air system but no outdoor compressor is present, then it is a ground-source heat pump.

Page 5: Commented [RL7]	Robinson, Lauren	2/14/2019 4:28:00 PM

Ductless system: Make this word a link that triggers a pop-up with the following text & image:

Ductless systems (sometimes called "mini-splits") cool liquid refrigerant in an outdoor compressor, distribute that refrigerant to specific rooms through pipes, and then use heat exchangers and fans in small wall- or ceiling-mounted indoor units to cool indoor air. Ductless systems include AC-only systems and heat pumps.

Page 5: Commented [TM8]	Ting, Michael	5/6/2019 10:28:00 AM

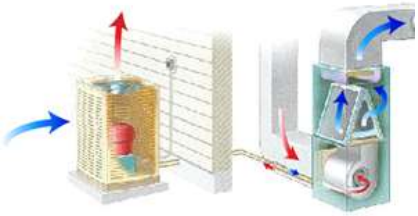
SECONDARY: Make this word a pop-up that contains the following text.

SECONDARY systems provide additional central air conditioning capacity to supplement your primary system or to serve as backup capacity. The most common secondary central air conditioning system are ductless systems used to supplement forced air systems. Note that portable air conditioners are NOT considered secondary central air conditioning systems.

Page 5: Commented [RL9]	Robinson, Lauren	2/14/2019 4:26:00 PM

Forced air split system: Make this word a link that triggers a pop-up with the following text & image:

Forced-air split systems cool air and use a blower motor and a system of air ducts to distribute cool air throughout the house. These systems are also often called "split" systems because the compressor is located outdoors, usually mounted on the ground. Split systems include AC-only systems and heat pumps.



Page 5: Commented [RL10]	Robinson, Lauren	2/14/2019 4:27:00 PM

Ground source heat pump: Make this word a link that triggers a pop-up with the following text:

Ground-source heat pump systems work similarly to split systems in that they cool air and use a blower motor and a system of air ducts to circulate cool air throughout the house. In contrast to split systems, ground-source heat pumps do not use an outdoor condenser unit to produce the cool air. Instead they use loops of pipe buried in the ground. If your home is centrally cooled via a forced air system but no outdoor compressor is present, then it is a ground-source heat pump.

Page 5: Commented [RL11]	Robinson, Lauren	2/14/2019 4:28:00 PM

Ductless system: Make this word a link that triggers a pop-up with the following text & image:

Ductless systems (sometimes called “mini-splits”) cool liquid refrigerant in an outdoor compressor, distribute that refrigerant to specific rooms through pipes, and then use heat exchangers and fans in small wall- or ceiling-mounted indoor units to cool indoor air. Ductless systems include AC-only systems and heat pumps.

Page 5: Commented [TM12]	Ting, Michael	2/26/2019 5:47:00 PM

many : Make this word a link to a pop-up with the following content:

Larger homes may have more than one compressor to cool different parts of the home.

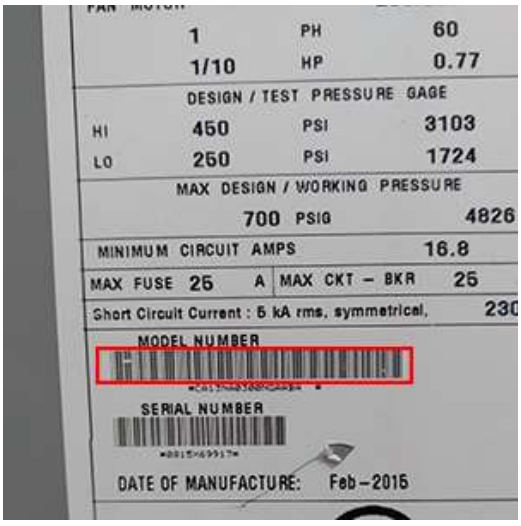
Page 6: Commented [TM13]	Ting, Michael	2/7/2019 3:15:00 PM

Nameplate: Make this word a link that triggers a pop-up with the following image:

Page 6: Commented [TM14]	Ting, Michael	2/26/2019 11:25:00 AM

barcode(s): Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.



If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 7: Commented [TM15]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 8: Commented [TM16]	Ting, Michael	2/25/2019 3:59:00 PM

Communicating: Make these words a link to a pop-up with the following content:

Communicating thermostats are able to communicate with your heating/cooling system through the web or a mobile app.

Page 8: Commented [TM17]	Ting, Michael	2/25/2019 4:01:00 PM

programmable: Make these words a link to a pop-up with the following content:

Programmable (non-communicating) thermostats allow you to set indoor temperature and on-off times, but only directly on the thermostat itself.

Page 8: Commented [TM18]	Ting, Michael	2/25/2019 4:08:00 PM

standard: Make these words a link to a pop-up with the following content:

Standard thermostats allow you to set indoor temperature but do not have the ability to program on-off times.

Page 8: Commented [TM19]	Ting, Michael	5/6/2019 10:35:00 AM

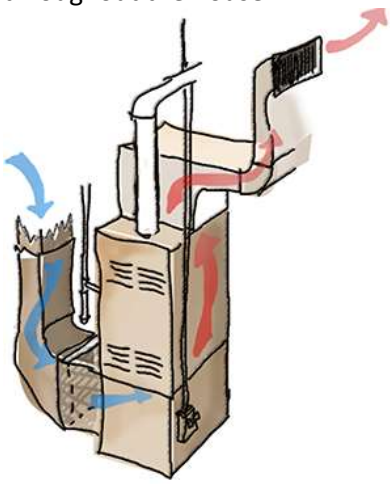
PRIMARY: Make this word a link to a pop-up with the following text:

Your PRIMARY system is the one that provides most or all of the space heating for your home during the winter and is often controlled by your thermostat.

Page 8: Commented [RL20]	Robinson, Lauren	2/14/2019 4:31:00 PM

Forced-air furnaces: Make this word a link that triggers a pop-up with the following text & image:

Forced-air furnaces heat air and use a blower motor and a system of air ducts to distribute warm air throughout the house.



Page 8: Commented [RL21]	Robinson, Lauren	2/14/2019 4:42:00 PM

Air-source heat pumps: Make this word a link that triggers a pop-up with the following text & image:

Air-source central heat pumps use an outdoor compressor unit and then a blower motor and a system of air ducts to circulate warm air throughout the house. These heat pump systems are also used for home cooling during the summer.

Page 8: Commented [TM22]	Ting, Michael	2/25/2019 3:44:00 PM

Ground source heat pumps: Make this word a link that triggers a pop-up with the following text:

Ground-source heat pumps work similarly to split systems in that they warm air and use a blower motor and a system of air ducts to circulate warm air throughout the house. In contrast to split systems, ground-source heat pumps do not use an outdoor condenser unit to produce the warm air. Instead they use loops of pipe buried in the ground. If your home is centrally heated via a forced air system but no outdoor compressor is present, then it is a ground-source heat pump.

Page 8: Commented [RL23]	Robinson, Lauren	2/14/2019 4:42:00 PM

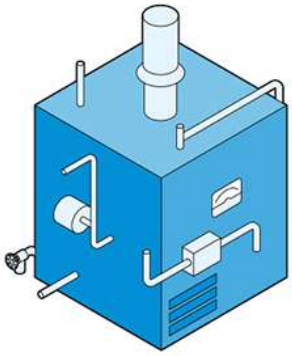
Ductless heat pumps: Make this word a link that triggers a pop-up with the following text & image:

Ductless heat pumps (sometimes called “mini-splits”) heat liquid refrigerant in an outdoor compressor, distribute that refrigerant to specific rooms through pipes, and then use heat exchangers and fans in small wall- or ceiling- mounted indoor units to cool indoor air. These systems are also used for home cooling during the summer.

Page 8: Commented [RL24]	Robinson, Lauren	2/14/2019 4:31:00 PM

Boilers: Make this word a link that triggers a pop-up with the following text & image:

Boilers heat water to provide hot water or steam that is then distributed through a series of pipes. Boilers are the heat sources for steam radiator systems, radiant floor/ceiling/wall heating systems, and hot water baseboards. Boilers can be mounted on the ground or on a wall.



Page 8: Commented [TM25]	Ting, Michael	5/6/2019 10:36:00 AM

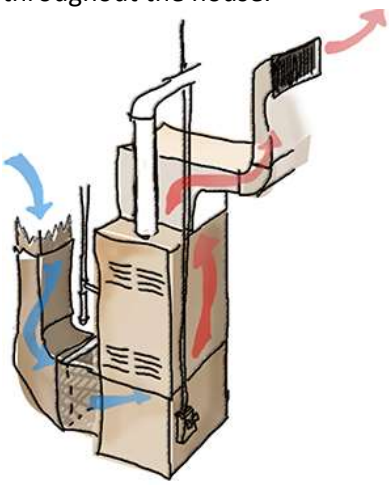
SECONDARY: Make this word a pop-up that contains the following text.

SECONDARY systems provide additional space heating capacity to supplement your primary system or to serve as backup capacity. The most common secondary central heating systems are ductless heat pumps or baseboard heaters used to supplement furnaces.

Page 8: Commented [RL26]	Robinson, Lauren	2/14/2019 4:31:00 PM

Forced-air furnaces: Make this word a link that triggers a pop-up with the following text & image:

Forced-air furnaces heat air and use a blower motor and a system of air ducts to distribute warm air throughout the house.



Page 8: Commented [RL27]	Robinson, Lauren	2/14/2019 4:42:00 PM

Air-source heat pumps: Make this word a link that triggers a pop-up with the following text & image:

Air-source central heat pumps use an outdoor compressor unit and then a blower motor and a system of air ducts to circulate warm air throughout the house. These heat pump systems are also used for home cooling during the summer.

Page 8: Commented [TM28]	Ting, Michael	2/25/2019 3:44:00 PM

Ground source heat pumps: Make this word a link that triggers a pop-up with the following text:

Ground-source heat pumps work similarly to split systems in that they warm air and use a blower motor and a system of air ducts to circulate warm air throughout the house. In contrast to split systems, ground-source heat pumps do not use an outdoor condenser unit to produce the warm air. Instead they use loops of pipe buried in the ground. If your home is centrally heated via a forced air system but no outdoor compressor is present, then it is a ground-source heat pump.

Page 8: Commented [RL29]	Robinson, Lauren	2/14/2019 4:42:00 PM

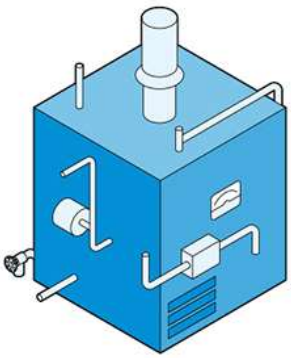
Ductless heat pumps: Make this word a link that triggers a pop-up with the following text & image:

Ductless heat pumps (sometimes called “mini-splits”) heat liquid refrigerant in an outdoor compressor, distribute that refrigerant to specific rooms through pipes, and then use heat exchangers and fans in small wall- or ceiling- mounted indoor units to cool indoor air. These systems are also used for home cooling during the summer.

Page 8: Commented [RL30]	Robinson, Lauren	2/14/2019 4:31:00 PM

Boilers: Make this word a link that triggers a pop-up with the following text & image:

Boilers heat water to provide hot water or steam that is then distributed through a series of pipes. Boilers are the heat sources for steam radiator systems, radiant floor/ceiling/wall heating systems, and hot water baseboards. Boilers can be mounted on the ground or on a wall.



Page 9: Commented [TM31] **Ting, Michael** **2/25/2019 3:00:00 PM**

fuel source: Make this word a link to a pop-up with the following content:

Natural gas, oil, and propane furnaces have a large cylindrical vent (or "flue") at the top of the unit to exhaust combustion gases outdoors. Oil and propane furnaces are connected to stand alone fuel tanks located next to the furnace. Electric furnaces and heat pumps lack exhaust flues.

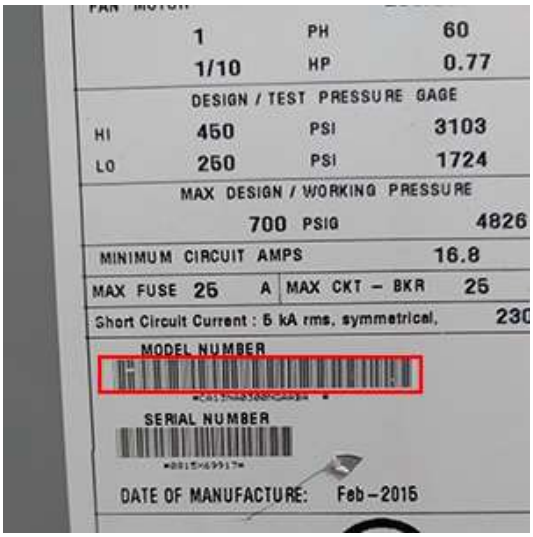
Page 9: Commented [TM32] **Ting, Michael** **2/7/2019 3:15:00 PM**

nameplate : Make this word a link that triggers a pop-up with the following image:

Page 10: Commented [TM33] **Ting, Michael** **2/26/2019 12:58:00 PM**

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.



If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 10: Commented [TM34]	**Ting, Michael**	**5/3/2019 2:49:00 PM**

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 11: Commented [TM35]	Ting, Michael	2/25/2019 3:59:00 PM

Communicating: Make these words a link to a pop-up with the following content:

Communicating thermostats are able to communicate with your heating/cooling system through the web or a mobile app.

Page 11: Commented [TM36]	Ting, Michael	2/25/2019 4:01:00 PM

programmable: Make these words a link to a pop-up with the following content:

Programmable (non-communicating) thermostats allow you to set indoor temperature and on-off times, but only directly on the thermostat itself.

Page 11: Commented [TM37]	Ting, Michael	2/25/2019 4:08:00 PM

standard: Make these words a link to a pop-up with the following content:

Standard thermostats allow you to set indoor temperature but do not have the ability to program on-off times.

Page 11: Commented [SJ38]	Smith, Jeremy	11/7/2019 8:55:00 AM

Air exchanger: make this word a link with popup with the following content:

Air exchangers replace stale indoor air with fresh outdoor air in your ventilation system. Air exchangers are large metal boxes with **two or three** ventilation ducts attached to them and are typically located in basements, crawlspaces, or attics. If the unit has four ducts attached to it, then it is likely a heat recovery ventilator, not an air exchanger.

Page 11: Commented [TM39] **Ting, Michael** **11/18/2019 10:54:00 AM**

Reset controls: make this word a link with popup with the following content:

Boiler reset controls are an add-on technology that controls boiler water temperature based on outdoor temperature. These controls have their own metal or plastic housing and are typically attached to a wall in the vicinity of the boiler itself. Most have visible buttons and a small digital display.

Page 12: Commented [RL40] **Robinson, Lauren** **2/14/2019 4:49:00 PM**

Natural gas: Make this word a link that triggers a pop-up with the following text & image:

Natural gas water heaters all have a large vent (or "flue") at the top of the unit to exhaust combustion gases that is typically 3-6" in diameter and noticeably wider than water pipes, gas pipes, or electrical connections.

Page 12: Commented [RL41]	Robinson, Lauren	2/14/2019 4:49:00 PM

Electricity: Make this word a link that triggers a pop-up with the following text:

Electric water heaters do not have a flue. They are connected to an electrical power line.

Page 12: Commented [RL42]	Robinson, Lauren	2/14/2019 4:50:00 PM

Propane: Make this word a link that triggers a pop-up with the following text:

Propane water heaters have flues like natural gas water heaters, but their gas lines are connected to a stand-alone propane tank located on the premises.

Page 12: Commented [RL43]	Robinson, Lauren	2/14/2019 4:50:00 PM

Oil: Make this word a link that triggers a pop-up with the following text:

Oil-fired water heaters use fuel oil to heat water and also have flues, but their hot water storage tanks are connected to an oil burner.

Page 12: Commented [RL44]	Robinson, Lauren	2/14/2019 4:50:00 PM

Solar: Make this word a link that triggers a pop-up with the following text:

Solar water heating systems include storage tanks and solar collectors.

Page 12: Commented [RL45]	Robinson, Lauren	2/14/2019 4:53:00 PM

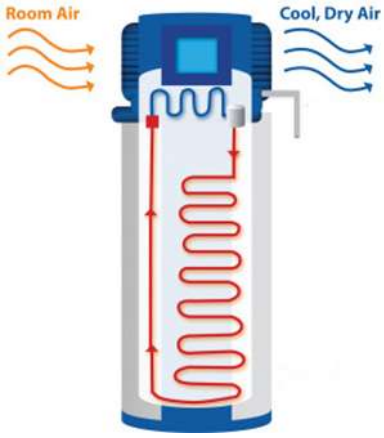
Conventional storage: Make this word a link that triggers a pop-up with the following text & image:

Conventional storage water heaters are large cylindrical tanks that are free-standing and sometimes strapped to a wall.

Page 12: Commented [RL46]	Robinson, Lauren	2/14/2019 4:54:00 PM

Heat pump storage: Make this word a link that triggers a pop-up with the following text & image:

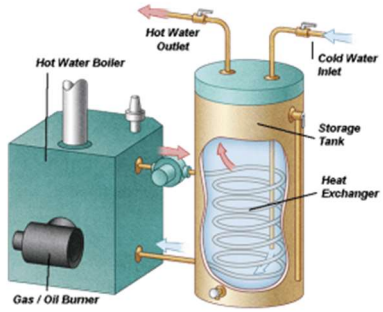
Heat pump storage water heaters look like electric resistance storage water heaters, except they have vents at the top of the unit and fans that pull surrounding air into the unit.



Page 12: Commented [RL47]	Robinson, Lauren	2/14/2019 4:55:00 PM

Indirect storage: Make this word a link that triggers a pop-up with the following text & image:

Indirect storage water heaters use the main furnace or boiler to heat a fluid that's circulated through a heat exchanger in the storage tank.



Page 12: Commented [RL48]	Robinson, Lauren	2/14/2019 4:54:00 PM

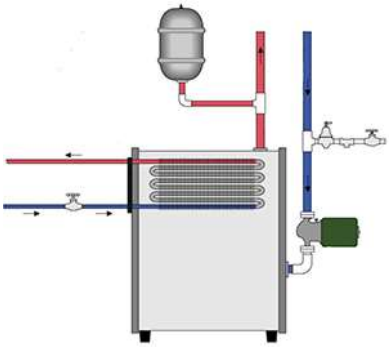
Tankless: Make this word a link that triggers a pop-up with the following text & image:

Tankless water heaters (also known as instantaneous or on-demand water heaters) are typically box-shaped units that are wall-mounted. They heat water directly without the use of a storage tank.

Page 12: Commented [RL49]	Robinson, Lauren	2/14/2019 4:55:00 PM

Tankless Coil: Make this word a link that triggers a pop-up with the following text & image:

Tankless coil water heaters are a kind of indirect system where the home's space heating system (a furnace or boiler) is used to heat water via a heat exchanger (a coil) but without a storage tank. These systems are readily identifiable when the water pipes that serve the kitchen and bathroom are observed entering and exiting a furnace or boiler and no storage tank is present.



Page 13: Commented [TM50]	Ting, Michael	2/7/2019 3:15:00 PM

nameplate Make this word a link that triggers a pop-up with the following image:

Page 13: Commented [TM51]	Ting, Michael	2/26/2019 12:59:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 13: Commented [TM52]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 15: Commented [TM53]	**Ting, Michael**	**2/7/2019 3:15:00 PM**

nameplate Make this word a link that triggers a pop-up with the following image:

Page 15: Commented [TM54] **Ting, Michael** **2/8/2019 3:06:00 PM**

Top-Loading: A

Make this letter a link that triggers a pop-up with the following text:

“Inside the lid”

Page 15: Commented [TM55] **Ting, Michael** **2/8/2019 3:08:00 PM**

Top-Loading: B

Make this letter a link that triggers a pop-up with the following text:

“Along the top edge of the tub”

Page 15: Commented [TM56] **Ting, Michael** **2/8/2019 3:09:00 PM**

Top-Loading: C

Make this letter a link that triggers a pop-up with the following text:

“On the back of the unit, opposite the control panel”

Page 15: Commented [TM57] **Ting, Michael** **2/8/2019 3:10:00 PM**

Top-Loading: D

Make this letter a link that triggers a pop-up with the following text:

“On the side of the unit, near the lower front corner”

Page 16: Commented [TM58] **Ting, Michael** **2/8/2019 3:06:00 PM**

Front-Loading: A

Make this letter a link that triggers a pop-up with the following text:

“Along the door jamb”

Page 16: Commented [TM59] **Ting, Michael** **2/8/2019 3:08:00 PM**

Front-Loading: B

Make this letter a link that triggers a pop-up with the following text:

“Along the inside edge of the door”

Page 16: Commented [TM60] **Ting, Michael** **2/8/2019 3:09:00 PM**

Front-Loading: C

Make this letter a link that triggers a pop-up with the following text:

“On the back of the unit, opposite the control panel”

Page 16: Commented [TM61] **Ting, Michael** **2/8/2019 3:10:00 PM**

Front-Loading: D

Make this letter a link that triggers a pop-up with the following text:

“On the side of the unit, near the lower front corner”

Page 16: Commented [TM62] **Ting, Michael** **2/26/2019 1:00:00 PM**

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 16: Commented [TM63] **Ting, Michael** **5/3/2019 2:49:00 PM**

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 17: Commented [TM64]	Ting, Michael	2/26/2019 10:06:00 AM

large: Make the word “large” a link to a pop-up with the following text:

Compact clothes washers are quite small and are mostly comprised of portable units or purpose-built units for RVs.

If your unit is not portable and at least 21” deep and 36” tall, it is considered a **standard** size clothes washer.

Page 18: Commented [TM65]	Ting, Michael	2/7/2019 3:15:00 PM

nameplate Make this word a link that triggers a pop-up with the following image:

Page 18: Commented [TM66]	Ting, Michael	2/8/2019 3:06:00 PM

A: Make this letter a link that triggers a pop-up with the following text:

“Along the door jamb”

Page 18: Commented [TM67]	Ting, Michael	2/8/2019 3:08:00 PM

B: Make this letter a link that triggers a pop-up with the following text:

“Along the inside edge of the door”

Page 18: Commented [TM68]	Ting, Michael	2/8/2019 3:09:00 PM

C: Make this letter a link that triggers a pop-up with the following text:

“On the side of the unit, near the lower front corner”

Page 18: Commented [TM69]	Ting, Michael	2/8/2019 3:10:00 PM

D: Make this letter a link that triggers a pop-up with the following text:

“On the back of the unit, opposite the control panel”

Page 19: Commented [TM70]	Ting, Michael	2/26/2019 1:01:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 19: Commented [TM71]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 21: Commented [TM72]	Ting, Michael	2/26/2019 1:31:00 PM

windows Make this word a link to a pop-up with the following content:

If you're not sure how many panes of glass are in your windows, hold a flashlight so it's shining directly through your window. You will see either one, two or three spots of light. Each spot of light represents one pane (or sheet) of glass.

Page 24: Commented [TM73]	Ting, Michael	2/7/2019 3:15:00 PM

Nameplate: Make this word a link that triggers a pop-up with the following image:

Page 24: Commented [TM74]	Ting, Michael	2/8/2019 3:06:00 PM

A: Make this letter a link that triggers a pop-up with the following text:

"On the interior side wall or the ceiling, usually on the top level of the refrigerator"

Page 24: Commented [TM75]	Ting, Michael	2/8/2019 3:08:00 PM

B: Make this letter a link that triggers a pop-up with the following text:

“Behind the kick plate”

Page 24: Commented [TM76]	Ting, Michael	2/8/2019 3:09:00 PM

C: Make this letter a link that triggers a pop-up with the following text:

“On the interior rear wall, behind the crisper drawer”

Page 24: Commented [TM77]	Ting, Michael	2/8/2019 3:10:00 PM

D: Make this letter a link that triggers a pop-up with the following text:

“On door jamb near the upper corners or along the top”

Page 24: Commented [TM78]	Ting, Michael	2/26/2019 1:02:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 25: Commented [TM79]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 26: Commented [TM80]	**Ting, Michael**	**2/26/2019 10:20:00 AM**

size Make this word a link to a pop-up with the following content:

The most common type of **compact** refrigerator is the “mini fridge” that fits underneath counter tops and desks. Although uncommon, compact units can be up to 44” tall.

Small refrigerators are ~60” tall and 28” wide at most.

Medium refrigerators are ~66” tall and 30” wide at most.

Large refrigerators are also ~66” tall but generally 32” wide.

Very large refrigerators are up to 69” tall and at least 32” wide.

Page 26: Commented [RL81]	Robinson, Lauren	5/15/2019 12:59:00 PM

defrost Make this word a link to a pop-up with the following content:

Automatic Defrost – is always working. You don't need to do anything to manage the frost build up inside the unit. Most refrigerators on the market today have automatic defrost controls.

Manual Defrost - requires you to remove all of the food from your refrigerator and freezer, unplug the unit, and allow it to warm up to melt the frost inside the unit. This is done each time the unit develops a quarter-inch of ice build-up on the interior walls (on average, once a year).

Page 26: Commented [TM82]	Ting, Michael	2/26/2019 3:27:00 PM

freestanding Make this word a link to a pop-up with the following content:

Freestanding refrigerators stand on their own and slide into place next to cabinets or against a wall. Built-in refrigerators sit flush with kitchen cabinetry. They are typically less deep than freestanding refrigerators.

Page 27: Commented [TM83]	Ting, Michael	2/7/2019 3:15:00 PM

Nameplate: Make this word a link that triggers a pop-up with the following image:

Page 27: Commented [TM84]	Ting, Michael	2/8/2019 3:06:00 PM

A: Make this letter a link that triggers a pop-up with the following text:

“On the side of the unit, near the lower front corner”

Page 27: Commented [TM85]	Ting, Michael	2/8/2019 3:08:00 PM

B: Make this letter a link that triggers a pop-up with the following text:

“On the interior back or side wall, near the top”

Page 27: Commented [TM86]	Ting, Michael	2/8/2019 3:09:00 PM

C: Make this letter a link that triggers a pop-up with the following text:

“On the inside or along the inside edge of the door”

Page 28: Commented [TM87]	Ting, Michael	2/26/2019 1:02:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 28: Commented [TM88]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 29: Commented [RL89]	Robinson, Lauren	5/15/2019 1:00:00 PM

style Make this word a link to a pop-up with the following content:

Automatic Defrost – is always working. You don't need to do anything to manage the frost build up inside the unit.

Manual Defrost - requires you to remove all of the food from your freezer, unplug the unit, and allow it to warm up to melt the frost inside the unit. This is done each time the unit develops a quarter-inch of ice build-up on the interior walls (on average, once a year).

Page 29: Commented [TM90]	Ting, Michael	2/26/2019 10:42:00 AM

size Make this word a link to a pop-up with the following content:

Compact upright freezers are ~56” tall and 24” wide at most. Compact chest freezers are 33” tall and can be up to 21” deep and 37” wide.

Small upright freezers are ~60” tall and 28” wide at most. Small chest freezers are ~28” deep and up to 50” wide.

Medium upright freezers are ~60” tall and 30” wide at most. Medium chest freezers are up to 65” wide.

Large upright freezers are also over 64” tall at least 32” wide. Chest freezers in this size range are highly uncommon.

Page 30: Commented [TM91]	Ting, Michael	2/7/2019 3:15:00 PM

Nameplate: Make this word a link that triggers a pop-up with the following image:

Page 30: Commented [TM92]	Ting, Michael	2/8/2019 3:06:00 PM

A: Make this letter a link that triggers a pop-up with the following text:

“Along the inside edge of the door”

Page 30: Commented [TM93]	Ting, Michael	2/8/2019 3:08:00 PM

B: Make this letter a link that triggers a pop-up with the following text:

“Along the door jamb”

Page 30: Commented [TM94]	Ting, Michael	2/8/2019 3:09:00 PM

C: Make this letter a link that triggers a pop-up with the following text:

“On the framing near the top of the unit”

Page 30: Commented [TM95]	Ting, Michael	2/8/2019 3:10:00 PM

D: Make this letter a link that triggers a pop-up with the following text:

“On side of the unit, near the lower front corner”

Page 30: Commented [TM96]	Ting, Michael	2/26/2019 1:03:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 30: Commented [TM97]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 31: Commented [TM98]	Ting, Michael	2/26/2019 11:08:00 AM

size Make this word a link to a pop-up with the following content:

Compact dishwashers are mostly comprised of counter-top models that up to 22” wide and no more than 18” tall.

Standard dishwashers are all at least 32” tall (“counter height”) and range from 15” wide to 36” wide.

Page 33: Commented [RL99]	Robinson, Lauren	2/14/2019 5:03:00 PM

Window air conditioners and heat pumps : Make this word a link that triggers a pop-up with the following text & image:

Window air conditioners and heat pumps are a type of "packaged" system that includes the evaporator, condenser, compressor, and fans all in one unit that sits inside a window frame and cools one room. Window heat pumps are the same but can also provide heat during the winter.

Page 33: Commented [RL100]	Robinson, Lauren	2/14/2019 5:04:00 PM

Portable air conditioners and heat pumps : Make this word a link that triggers a pop-up with the following text & image:

Portable air conditioners and heat pumps are also packaged systems, but instead of sitting inside the window frame the unit sits in the room and a small exhaust tube is fed through the window.

Page 33: Commented [RL101] **Robinson, Lauren** **2/14/2019 5:05:00 PM**

Through-the-wall air conditioners and heat pumps: Make this word a link that triggers a pop-up with the following text & image:

Through-the-wall air conditioners and heat pumps are similar to window air conditioners and heat pumps but are permanently installed through dedicated sections of exterior walls. They are typically found in hotels or apartment buildings.

Page 34: Commented [TM102] **Ting, Michael** **2/26/2019 1:03:00 PM**

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 34: Commented [TM103]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 35: Commented [TM104]	Ting, Michael	2/26/2019 1:03:00 PM

barcode(s) : Make this word a link to a pop-up with the following content:

If there are multiple barcodes, take a photo of the barcode associated the model number, not the serial number.

If you are unsure which barcode is for the model number, take a photo that includes all the barcodes.

Page 36: Commented [TM105]	Ting, Michael	5/3/2019 2:49:00 PM

model number: make this word a pop-up with the following content:

Be careful to identify and capture the **model number**, not the serial number. Model numbers are often preceded by abbreviations like “Mod. No.”, “Mod. Num.”, “MOD#”, or “M/N”. Serial numbers are often preceded by abbreviations like “Serial No.”, “Ser. Num.”, “SER#”, or “S/N”.

If you are unsure which number is the model number as which is the serial number, take a photo that includes both.

Page 37: Commented [RL106]	Robinson, Lauren	2/14/2019 4:21:00 PM

LED: Make this word a link that triggers a pop-up with the following text & image:

LEDs always have a component between the screw base and the glass enclosure, similar to CFLs. However, this middle component tends to be smaller and more discrete in LED lamps compared to CFLs. When the glass enclosure is clear, you can see the small LED chips that actually emit the light.

Page 37: Commented [RL107]	Robinson, Lauren	2/14/2019 4:20:00 PM

CFL: Make this word a link that triggers a pop-up with the following text & image:

CFLs consist of two or three tubular loops that are often visible. When the tubes are covered by a glass enclosure, they can look similar to incandescent bulbs. However, CFLs always have a bulky component between the screw base and the tubes (or glass enclosure) which contains the ballast.

Page 37: Commented [RL108]	Robinson, Lauren	2/14/2019 4:20:00 PM

Incandescent: Make this word a link that triggers a pop-up with the following text & image:

Incandescent lights are the historically standard for screw-based lighting sockets in residential homes. The key ways to tell if a lamp is incandescent are the presence of a small, thin filament (visible when the glass enclosure is clear) or when the glass enclosure continues all the way down to the screw base.

Page 37: Commented [RL109]	Robinson, Lauren	2/14/2019 4:22:00 PM

Fluorescent Tube: Make this word a link that triggers a pop-up with the following text & image:

Fluorescent tubes are also known as linear fluorescent lamps. These are most commonly used in commercial settings but are sometimes found in residential garages, basements, workshops, or hallways.

Page 37: Commented [RL110]	Robinson, Lauren	2/14/2019 4:22:00 PM

Halogen: Make this word a link that triggers a pop-up with the following text & image:

Halogen lamps can resemble incandescent lamps in that they contain a filament and have glass enclosures that continue all the way down to the base. However, the filament in halogens is larger and more complex

than in an incandescent. Halogen filaments can resemble “a lamp inside a lamp”. Halogens are most commonly used in recessed downlights and other applications that use directional, reflector lamps.

Page 37: Commented [RL111]	Robinson, Lauren	2/14/2019 4:23:00 PM

Infrared: Make this word a link that triggers a pop-up with the following text:

Infrared heat lamps use a special type of incandescent bulb for the primary purpose of heat production rather than to generate light (i.e., bathroom heat lamps).

Page 38: Commented [RL112]	Robinson, Lauren	2/14/2019 4:13:00 PM

Standard: Make this word a link that triggers a pop-up with the following text & image:

Standard shape lamps are also known as A-lamps and have the classic pear shape. The common twister or spiral-style CFL lamps are also considered standard shaped lamps, since they can be used interchangeably with A-lamps.

Page 39: Commented [TM113] **Ting, Michael** **5/6/2019 10:55:00 AM**

reflectors: make this word a link to a pop-up with the following text and image.:

Reflector lamps are also known as directional or parabolic lamps. These lamps are commonly used in recessed downlighting, track lighting, and pendant lighting fixtures.

Page 39: Commented [TM114] **Ting, Michael** **2/26/2019 6:05:00 PM**

faucet aerators Make this word a link to a pop-up with the following content:

Aerators are add-on devices that reduce the water usage by mixing air into the water stream.

Page 40: Commented [TM115] **Ting, Michael** **2/26/2019 6:06:00 PM**

showerheads Make this word a link to a po-up with the following content:

Water-saving showerheads use 2.5 gallons per minute or less and have been standard since 1993.

Page 40: Commented [SJ116] **Smith, Jeremy** **11/6/2019 8:58:00 AM**

Thermostatic restrictor valves: make this word a popup with the following content

Thermostatic restrictor valves (also known as thermostatic shut-off valves) are small valves installed just behind a showerhead. They act to reduce the flow of water through the showerhead once the water has reached 95°. When the user is ready to shower, they pull on a small tab or handle on the restrictor valve to release the flow of warm water. These restrictor valves save energy and water by minimizing the amount of hot water wasted before and during showering.

Page 45: Commented [RL117]	Robinson, Lauren	2/14/2019 3:42:00 PM

INCANDESCENT: Make this word a link that triggers a pop-up with the following text & image:

Incandescent lights are the historically standard for screw-based lighting sockets in residential homes. The key ways to tell if a lamp is incandescent are the presence of a small, thin filament (visible when the glass enclosure is clear) or when the glass enclosure continues all the way down to the screw base.

Page 45: Commented [RL118]	Robinson, Lauren	2/14/2019 3:42:00 PM

HALOGEN: Make this word a link that triggers a pop-up with the following text & image:

Halogen lamps can resemble incandescent lamps in that they contain a filament and have glass enclosures that continue all the way down to the base. However, the filament in halogens is larger and more complex than in an incandescent. Halogen filaments can resemble “a lamp inside a lamp”. Halogens are most commonly used in recessed downlights and other applications that use directional, reflector lamps.

Page 48: Commented [TM119]	Ting, Michael	2/26/2019 6:15:00 PM

"smart" Make this word a link to a pop-up with the following content:

Smart strips look different from regular power strips. They typically use color-coded outlets that identify a “control” device (e.g. TVs, PCs or gaming consoles) separately from associated peripheral devices (e.g. speakers, monitors, printers, etc.).

Page 48: Commented [RL120]	Robinson, Lauren	2/14/2019 4:04:00 PM

Tier 1: Make this word a link that triggers a pop-up with the following text:

Tier 1 smart strips work by sensing when the control device is powered off or in sleep mode and then automatically turning off connected peripheral devices.

Page 48: Commented [RL121]	Robinson, Lauren	2/14/2019 4:02:00 PM

Tier 2: Make this word a link that triggers a pop-up with the following text:

Tier 2 smart strips have additional sensors that monitor user activity and actively turn off both control and peripheral devices after a predetermined period of inactivity. These additional sensors include infrared and motion sensors that are usually connected to the smart strip via a wired ethernet connection or a wireless Bluetooth connection.

Page 49: Commented [TM122]	Ting, Michael	12/4/2019 9:02:00 AM

Make this word a link to a pop-up with the following content:

Peak demand reduction programs offer financial incentives for customers who allow their electric utility to remotely control certain equipment for 2-4 hours during periods of high electricity demand (usually late afternoon and early

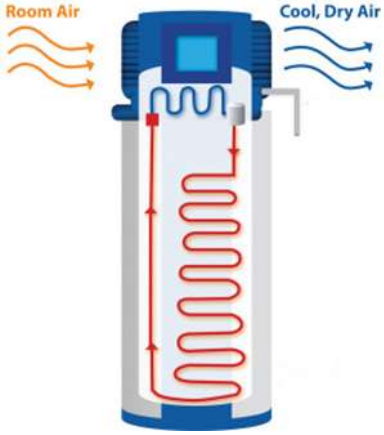
evening, for up to 10 times per year). The timing and duration of the utility controls are designed to have little or no noticeable effect on customers' comfort.

Page 50: Commented [TM123]	Ting, Michael	12/4/2019 9:05:00 AM

Heat pump: Make this word a link that triggers a pop-up with the following text & image:

Air-source central heat pumps use an outdoor compressor unit and then a blower motor and a system of air ducts to circulate warm air throughout the house. These heat pump systems are also used for home cooling during the summer.

Heat pump storage water heaters look like electric resistance storage water heaters, except they have vents at the top of the unit and fans that pull surrounding air into the unit.



Header and footer changes

Text Box changes

Header and footer text box changes

Footnote changes

Endnote changes

APPENDIX B WEIGHT SUMMARY

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nGeneral	wGeneral	nSpaceCooling	wSpaceCooling	nSpaceHeating	wSpaceHeating
Eversource11150	SF=1	1	5=CZ 5	N=0	7037.36	15	43	34	217.21	32	231.46	28	266.41
Eversource11151	SF=1	1	5=CZ 5	Y=1	734.64	1	2	2	367.32	2	367.32	1	734.64
Eversource11160	SF=1	1	6=CZ 6	N=0	373.3	2	3	2	343.44	2	343.44	2	343.44
Eversource11170	SF=1	1	6=CZ 6	N=0	158	1	1	1	158	1	158	1	158
Eversource11250	SF=1	2	5=CZ 5	N=0	8861.69	25	69	52	186.93	50	195.1	47	208.77
Eversource11251	SF=1	2	5=CZ 5	Y=1	1287.31	3	5	5	516.98	5	516.98	5	516.98
Eversource11260	SF=1	2	6=CZ 6	N=0	363.2	2	10	7	51.89	7	51.89	7	51.89
Eversource11261	SF=1	2	6=CZ 6	Y=1	134.8	0	1	1	134.8	1	134.8	1	134.8
Eversource11270	SF=1	2	6=CZ 6	N=0	213.6	1	3	3	111.07	3	111.07	3	111.07
Eversource11271	SF=1	2	6=CZ 6	Y=1	67.4	0	1	1	67.4	1	67.4	1	67.4
Eversource11350	SF=1	3	5=CZ 5	N=0	7101.82	19	30	22	396.76	21	419.35	20	444.57
Eversource11351	SF=1	3	5=CZ 5	Y=1	1705.18	4	9	9	260.2	9	260.2	8	302.67
Eversource11360	SF=1	3	6=CZ 6	N=0	277.38	1	1	1	277.38	1	277.38	1	277.38
Eversource11370	SF=1	3	6=CZ 6	N=0	227.38	1	1	1	609.38	1	609.38	1	609.38
Eversource11371	SF=1	3	6=CZ 6	Y=1	87.62	0	1	1	87.62	1	87.62	1	87.62
Eversource12150	MF=2	1	5=CZ 5	N=0	1088.08	6	11	9	256.3	9	256.3	9	256.3
Eversource12151	MF=2	1	5=CZ 5	Y=1	882.92	1	2	1	2366.22	1	2366.22	1	2366.22
Eversource12160	MF=2	1	6=CZ 6	N=0	328	1	2	2	164	2	164	2	164
Eversource12250	MF=2	2	5=CZ 5	N=0	1188.7	6	13	11	256.6	10	278.63	9	329.31
Eversource12251	MF=2	2	5=CZ 5	Y=1	795.3	1	2	2	731.68	2	731.68	2	731.68
Eversource12260	MF=2	2	6=CZ 6	N=0	254	1	2	1	680.72	1	680.72	1	680.72
Eversource12350	MF=2	3	5=CZ 5	N=0	710.72	4	6	6	251.12	6	251.12	6	251.12
Eversource12351	MF=2	3	5=CZ 5	Y=1	640.28	1	1	.	.	.	.	.	.
Eversource21150	SF=1	1	5=CZ 5	N=0	34257.8	102	260	192	194.04	183	204.39	175	214.55
Eversource21151	SF=1	1	5=CZ 5	Y=1	4010.2	8	20	19	267.05	16	329.59	15	357.18
Eversource21160	SF=1	1	6=CZ 6	N=0	5523.16	14	28	20	276.16	20	276.16	20	276.16
Eversource21161	SF=1	1	6=CZ 6	Y=1	1428.84	2	5	4	357.21	4	357.21	4	357.21
Eversource21170	SF=1	1	6=CZ 6	N=0	2678.68	6	13	10	267.87	10	267.87	8	334.83
Eversource21171	SF=1	1	6=CZ 6	Y=1	613.32	1	2	2	306.66	2	306.66	2	306.66
Eversource21250	SF=1	2	5=CZ 5	N=0	28074.47	84	213	154	194.23	150	197.64	143	207.86
Eversource21251	SF=1	2	5=CZ 5	Y=1	4286.53	9	27	22	239.48	22	239.48	22	239.48
Eversource21260	SF=1	2	6=CZ 6	N=0	6073.6	16	39	25	259.27	25	259.27	25	259.27
Eversource21261	SF=1	2	6=CZ 6	Y=1	2217.4	3	7	7	316.77	7	316.77	7	316.77
Eversource21270	SF=1	2	6=CZ 6	N=0	2755.52	7	15	7	582.6	7	582.6	7	582.6
Eversource21271	SF=1	2	6=CZ 6	Y=1	842.48	1	5	4	210.62	4	210.62	4	210.62
Eversource21350	SF=1	3	5=CZ 5	N=0	23475.57	79	159	112	237.9	110	242.75	104	258.54
Eversource21351	SF=1	3	5=CZ 5	Y=1	7501.43	10	30	28	316.13	27	329.69	27	329.69
Eversource21360	SF=1	3	6=CZ 6	N=0	6335.42	21	34	24	263.98	23	275.45	22	287.97
Eversource21361	SF=1	3	6=CZ 6	Y=1	3922.58	6	11	9	598.56	9	598.56	8	696.26
Eversource21370	SF=1	3	6=CZ 6	N=0	3224.61	10	23	17	208.43	16	222.7	16	222.7
Eversource21371	SF=1	3	6=CZ 6	Y=1	1233.39	1	2	2	616.69	2	616.69	2	616.69
Eversource22150	MF=2	1	5=CZ 5	N=0	1060.27	9	24	18	124.88	18	124.88	18	124.88
Eversource22151	MF=2	1	5=CZ 5	Y=1	2001.73	1	3	3	667.24	3	667.24	3	667.24
Eversource22160	MF=2	1	6=CZ 6	N=0	34.29	2	4	4	19.38	4	19.38	4	19.38
Eversource22161	MF=2	1	6=CZ 6	Y=1	525.71	1	3	3	273.37	3	273.37	3	273.37
Eversource22170	MF=2	1	6=CZ 6	N=0	86.16	2	4	3	44.8	3	44.8	3	44.8
Eversource22171	MF=2	1	6=CZ 6	Y=1	599.84	0	1	1	599.84	1	599.84	1	599.84
Eversource22250	MF=2	2	5=CZ 5	N=0	1242.61	10	22	18	159.24	18	159.24	18	159.24
Eversource22251	MF=2	2	5=CZ 5	Y=1	2062.39	1	2	2	2763.6	2	2763.6	2	2763.6
Eversource22260	MF=2	2	6=CZ 6	N=0	48.21	2	4	2	64.6	2	64.6	2	64.6
Eversource22270	MF=2	2	6=CZ 6	N=0	389	1	1	1	1042.52	1	1042.52	1	1042.52
Eversource22350	MF=2	3	5=CZ 5	N=0	1501.8	10	12	10	352.02	10	352.02	10	352.02
Eversource22351	MF=2	3	5=CZ 5	Y=1	2352.2	3	3	3	1223.14	3	1223.14	3	1223.14
Eversource22360	MF=2	3	6=CZ 6	N=0	91.42	1	2	2	84.1	2	84.1	2	84.1
Eversource22370	MF=2	3	6=CZ 6	N=0	483	3	2	1	1294.44	1	1294.44	1	1294.44
Liberty11150	SF=1	1	5=CZ 5	N=0	123	1	2	2	61.5	2	61.5	1	123
Liberty12250	MF=2	2	5=CZ 5	N=0	176.21	1	1	.	.	.	.	.	.
Liberty21150	SF=1	1	5=CZ 5	N=0	4685.51	15	42	32	154.11	29	170.93	26	191.86
Liberty21151	SF=1	1	5=CZ 5	Y=1	820.49	1	1	.	.	.	.	.	.
Liberty21160	SF=1	1	6=CZ 6	N=0	1716.88	6	17	13	132.07	13	132.07	12	143.07
Liberty21161	SF=1	1	6=CZ 6	Y=1	386.12	0	2	2	193.06	2	193.06	2	193.06
Liberty21250	SF=1	2	5=CZ 5	N=0	3880.35	15	45	30	136.59	30	136.59	28	146.9
Liberty21251	SF=1	2	5=CZ 5	Y=1	613.65	0	2	2	306.82	2	306.82	2	306.82
Liberty21260	SF=1	2	6=CZ 6	N=0	2391.99	8	15	10	319.57	10	319.57	10	319.57
Liberty21261	SF=1	2	6=CZ 6	Y=1	524.01	0	1	1	524.01	1	524.01	1	524.01
Liberty21350	SF=1	3	5=CZ 5	N=0	2519.6	9	24	18	139.98	17	148.21	16	157.48
Liberty21351	SF=1	3	5=CZ 5	Y=1	1089.4	2	6	6	232.4	6	232.4	5	217.88
Liberty21360	SF=1	3	6=CZ 6	N=0	3135.19	10	13	11	328.55	11	328.55	11	328.55
Liberty21361	SF=1	3	6=CZ 6	Y=1	668.81	1	1	1	1792.4	1	1792.4	1	1792.4
Liberty22150	MF=2	1	5=CZ 5	N=0	1891.88	10	40	27	74.43	26	77.47	19	108.38
Liberty22151	MF=2	1	5=CZ 5	Y=1	386.12	0	2	2	193.06	2	193.06	2	193.06
Liberty22160	MF=2	1	6=CZ 6	N=0	889.09	13	24	16	84.74	16	84.74	16	84.74
Liberty22161	MF=2	1	6=CZ 6	Y=1	399.91	0	3	3	133.3	3	133.3	3	133.3
Liberty22250	MF=2	2	5=CZ 5	N=0	952.09	7	10	8	169	7	201.3	8	169
Liberty22251	MF=2	2	5=CZ 5	Y=1	530.91	0	1	1	530.91	1	530.91	1	530.91
Liberty22260	MF=2	2	6=CZ 6	N=0	1132.72	14	22	19	112.33	18	115.79	18	115.79
Liberty22261	MF=2	2	6=CZ 6	Y=1	703.28	1	2	2	351.64	2	351.64	2	351.64
Liberty22350	MF=2	3	5=CZ 5	N=0	845.04	7	7	6	259.14	6	259.14	5	339.37
Liberty22360	MF=2	3	6=CZ 6	N=0	1406.72	15	20	16	180.24	15	198.82	14	221.06
NHEC21150	SF=1	1	5=CZ 5	N=0	3399.02	25	67	46	81.99	45	83.99	43	88.31
NHEC21151	SF=1	1	5=CZ 5	Y=1	724.98	2	7	7	103.57	7	103.57	7	103.57
NHEC21160	SF=1	1	6=CZ 6	N=0	3948.11	5	15	10	394.81	10	394.81	10	394.81
NHEC21161	SF=1	1	6=CZ 6	Y=1	1689.89	4	10	10	254.16	10	254.16	10	254.16
NHEC21170	SF=1	1	6=CZ 6	N=0	5246.37	10	15	12	437.2	12	437.2	12	437.2
NHEC21171	SF=1	1	6=CZ 6	Y=1	1538.63	3	6	6	471.85	6	471.85	6	471.85
NHEC21250	SF=1	2	5=CZ 5	N=0	2579.08	20	50	39	71.83	38	73.87	33	86.11
NHEC21251	SF=1	2	5=CZ 5	Y=1	505.92	3	5	5	101.18	5	101.18	5	101.18
NHEC21260	SF=1	2	6=CZ 6	N=0	4507.07	10	22	17	291.32	17	291.32	16	311.27
NHEC21261	SF=1	2	6=CZ 6	Y=1	1835.93	5	12	9	318.23	9	318.23	9	318.23
NHEC21270	SF=1	2	6=CZ 6	N=0	5387.45	7	14	9	598.61	9	598.61	9	598.61
NHEC21271	SF=1	2	6=CZ 6	Y=1	1246.55	4	8	5	416.85	5	416.85	5	416.85
NHEC21350	SF=1	3	5=CZ 5	N=0	1272.02	16	28	22	57.82	22	57.82	20	63.6
NHEC21351	SF=1	3	5=CZ 5	Y=1	458.98	2	8	7	65.57	7	65.57	7	65.57
NHEC21360	SF=1	3	6=CZ 6	N=0	4700.15	8	12	9	619.72	9	619.72	9	619.72
NHEC21361	SF=1	3	6=CZ 6	Y=1	1543.85	4	4	3	1090.99	3	1090.99	3	1090.99
NHEC21370	SF=1	3	6=CZ 6	N=0	7097.02	16	21	14	628.59	14	628.59	14	628.59
NHEC21371	SF=1	3	6=CZ 6	Y=1	990.98	3	7	6	257.66	6	257.66	6	257.66
NHEC22160	MF=2	1	6=CZ 6	N=0	123.71	1	2	1	123.71	1	123.71	1	123.71
NHEC22261	MF=2	2	6=CZ 6	Y=1	57.37	0	1	1	57.37	1	57.37	1	57.37
NHEC22370	MF=2	3	6=CZ 6	N=0	247	1	1	.	.	.	.	.	.

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nWaterHeater	wWaterHeater	nLaundry	wLaundry	nInsAndVent	wInsAndVent	nRef	wRef	nFoodPrep	wFoodPrep
Eversource11150	SF=1	1	5=CZ 5	N=0	7037.36	15	43	24	313.75	23	328.32	22	344.31	18	427.45	18	427.45
Eversource11151	SF=1	1	5=CZ 5	Y=1	734.64	1	2	1	734.64	1	734.64	1	734.64	1	734.64	1	734.64
Eversource11160	SF=1	1	6=CZ 6	N=0	373.3	2	3	2	343.44	2	343.44	2	343.44	2	343.44	2	343.44
Eversource11170	SF=1	1	6=CZ 6	N=0	158	1	1	1	158	1	158	1	158	1	158	1	158
Eversource11250	SF=1	2	5=CZ 5	N=0	8861.69	25	69	39	246.8	31	316.84	32	306.01	28	354.47	28	354.47
Eversource11251	SF=1	2	5=CZ 5	Y=1	1287.31	3	5	5	516.98	4	592.16	4	592.16	4	592.16	4	592.16
Eversource11260	SF=1	2	6=CZ 6	N=0	363.2	2	10	4	90.8	2	181.6	3	121.07	2	181.6	2	181.6
Eversource11261	SF=1	2	6=CZ 6	Y=1	134.8	0	1	1	134.8	.	.	.	.	.	.	.	.
Eversource11270	SF=1	2	6=CZ 6	N=0	213.6	1	3	2	196.51	2	196.51	2	196.51	2	196.51	2	196.51
Eversource11271	SF=1	2	6=CZ 6	Y=1	67.4	0	1	1	67.4	.	.	.	.	.	.	.	.
Eversource11350	SF=1	3	5=CZ 5	N=0	7101.82	19	30	17	541.61	14	629.02	14	689.89	11	842.83	11	842.83
Eversource11351	SF=1	3	5=CZ 5	Y=1	1705.18	4	9	8	302.67	5	570.21	6	443.35	6	443.35	6	443.35
Eversource11360	SF=1	3	6=CZ 6	N=0	277.38	1	1	1	277.38	1	277.38	1	277.38	1	277.38	1	277.38
Eversource11370	SF=1	3	6=CZ 6	N=0	227.38	1	1	1	609.38	.	.	.	.	.	.	.	.
Eversource11371	SF=1	3	6=CZ 6	Y=1	87.62	0	1	1	87.62	1	87.62	1	87.62	1	87.62	1	87.62
Eversource12150	MF=2	1	5=CZ 5	N=0	1088.08	6	11	8	307.38	3	768.91	7	341.97	6	384.46	6	384.46
Eversource12151	MF=2	1	5=CZ 5	Y=1	882.92	1	2	1	2366.22	1	2366.22	1	2366.22	1	2366.22	1	2366.22
Eversource12160	MF=2	1	6=CZ 6	N=0	328	1	2	1	328	1	328	1	328	1	328	1	328
Eversource12250	MF=2	2	5=CZ 5	N=0	1188.7	6	13	9	329.31	6	475.48	8	367.01	8	367.01	8	367.01
Eversource12251	MF=2	2	5=CZ 5	Y=1	795.3	1	2	2	731.68	1	2131.4	1	2131.4	1	2131.4	1	2131.4
Eversource12260	MF=2	2	6=CZ 6	N=0	254	1	2	1	680.72	1	680.72	1	680.72	1	680.72	1	680.72
Eversource12350	MF=2	3	5=CZ 5	N=0	710.72	4	6	6	251.12	3	502.24	6	251.12	4	401.55	4	401.55
Eversource12351	MF=2	3	5=CZ 5	Y=1	640.28	1	1	.	.	.	.	.	.	.	.	.	.
Eversource21150	SF=1	1	5=CZ 5	N=0	34257.8	102	260	151	249.59	120	313.46	135	282.18	118	327.52	118	327.52
Eversource21151	SF=1	1	5=CZ 5	Y=1	4010.2	8	20	13	428.07	9	611.93	11	475.92	11	475.92	11	475.92
Eversource21160	SF=1	1	6=CZ 6	N=0	5523.16	14	28	18	306.84	13	424.86	14	394.51	12	460.26	13	424.86
Eversource21161	SF=1	1	6=CZ 6	Y=1	1428.84	2	5	4	357.21	4	357.21	4	357.21	4	357.21	4	357.21
Eversource21170	SF=1	1	6=CZ 6	N=0	2678.68	6	13	6	446.45	6	446.45	6	446.45	6	446.45	6	446.45
Eversource21171	SF=1	1	6=CZ 6	Y=1	613.32	1	2	2	306.66	1	613.32	1	613.32	1	613.32	1	613.32
Eversource21250	SF=1	2	5=CZ 5	N=0	28074.47	84	213	118	251.47	93	312.78	103	290.35	98	301.21	98	301.21
Eversource21251	SF=1	2	5=CZ 5	Y=1	4286.53	9	27	20	268.34	14	342.92	17	326.9	16	352.3	16	352.3
Eversource21260	SF=1	2	6=CZ 6	N=0	6073.6	16	39	17	392.58	15	404.91	16	419.46	15	450.26	16	419.46
Eversource21261	SF=1	2	6=CZ 6	Y=1	2217.4	3	7	7	316.77	5	443.48	7	316.77	6	369.57	6	369.57
Eversource21270	SF=1	2	6=CZ 6	N=0	2755.52	7	15	6	716.44	5	736.28	6	716.44	5	736.28	5	736.28
Eversource21271	SF=1	2	6=CZ 6	Y=1	842.48	1	5	2	421.24	1	842.48	1	842.48	1	842.48	1	842.48
Eversource21350	SF=1	3	5=CZ 5	N=0	23475.57	79	159	90	304.66	71	369.76	84	329.78	78	352.83	78	352.83
Eversource21351	SF=1	3	5=CZ 5	Y=1	7501.43	10	30	23	397.62	15	556.11	20	469.59	20	469.59	20	469.59
Eversource21360	SF=1	3	6=CZ 6	N=0	6335.42	21	34	17	372.67	14	452.53	15	422.36	15	422.36	15	422.36
Eversource21361	SF=1	3	6=CZ 6	Y=1	3922.58	6	11	7	829.35	7	829.35	6	1019.87	6	1019.87	6	1019.87
Eversource21370	SF=1	3	6=CZ 6	N=0	3224.61	10	23	15	214.97	9	358.29	9	358.29	8	403.08	8	403.08
Eversource21371	SF=1	3	6=CZ 6	Y=1	1233.39	1	2	2	616.69	2	616.69	2	616.69	2	616.69	2	616.69
Eversource22150	MF=2	1	5=CZ 5	N=0	1060.27	9	24	15	157.77	6	325.15	14	175.7	9	249.75	9	249.75
Eversource22151	MF=2	1	5=CZ 5	Y=1	2001.73	1	3	2	1000.86	1	2001.73	2	1000.86	.	.	.	.
Eversource22160	MF=2	1	6=CZ 6	N=0	34.29	2	4	3	30.64	3	30.64	3	30.64	2	45.95	2	45.95
Eversource22161	MF=2	1	6=CZ 6	Y=1	525.71	1	3	1	1408.89	1	1408.89	1	1408.89	1	1408.89	1	1408.89
Eversource22170	MF=2	1	6=CZ 6	N=0	86.16	2	4	2	79.26	1	86.16	1	86.16	1	86.16	1	86.16
Eversource22171	MF=2	1	6=CZ 6	Y=1	599.84	0	1	.	.	.	.	.	.	.	.	.	.
Eversource22250	MF=2	2	5=CZ 5	N=0	1242.61	10	22	18	159.24	5	415.53	18	159.24	15	184.9	14	195.27
Eversource22251	MF=2	2	5=CZ 5	Y=1	2062.39	1	2	2	2763.6	1	5527.2	2	2763.6	1	5527.2	1	5527.2
Eversource22260	MF=2	2	6=CZ 6	N=0	48.21	2	4	1	129.21	.	.	1	129.21	.	.	.	.
Eversource22270	MF=2	2	6=CZ 6	N=0	389	1	1	1	1042.52	.	.	1	1042.52	1	1042.52	1	1042.52
Eversource22350	MF=2	3	5=CZ 5	N=0	1501.8	10	12	9	416.05	2	1381.66	9	416.05	9	416.05	9	416.05
Eversource22351	MF=2	3	5=CZ 5	Y=1	2352.2	3	3	3	1223.14	3	1223.14	3	1223.14	3	1223.14	3	1223.14
Eversource22360	MF=2	3	6=CZ 6	N=0	91.42	1	2	2	84.1	1	91.42	2	84.1	1	244.99	1	244.99
Eversource22370	MF=2	3	6=CZ 6	N=0	483	3	2	1	1294.44	.	.	.	.	.	.	.	.
Liberty11150	SF=1	1	5=CZ 5	N=0	123	1	2	1	123	1	123	1	123	1	123	1	123
Liberty12250	MF=2	2	5=CZ 5	N=0	176.21	1	1	.	.	.	.	.	.	.	.	.	.
Liberty21150	SF=1	1	5=CZ 5	N=0	4685.51	15	42	22	229.24	17	302.86	19	268.41	17	302.86	18	284.6
Liberty21151	SF=1	1	5=CZ 5	Y=1	820.49	1	1	.	.	.	.	.	.	.	.	.	.
Liberty21160	SF=1	1	6=CZ 6	N=0	1716.88	6	17	10	171.69	9	190.76	10	171.69	8	214.61	8	214.61
Liberty21161	SF=1	1	6=CZ 6	Y=1	386.12	0	2	2	193.06	1	386.12	1	386.12	1	386.12	1	386.12
Liberty21250	SF=1	2	5=CZ 5	N=0	3880.35	15	45	26	158.89	20	194.02	18	215.58	14	277.17	14	277.17
Liberty21251	SF=1	2	5=CZ 5	Y=1	613.65	0	2	1	613.65	1	613.65	1	613.65	1	613.65	1	613.65
Liberty21260	SF=1	2	6=CZ 6	N=0	2391.99	8	15	9	365	7	423.72	7	423.72	6	510.29	6	510.29
Liberty21261	SF=1	2	6=CZ 6	Y=1	524.01	0	1	1	524.01	1	524.01	1	524.01	1	524.01	1	524.01
Liberty21350	SF=1	3	5=CZ 5	N=0	2519.6	9	24	13	193.82	6	419.93	9	279.96	9	279.96	9	279.96
Liberty21351	SF=1	3	5=CZ 5	Y=1	1089.4	2	6	3	363.13	3	363.13	3	363.13	3	363.13	3	363.13
Liberty21360	SF=1	3	6=CZ 6	N=0	3135.19	10	13	10	366.19	8	391.9	10	366.19	10	366.19	10	366.19
Liberty21361	SF=1	3	6=CZ 6	Y=1	668.81	1	1	1	1792.4	.	.	1	1792.4	1	1792.4	1	1792.4
Liberty22150	MF=2	1	5=CZ 5	N=0	1891.88	10	40	16	130.66	13	164.34	15	140.25	13	164.34	14	151.35
Liberty22151	MF=2	1	5=CZ 5	Y=1	386.12	0	2	2	193.06	1	386.12	2	193.06	2	193.06	2	193.06
Liberty22160	MF=2	1	6=CZ 6	N=0	889.09	13	24	15	92.47	13	94.91	14	93.99	11	117.86	12	105.21
Liberty22161	MF=2	1	6=CZ 6	Y=1	399.91	0	3	2	199.95	1	399.91	2	199.95	2	199.95	2	199.95
Liberty22250	MF=2	2	5=CZ 5	N=0	952.09	7	10	8	169	7	201.3	7	201.3	7	201.3	7	201.3
Liberty22251	MF=2	2	5=CZ 5	Y=1	530.91	0	1	1	530.91	1	530.91	1	530.91	1	530.91	1	530.91
Liberty22260	MF=2	2	6=CZ 6	N=0	1132.72	14	22	14	168.29	6	294.51	13	188.47	13	188.47	13	188.47
Liberty22261	MF=2	2	6=CZ 6	Y=1	703.28	1	2	2	351.64	2	351.64	2	351.64	2	351.64	2	351.64
Liberty22350	MF=2	3	5=CZ 5	N=0	845.04	7	7	4	388.72	.	.	4	388.72	3	597.16	3	597.16
Liberty22360	MF=2	3	6=CZ 6	N=0	1406.72	15	20	14	221.06	3	468.91	14	221.06	13	234.07	13	234.07
NHEC21150	SF=1	1	5=CZ 5	N=0	3399.02	25	67	35	111.1	27	133.72	31	121.53	27	141.56	27	141.56
NHEC21151	SF=1	1	5=CZ 5	Y=1	724.98	2	7	6	120.83	3	241.66	5	145	4	181.25	4	181.25
NHEC21160	SF=1	1	6=CZ 6	N=0	3948.11	5	15	7	564.02	5	789.62	5	789.62	4	987.03	4	987.03
NHEC21161	SF=1	1	6=CZ 6	Y=1	1689.89	4	10	8	299.96	6	360.51	7	357.29	6	439.37	6	439.37
NHEC21170	SF=1	1	6=CZ 6	N=0	5246.37	10	15	11	476.94	10	524.64	11	476.94	11	476.94	11	476.94
NHEC21171	SF=1	1	6=CZ 6	Y=1	1538.63	3	6	4	869.33	4	869.33	4	869.33	4	869.33	4	869.33
NHEC21250	SF=1	2	5=CZ 5	N=0	2579.08	20	50	29	94.09	22	117.23	25	103.16	21	122.81	21	122.81
NHEC21251	SF=1	2	5=CZ 5	Y=1	505.92	3	5	5	101.18	2	252.96	3	168.64	3	168.64	3	168.64
NHEC21260	SF=1	2	6=CZ 6	N=0	4507.07	10	22	15	334.12	10	526.43	11	472.31	10	526.43	10	526.43
NHEC21261	SF=1	2	6=CZ 6	Y=1	1835.93	5	12	7	388.17	7	388.17	6	477.34	5	613.93	6	477.34
NHEC21270	SF=1	2	6=CZ 6	N=0	5387.45	7	14	8	673.43	5	1077.49	7	769.64	6	897.91	6	897.91
NHEC21271	SF=1	2	6=CZ 6	Y=1	1246.55	4	8	5	416.85	3	648.21	5	416.85	5	416.85	5	416.85
NHEC21350	SF=1	3	5=CZ 5	N=0	1272.02	16	28	17	74.82	11	115.64	14	90.86	13	97.85	14	90.86
NHEC21351	SF=1	3	5=CZ 5	Y=1	458.98	2	8	7	65.57	4	114.75	6	76.5	6	76.5	6	76.5
NHEC21360	SF=1	3	6=CZ 6	N=0	4700.15	8	12	9	619.72	7	671.45	9	619.72	8	587.52	8	587.52
NHEC21361	SF=1	3	6=CZ 6	Y=1	1543.85	4	4	3	1090.99	3	1090.99	3	1090.99	2	1420.34	2	1420.34
NHEC21370	SF=1	3	6=CZ 6	N=0	7097.02	16	21	12	757.02	11	842.26	11	842.26	11	842.26	11	842.26
NHEC21371	SF=1	3	6=CZ 6	Y=1	990.98	3	7	5	331.39	.	.	5	331.39	3	700.3	3	700.3
NHEC22160	MF=2	1	6=CZ 6	N=0	123.71	1	2	1	123.71	1	123.71	1	123.71	1	123.71	1	123.71
NHEC22261	MF=2	2	6=CZ 6	Y=1	57.37	0	1	1	57.37	1	57.37	1	57.37	1	57.37	1	57.37
NHEC22370	MF=2	3	6=CZ 6	N=0	247	1	1	.	.	.	.	.	.	.	.	.	.

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nHVAC	wHVAC	nLighting	wLighting	nWater	wWater	nExtLighting	wExtLighting	nEntTech	wEntTech
Eversource11150	SF=1	1	5=CZ 5	N=0	7037.36	15	43	19	403.14	17	454.87	16	486.02	15	521.7	15	521.7
Eversource11151	SF=1	1	5=CZ 5	Y=1	734.64	1	2	.	.	1	734.64	1	734.64	1	734.64	1	734.64
Eversource11160	SF=1	1	6=CZ 6	N=0	373.3	2	3	1	1000.45	2	343.44	2	343.44	2	343.44	2	343.44
Eversource11170	SF=1	1	6=CZ 6	N=0	158	1	1	1	158	1	158	.	.	.	.	.	.
Eversource11250	SF=1	2	5=CZ 5	N=0	8861.69	25	69	27	369.05	25	378.29	23	441.58	23	441.58	23	441.58
Eversource11251	SF=1	2	5=CZ 5	Y=1	1287.31	3	5	3	909.7	4	592.16	3	909.7	4	592.16	4	592.16
Eversource11260	SF=1	2	6=CZ 6	N=0	363.2	2	10	2	181.6	1	363.2	1	363.2	1	363.2	1	363.2
Eversource11261	SF=1	2	6=CZ 6	Y=1	134.8	0	1	.	.	.	.	.	.	.	.	.	.
Eversource11270	SF=1	2	6=CZ 6	N=0	213.6	1	3	2	196.51	2	196.51	2	196.51	2	196.51	2	196.51
Eversource11271	SF=1	2	6=CZ 6	Y=1	67.4	0	1	.	.	.	.	.	.	.	.	.	.
Eversource11350	SF=1	3	5=CZ 5	N=0	7101.82	19	30	11	941.43	11	842.83	10	948.8	11	842.83	11	842.83
Eversource11351	SF=1	3	5=CZ 5	Y=1	1705.18	4	9	5	570.21	6	443.35	5	570.21	6	443.35	6	443.35
Eversource11360	SF=1	3	6=CZ 6	N=0	277.38	1	1	1	277.38	1	277.38	1	277.38	1	277.38	1	277.38
Eversource11370	SF=1	3	6=CZ 6	N=0	227.38	1	1	.	.	.	.	.	.	.	.	.	.
Eversource11371	SF=1	3	6=CZ 6	Y=1	87.62	0	1	1	87.62	1	87.62	1	87.62	1	87.62	1	87.62
Eversource12150	MF=2	1	5=CZ 5	N=0	1088.08	6	11	7	341.97	6	384.46	6	384.46	6	384.46	6	384.46
Eversource12151	MF=2	1	5=CZ 5	Y=1	882.92	1	2	.	.	1	2366.22	1	2366.22	1	2366.22	1	2366.22
Eversource12160	MF=2	1	6=CZ 6	N=0	328	1	2	1	328	1	328	1	328	1	328	1	328
Eversource12250	MF=2	2	5=CZ 5	N=0	1188.7	6	13	7	455.1	7	455.1	6	530.95	6	530.95	6	530.95
Eversource12251	MF=2	2	5=CZ 5	Y=1	795.3	1	2	1	2131.4	1	2131.4	1	2131.4	1	2131.4	1	2131.4
Eversource12260	MF=2	2	6=CZ 6	N=0	254	1	2	1	680.72	1	680.72	1	680.72	1	680.72	1	680.72
Eversource12350	MF=2	3	5=CZ 5	N=0	710.72	4	6	5	285.42	4	401.55	4	401.55	4	401.55	4	401.55
Eversource12351	MF=2	3	5=CZ 5	Y=1	640.28	1	1	.	.	.	.	.	.	.	.	.	.
Eversource21150	SF=1	1	5=CZ 5	N=0	34257.8	102	260	116	329.54	111	350.67	100	388.62	101	378.68	101	378.68
Eversource21151	SF=1	1	5=CZ 5	Y=1	4010.2	8	20	11	475.92	11	475.92	11	475.92	11	475.92	11	475.92
Eversource21160	SF=1	1	6=CZ 6	N=0	5523.16	14	28	11	502.11	10	552.32	12	460.26	12	460.26	12	460.26
Eversource21161	SF=1	1	6=CZ 6	Y=1	1428.84	2	5	4	357.21	4	357.21	3	476.28	3	476.28	3	476.28
Eversource21170	SF=1	1	6=CZ 6	N=0	2678.68	6	13	6	446.45	6	446.45	5	535.74	6	446.45	6	446.45
Eversource21171	SF=1	1	6=CZ 6	Y=1	613.32	1	2	1	613.32	1	613.32	1	613.32	1	613.32	1	613.32
Eversource21250	SF=1	2	5=CZ 5	N=0	28074.47	84	213	91	331.29	89	333.31	84	354.27	80	373.04	80	373.04
Eversource21251	SF=1	2	5=CZ 5	Y=1	4286.53	9	27	16	352.3	16	352.3	14	416.41	15	381.79	15	381.79
Eversource21260	SF=1	2	6=CZ 6	N=0	6073.6	16	39	15	450.26	15	450.26	13	527.58	15	450.26	15	450.26
Eversource21261	SF=1	2	6=CZ 6	Y=1	2217.4	3	7	6	369.57	5	443.48	5	443.48	5	443.48	5	443.48
Eversource21270	SF=1	2	6=CZ 6	N=0	2755.52	7	15	4	1267.54	5	736.28	4	978.21	4	978.21	4	978.21
Eversource21271	SF=1	2	6=CZ 6	Y=1	842.48	1	5	1	842.48	1	842.48	1	842.48	1	842.48	1	842.48
Eversource21350	SF=1	3	5=CZ 5	N=0	23475.57	79	159	67	420.67	75	369.1	66	428.12	68	413.46	67	411.88
Eversource21351	SF=1	3	5=CZ 5	Y=1	7501.43	10	30	18	533.44	20	469.59	16	616.52	17	572.08	17	572.08
Eversource21360	SF=1	3	6=CZ 6	N=0	6335.42	21	34	15	422.36	15	422.36	15	422.36	15	422.36	15	422.36
Eversource21361	SF=1	3	6=CZ 6	Y=1	3922.58	6	11	6	1019.87	6	1019.87	5	1311.71	5	1311.71	5	1311.71
Eversource21370	SF=1	3	6=CZ 6	N=0	3224.61	10	23	8	403.08	8	403.08	7	460.66	8	403.08	8	403.08
Eversource21371	SF=1	3	6=CZ 6	Y=1	1233.39	1	2	1	1233.39	2	616.69	2	616.69	2	616.69	2	616.69
Eversource22150	MF=2	1	5=CZ 5	N=0	1060.27	9	24	14	175.7	10	230.71	9	249.75	9	249.75	9	249.75
Eversource22151	MF=2	1	5=CZ 5	Y=1	2001.73	1	3	2	1000.86	.	.	.	.	.	.	.	.
Eversource22160	MF=2	1	6=CZ 6	N=0	34.29	2	4	3	30.64	2	45.95	2	45.95	2	45.95	2	45.95
Eversource22161	MF=2	1	6=CZ 6	Y=1	525.71	1	3	1	1408.89	1	1408.89	1	1408.89	1	1408.89	1	1408.89
Eversource22170	MF=2	1	6=CZ 6	N=0	86.16	2	4	1	86.16	1	86.16	1	86.16	1	86.16	1	86.16
Eversource22171	MF=2	1	6=CZ 6	Y=1	599.84	0	1	.	.	.	.	.	.	.	.	.	.
Eversource22250	MF=2	2	5=CZ 5	N=0	1242.61	10	22	18	159.24	14	195.27	11	268.24	11	268.24	11	268.24
Eversource22251	MF=2	2	5=CZ 5	Y=1	2062.39	1	2	2	2763.6	1	5527.2	1	5527.2	1	5527.2	1	5527.2
Eversource22260	MF=2	2	6=CZ 6	N=0	48.21	2	4	1	129.21	.	.	.	.	.	.	.	.
Eversource22270	MF=2	2	6=CZ 6	N=0	389	1	1	1	1042.52	1	1042.52	1	1042.52	1	1042.52	1	1042.52
Eversource22350	MF=2	3	5=CZ 5	N=0	1501.8	10	12	8	463.68	8	463.68	8	463.68	9	416.05	9	416.05
Eversource22351	MF=2	3	5=CZ 5	Y=1	2352.2	3	3	3	1223.14	3	1223.14	3	1223.14	3	1223.14	3	1223.14
Eversource22360	MF=2	3	6=CZ 6	N=0	91.42	1	2	1	244.99	1	244.99	1	244.99	1	244.99	1	244.99
Eversource22370	MF=2	3	6=CZ 6	N=0	483	3	2	.	.	.	.	.	.	.	.	.	.
Liberty11150	SF=1	1	5=CZ 5	N=0	123	1	2	1	123	1	123	1	123	1	123	1	123
Liberty12250	MF=2	2	5=CZ 5	N=0	176.21	1	1	.	.	.	.	.	.	.	.	.	.
Liberty21150	SF=1	1	5=CZ 5	N=0	4685.51	15	42	16	323.59	15	347.35	16	323.59	16	323.59	16	323.59
Liberty21151	SF=1	1	5=CZ 5	Y=1	820.49	1	1	.	.	.	.	.	.	.	.	.	.
Liberty21160	SF=1	1	6=CZ 6	N=0	1716.88	6	17	9	190.76	8	214.61	7	245.27	6	286.15	6	286.15
Liberty21161	SF=1	1	6=CZ 6	Y=1	386.12	0	2	1	386.12	1	386.12	1	386.12	1	386.12	1	386.12
Liberty21250	SF=1	2	5=CZ 5	N=0	3880.35	15	45	17	228.26	14	277.17	12	323.36	11	352.76	11	352.76
Liberty21251	SF=1	2	5=CZ 5	Y=1	613.65	0	2	1	613.65	1	613.65	1	613.65	1	613.65	1	613.65
Liberty21260	SF=1	2	6=CZ 6	N=0	2391.99	8	15	7	423.72	6	510.29	6	510.29	6	510.29	6	510.29
Liberty21261	SF=1	2	6=CZ 6	Y=1	524.01	0	1	.	.	1	524.01	1	524.01	1	524.01	1	524.01
Liberty21350	SF=1	3	5=CZ 5	N=0	2519.6	9	24	8	314.95	9	279.96	9	279.96	9	279.96	9	279.96
Liberty21351	SF=1	3	5=CZ 5	Y=1	1089.4	2	6	3	363.13	3	363.13	3	363.13	2	544.7	2	544.7
Liberty21360	SF=1	3	6=CZ 6	N=0	3135.19	10	13	10	366.19	10	366.19	10	366.19	10	366.19	10	366.19
Liberty21361	SF=1	3	6=CZ 6	Y=1	668.81	1	1	1	1792.4	.	.	.	.	.	.	.	.
Liberty22150	MF=2	1	5=CZ 5	N=0	1891.88	10	40	12	157.66	12	157.66	11	171.99	10	189.19	10	189.19
Liberty22151	MF=2	1	5=CZ 5	Y=1	386.12	0	2	1	386.12	1	386.12	1	386.12	1	386.12	1	386.12
Liberty22160	MF=2	1	6=CZ 6	N=0	889.09	13	24	9	154.11	12	105.21	12	105.21	12	105.21	12	105.21
Liberty22161	MF=2	1	6=CZ 6	Y=1	399.91	0	3	2	199.95	2	199.95	2	199.95	2	199.95	2	199.95
Liberty22250	MF=2	2	5=CZ 5	N=0	952.09	7	10	7	201.3	7	201.3	5	318.38	7	201.3	7	201.3
Liberty22251	MF=2	2	5=CZ 5	Y=1	530.91	0	1	1	530.91	1	530.91	1	530.91	1	530.91	1	530.91
Liberty22260	MF=2	2	6=CZ 6	N=0	1132.72	14	22	12	200.11	13	188.47	12	200.11	13	188.47	13	188.47
Liberty22261	MF=2	2	6=CZ 6	Y=1	703.28	1	2	2	351.64	2	351.64	2	351.64	2	351.64	2	351.64
Liberty22350	MF=2	3	5=CZ 5	N=0	845.04	7	7	4	388.72	3	597.16	3	597.16	3	597.16	3	597.16
Liberty22360	MF=2	3	6=CZ 6	N=0	1406.72	15	20	13	234.07	13	234.07	13	234.07	13	234.07	13	234.07
NHEC21150	SF=1	1	5=CZ 5	N=0	3399.02	25	67	28	135.96	27	141.56	22	166.3	24	151.54	24	151.54
NHEC21151	SF=1	1	5=CZ 5	Y=1	724.98	2	7	5	145	4	181.25	3	241.66	3	241.66	3	241.66
NHEC21160	SF=1	1	6=CZ 6	N=0	3948.11	5	15	4	987.03	4	987.03	4	987.03	4	987.03	4	987.03
NHEC21161	SF=1	1	6=CZ 6	Y=1	1689.89	4	10	5	565.1	6	439.37	6	439.37	6	439.37	6	439.37
NHEC21170	SF=1	1	6=CZ 6	N=0	5246.37	10	15	8	655.8	10	524.64	10	524.64	10	524.64	10	524.64
NHEC21171	SF=1	1	6=CZ 6	Y=1	1538.63	3	6	4	869.33	3	1087.3	3	1087.3	3	1087.3	3	1087.3
NHEC21250	SF=1	2	5=CZ 5	N=0	2579.08	20	50	21	122.81	21	122.81	18	143.28	20	128.95	20	128.95
NHEC21251	SF=1	2	5=CZ 5	Y=1	505.92	3	5	3	168.64	3	168.64	3	168.64	3	168.64	3	168.64
NHEC21260	SF=1	2	6=CZ 6	N=0	4507.07	10	22	8	681.69	8	681.69	9	594.27	8	681.69	8	681.69
NHEC21261	SF=1	2	6=CZ 6	Y=1	1835.93	5	12	6	477.34	6	477.34	6	477.34	6	477.34	6	477.34
NHEC21270	SF=1	2	6=CZ 6	N=0	5387.45	7	14	7	769.64	5	1077.49	5	1077.49	5	1077.49	5	1077.49
NHEC21271	SF=1	2	6=CZ 6	Y=1	1246.55	4	8	4	442.53	5	416.85	4	573.41	4	573.41	4	573.41
NHEC21350	SF=1	3	5=CZ 5	N=0	1272.02	16	28	14	90.86	13	97.85	14	90.86	12	106	12	106
NHEC21351	SF=1	3	5=CZ 5	Y=1	458.98	2	8	4	114.75	6	76.5	6	76.5	6	76.5	6	76.5
NHEC21360	SF=1	3	6=CZ 6	N=0	4700.15	8	12	7	832.6	7	671.45	7	671.45	7	671.45	7	671.45
NHEC21361	SF=1	3	6=CZ 6	Y=1	1543.85	4	4	3	1090.99	2	1420.34	2	1420.34	2	1420.34	2	1420.34
NHEC21370	SF=1	3	6=CZ 6	N=0	7097.02	16	21	10	948.16	11	842.26	10	948.16	10	948.16	10	948.16
NHEC21371	SF=1	3	6=CZ 6	Y=1	990.98	3	7	5	331.39	3	700.3	3	700.3	3	700.3	3	700.3
NHEC22160	MF=2	1	6=CZ 6	N=0	123.71	1	2	1	123.71	1	123.71	1	123.71	1	123.71	1	123.71
NHEC22261	MF=2	2	6=CZ 6	Y=1	57.37	0	1	1	57.37	1	57.37	1	57.37	1	57.37	1	57.37
NHEC22370	MF=2	3	6=CZ 6	N=0	247	1	1	.	.	.	.	.	.	.	.	.	.

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nGeneral	wGeneral	nSpaceCooling	wSpaceCooling	nSpaceHeating	wSpaceHeating
Unitil11150	SF=1	1	5=CZ 5	N=0	1062.39	13	37	26	43.5	24	47.36	21	54.64
Unitil11151	SF=1	1	5=CZ 5	Y=1	105.61	0	2	2	52.81	2	52.81	2	52.81
Unitil11160	SF=1	1	6=CZ 6	N=0	686.46	3	5	5	275.68	5	275.68	5	275.68
Unitil11161	SF=1	1	6=CZ 6	Y=1	108.54	1	2	2	99.86	2	99.86	2	99.86
Unitil11250	SF=1	2	5=CZ 5	N=0	1353.98	14	25	20	79.07	20	79.07	20	79.07
Unitil11251	SF=1	2	5=CZ 5	Y=1	176.02	1	2	2	161.94	2	161.94	2	161.94
Unitil11260	SF=1	2	6=CZ 6	N=0	988.52	6	11	8	149.51	8	149.51	8	149.51
Unitil11261	SF=1	2	6=CZ 6	Y=1	155.48	1	1	1	155.48	1	155.48	1	155.48
Unitil11350	SF=1	3	5=CZ 5	N=0	1861.24	14	21	19	141.27	19	141.27	18	151.66
Unitil11351	SF=1	3	5=CZ 5	Y=1	231.76	1	2	1	231.76	1	231.76	1	231.76
Unitil11360	SF=1	3	6=CZ 6	N=0	1165.96	7	10	10	136.18	10	136.18	10	136.18
Unitil11361	SF=1	3	6=CZ 6	Y=1	352.04	5	11	8	80.97	8	80.97	8	80.97
Unitil12150	MF=2	1	5=CZ 5	N=0	355.06	7	5	3	118.35	3	118.35	3	118.35
Unitil12160	MF=2	1	6=CZ 6	N=0	216	2	5	4	122.04	3	152.64	3	152.64
Unitil12250	MF=2	2	5=CZ 5	N=0	444.13	8	13	9	76.98	8	90.49	5	148.52
Unitil12251	MF=2	2	5=CZ 5	Y=1	49.87	0	1	1	49.87	1	49.87	1	49.87
Unitil12260	MF=2	2	6=CZ 6	N=0	260	3	3	3	135.2	3	135.2	3	135.2
Unitil12350	MF=2	3	5=CZ 5	N=0	380.39	7	5	5	127.2	5	127.2	4	174.98
Unitil21150	SF=1	1	5=CZ 5	N=0	3167.59	10	25	20	211.59	18	241.68	18	241.68
Unitil21151	SF=1	1	5=CZ 5	Y=1	733.41	3	6	4	183.35	4	183.35	4	183.35
Unitil21160	SF=1	1	6=CZ 6	N=0	1632.17	8	9	7	233.17	7	233.17	7	233.17
Unitil21161	SF=1	1	6=CZ 6	Y=1	316.83	3	12	11	33.2	11	33.2	11	33.2
Unitil21250	SF=1	2	5=CZ 5	N=0	2137.73	8	12	10	213.77	10	213.77	10	213.77
Unitil21251	SF=1	2	5=CZ 5	Y=1	695.27	3	4	4	173.82	4	173.82	4	173.82
Unitil21260	SF=1	2	6=CZ 6	N=0	1711.29	6	10	6	365.08	6	365.08	6	365.08
Unitil21261	SF=1	2	6=CZ 6	Y=1	366.71	2	8	5	122.63	5	122.63	5	122.63
Unitil21350	SF=1	3	5=CZ 5	N=0	1631.74	8	21	12	135.98	12	135.98	12	135.98
Unitil21351	SF=1	3	5=CZ 5	Y=1	563.26	2	3	3	292.9	3	292.9	3	292.9
Unitil21360	SF=1	3	6=CZ 6	N=0	1336.89	3	7	6	285.2	6	285.2	4	474.59
Unitil21361	SF=1	3	6=CZ 6	Y=1	437.11	1	2	2	218.56	2	218.56	2	218.56
Unitil22150	MF=2	1	5=CZ 5	N=0	255.77	7	5	2	127.88	2	127.88	2	127.88
Unitil22151	MF=2	1	5=CZ 5	Y=1	299.23	1	1	1	801.94	1	801.94	1	801.94
Unitil22160	MF=2	1	6=CZ 6	N=0	63.09	5	4	4	35.64	4	35.64	4	35.64
Unitil22161	MF=2	1	6=CZ 6	Y=1	445.91	2	6	5	209.04	5	209.04	5	209.04
Unitil22250	MF=2	2	5=CZ 5	N=0	248.44	7	4	3	175.56	2	332.9	2	332.9
Unitil22260	MF=2	2	6=CZ 6	N=0	51.64	3	1	1	138.38	1	138.38	1	138.38
Unitil22261	MF=2	2	6=CZ 6	Y=1	293.36	1	1	1	786.22	1	786.22	1	786.22
Unitil22350	MF=2	3	5=CZ 5	N=0	543.84	7	5	5	254.95	5	254.95	5	254.95
Unitil22360	MF=2	3	6=CZ 6	N=0	52.65	2	3	2	70.55	2	70.55	2	70.55
Unitil22361	MF=2	3	6=CZ 6	Y=1	161.35	1	1	1	432.42	1	432.42	1	432.42

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nWaterHeater	wWaterHeater	nLaundry	wLaundry	nInsAndVent	wInsAndVent	nRef	wRef	nFoodPrep	wFoodPrep
Unitil11150	SF=1	1	5=CZ 5	N=0	1062.39	13	37	18	64.53	14	75.88	15	78.76	14	75.88	14	75.88
Unitil11151	SF=1	1	5=CZ 5	Y=1	105.61	0	2	2	52.81	2	52.81	1	105.61	1	105.61	1	105.61
Unitil11160	SF=1	1	6=CZ 6	N=0	686.46	3	5	5	275.68	3	356.96	4	315.77	4	315.77	4	315.77
Unitil11161	SF=1	1	6=CZ 6	Y=1	108.54	1	2	2	99.86	2	99.86	2	99.86	2	99.86	2	99.86
Unitil11250	SF=1	2	5=CZ 5	N=0	1353.98	14	25	18	89.26	16	93.51	17	95.39	16	102.39	16	102.39
Unitil11251	SF=1	2	5=CZ 5	Y=1	176.02	1	2	2	161.94	1	176.02	2	161.94	1	471.73	1	471.73
Unitil11260	SF=1	2	6=CZ 6	N=0	988.52	6	11	8	149.51	7	141.22	8	149.51	7	175.11	7	175.11
Unitil11261	SF=1	2	6=CZ 6	Y=1	155.48	1	1	1	155.48	1	155.48	1	155.48	1	155.48	1	155.48
Unitil11350	SF=1	3	5=CZ 5	N=0	1861.24	14	21	17	163.58	13	198.68	14	212.71	14	212.71	14	212.71
Unitil11351	SF=1	3	5=CZ 5	Y=1	231.76	1	2	1	231.76	1	231.76	1	231.76	1	231.76	1	231.76
Unitil11360	SF=1	3	6=CZ 6	N=0	1165.96	7	10	7	166.57	5	233.19	6	194.33	6	194.33	6	194.33
Unitil11361	SF=1	3	6=CZ 6	Y=1	352.04	5	11	7	98.57	5	141.38	5	141.38	4	198.9	4	198.9
Unitil12150	MF=2	1	5=CZ 5	N=0	355.06	7	5	3	118.35	3	118.35	3	118.35	3	118.35	3	118.35
Unitil12160	MF=2	1	6=CZ 6	N=0	216	2	5	2	289.44	1	578.88	1	578.88	1	578.88	1	578.88
Unitil12250	MF=2	2	5=CZ 5	N=0	444.13	8	13	5	148.52	2	408.6	4	204.3	3	230.95	3	230.95
Unitil12251	MF=2	2	5=CZ 5	Y=1	49.87	0	1	1	49.87	.	.	1	49.87	1	49.87	1	49.87
Unitil12260	MF=2	2	6=CZ 6	N=0	260	3	3	2	239.2	1	260	2	239.2	2	239.2	2	239.2
Unitil12350	MF=2	3	5=CZ 5	N=0	380.39	7	5	4	174.98	2	190.2	4	174.98	3	197.8	3	197.8
Unitil21150	SF=1	1	5=CZ 5	N=0	3167.59	10	25	17	241.57	13	306.64	17	241.57	13	306.64	13	306.64
Unitil21151	SF=1	1	5=CZ 5	Y=1	733.41	3	6	4	183.35	4	183.35	4	183.35	4	183.35	4	183.35
Unitil21160	SF=1	1	6=CZ 6	N=0	1632.17	8	9	7	233.17	5	326.43	7	233.17	7	233.17	7	233.17
Unitil21161	SF=1	1	6=CZ 6	Y=1	316.83	3	12	9	41.78	8	47.92	8	47.92	7	45.26	7	45.26
Unitil21250	SF=1	2	5=CZ 5	N=0	2137.73	8	12	9	237.53	8	267.22	9	237.53	8	267.22	8	267.22
Unitil21251	SF=1	2	5=CZ 5	Y=1	695.27	3	4	3	231.76	3	231.76	3	231.76	3	231.76	3	231.76
Unitil21260	SF=1	2	6=CZ 6	N=0	1711.29	6	10	6	365.08	5	457.26	6	365.08	6	365.08	6	365.08
Unitil21261	SF=1	2	6=CZ 6	Y=1	366.71	2	8	4	130.18	3	122.24	4	130.18	4	130.18	4	130.18
Unitil21350	SF=1	3	5=CZ 5	N=0	1631.74	8	21	11	148.34	6	271.96	10	163.17	6	271.96	6	271.96
Unitil21351	SF=1	3	5=CZ 5	Y=1	563.26	2	3	3	292.9	2	281.63	3	292.9	3	292.9	3	292.9
Unitil21360	SF=1	3	6=CZ 6	N=0	1336.89	3	7	3	695.18	2	668.44	3	695.18	3	695.18	3	695.18
Unitil21361	SF=1	3	6=CZ 6	Y=1	437.11	1	2	1	437.11	1	437.11	1	437.11	1	437.11	1	437.11
Unitil22150	MF=2	1	5=CZ 5	N=0	255.77	7	5	2	127.88	1	255.77	1	255.77	1	255.77	1	255.77
Unitil22151	MF=2	1	5=CZ 5	Y=1	299.23	1	1	1	801.94	.	.	1	801.94	1	801.94	1	801.94
Unitil22160	MF=2	1	6=CZ 6	N=0	63.09	5	4	4	35.64	2	58.04	4	35.64	4	35.64	4	35.64
Unitil22161	MF=2	1	6=CZ 6	Y=1	445.91	2	6	5	209.04	.	.	4	298.76	1	1195.05	1	1195.05
Unitil22250	MF=2	2	5=CZ 5	N=0	248.44	7	4	2	332.9	.	.	2	332.9	1	665.81	1	665.81
Unitil22260	MF=2	2	6=CZ 6	N=0	51.64	3	1	1	138.38	.	.	1	138.38	1	138.38	1	138.38
Unitil22261	MF=2	2	6=CZ 6	Y=1	293.36	1	1	1	786.22	.	.	1	786.22	.	.	.	.
Unitil22350	MF=2	3	5=CZ 5	N=0	543.84	7	5	5	254.95	.	.	5	254.95	4	307.27	5	254.95
Unitil22360	MF=2	3	6=CZ 6	N=0	52.65	2	3	2	70.55	1	141.1	2	70.55	2	70.55	2	70.55
Unitil22361	MF=2	3	6=CZ 6	Y=1	161.35	1	1	1	432.42	1	432.42	1	432.42	1	432.42	1	432.42

Stratum	House_Type	uselevel	CZ	Low_Income	frame	Quota	nRawData	nHVAC	wHVAC	nLighting	wLighting	nWater	wWater	nExtLighting	wExtLighting	nEntTech	wEntTech
Unitil11150	SF=1	1	5=CZ 5	N=0	1062.39	13	37	15	78.76	13	81.72	12	88.53	13	81.72	13	81.72
Unitil11151	SF=1	1	5=CZ 5	Y=1	105.61	0	2	1	105.61	1	105.61	1	105.61	1	105.61	1	105.61
Unitil11160	SF=1	1	6=CZ 6	N=0	686.46	3	5	4	315.77	4	315.77	3	485.09	3	485.09	3	485.09
Unitil11161	SF=1	1	6=CZ 6	Y=1	108.54	1	2	1	290.9	1	108.54	2	99.86	1	108.54	1	108.54
Unitil11250	SF=1	2	5=CZ 5	N=0	1353.98	14	25	16	102.39	17	95.39	15	110.48	15	110.48	15	110.48
Unitil11251	SF=1	2	5=CZ 5	Y=1	176.02	1	2	.	.	1	471.73	1	471.73	1	471.73	1	471.73
Unitil11260	SF=1	2	6=CZ 6	N=0	988.52	6	11	8	149.51	6	210.88	6	210.88	6	210.88	6	210.88
Unitil11261	SF=1	2	6=CZ 6	Y=1	155.48	1	1	1	155.48	1	155.48	1	155.48	1	155.48	1	155.48
Unitil11350	SF=1	3	5=CZ 5	N=0	1861.24	14	21	12	263.68	14	212.71	15	193.57	13	235.68	13	235.68
Unitil11351	SF=1	3	5=CZ 5	Y=1	231.76	1	2	1	231.76	1	231.76	1	231.76	1	231.76	1	231.76
Unitil11360	SF=1	3	6=CZ 6	N=0	1165.96	7	10	6	194.33	6	194.33	6	194.33	6	194.33	6	194.33
Unitil11361	SF=1	3	6=CZ 6	Y=1	352.04	5	11	4	161.94	4	198.9	4	198.9	4	198.9	4	198.9
Unitil12150	MF=2	1	5=CZ 5	N=0	355.06	7	5	3	118.35	2	177.53	2	177.53	2	177.53	2	177.53
Unitil12160	MF=2	1	6=CZ 6	N=0	216	2	5	1	578.88	.	.	1	578.88	.	.	.	.
Unitil12250	MF=2	2	5=CZ 5	N=0	444.13	8	13	4	204.3	2	408.6	2	408.6	2	408.6	2	408.6
Unitil12251	MF=2	2	5=CZ 5	Y=1	49.87	0	1	1	49.87	1	49.87	1	49.87	1	49.87	1	49.87
Unitil12260	MF=2	2	6=CZ 6	N=0	260	3	3	1	260	1	260	1	260	1	260	1	260
Unitil12350	MF=2	3	5=CZ 5	N=0	380.39	7	5	4	174.98	3	197.8	3	197.8	3	197.8	3	197.8
Unitil21150	SF=1	1	5=CZ 5	N=0	3167.59	10	25	13	338.13	12	337.88	10	369.97	9	417.65	9	417.65
Unitil21151	SF=1	1	5=CZ 5	Y=1	733.41	3	6	4	183.35	4	183.35	4	183.35	4	183.35	4	183.35
Unitil21160	SF=1	1	6=CZ 6	N=0	1632.17	8	9	5	326.43	7	233.17	6	272.03	7	233.17	7	233.17
Unitil21161	SF=1	1	6=CZ 6	Y=1	316.83	3	12	8	47.92	6	52.81	6	52.81	5	63.37	5	63.37
Unitil21250	SF=1	2	5=CZ 5	N=0	2137.73	8	12	8	267.22	7	305.39	6	356.29	6	356.29	6	356.29
Unitil21251	SF=1	2	5=CZ 5	Y=1	695.27	3	4	2	347.64	3	231.76	3	231.76	3	231.76	3	231.76
Unitil21260	SF=1	2	6=CZ 6	N=0	1711.29	6	10	6	365.08	6	365.08	5	457.26	5	457.26	5	457.26
Unitil21261	SF=1	2	6=CZ 6	Y=1	366.71	2	8	2	337.37	4	130.18	4	130.18	4	130.18	3	190.69
Unitil21350	SF=1	3	5=CZ 5	N=0	1631.74	8	21	8	203.97	6	271.96	4	407.93	3	543.91	3	543.91
Unitil21351	SF=1	3	5=CZ 5	Y=1	563.26	2	3	3	292.9	3	292.9	3	292.9	3	292.9	3	292.9
Unitil21360	SF=1	3	6=CZ 6	N=0	1336.89	3	7	3	695.18	3	695.18	3	695.18	3	695.18	3	695.18
Unitil21361	SF=1	3	6=CZ 6	Y=1	437.11	1	2	1	437.11	1	437.11	1	437.11	1	437.11	1	437.11
Unitil22150	MF=2	1	5=CZ 5	N=0	255.77	7	5	1	255.77	1	255.77	1	255.77	1	255.77	1	255.77
Unitil22151	MF=2	1	5=CZ 5	Y=1	299.23	1	1	1	801.94	1	801.94	1	801.94	1	801.94	1	801.94
Unitil22160	MF=2	1	6=CZ 6	N=0	63.09	5	4	4	35.64	1	169.07	2	84.53	1	169.07	1	169.07
Unitil22161	MF=2	1	6=CZ 6	Y=1	445.91	2	6	4	298.76	1	1195.05	1	1195.05	1	1195.05	1	1195.05
Unitil22250	MF=2	2	5=CZ 5	N=0	248.44	7	4	2	332.9	1	665.81	1	665.81	1	665.81	1	665.81
Unitil22260	MF=2	2	6=CZ 6	N=0	51.64	3	1	1	138.38	1	138.38	1	138.38	1	138.38	1	138.38
Unitil22261	MF=2	2	6=CZ 6	Y=1	293.36	1	1	1	786.22	.	.	.	.	.	.	.	.
Unitil22350	MF=2	3	5=CZ 5	N=0	543.84	7	5	5	254.95	4	307.27	4	307.27	4	307.27	4	307.27
Unitil22360	MF=2	3	6=CZ 6	N=0	52.65	2	3	2	70.55	2	70.55	2	70.55	2	70.55	2	70.55
Unitil22361	MF=2	3	6=CZ 6	Y=1	161.35	1	1	1	432.42	1	432.42	1	432.42	1	432.42	1	432.42

APPENDIX C RESULTS TABLES

O9. How many people including yourself usually live in this home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	3.24	2.74	2.97	2.81	2.00	2.70	1.77	3.10	2.96	2.77	2.74	2.97	2.81	2.73
n	33	743	68	121	2	209	21	164	124	1,237	1,154	207	997	364

A1. Which best describes the ownership of this home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Own, either with a mortgage or outright	20%	83%	50%	80%	100%	73%	21%	70%	27%	79%	76%	54%	72%	68%
Rent/Lease	80%	17%	50%	20%	0%	27%	79%	30%	73%	21%	24%	46%	28%	32%
n	103	800	100	128	2	236	50	194	255	1,358	1,349	264	1,146	467

A6. Do you have an electric vehicle at your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes, I have an electric vehicle	0%	1%	1%	0%	0%	0%	0%	1%	0%	1%	1%	0%	1%	0%
Yes, I have a plug-in hybrid	0%	1%	2%	1%	0%	1%	0%	1%	0%	1%	1%	0%	1%	1%
I have a hybrid vehicle that does NOT need to be charged	2%	5%	1%	4%	0%	5%	1%	4%	2%	5%	5%	1%	4%	5%
No	98%	94%	96%	95%	100%	94%	99%	95%	98%	94%	94%	99%	95%	94%
n	103	798	99	128	2	236	50	194	254	1,356	1,346	264	1,144	466

A6a. What type of charger do you use to charge your vehicle at home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
None, I do not charge my vehicle at home	0%	8%	100%	0%	0%	0%	0%	0%	100%	6%	17%	0%	8%	29%
Level 1 charger	0%	19%	0%	0%	0%	0%	0%	50%	0%	18%	17%	0%	15%	18%
Level 2 charger	0%	54%	0%	47%	0%	0%	0%	50%	0%	46%	43%	0%	53%	21%
I charge my vehicle at home, but I don't know the type of...	0%	19%	0%	53%	0%	100%	0%	0%	0%	31%	23%	100%	24%	33%
n	-	11	2	2	-	1	-	2	2	16	17	1	13	5

A2. What type of home do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
A single-family detached house	7%	76%	45%	83%	100%	79%	1%	73%	15%	77%	75%	41%	65%	71%
A townhouse, duplex, or row house	28%	10%	15%	11%	0%	5%	9%	13%	22%	9%	9%	20%	14%	7%
An apartment or condominium	64%	8%	37%	3%	0%	8%	90%	8%	61%	8%	14%	24%	17%	14%
A manufactured home (mobile home or trailer)	0%	7%	3%	3%	0%	9%	1%	6%	1%	7%	3%	15%	4%	8%
n	103	800	100	128	2	236	50	194	255	1,358	1,349	264	1,146	467

A10. Is this a secondary home or a vacation rental property?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
This is my primary residence	99%	100%	99%	100%	0%	98%	95%	99%	99%	100%	100%	100%	100%	99%
This is my secondary/vacation home	1%	0%	1%	0%	100%	2%	5%	1%	1%	0%	0%	0%	0%	1%
n	34	745	69	121	2	212	22	165	127	1,243	1,162	208	1,002	368

A11. How many years have you lived in/owned this home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	13.69	14.96	12.68	11.77	31.75	12.47	7.92	13.70	12.84	14.14	13.56	16.33	14.63	13.03
n	34	745	69	121	2	212	22	165	127	1,243	1,162	208	1,002	368

O9. How many people including yourself usually live in this home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	2.75	2.82	3.45	2.69	2.25	2.76	3.78	2.82	2.03	2.84	3.15	2.76	2.78
n	79	918	45	319	104	1,050	20	187	26	214	98	1,023	1,361

A1. Which best describes the ownership of this home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Own, either with a mortgage or outright	27%	83%	28%	74%	24%	84%	33%	61%	19%	71%	30%	81%	71%
Rent/Lease	73%	18%	72%	26%	76%	16%	67%	39%	81%	29%	70%	19%	29%
n	156	990	99	368	222	1,127	33	231	57	248	198	1,146	1,613

A6. Do you have an electric vehicle at your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes, I have an electric vehicle	0%	1%	1%	0%	0%	1%	0%	0%	0%	0%	0%	1%	0%
Yes, I have a plug-in hybrid	0%	1%	1%	1%	1%	1%	0%	0%	0%	0%	1%	1%	1%
I have a hybrid vehicle that does NOT need to be charged	2%	4%	2%	6%	3%	6%	0%	2%	2%	10%	1%	4%	4%
No	99%	95%	96%	94%	96%	93%	100%	98%	98%	90%	98%	95%	95%
n	156	988	98	368	221	1,125	33	231	57	248	197	1,144	1,610

A6a. What type of charger do you use to charge your vehicle at home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
None, I do not charge my vehicle at home	0%	8%	100%	0%	100%	6%	0%	0%	100%	6%	0%	0%	16%
Level 1 charger	0%	15%	0%	25%	0%	19%	0%	0%	0%	18%	0%	0%	16%
Level 2 charger	0%	53%	0%	29%	0%	49%	0%	0%	0%	46%	0%	0%	41%
I charge my vehicle at home, but I don't know the type of...	0%	24%	0%	46%	0%	26%	0%	100%	0%	31%	0%	0%	28%
n	-	13	2	3	2	15	-	1	2	16	-	-	18

A2. What type of home do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
A single-family detached house	13%	76%	21%	78%	16%	84%	14%	50%	2%	66%	20%	79%	67%
A townhouse, duplex, or row house	24%	11%	19%	5%	16%	7%	33%	15%	33%	22%	19%	7%	11%
An apartment or condominium	63%	7%	57%	8%	67%	6%	51%	15%	65%	11%	60%	7%	16%
A manufactured home (mobile home or trailer)	0%	5%	3%	9%	1%	3%	2%	20%	.	1%	2%	8%	6%
n	156	990	99	368	222	1,127	33	231	57	248	198	1,146	1,613

A10. Is this a secondary home or a vacation rental property?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
This is my primary residence	99%	100%	97%	99%	98%	100%	100%	100%	100%	100%	98%	100%	100%
This is my secondary/vacation home	1%	0%	3%	1%	3%	0%	0%	0%	0%	0%	2%	0%	0%
n	80	922	47	321	107	1,055	20	188	26	214	101	1,002	1,370

A11. How many years have you lived in/owned this home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	14.11	14.67	9.85	13.20	12.29	13.61	13.49	16.85	8.05	13.61	13.84	14.22	14.06
n	80	922	47	321	107	1,055	20	188	26	214	101	1,029	1,370

A4. How many rooms do you have for each type?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Bedrooms	2.05	2.92	2.38	2.96	2.68	2.80	1.77	3.00	2.09	2.91	2.88	2.45	2.80	2.74
Bathrooms	1.19	2.01	1.67	2.10	1.68	1.86	1.17	2.00	1.30	1.99	2.02	1.42	1.92	1.80
Kitchens	1.05	1.02	1.01	1.03	1.00	1.02	0.99	1.04	1.03	1.02	1.03	1.01	1.03	1.02
Living/Family Rooms	1.06	1.25	1.20	1.38	1.00	1.20	1.00	1.23	1.08	1.25	1.27	1.09	1.24	1.19
Dens/Offices	0.19	0.47	0.38	0.58	1.00	0.55	0.11	0.42	0.22	0.49	0.50	0.29	0.45	0.46
Dining Rooms	0.29	0.67	0.49	0.67	1.00	0.58	0.35	0.60	0.35	0.65	0.65	0.45	0.62	0.57
Hallways with light fixtures	0.94	1.53	1.04	1.59	0.95	1.52	0.56	1.62	0.91	1.54	1.52	1.20	1.47	1.38
n	103	800	100	128	2	236	50	194	255	1,358	1,349	264	1,146	467

A5. Do you have a finished or unfinished basement?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
No Basement	36%	5%	12%	6%	0%	18%	34%	11%	27%	8%	8%	16%	8%	12%
Unfinished basement	61%	60%	62%	60%	68%	57%	44%	64%	61%	60%	58%	68%	58%	64%
Finished basement	2%	35%	26%	34%	32%	26%	22%	26%	12%	32%	34%	16%	34%	25%
n	25	714	72	123	2	213	10	173	109	1,223	1,152	180	967	365

O12. What is your estimated annual household income?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Low income	46%	16%	22%	12%	32%	19%	16%	15%	34%	16%	0%	91%	16%	22%
Above low income - $120,000	30%	54%	43%	58%	68%	57%	84%	52%	51%	55%	66%	9%	54%	55%
$120,000 - $250,000	4%	27%	29%	25%	0%	22%	0%	26%	12%	26%	30%	0%	27%	20%
Over $250,000	1%	3%	6%	4%	0%	2%	0%	7%	3%	3%	4%	0%	4%	2%
n	33	738	68	121	2	209	21	164	124	1,232	1,149	207	993	363

A3. Approx. how many sqft of living space does your home have, including bathrooms, foyers and hallways?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Less than 250	1%	1%	0%	1%	0%	1%	4%	2%	1%	1%	1%	1%	1%	1%
250 - 500	5%	1%	4%	2%	0%	3%	8%	4%	5%	2%	1%	6%	2%	4%
501 - 750	13%	2%	8%	2%	0%	3%	16%	3%	11%	2%	3%	7%	3%	5%
751 - 1,000	31%	10%	18%	5%	0%	9%	28%	11%	25%	9%	10%	22%	10%	16%
1,001 - 1,250	21%	12%	9%	12%	50%	11%	20%	10%	17%	12%	11%	21%	11%	15%
1,251 - 1,500	13%	14%	8%	14%	0%	18%	14%	13%	11%	15%	15%	12%	14%	14%
1,501 - 2,000	11%	26%	15%	23%	0%	24%	6%	18%	11%	24%	23%	17%	23%	20%
2,001 - 2,500	3%	18%	19%	21%	50%	17%	4%	20%	10%	19%	19%	8%	19%	13%
2,501 - 3,000	2%	11%	9%	7%	0%	11%	0%	10%	4%	10%	11%	3%	10%	7%
3,001 - 4,000	1%	5%	8%	13%	0%	6%	0%	6%	4%	6%	6%	2%	6%	5%
4,001 - 5,000	0%	1%	2%	1%	0%	0%	0%	1%	1%	1%	1%	0%	1%	0%
More than 5,000	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	1%	0%
n	103	800	100	128	2	236	50	194	255	1,358	1,349	264	1,146	467

A4. How many rooms do you have for each type?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Bedrooms	2.12	2.95	2.01	2.84	2.05	3.01	2.16	2.54	1.92	2.86	2.14	2.92	2.78
Bathrooms	1.31	2.06	1.26	1.88	1.36	2.12	1.20	1.49	1.26	1.99	1.31	1.99	1.88
Kitchens	1.04	1.02	1.00	1.02	1.03	1.02	1.03	1.01	1.00	1.03	1.04	1.02	1.02
Living/Family Rooms	1.11	1.27	1.03	1.22	1.13	1.29	1.01	1.12	0.96	1.25	1.12	1.25	1.22
Dens/Offices	0.24	0.49	0.18	0.49	0.22	0.54	0.23	0.31	0.09	0.41	0.26	0.51	0.45
Dining Rooms	0.36	0.67	0.31	0.60	0.39	0.68	0.27	0.51	0.35	0.65	0.34	0.65	0.60
Hallways with light fixtures	0.93	1.59	0.88	1.46	0.96	1.60	0.83	1.32	0.69	1.66	0.99	1.52	1.44
n	156	990	99	368	222	1,127	33	231	57	248	198	1,110	1,613

A5. Do you have a finished or unfinished basement?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
No Basement	34%	6%	11%	12%	20%	7%	35%	12%	15%	4%	31%	9%	10%
Unfinished basement	56%	58%	74%	63%	59%	58%	63%	69%	80%	49%	56%	62%	60%
Finished basement	10%	36%	16%	25%	21%	35%	2%	20%	6%	46%	14%	30%	31%
n	63	904	46	319	94	1,058	15	165	16	222	93	1,001	1,332

O12. What is your estimated annual household income?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Low income	33%	14%	38%	21%	0%	0%	100%	89%	15%	12%	40%	17%	18%
Above low income - $120,000	56%	54%	38%	57%	77%	65%	0%	10%	79%	57%	43%	55%	55%
$120,000 - $250,000	10%	29%	18%	21%	19%	31%	0%	0%	6%	29%	14%	25%	24%
Over $250,000	1%	4%	6%	2%	4%	4%	0%	0%	0%	3%	4%	3%	3%
n	79	914	45	318	104	1,045	20	187	26	212	98	1,020	1,356

A3. Approx. how many sqft of living space does your home have, including bathrooms, foyers and hallways?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Less than 250	1%	1%	2%	1%	1%	1%	3%	1%	2%	2%	1%	1%	1%
250 - 500	5%	1%	5%	3%	5%	1%	3%	7%	0%	1%	7%	2%	2%
501 - 750	9%	2%	15%	2%	10%	1%	18%	6%	5%	3%	13%	2%	4%
751 - 1,000	28%	7%	21%	15%	26%	7%	21%	22%	35%	8%	22%	10%	12%
1,001 - 1,250	16%	11%	17%	14%	15%	10%	27%	20%	23%	11%	15%	12%	12%
1,251 - 1,500	13%	15%	8%	15%	11%	15%	9%	13%	23%	18%	8%	14%	14%
1,501 - 2,000	10%	25%	14%	21%	12%	26%	9%	18%	9%	24%	12%	24%	22%
2,001 - 2,500	10%	20%	10%	14%	10%	21%	6%	8%	4%	18%	12%	19%	17%
2,501 - 3,000	4%	11%	5%	8%	5%	12%	0%	4%	0%	12%	6%	10%	9%
3,001 - 4,000	5%	6%	2%	6%	4%	7%	3%	2%	0%	2%	5%	7%	6%
4,001 - 5,000	1%	1%	0%	0%	1%	1%	0%	0%	0%	1%	1%	1%	1%
More than 5,000	0%	1%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
n	156	990	99	368	222	1,127	33	231	57	248	198	1,110	1,613

B0. Do you pay for central air conditioning for your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	8.10%	24.80%	25.00%	22.30%	0.00%	11.30%	21.60%	16.70%	14.00%	21.20%	23.90%	7.50%	26.70%	8.60%
No, it is part of my rent/condo fee	1.90%	2.00%	0.00%	0.50%	0.00%	0.00%	6.50%	4.70%	2.10%	1.70%	1.90%	1.60%	2.20%	1.10%
No, do not have central air conditioning in my home	90.00%	73.20%	75.00%	77.20%	100.00%	88.70%	72.00%	78.50%	83.90%	77.10%	74.20%	90.80%	71.10%	90.40%
n	102	774	96	124	2	234	47	190	247	1,322	1,309	260	1,107	462

E0. Do you pay to heat your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	73.80%	96.60%	75.40%	99.40%	100.00%	94.70%	54.00%	93.20%	71.40%	96.10%	92.70%	90.40%	91.30%	93.60%
No, it is part of my rent/condo fee	26.10%	3.30%	24.60%	0.00%	0.00%	3.50%	46.00%	6.80%	28.50%	3.40%	6.80%	9.60%	8.50%	5.60%
No, do not have a heating system	0.20%	0.10%	0.00%	0.60%	0.00%	1.80%	0.00%	0.00%	0.10%	0.50%	0.50%	0.00%	0.20%	0.80%
n	101	738	88	115	2	224	43	184	234	1,261	1,240	255	1,042	453

B2. What is the PRIMARY central air conditioning system in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Forced air split system	68.40%	83.80%	84.60%	89.50%	0.00%	69.10%	77.00%	84.90%	77.10%	82.90%	83.10%	73.10%	85.70%	63.90%
Ground source heat pump	18.30%	7.70%	7.50%	5.30%	0.00%	12.50%	3.10%	0.90%	10.40%	7.50%	7.70%	9.20%	5.70%	19.10%
Ductless system	11.20%	3.90%	6.20%	2.90%	0.00%	14.30%	19.90%	12.80%	11.10%	5.60%	6.10%	6.90%	5.10%	12.30%
Other, specify:	2.00%	4.50%	1.70%	2.30%	0.00%	4.00%	0.00%	1.40%	1.40%	4.00%	3.00%	10.90%	3.60%	4.70%
n	16	225	29	35	-	42	16	47	61	349	382	28	360	50

B4. How old is the forced air split system?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 5 years	21.06%	32.46%	16.58%	22.15%	0.00%	31.43%	0.00%	38.54%	15.80%	31.98%	30.44%	29.21%	30.42%	29.53%
2. 5-13 years	23.32%	31.23%	15.30%	48.16%	0.00%	14.80%	25.29%	28.24%	20.00%	31.06%	30.66%	22.63%	29.40%	34.56%
3. 14-27 years	4.56%	30.00%	47.03%	29.69%	0.00%	43.51%	25.17%	23.12%	26.89%	30.58%	29.46%	37.54%	29.56%	35.90%
4. Over 27 years	0.00%	3.57%	0.00%	0.00%	0.00%	0.00%	0.00%	12.92%	0.00%	3.66%	3.11%	5.08%	3.66%	0.00%
98. Dont Know	51.06%	4.18%	21.10%	5.96%	0.00%	10.26%	49.54%	0.00%	37.31%	4.52%	8.10%	5.54%	8.75%	0.00%
n	7	126	11	17	-	18	4	26	22	187	193	16	190	19

E3. What is the PRIMARY heating system in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Forced air furnace	35.80%	43.00%	42.90%	45.00%	68.30%	36.10%	28.60%	47.60%	37.00%	42.30%	38.80%	50.80%	43.40%	38.60%
Boiler	17.90%	37.00%	24.10%	34.20%	0.00%	41.60%	11.30%	33.30%	18.60%	37.30%	39.10%	21.60%	32.50%	39.10%
Electric baseboard heater	21.40%	5.90%	15.80%	7.30%	0.00%	5.20%	46.10%	6.40%	22.60%	5.90%	6.50%	12.90%	8.60%	7.00%
Air-source central heat pump	1.30%	1.80%	1.60%	0.70%	0.00%	1.10%	0.00%	3.10%	1.30%	1.70%	1.80%	1.00%	2.00%	1.00%
Ductless heat pump	1.20%	0.40%	0.00%	0.00%	0.00%	1.60%	2.60%	0.40%	1.10%	0.60%	0.60%	0.60%	0.40%	1.00%
Ground-source heat pump	1.60%	1.50%	3.60%	2.10%	0.00%	2.00%	4.30%	0.70%	2.40%	1.60%	2.10%	0.40%	1.60%	1.80%
Other, specify:	20.70%	10.30%	12.00%	10.70%	31.70%	12.50%	7.10%	8.70%	17.10%	10.60%	11.00%	12.70%	11.40%	11.40%
n	75	727	74	114	2	218	31	178	182	1,237	1,175	244	991	428

B0. Do you pay for central air conditioning for your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	16.50%	28.90%	7.60%	8.70%	20.30%	24.50%	3.60%	8.90%	22.10%	36.90%	11.30%	18.40%	20.00%
No, it is part of my rent/condo fee	2.60%	2.20%	0.80%	1.10%	3.40%	1.60%	0.00%	2.10%	0.90%	5.10%	2.50%	1.20%	1.80%
No, do not have central air conditioning in my home	80.80%	68.90%	91.60%	90.20%	76.30%	73.90%	96.40%	89.00%	77.00%	58.10%	86.10%	80.50%	78.20%
n	151	956	96	366	214	1,095	33	227	54	241	193	1,081	1,569

E0. Do you pay to heat your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	69.70%	96.10%	75.60%	96.10%	67.60%	96.50%	77.70%	94.60%	91.90%	96.20%	64.60%	96.10%	92.10%
No, it is part of my rent/condo fee	30.30%	3.70%	24.00%	3.00%	32.30%	2.90%	22.30%	5.40%	8.10%	3.80%	35.20%	3.30%	7.50%
No, do not have a heating system	0.00%	0.20%	0.40%	0.90%	0.20%	0.60%	0.00%	0.00%	0.00%	0.00%	0.10%	0.60%	0.40%
n	139	903	95	358	201	1,039	33	222	49	226	185	1,035	1,495

B2. What is the PRIMARY central air conditioning system in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Forced air split system	84.00%	85.90%	39.90%	66.90%	77.90%	83.80%	69.00%	73.60%	68.50%	88.80%	82.50%	80.70%	82.20%
Ground source heat pump	5.50%	5.70%	36.70%	16.90%	11.50%	7.20%	0.00%	10.50%	17.30%	3.00%	6.00%	9.10%	7.80%
Ductless system	9.60%	4.50%	19.00%	11.40%	9.00%	5.80%	31.00%	3.60%	14.20%	3.60%	9.10%	6.30%	6.20%
Other, specify:	0.90%	3.90%	4.40%	4.70%	1.60%	3.20%	0.00%	12.30%	0.00%	4.50%	2.30%	3.90%	3.80%
n	50	310	11	39	59	323	2	26	22	103	39	246	410

B4. How old is the forced air split system?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 5 years	16.47%	32.12%	0.00%	30.81%	18.34%	31.74%	0.00%	34.58%	33.91%	26.82%	9.91%	33.94%	30.33%
2. 5-13 years	18.56%	30.73%	53.93%	33.73%	23.22%	31.46%	0.00%	26.79%	50.33%	29.41%	10.14%	31.68%	29.93%
3. 14-27 years	26.07%	29.98%	46.07%	35.46%	15.12%	31.00%	100.00%	26.06%	15.76%	28.94%	30.51%	31.20%	30.20%
4. Over 27 years	0.00%	4.11%	0.00%	0.00%	0.00%	3.44%	0.00%	6.02%	0.00%	7.95%	0.00%	2.04%	3.29%
98. Dont Know	38.90%	5.06%	0.00%	0.00%	43.32%	4.32%	0.00%	6.56%	0.00%	7.62%	49.44%	3.34%	7.87%
n	19	171	3	16	21	172	1	15	5	57	17	130	209

E3. What is the PRIMARY heating system in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Forced air furnace	41.50%	43.80%	26.70%	39.90%	35.10%	39.20%	39.70%	53.80%	23.10%	57.40%	43.40%	39.60%	41.60%
Boiler	11.10%	36.00%	35.80%	39.50%	22.80%	40.80%	12.50%	24.20%	15.50%	25.90%	20.10%	39.40%	35.00%
Electric baseboard heater	24.50%	6.10%	18.30%	5.70%	18.80%	5.20%	28.20%	8.70%	24.70%	4.80%	21.60%	6.10%	8.00%
Air-source central heat pump	1.80%	2.00%	0.00%	1.20%	2.10%	1.80%	0.00%	1.30%	2.70%	3.60%	0.60%	1.30%	1.60%
Ductless heat pump	1.50%	0.20%	0.00%	1.20%	1.80%	0.50%	0.00%	0.80%	3.40%	0.20%	0.00%	0.60%	0.60%
Ground-source heat pump	1.80%	1.60%	3.70%	1.60%	4.00%	1.90%	0.00%	0.50%	4.20%	0.00%	1.50%	1.90%	1.70%
Other, specify:	17.80%	10.40%	15.60%	10.90%	15.50%	10.50%	19.50%	10.80%	26.40%	8.00%	12.80%	11.10%	11.40%
n	105	886	77	351	153	1,022	29	215	45	222	137	1,015	1,419

E3A. What is the SECONDARY heating system in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. No secondary	89.95%	65.82%	80.34%	68.36%	0.00%	53.29%	72.71%	75.95%	85.28%	64.56%	64.26%	76.59%	70.84%	60.99%
1. Forced air furnace	0.00%	2.00%	1.87%	1.30%	0.00%	3.66%	0.00%	0.00%	0.47%	2.08%	1.38%	3.49%	1.61%	2.32%
4. Air-source central heat pump	0.00%	1.18%	0.97%	0.00%	0.00%	1.30%	0.00%	0.99%	0.24%	1.08%	0.91%	1.21%	0.82%	1.23%
3. Electric baseboard heater	0.00%	0.00%	0.00%	0.00%	0.00%	0.79%	0.00%	0.00%	0.00%	0.15%	0.17%	0.00%	0.00%	0.35%
5. Ductless heat pump	0.00%	1.00%	0.00%	3.58%	0.00%	2.95%	0.00%	2.28%	0.00%	1.71%	1.84%	0.36%	1.72%	1.12%
2. Boiler	0.89%	1.73%	0.00%	3.25%	31.68%	1.31%	5.62%	2.53%	1.32%	1.85%	2.13%	0.65%	1.55%	2.17%
6. Ground-source heat pump	5.66%	6.60%	7.72%	4.09%	0.00%	4.30%	2.82%	2.50%	5.84%	5.56%	5.83%	4.86%	5.61%	5.59%
8. Other	3.49%	21.79%	10.55%	20.74%	68.32%	33.47%	18.84%	15.95%	7.22%	23.41%	23.99%	12.86%	18.13%	26.81%
n	75	727	74	114	2	218	31	178	182	1,237	1,175	244	991	428

E1A. Does your air-source central heat pump unit also provide central space cooling in the summer?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
n	2	25	2	6	-	12	1	12	5	55	54	6	51	9

E1. What is the primary fuel source used by your primary FORCED AIR FURNACE?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	24.00%	28.10%	0.00%	4.00%	0.00%	1.00%	96.70%	33.80%	23.00%	22.10%	25.40%	14.00%	30.40%	6.70%
Electricity	3.40%	0.60%	1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	2.50%	0.40%	0.60%	0.70%	0.90%	0.10%
Oil	62.00%	42.10%	29.50%	50.20%	100.00%	66.80%	3.30%	38.30%	47.90%	46.50%	39.20%	65.30%	40.20%	58.90%
Propane	8.90%	27.10%	69.30%	45.70%	0.00%	28.40%	0.00%	18.60%	25.60%	28.10%	31.80%	18.10%	27.10%	29.20%
Wood	0.00%	0.00%	0.00%	0.00%	0.00%	2.40%	0.00%	2.60%	0.00%	0.70%	0.80%	0.00%	0.10%	1.50%
Other, specify:	1.70%	2.10%	0.00%	0.00%	0.00%	1.40%	0.00%	6.70%	1.00%	2.30%	2.20%	1.90%	1.40%	3.50%
n	28	316	30	49	1	81	11	84	70	530	475	125	435	165

E1. What is the primary fuel source used by your primary BOILER?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	39.20%	11.70%	14.20%	0.00%	0.00%	0.00%	73.00%	39.10%	33.40%	10.50%	12.20%	11.40%	13.90%	9.60%
Electricity	3.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	0.00%	0.20%	0.00%	0.20%	0.00%
Oil	27.80%	74.50%	60.20%	70.60%	0.00%	72.80%	0.00%	54.70%	36.40%	72.20%	68.00%	80.20%	76.50%	60.50%
Propane	29.60%	13.50%	25.60%	20.90%	0.00%	23.70%	0.00%	6.10%	26.30%	15.60%	17.70%	8.40%	9.40%	26.00%
Wood	0.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.20%	0.00%	0.00%	0.50%
Other, specify:	0.00%	0.00%	0.00%	8.50%	0.00%	3.50%	27.00%	0.00%	1.80%	1.40%	1.70%	0.00%	0.00%	3.40%
n	18	279	22	42		97	4	63	44	481	464	61	358	167

E1. What is the primary fuel source used by your primary OTHER-type heater?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	59.70%	13.20%	0.00%	0.00%	0.00%	0.00%	27.60%	38.70%	47.30%	11.00%	12.10%	34.00%	27.10%	2.10%
Electricity	7.40%	6.00%	4.50%	19.60%	0.00%	8.60%	44.70%	0.00%	8.50%	7.30%	7.70%	7.00%	6.30%	9.60%
Oil	0.00%	23.10%	50.10%	10.50%	0.00%	7.50%	0.00%	17.70%	8.70%	18.10%	16.20%	16.80%	18.70%	12.40%
Propane	19.50%	14.60%	8.10%	38.10%	0.00%	31.30%	27.70%	12.40%	17.70%	20.20%	26.20%	1.60%	13.80%	29.80%
Wood	9.00%	28.20%	15.60%	31.80%	100.00%	46.30%	0.00%	25.40%	10.50%	32.40%	28.70%	26.90%	25.20%	33.30%
Other, specify:	4.50%	14.90%	21.60%	0.00%	0.00%	6.30%	0.00%	5.90%	7.20%	11.00%	9.10%	13.80%	8.80%	12.80%
n	11	72	9	14	1	25	4	16	25	127	122	30	104	48

E3A. What is the SECONDARY heating system in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. No secondary	89.57%	67.81%	75.46%	59.36%	78.44%	62.74%	95.26%	71.42%	86.60%	82.94%	84.66%	61.26%	67.15%
1. Forced air furnace	0.67%	1.76%	0.00%	2.58%	0.00%	1.53%	1.15%	4.13%	0.00%	0.00%	0.68%	2.45%	1.88%
4. Air-source central heat pump	0.35%	0.90%	0.00%	1.37%	0.41%	0.96%	0.00%	1.54%	0.00%	0.69%	0.35%	1.15%	0.98%
3. Electric baseboard heater	0.00%	0.00%	0.00%	0.39%	0.00%	0.19%	0.00%	0.00%	0.00%	0.00%	0.00%	0.18%	0.13%
5. Ductless heat pump	0.00%	2.00%	0.00%	1.24%	0.00%	2.04%	0.00%	0.46%	0.00%	0.93%	0.00%	1.85%	1.50%
2. Boiler	1.09%	1.63%	1.85%	2.21%	1.28%	2.23%	1.38%	0.44%	1.94%	2.80%	1.03%	1.68%	1.79%
6. Ground-source heat pump	3.35%	5.97%	11.54%	4.91%	9.84%	5.39%	0.00%	6.20%	3.41%	4.23%	6.97%	5.80%	5.60%
8. Other	4.98%	20.26%	12.34%	28.45%	10.64%	25.42%	2.21%	15.81%	8.05%	8.54%	6.83%	26.08%	21.38%
n	105	886	77	351	153	1,022	29	215	45	222	137	1,015	1,419

E1A. Does your air-source central heat pump unit also provide central space cooling in the summer?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
n	5	46	-	9	5	49	-	6	3	13	2	42	60

E1. What is the primary fuel source used by your primary FORCED AIR FURNACE?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Natural gas	25.40%	31.10%	14.50%	6.20%	33.10%	24.70%	10.00%	14.80%	85.40%	95.80%	7.50%	2.80%	22.20%
Electricity	2.70%	0.60%	1.70%	0.00%	4.40%	0.20%	0.00%	0.80%	10.70%	1.80%	0.50%	0.00%	0.60%
Oil	53.00%	38.20%	29.60%	61.10%	28.40%	40.20%	73.10%	63.80%	4.00%	2.40%	58.80%	58.00%	46.70%
Propane	17.50%	28.60%	54.20%	27.30%	32.30%	31.70%	16.90%	18.40%	0.00%	0.00%	31.90%	35.50%	27.90%
Wood	0.00%	0.10%	0.00%	1.60%	0.00%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.80%	0.60%
Other, specify:	1.30%	1.40%	0.00%	3.80%	1.80%	2.20%	0.00%	2.30%	0.00%	0.00%	1.30%	2.80%	2.10%
n	46	389	24	141	63	412	7	118	19	127	51	403	600

E1. What is the primary fuel source used by your primary BOILER?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Natural gas	39.90%	12.60%	28.80%	7.60%	28.60%	11.20%	46.20%	6.30%	100.00%	87.80%	9.30%	1.40%	12.10%
Electricity	4.90%	0.00%	0.00%	0.00%	2.80%	0.00%	0.00%	0.00%	0.00%	0.00%	2.80%	0.00%	0.10%
Oil	49.90%	77.80%	26.80%	64.00%	29.80%	70.30%	53.80%	84.00%	0.00%	12.20%	49.60%	79.30%	69.80%
Propane	5.30%	9.60%	41.30%	24.40%	36.30%	16.60%	0.00%	9.60%	0.00%	0.00%	35.90%	17.50%	16.40%
Wood	0.00%	0.00%	0.00%	0.60%	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	0.20%
Other, specify:	0.00%	0.00%	3.10%	3.50%	2.50%	1.60%	0.00%	0.00%	0.00%	0.00%	2.40%	1.60%	1.40%
n	18	340	26	141	38	426	6	55	8	64	36	417	525

E1. What is the primary fuel source used by your primary OTHER-type heater?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Natural gas	65.40%	16.60%	0.00%	2.40%	25.90%	9.90%	72.10%	14.90%	90.90%	95.60%	5.10%	0.00%	17.80%
Electricity	10.40%	5.20%	3.60%	10.60%	15.80%	6.50%	0.00%	10.40%	0.00%	1.50%	16.70%	8.10%	7.50%
Oil	9.50%	21.20%	6.80%	13.30%	12.80%	16.70%	4.10%	23.10%	0.00%	0.00%	17.20%	20.40%	16.30%
Propane	0.00%	17.60%	64.10%	24.30%	30.70%	25.50%	2.70%	1.00%	0.00%	0.00%	34.90%	22.90%	19.80%
Wood	10.00%	29.50%	11.90%	36.80%	8.40%	32.00%	13.00%	33.90%	9.10%	2.90%	11.80%	36.20%	28.30%
Other, specify:	4.80%	10.00%	13.60%	12.60%	6.40%	9.50%	8.10%	16.60%	0.00%	0.00%	14.20%	12.40%	10.30%
n	14	90	11	37	17	105	8	22	5	17	20	110	152

E1_Sec. What is the primary fuel source used by your secondary FORCED AIR FURNACE?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	0.00%	5.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.30%	5.60%	0.00%	5.90%	0.00%
Electricity	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	7.10%	5.80%	0.00%
Oil	0.00%	55.90%	0.00%	0.00%	0.00%	32.00%	0.00%	0.00%	0.00%	44.80%	31.20%	59.40%	41.50%	45.70%
Propane	0.00%	38.70%	0.00%	100.00%	0.00%	68.00%	0.00%	0.00%	0.00%	51.90%	63.20%	33.50%	46.80%	54.30%
n	-	16	1	2	-	6	-	-	1	24	16	9	18	7

E1_Sec. What is the primary fuel source used by your secondary BOILER?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	0.00%	22.00%	0.00%	0.00%	0.00%	0.00%	100.00%	79.90%	46.60%	23.00%	27.50%	0.00%	34.90%	13.70%
Oil	74.80%	56.20%	100.00%	100.00%	0.00%	89.30%	0.00%	20.10%	42.60%	62.70%	62.10%	46.50%	39.40%	86.30%
Propane	25.20%	21.80%	0.00%	0.00%	0.00%	10.70%	0.00%	0.00%	10.80%	14.30%	10.30%	53.50%	25.70%	0.00%
n	2	11	2	1	-	4	1	4	4	21	22	3	18	7

E1_Sec. What is the primary fuel source used by your secondary OTHER-type heater?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	35.20%	4.40%	0.00%	0.00%	0.00%	0.00%	11.10%	0.00%	14.00%	2.60%	3.60%	0.00%	4.00%	2.00%
Electricity	32.80%	8.10%	21.40%	7.10%	0.00%	8.10%	88.90%	5.00%	43.40%	7.80%	8.60%	13.90%	12.10%	6.30%
Oil	0.00%	2.40%	0.00%	8.30%	0.00%	0.00%	0.00%	0.00%	0.00%	2.00%	1.90%	2.30%	2.10%	1.70%
Propane	13.10%	13.30%	18.80%	9.60%	0.00%	18.10%	0.00%	21.50%	10.90%	14.90%	14.00%	19.30%	14.00%	15.50%
Wood	18.80%	57.60%	50.60%	62.90%	100.00%	59.60%	0.00%	72.20%	28.40%	59.50%	58.90%	53.30%	55.30%	61.40%
Other, specify:	0.00%	14.20%	9.20%	12.20%	0.00%	14.20%	0.00%	1.20%	3.30%	13.20%	13.00%	11.20%	12.40%	13.20%
n	8	176	12	26	1	79	5	21	26	302	284	44	206	122

E4_D. How old is the air-source central heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Less than 5 years	21.40%	5.90%	15.80%	7.30%	0.00%	5.20%	46.10%	6.40%	22.60%	5.90%	6.50%	12.90%	8.60%	7.00%
5-13 years	1.30%	1.80%	1.60%	0.70%	0.00%	1.10%	0.00%	3.10%	1.30%	1.70%	1.80%	1.00%	2.00%	1.00%
Over 27 years	1.20%	0.40%	0.00%	0.00%	0.00%	1.60%	2.60%	0.40%	1.10%	0.60%	0.60%	0.60%	0.40%	1.00%
Don't know	1.60%	1.50%	3.60%	2.10%	0.00%	2.00%	4.30%	0.70%	2.40%	1.60%	2.10%	0.40%	1.60%	1.80%
n	11	72	9	14	1	25	4	16	25	127	122	30	104	48

D3. Did you have any work done to test and seal air leaks from your ventilation system within the last 5 years?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	2.10%	10.10%	0.00%	17.30%	100.00%	7.50%	16.10%	7.30%	3.60%	10.10%	9.10%	10.40%	9.00%	10.20%
No	48.30%	79.80%	60.20%	62.90%	0.00%	86.20%	30.10%	67.70%	49.80%	78.10%	77.50%	69.00%	75.70%	74.30%
Don't know	49.70%	10.10%	39.80%	19.80%	0.00%	6.30%	53.90%	25.00%	46.60%	11.80%	13.40%	20.60%	15.30%	15.50%
n	26	285	32	52	1	78	11	78	70	493	454	109	419	144

E1_Sec. What is the primary fuel source used by your secondary FORCED AIR FURNACE?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	0.00%	6.30%	0.00%	0.00%	0.00%	5.60%	0.00%	0.00%	0.00%	0.00%	0.00%	3.30%	3.20%
Electricity	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	3.10%
Oil	0.00%	44.10%	0.00%	45.70%	0.00%	31.20%	0.00%	63.90%	0.00%	0.00%	0.00%	44.80%	43.40%
Propane	0.00%	49.70%	0.00%	54.30%	0.00%	63.20%	0.00%	36.10%	0.00%	0.00%	0.00%	51.90%	50.30%
n	1	17	-	7	-	16	1	8	-	-	1	24	25

E1_Sec. What is the primary fuel source used by your secondary BOILER?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	81.20%	29.90%	0.00%	15.00%	81.20%	24.20%	0.00%	0.00%	100.00%	100.00%	0.00%	0.00%	25.20%
Oil	0.00%	43.70%	100.00%	85.00%	0.00%	65.90%	100.00%	0.00%	0.00%	0.00%	79.80%	81.40%	60.80%
Propane	18.80%	26.50%	0.00%	0.00%	18.80%	9.80%	0.00%	100.00%	0.00%	0.00%	20.20%	18.60%	14.00%
n	2	16	2	5	2	20	2	1	1	5	3	16	25

E1_Sec. What is the primary fuel source used by your secondary OTHER-type heater?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	29.20%	3.00%	0.00%	2.10%	16.00%	3.00%	0.00%	0.00%	39.50%	34.30%	0.00%	0.70%	3.10%
Electricity	44.90%	10.80%	42.00%	4.50%	35.30%	7.40%	100.00%	10.40%	49.00%	25.10%	40.20%	6.80%	9.40%
Oil	0.00%	2.20%	0.00%	1.80%	0.00%	2.00%	0.00%	2.30%	0.00%	0.00%	0.00%	2.10%	1.90%
Propane	8.40%	14.30%	13.20%	15.60%	12.50%	14.10%	0.00%	20.00%	11.40%	0.00%	10.60%	15.80%	14.70%
Wood	10.50%	57.10%	44.90%	62.20%	32.40%	60.10%	0.00%	55.50%	0.00%	32.60%	44.00%	61.10%	58.10%
Other, specify:	6.90%	12.60%	0.00%	13.90%	3.80%	13.50%	0.00%	11.70%	0.00%	8.10%	5.20%	13.50%	12.80%
n	10	196	16	106	24	260	2	42	6	17	20	285	328

E4_D. How old is the air-source central heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Less than 5 years	24.50%	6.10%	18.30%	5.70%	18.80%	5.20%	28.20%	8.70%	24.70%	4.80%	21.60%	6.10%	8.00%
5-13 years	1.80%	2.00%	0.00%	1.20%	2.10%	1.80%	0.00%	1.30%	2.70%	3.60%	0.60%	1.30%	1.60%
Over 27 years	1.50%	0.20%	0.00%	1.20%	1.80%	0.50%	0.00%	0.80%	3.40%	0.20%	0.00%	0.60%	0.60%
Don't know	1.80%	1.60%	3.70%	1.60%	4.00%	1.90%	0.00%	0.50%	4.20%	0.00%	1.50%	1.90%	1.70%
n	14	90	11	37	17	105	8	22	5	17	20	110	152

D3. Did you have any work done to test and seal air leaks from your ventilation system within the last 5 years?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Yes	3.60%	9.80%	3.60%	10.60%	5.60%	9.40%	0.00%	12.10%	8.40%	5.00%	2.30%	11.20%	9.40%
No	51.30%	79.20%	44.00%	76.20%	55.40%	79.70%	40.00%	73.70%	64.00%	83.30%	46.20%	77.00%	75.20%
Don't know	45.20%	11.00%	52.40%	13.20%	39.10%	10.90%	60.00%	14.30%	27.60%	11.70%	51.40%	11.80%	15.30%
n	49	370	21	123	64	390	6	103	17	101	53	392	563

C8. How often is room cooling unit turned on during the cooling season?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Never	0.00%	7.87%	20.19%	12.78%	0.00%	18.05%	3.27%	0.00%	4.28%	8.98%	5.02%	16.13%	7.23%	9.58%
2. Rarely	33.34%	28.23%	28.96%	51.30%	0.00%	30.29%	18.58%	17.17%	30.37%	28.77%	27.19%	34.32%	31.36%	24.53%
3. Sometimes	48.34%	37.21%	43.59%	18.54%	0.00%	37.06%	31.25%	63.75%	44.97%	38.78%	41.29%	36.70%	41.06%	38.04%
4. Often	14.75%	34.22%	14.64%	26.99%	0.00%	17.95%	20.05%	28.98%	15.50%	30.70%	31.93%	15.63%	29.75%	23.12%
5. Always	12.36%	9.39%	11.24%	0.00%	0.00%	12.67%	26.84%	30.97%	14.25%	11.54%	11.68%	13.24%	9.07%	18.22%
n	18	86	11	12	-	27	9	26	38	151	154	35	134	55

C5. What type of room air conditioner do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Window air conditioner or heat pump	54.11%	63.07%	58.16%	68.68%	0.00%	54.08%	42.66%	73.76%	53.22%	63.04%	61.66%	59.25%	59.16%	64.75%
2. Portable air conditioner or heat pump	8.31%	21.57%	32.35%	14.75%	0.00%	23.33%	2.31%	17.93%	11.97%	21.09%	21.56%	12.80%	18.55%	20.54%
3. Through-the-wall air conditioner or heat pump	41.30%	26.51%	29.86%	25.50%	0.00%	43.79%	52.58%	24.24%	40.78%	28.96%	30.03%	35.16%	35.41%	23.30%
4. Other	0.00%	0.91%	5.62%	0.00%	0.00%	0.00%	4.41%	0.00%	1.70%	0.62%	0.48%	1.84%	1.08%	0.37%
n	18	86	11	12	-	27	9	26	38	151	154	35	134	55

D5. Do you have a whole house fan or attic fan to cool your home in summer months?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	7.70%	12.70%	17.20%	8.90%	0.00%	2.80%	8.10%	12.40%	10.00%	10.40%	11.00%	8.30%	12.40%	6.80%
No	92.30%	87.30%	82.80%	91.10%	100.00%	97.20%	91.90%	87.60%	90.00%	89.60%	89.00%	91.70%	87.60%	93.20%
n	82	546	74	81	2	168	37	151	195	946	948	193	801	340

C2. How often do you use the electric portable space heater(s) during the heating season?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. Never	56.28%	11.20%	0.00%	13.00%	0.00%	0.00%	12.87%	18.83%	30.49%	9.76%	10.79%	23.84%	18.22%	6.98%
1. Rarely	0.00%	26.81%	4.59%	29.84%	0.00%	12.98%	0.00%	47.19%	1.21%	25.89%	23.76%	12.76%	17.78%	26.59%
2. Sometimes	23.07%	25.90%	36.14%	22.18%	0.00%	50.16%	15.04%	28.97%	24.46%	30.42%	33.68%	12.25%	30.46%	27.92%
3. Often	10.72%	26.12%	24.61%	34.41%	0.00%	56.74%	31.73%	45.84%	19.70%	34.34%	34.77%	19.79%	26.35%	39.00%
4. Always	15.29%	21.62%	39.25%	8.10%	0.00%	10.22%	40.36%	0.00%	27.94%	16.44%	13.78%	37.09%	20.40%	15.88%
n	8	48	9	14	-	15	5	13	22	90	94	18	65	47

L4. Average # ventilation fans per house	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	0.94	1.39	0.94	1.74	0.68	1.33	1.03	1.35	0.95	1.40	1.45	0.97	1.33	1.35
n	58	429	62	67	2	135	24	122	146	753	740	159	618	281

E13. Does your furnace have...?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Air exchanger	0.90%	14.10%	18.30%	9.00%	0.00%	20.60%	0.00%	12.00%	6.30%	14.60%	15.80%	8.40%	11.80%	17.30%
Heat recovery ventilator	1.00%	1.60%	0.00%	0.00%	0.00%	0.50%	0.00%	0.60%	0.60%	1.20%	1.00%	1.40%	1.20%	1.00%
Neither	12.70%	23.20%	15.70%	12.20%	0.00%	17.20%	16.70%	14.00%	13.90%	20.30%	22.00%	13.60%	20.70%	17.40%
Do not know	85.50%	61.10%	66.00%	78.80%	100.00%	61.60%	83.30%	73.40%	79.20%	64.00%	61.20%	76.50%	66.40%	64.30%
n	23	281	27	45	1	72	10	74	61	472	422	111	393	140

C8. How often is room cooling unit turned on during the cooling season?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Never	4.99%	7.92%	1.99%	10.90%	6.45%	4.70%	0.00%	21.77%	0.00%	4.36%	6.55%	9.78%	8.01%
2. Rarely	37.33%	29.53%	8.17%	27.39%	24.01%	27.92%	42.91%	31.32%	2.80%	19.24%	45.05%	30.43%	29.10%
3. Sometimes	51.26%	37.92%	24.89%	40.34%	43.20%	40.85%	48.47%	32.59%	68.42%	30.74%	32.49%	40.18%	40.06%
4. Often	14.31%	34.50%	19.30%	23.79%	18.99%	34.92%	8.62%	18.08%	17.59%	55.11%	14.39%	26.44%	27.56%
5. Always	4.41%	10.51%	45.66%	13.42%	21.48%	9.42%	0.00%	17.88%	11.19%	6.92%	15.88%	12.35%	12.10%
n	28	106	10	45	33	121	5	30	10	26	28	125	189

C5. What type of room air conditioner do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Window air conditioner or heat pump	47.79%	62.65%	70.55%	63.74%	55.63%	63.05%	48.47%	63.02%	78.03%	61.23%	40.01%	63.35%	61.01%
2. Portable air conditioner or heat pump	10.93%	20.89%	15.29%	21.46%	17.54%	22.49%	0.99%	16.93%	9.76%	38.46%	13.15%	18.06%	19.21%
3. Through-the-wall air conditioner or heat pump	48.74%	31.31%	15.35%	24.69%	35.83%	28.69%	50.54%	29.78%	10.37%	18.01%	56.97%	30.87%	31.40%
4. Other	2.23%	0.73%	0.00%	0.43%	2.56%	0.00%	0.00%	2.48%	1.84%	1.03%	1.62%	0.55%	0.84%
n	28	106	10	45	33	121	5	30	10	26	28	125	189

D5. Do you have a whole house fan or attic fan to cool your home in summer months?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	9.20%	13.10%	12.20%	6.00%	16.20%	10.20%	0.00%	11.20%	11.90%	19.20%	9.30%	8.80%	10.30%
No	90.80%	86.90%	87.80%	94.00%	83.80%	89.80%	100.00%	88.80%	88.10%	80.80%	90.70%	91.20%	89.70%
n	121	680	74	266	169	779	26	167	40	166	155	780	1,141

C2. How often do you use the electric portable space heater(s) during the heating season?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	42.61%	11.33%	0.00%	7.90%	5.82%	11.49%	62.10%	0.00%	73.90%	0.00%	5.17%	11.09%	13.41%
1. Rarely	0.00%	22.80%	4.24%	29.55%	2.15%	26.81%	0.00%	20.71%	0.00%	21.12%	1.91%	26.54%	21.55%
2. Sometimes	15.05%	34.81%	48.14%	25.24%	32.22%	33.89%	14.53%	10.82%	15.78%	25.05%	29.53%	31.15%	29.37%
3. Often	18.50%	28.57%	22.71%	41.15%	35.07%	34.73%	0.00%	32.13%	10.32%	35.79%	25.17%	34.14%	31.76%
4. Always	27.46%	18.40%	29.14%	14.12%	31.51%	11.28%	23.37%	45.63%	0.00%	28.35%	44.23%	14.82%	18.47%
n	12	53	10	37	18	76	4	14	3	10	19	80	112

L4. Average # ventilation fans per house	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	0.94	1.41	0.98	1.39	0.93	1.52	0.98	0.97	1.05	1.26	0.91	1.43	1.33
n	86	532	60	221	128	612	18	141	30	133	116	620	899

E13. Does your furnace have...?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Air exchanger	6.40%	12.60%	6.20%	18.00%	4.10%	16.90%	9.50%	8.20%	0.00%	15.20%	8.00%	14.40%	13.70%
Heat recovery ventilator	0.00%	1.40%	3.20%	0.80%	1.00%	1.00%	0.00%	1.70%	0.00%	1.30%	0.70%	1.20%	1.10%
Neither	14.70%	21.60%	9.90%	17.90%	13.80%	22.80%	14.00%	13.60%	12.00%	23.30%	14.40%	19.50%	19.60%
Do not know	78.90%	64.40%	80.70%	63.30%	81.20%	59.30%	76.50%	76.50%	88.00%	60.30%	76.90%	65.00%	65.60%
n	42	351	19	121	55	367	6	105	17	109	44	363	533

E13. Does your heat pump have...?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Air exchanger	0.00%	10.60%	37.10%	0.00%	0.00%	0.00%	0.00%	0.00%	16.00%	6.60%	9.70%	0.00%	12.00%	0.00%
Heat recovery ventilator	0.00%	13.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.30%	0.00%	34.40%	0.00%	20.20%
Neither	0.00%	5.30%	0.00%	100.00%	0.00%	0.00%	0.00%	30.10%	0.00%	12.00%	13.90%	0.00%	9.20%	13.60%
Do not know	100.00%	70.70%	62.90%	0.00%	0.00%	100.00%	0.00%	69.90%	84.00%	73.00%	76.40%	65.60%	78.80%	66.20%
n	1	14	2	1	-	3	-	5	3	23	21	5	20	6

T1A. What type of thermostat controls do you have on your air conditioning?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	5.44%	24.79%	18.36%	26.13%	0.00%	47.84%	41.57%	31.00%	19.10%	27.70%	27.97%	13.72%	24.38%	41.71%
Programmable (non-communicating) thermostat	50.01%	58.91%	72.56%	42.43%	0.00%	21.23%	32.19%	43.59%	54.59%	52.58%	52.88%	51.88%	55.77%	34.23%
Standard thermostat	44.55%	17.09%	9.08%	39.76%	0.00%	25.42%	26.24%	33.36%	26.31%	21.11%	20.67%	32.50%	22.03%	19.41%
No thermostat	0.00%	0.24%	0.00%	3.33%	0.00%	14.57%	0.00%	0.00%	0.00%	1.88%	1.66%	1.90%	0.27%	10.43%
Dont Know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
n	11	176	18	23	-	28	11	39	40	266	285	21	273	33

T1B. What type of thermostat controls do you have on your furnace?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	1.50%	17.10%	13.30%	26.60%	0.00%	9.00%	17.40%	17.20%	6.80%	16.60%	20.20%	4.00%	15.20%	16.10%
Programmable (non-communicating) thermostat	21.90%	48.60%	51.10%	26.30%	100.00%	29.40%	17.80%	38.30%	31.80%	42.20%	45.70%	29.70%	44.70%	34.20%
Standard thermostat	76.60%	34.30%	31.30%	47.10%	0.00%	61.70%	64.80%	44.50%	60.00%	41.20%	34.10%	65.80%	39.90%	49.70%
No thermostat	0.00%	0.00%	4.30%	0.00%	0.00%	0.00%	0.00%	0.00%	1.40%	0.00%	0.00%	0.50%	0.20%	0.00%
n	23	281	29	45	1	72	10	74	63	472	424	111	395	140

T1B. What type of thermostat controls do you have on your ductless heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	17.00%	0.00%	0.00%	0.00%	32.70%	0.00%	37.00%	0.00%	22.30%	20.30%	22.60%	17.50%	26.70%
Programmable (non-communicating) thermostat	0.00%	56.60%	0.00%	25.80%	0.00%	10.10%	100.00%	19.50%	26.80%	33.00%	25.80%	77.40%	36.30%	25.10%
Standard thermostat	100.00%	0.00%	0.00%	0.00%	0.00%	57.10%	0.00%	8.30%	73.20%	19.90%	27.50%	0.00%	11.70%	48.30%
No thermostat	0.00%	26.40%	0.00%	74.20%	0.00%	0.00%	0.00%	35.20%	0.00%	24.80%	26.40%	0.00%	34.50%	0.00%
n	1	10	-	4	-	7	1	6	2	27	26	3	25	4

T1B. What type of thermostat controls do you have on your boiler?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	13.80%	20.70%	8.10%	0.00%	18.60%	0.00%	9.30%	6.40%	14.00%	14.60%	7.30%	13.10%	14.00%
Programmable (non-communicating) thermostat	14.00%	40.10%	18.60%	50.50%	0.00%	37.40%	27.60%	45.30%	16.60%	40.80%	41.60%	25.10%	41.20%	36.40%
Standard thermostat	86.00%	46.10%	60.80%	41.40%	100.00%	44.00%	37.40%	45.30%	73.70%	45.20%	43.60%	67.60%	45.30%	49.60%
No thermostat	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	34.90%	0.00%	3.30%	0.00%	0.30%	0.00%	0.40%	0.00%
n	13	239	18	37	1	89	4	58	36	423	403	56	316	143

E13. Does your heat pump have...?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Air exchanger	16.00%	11.30%	0.00%	0.00%	16.00%	8.80%	0.00%	0.00%	0.00%	0.00%	37.10%	8.30%	7.50%
Heat recovery ventilator	0.00%	0.00%	0.00%	20.20%	0.00%	0.00%	0.00%	34.40%	0.00%	0.00%	0.00%	10.30%	7.50%
Neither	0.00%	10.90%	0.00%	13.60%	0.00%	15.80%	0.00%	0.00%	0.00%	28.80%	0.00%	7.90%	10.90%
Do not know	84.00%	77.80%	0.00%	66.20%	84.00%	75.40%	0.00%	65.60%	100.00%	71.20%	62.90%	73.50%	74.10%
n	3	17	-	6	3	18	-	5	1	5	2	18	26

T1A. What type of thermostat controls do you have on your air conditioning?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Communicating thermostat	16.89%	25.31%	37.00%	42.15%	17.30%	29.18%	31.04%	10.24%	21.78%	31.60%	17.59%	26.19%	26.78%
Programmable (non-communicating) thermostat	53.55%	56.05%	63.00%	31.54%	52.42%	52.93%	68.96%	48.46%	59.34%	53.04%	51.91%	52.40%	52.80%
Standard thermostat	29.56%	21.09%	0.00%	21.22%	30.27%	19.58%	0.00%	39.02%	18.88%	15.86%	30.50%	23.12%	21.66%
No thermostat	0.00%	0.31%	0.00%	11.41%	0.00%	1.85%	0.00%	2.28%	0.00%	0.64%	0.00%	2.35%	1.68%
Dont Know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
n	34	239	6	27	38	247	2	19	14	83	26	183	306

T1B. What type of thermostat controls do you have on your furnace?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Communicating thermostat	7.80%	16.40%	2.30%	16.90%	11.60%	21.10%	0.00%	4.70%	11.80%	20.40%	5.50%	15.60%	15.50%
Programmable (non-communicating) thermostat	30.00%	47.00%	40.40%	33.80%	37.70%	46.50%	23.50%	30.90%	28.40%	50.60%	32.70%	40.10%	41.10%
Standard thermostat	60.60%	36.60%	57.30%	49.30%	50.80%	32.40%	73.10%	64.40%	59.80%	29.00%	60.00%	44.30%	43.30%
No thermostat	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%	3.40%	0.00%	0.00%	0.00%	1.80%	0.00%	0.20%
n	44	351	19	121	57	367	6	105	17	109	46	363	535

T1B. What type of thermostat controls do you have on your ductless heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Communicating thermostat	0.00%	19.70%	0.00%	26.70%	0.00%	22.20%	0.00%	22.60%	0.00%	12.40%	0.00%	23.10%	20.60%
Programmable (non-communicating) thermostat	26.80%	37.60%	0.00%	25.10%	26.80%	25.70%	0.00%	77.40%	26.80%	29.00%	0.00%	33.40%	32.60%
Standard thermostat	73.20%	3.80%	0.00%	48.30%	73.20%	23.20%	0.00%	0.00%	73.20%	12.40%	0.00%	20.50%	23.90%
No thermostat	0.00%	38.90%	0.00%	0.00%	0.00%	28.90%	0.00%	0.00%	0.00%	46.20%	0.00%	23.10%	23.00%
n	4	2		3	2	5	-	3	2	5	-	22	29

T1B. What type of thermostat controls do you have on your boiler?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Communicating thermostat	6.90%	13.50%	6.10%	14.80%	8.90%	14.90%	0.00%	8.40%	0.00%	26.90%	9.10%	12.30%	13.50%
Programmable (non-communicating) thermostat	23.20%	42.20%	11.30%	38.90%	22.00%	42.80%	2.50%	28.40%	24.90%	56.10%	13.10%	38.80%	39.10%
Standard thermostat	62.50%	44.40%	82.60%	46.30%	64.60%	42.30%	97.50%	63.20%	63.70%	17.10%	77.80%	48.90%	47.10%
No thermostat	7.50%	0.00%	0.00%	0.00%	4.60%	0.00%	0.00%	0.00%	11.40%	0.00%	0.00%	0.00%	0.20%
n	17	299	19	124	30	373	6	50	7	60	29	363	459

T1B. What type of thermostat controls do you have on your air-source central heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	23.80%	100.00%	0.00%	0.00%	24.10%	0.00%	6.90%	32.30%	21.00%	31.40%	0.00%	20.20%	26.90%
Programmable (non-communicating) thermostat	100.00%	49.50%	0.00%	0.00%	0.00%	75.90%	0.00%	0.00%	67.70%	43.20%	43.30%	51.90%	43.80%	50.50%
Standard thermostat	0.00%	26.70%	0.00%	0.00%	0.00%	0.00%	0.00%	93.10%	0.00%	35.80%	25.40%	48.10%	36.00%	22.60%
n	1	12	1	-	-	2	-	4	2	18	15	5	16	4

T1B_prim. What type of thermostat controls do you have on your primary furnace?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	1.50%	18.00%	13.90%	24.20%	0.00%	5.30%	17.40%	17.20%	6.90%	16.40%	19.70%	4.30%	15.40%	15.10%
Programmable (non-communicating) thermostat	21.90%	49.10%	53.40%	27.20%	100.00%	32.30%	17.80%	38.30%	32.30%	43.20%	46.10%	31.30%	45.10%	35.80%
Standard thermostat	76.60%	32.90%	32.70%	48.60%	0.00%	62.40%	64.80%	44.50%	60.80%	40.40%	34.20%	64.50%	39.50%	49.10%
n	23	266	28	43	1	67	10	74	62	450	409	103	378	134

T1B_prim. What type of thermostat controls do you have on your primary ductless heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	42.60%	44.20%	0.00%	7.90%	51.60%
Programmable (non-communicating) thermostat	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	50.00%	26.80%	53.70%	27.60%	100.00%	45.50%	48.40%
Standard thermostat	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	73.20%	3.70%	28.30%	0.00%	46.60%	0.00%
n	1	2	-	-	-	2	1	2	2	6	7	1	6	2

T1B_prim. What type of thermostat controls do you have on your primary boiler?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	13.50%	20.70%	9.00%	0.00%	19.30%	0.00%	8.80%	6.80%	14.00%	14.60%	7.50%	12.60%	14.80%
Programmable (non-communicating) thermostat	12.80%	40.90%	18.60%	56.20%	0.00%	38.40%	44.20%	46.60%	16.60%	42.00%	42.90%	25.60%	41.50%	38.60%
Standard thermostat	87.20%	45.60%	60.80%	34.80%	0.00%	42.30%	0.00%	44.50%	73.10%	44.00%	42.20%	66.90%	45.50%	46.60%
No thermostat	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	55.80%	0.00%	3.50%	0.00%	0.30%	0.00%	0.40%	0.00%
n	12	229	18	35	-	85	3	54	33	403	382	54	299	137

T1B_prim. What type of thermostat controls do you have on your primary air-source central heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Communicating thermostat	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	32.30%	0.00%	8.00%	0.00%	7.50%	0.00%
Programmable (non-communicating) thermostat	100.00%	57.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	67.70%	44.30%	60.40%	0.00%	56.20%	0.00%
Standard thermostat	0.00%	42.80%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	55.70%	31.50%	100.00%	36.40%	100.00%
n	1	6	1	-	-	-	-	2	2	8	8	2	9	1

T1B. What type of thermostat controls do you have on your air-source central heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	32.30%	18.00%	0.00%	26.90%	32.30%	31.20%	0.00%	0.00%	0.00%	8.50%	100.00%	23.00%	22.20%
Programmable (non-communicating) thermostat	67.70%	39.50%	0.00%	50.50%	67.70%	38.90%	0.00%	51.90%	100.00%	0.00%	0.00%	50.00%	45.80%
Standard thermostat	0.00%	42.50%	0.00%	22.60%	0.00%	29.90%	0.00%	48.10%	0.00%	91.50%	0.00%	27.00%	32.00%
n	2	14	-	4	2	13	-	5	1	3	1	15	20

T1B_prim. What type of thermostat controls do you have on your primary furnace?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	7.90%	16.70%	2.30%	15.90%	11.60%	20.50%	0.00%	5.10%	11.80%	20.40%	5.60%	15.30%	15.30%
Programmable (non-communicating) thermostat	30.50%	47.50%	40.40%	35.50%	37.70%	47.00%	24.30%	32.60%	28.40%	50.60%	33.30%	41.20%	41.90%
Standard thermostat	61.60%	35.90%	57.30%	48.60%	50.80%	32.50%	75.70%	62.30%	59.80%	29.00%	61.10%	43.50%	42.70%
n	43	335	19	115	57	352	5	98	17	109	45	341	512

T1B_prim. What type of thermostat controls do you have on your primary ductless heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	0.00%	17.60%	0.00%	51.60%	0.00%	66.30%	0.00%	0.00%	0.00%	0.00%	0.00%	46.00%	32.30%
Programmable (non-communicating) thermostat	26.80%	68.40%	0.00%	48.40%	26.80%	28.00%	0.00%	100.00%	26.80%	50.00%	0.00%	54.00%	47.10%
Standard thermostat	73.20%	14.00%	0.00%	0.00%	73.20%	5.70%	0.00%	0.00%	73.20%	50.00%	0.00%	0.00%	20.60%
n	2	4	-	2	2	5	-	1	2	2	-	4	8

T1B_prim. What type of thermostat controls do you have on your primary boiler?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	7.60%	12.80%	6.20%	15.70%	9.50%	15.00%	0.00%	8.50%	0.00%	27.30%	9.30%	12.40%	13.50%
Programmable (non-communicating) thermostat	23.70%	42.50%	11.50%	41.40%	22.20%	44.20%	2.60%	29.00%	28.40%	57.20%	12.30%	40.10%	40.30%
Standard thermostat	60.40%	44.70%	82.30%	42.90%	63.50%	40.80%	97.40%	62.50%	58.60%	15.50%	78.40%	47.50%	46.00%
No thermostat	8.30%	0.00%	0.00%	0.00%	4.90%	0.00%	0.00%	0.00%	12.90%	0.00%	0.00%	0.00%	0.20%
n	15	284	18	119	28	354	5	49	6	55	27	348	436

T1B_prim. What type of thermostat controls do you have on your primary air-source central heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	32.30%	0.00%	0.00%	0.00%	32.30%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	6.50%
Programmable (non-communicating) thermostat	67.70%	52.70%	0.00%	0.00%	67.70%	58.00%	0.00%	0.00%	100.00%	0.00%	0.00%	60.10%	49.00%
Standard thermostat	0.00%	47.30%	0.00%	100.00%	0.00%	42.00%	0.00%	100.00%	0.00%	100.00%	0.00%	39.90%	44.50%
n	2	7	-	1	2	6	-	2	1	2	1	6	10

T1B_second. What type of thermostat controls do you have on your secondary furnace?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Communicating thermostat	0.00%	0.00%	0.00%	100.00%	0.00%	41.70%	0.00%	0.00%	0.00%	19.80%	34.50%	0.00%	9.90%	30.50%
Programmable (non-communicating) thermostat	0.00%	38.90%	0.00%	0.00%	0.00%	3.30%	0.00%	0.00%	0.00%	24.60%	34.50%	10.30%	34.60%	10.50%
Standard thermostat	0.00%	61.10%	0.00%	0.00%	0.00%	55.00%	0.00%	0.00%	0.00%	55.60%	31.00%	82.30%	49.50%	59.00%
No thermostat	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	7.40%	6.00%	0.00%
n	-	15	1	2	-	5	-	-	1	22	15	8	17	6

T1B_second. What type of thermostat controls do you have on your secondary ductless heat pump?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Communicating thermostat	0.00%	24.20%	0.00%	0.00%	0.00%	0.00%	0.00%	44.40%	0.00%	15.30%	11.80%	62.70%	20.00%	0.00%
Programmable (non-communicating) thermostat	0.00%	38.10%	0.00%	25.80%	0.00%	15.10%	0.00%	13.40%	0.00%	26.00%	25.20%	37.30%	34.00%	0.00%
Standard thermostat	0.00%	0.00%	0.00%	0.00%	0.00%	84.90%	0.00%	0.00%	0.00%	25.40%	27.30%	0.00%	2.60%	100.00%
No thermostat	0.00%	37.70%	0.00%	74.20%	0.00%	0.00%	0.00%	42.30%	0.00%	33.30%	35.80%	.	43.50%	0.00%
n	-	8	-	100.00%	-	5	-	4	-	21	19	2	19	2

T1B_second. What type of thermostat controls do you have on your secondary boiler?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Communicating thermostat	0.00%	20.80%	0.00%	0.00%	0.00%	0.00%	0.00%	15.30%	0.00%	13.90%	13.80%	0.00%	23.90%	0.00%
Programmable (non-communicating) thermostat	100.00%	24.00%	0.00%	0.00%	0.00%	8.70%	0.00%	30.20%	15.90%	18.90%	19.90%	0.00%	34.40%	0.00%
Standard thermostat	0.00%	55.20%	0.00%	100.00%	100.00%	91.30%	100.00%	54.50%	84.10%	67.20%	66.40%	100.00%	41.70%	100.00%
n	1	10	-	2	1	4	1	4	3	20	21	2	17	6

T1B_second. What type of thermostat controls do you have on your secondary air-source central heat pump?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Communicating thermostat	0.00%	46.30%	0.00%	0.00%	0.00%	24.10%	0.00%	19.10%	0.00%	40.00%	67.50%	0.00%	45.10%	34.70%
Programmable (non-communicating) thermostat	0.00%	42.20%	0.00%	0.00%	0.00%	75.90%	0.00%	0.00%	0.00%	42.20%	16.70%	79.10%	19.50%	65.30%
Standard thermostat	0.00%	11.50%	0.00%	0.00%	0.00%	0.00%	0.00%	80.90%	0.00%	17.90%	15.80%	20.90%	35.40%	0.00%
n	-	2	-	-	-	2	-	2	-	10	7	3	7	3

T1B. Total number of thermostats	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Communicating thermostat	1	89	13	17	-	27	2	24	16	157	162	11	126	47
Programmable (non-communicating) thermostat	13	245	18	32	1	60	6	61	38	398	380	56	328	108
Standard thermostat	24	201	16	33	1	78	6	55	47	367	310	104	282	132
No thermostat	-	3	1	3	-	-	1	1	2	7	8	1	9	-
n	38	530	48	82	2	162	15	138	103	912	844	171	730	285

T1B_second. What type of thermostat controls do you have on your secondary furnace?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	0.00%	10.50%	0.00%	30.50%	34.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	19.80%	19.20%
Programmable (non-communicating) thermostat	0.00%	36.80%	0.00%	10.50%	34.50%	0.00%	0.00%	11.10%	0.00%	0.00%	0.00%	24.60%	23.80%
Standard thermostat	0.00%	52.70%	0.00%	59.00%	31.00%	0.00%	0.00%	88.90%	0.00%	0.00%	0.00%	55.60%	53.80%
No thermostat	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	3.30%
n	1	16	-	6	15	1	-	7	-	-	1	22	23

T1B_second. What type of thermostat controls do you have on your secondary ductless heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	0.00%	20.00%	0.00%	0.00%	0.00%	11.80%	0.00%	62.70%	0.00%	16.50%	0.00%	15.20%	15.30%
Programmable (non-communicating) thermostat	0.00%	34.00%	0.00%	0.00%	0.00%	25.20%	0.00%	37.30%	0.00%	22.10%	0.00%	26.30%	26.00%
Standard thermostat	0.00%	2.60%	0.00%	100.00%	0.00%	27.30%	0.00%	0.00%	0.00%	0.00%	0.00%	27.50%	25.40%
No thermostat	0.00%	43.50%	0.00%	0.00%	0.00%	35.80%	0.00%	0.00%	0.00%	61.40%	0.00%	31.00%	33.30%
n	-	19	-	2	-	19	-	2	-	3	-	18	21

T1B_second. What type of thermostat controls do you have on your secondary boiler?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	0.00%	26.70%	0.00%	0.00%	0.00%	14.70%	0.00%	0.00%	0.00%	23.70%	0.00%	10.80%	13.00%
Programmable (non-communicating) thermostat	18.80%	36.30%	0.00%	0.00%	18.80%	19.90%	0.00%	0.00%	0.00%	46.50%	50.70%	10.20%	18.70%
Standard thermostat	81.20%	37.00%	100.00%	100.00%	81.20%	65.40%	100.00%	100.00%	100.00%	29.80%	49.30%	79.00%	68.30%
n	2	15	1	5	2	19	1	1	1	5	2	15	23

T1B_second. What type of thermostat controls do you have on your secondary air-source central heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	0.00%	45.10%	0.00%	34.70%	0.00%	67.50%	0.00%	0.00%	0.00%	100.00%	0.00%	38.60%	40.00%
Programmable (non-communicating) thermostat	0.00%	19.50%	0.00%	65.30%	0.00%	16.70%	0.00%	79.10%	0.00%	0.00%	0.00%	43.10%	42.20%
Standard thermostat	0.00%	35.40%	0.00%	0.00%	0.00%	15.80%	0.00%	20.90%	0.00%	0.00%	0.00%	18.30%	17.90%
n	-	7	-	3	-	7	-	3	-	1	-	9	10

T1B. Total number of thermostats	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Communicating thermostat	11	115	5	42	16	146	-	11	3	45	13	112	173
Programmable (non-communicating) thermostat	24	304	14	94	35	345	3	53	10	86	28	312	436
Standard thermostat	28	254	19	113	39	271	8	96	13	44	34	323	414
No thermostat	2	7	-	-	1	7	1	-	1	1	1	6	9
n	65	665	38	247	91	753	12	159	27	174	76	738	1,015

F4. How old is your water heater?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Less than 5 years	44.80%	30.40%	33.30%	30.80%	0.00%	33.90%	100.00%	36.20%	41.90%	31.40%	30.90%	35.80%	33.60%	30.20%
5-15 years	5.30%	52.40%	44.30%	42.20%	0.00%	48.00%	0.00%	37.00%	20.50%	50.00%	46.30%	51.30%	45.30%	51.30%
More than 15 years	4.00%	9.10%	1.90%	13.60%	0.00%	11.10%	0.00%	16.90%	3.10%	10.20%	12.20%	2.70%	8.80%	11.00%
Don't know	45.90%	8.20%	20.40%	13.50%	0.00%	7.00%	0.00%	9.90%	34.60%	8.40%	10.60%	10.20%	12.40%	7.60%
n	3	14	2	3	-	6	-	5	5	28	24	9	25	8

L1A. How many faucet aerators?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Total Faucet aerators	2.36	3.38	2.68	3.60	3.68	3.32	2.42	3.32	2.46	3.38	3.43	2.63	3.22	3.26
n	58	429	62	67	2	135	24	122	146	753	740	159	618	281

L1A. How many faucet aerators?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Water saving faucet aerators	0.97	1.50	1.28	1.87	0.95	1.65	0.21	1.33	0.92	1.55	1.63	0.88	1.40	1.54
n	43	305	43	49	2	99	17	84	105	537	524	118	433	209

L1B. How many showerheads?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Total Showerheads	1.08	1.52	1.36	1.89	1.00	1.53	1.16	1.46	1.16	1.55	1.57	1.21	1.47	1.52
n	58	429	62	67	2	135	24	122	146	753	740	159	618	281

L1B. How many showerheads?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Low flow showerheads	0.51	0.90	0.89	0.99	0.32	0.87	0.33	0.60	0.57	0.88	0.91	0.58	0.80	0.88
n	44	343	45	54	2	103	22	98	113	598	585	126	486	225

F2.What fuel does your primary water heater use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Natural gas	28.90%	18.70%	7.90%	1.60%	0.00%	0.00%	47.70%	34.50%	25.30%	15.00%	16.70%	14.40%	22.20%	5.90%
Electric	51.00%	29.50%	38.20%	32.20%	0.00%	36.90%	49.20%	26.60%	47.60%	30.90%	27.70%	49.10%	29.90%	37.40%
Propane	6.00%	21.40%	26.40%	32.10%	68.30%	29.40%	0.00%	17.20%	10.60%	23.40%	24.70%	13.30%	18.10%	28.80%
Oil	9.60%	27.60%	21.50%	29.10%	31.70%	30.00%	0.00%	19.00%	11.80%	27.40%	27.40%	20.20%	26.70%	24.10%
Solar	0.00%	0.10%	0.00%	1.50%	0.00%	1.20%	0.00%	0.70%	0.00%	0.50%	0.60%	0.00%	0.20%	0.80%
Other, specify:	0.00%	0.90%	0.00%	1.00%	0.00%	0.60%	0.00%	0.20%	0.00%	0.80%	0.90%	0.10%	0.50%	1.00%
Don't know	4.50%	1.80%	6.10%	2.50%	0.00%	2.00%	3.10%	1.90%	4.70%	1.90%	2.00%	2.90%	2.40%	1.90%
n	46	568	51	91	2	163	17	143	116	965	901	180	764	317

F4. How old is your water heater?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Less than 5 years	39.90%	33.00%	45.40%	29.00%	37.50%	30.50%	47.10%	34.00%	63.00%	40.30%	33.50%	30.00%	32.20%
5-15 years	30.00%	46.70%	3.60%	55.10%	25.50%	47.60%	14.50%	57.10%	5.80%	48.40%	26.30%	50.20%	47.60%
More than 15 years	3.60%	9.30%	2.10%	11.70%	5.70%	12.60%	0.00%	3.10%	0.00%	0.00%	4.30%	11.80%	9.60%
Don't know	26.50%	11.10%	48.90%	4.30%	31.30%	9.30%	38.40%	5.80%	31.20%	11.30%	35.90%	7.90%	10.50%
n	4	21	1	7	4	20	1	8	2	3	3	25	33

L1A. How many faucet aerators?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Total Faucet aerators	2.46	3.39	2.45	3.37	2.51	3.56	2.36	2.71	2.54	3.21	2.43	3.41	3.24
n	86	532	60	221	128	612	18	141	30	133	116	620	899

L1A. How many faucet aerators?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Water saving faucet aerators	0.91	1.50	0.93	1.61	0.78	1.76	1.21	0.80	0.85	1.57	0.95	1.54	1.45
n	63	370	42	167	92	432	13	105	24	87	81	450	642

L1B. How many showerheads?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Total Showerheads	1.14	1.54	1.21	1.56	1.23	1.62	1.03	1.27	1.20	1.48	1.15	1.56	1.49
n	86	532	60	221	128	612	18	141	30	133	116	620	899

L1B. How many showerheads?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Low flow showerheads	0.52	0.86	0.70	0.90	0.63	0.95	0.47	0.62	0.50	0.90	0.59	0.87	0.83
n	67	419	46	179	98	487	15	111	25	107	88	491	711

F2.What fuel does your primary water heater use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Natural gas	30.70%	20.90%	10.70%	5.50%	22.70%	16.20%	28.10%	10.50%	69.30%	85.80%	3.10%	1.50%	16.10%
Electric	43.60%	28.00%	58.50%	35.60%	40.10%	26.70%	55.90%	47.20%	23.90%	12.40%	59.60%	34.40%	32.70%
Propane	6.50%	19.70%	21.50%	29.50%	17.00%	25.30%	3.60%	16.10%	0.00%	0.70%	16.00%	27.80%	22.10%
Oil	13.00%	28.70%	8.50%	25.50%	11.20%	28.70%	12.40%	22.40%	0.00%	0.50%	17.70%	32.60%	25.80%
Solar	0.00%	0.20%	0.00%	0.90%	0.00%	0.60%	0.00%	0.00%	0.00%	0.00%	0.00%	0.60%	0.40%
Other, specify:	0.00%	0.60%	0.00%	1.10%	0.00%	0.90%	0.00%	0.10%	0.00%	0.00%	0.00%	0.90%	0.70%
Don't know	6.20%	1.90%	0.80%	2.00%	9.00%	1.50%	0.00%	3.70%	6.80%	0.70%	3.70%	2.20%	2.20%
n	70	694	46	271	99	802	17	163	29	184	87	781	1,081

F6.What type of water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	66.60%	56.30%	57.00%	52.00%	68.30%	45.00%	64.20%	50.60%	64.20%	53.30%	53.20%	58.60%	56.20%	51.50%
Heat pump storage	0.00%	2.70%	2.70%	3.20%	0.00%	3.10%	0.00%	1.10%	0.60%	2.70%	2.30%	3.10%	1.70%	3.80%
Indirect storage	9.40%	12.60%	6.80%	15.30%	0.00%	16.90%	0.00%	15.90%	8.00%	13.90%	15.20%	6.80%	12.20%	15.00%
Tankless	1.60%	6.50%	19.80%	8.40%	0.00%	17.60%	3.90%	7.00%	6.00%	8.80%	9.80%	4.20%	6.50%	12.00%
Tankless coil	3.60%	9.70%	4.90%	7.40%	0.00%	9.10%	10.40%	4.60%	4.40%	8.90%	8.70%	7.50%	8.20%	9.00%
Don't know	18.70%	12.30%	8.70%	13.70%	31.70%	8.30%	21.50%	20.80%	16.70%	12.40%	10.70%	19.80%	15.20%	8.70%
n	46	568	51	91	2	163	17	143	116	965	901	180	764	317

F6.What type of natural gas water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	77.80%	67.50%	20.70%	0.00%	0.00%	0.00%	70.00%	67.20%	72.60%	66.80%	68.90%	63.70%	66.00%	79.60%
Indirect storage	5.70%	2.70%	61.70%	0.00%	0.00%	0.00%	0.00%	10.60%	8.90%	4.20%	4.60%	6.50%	4.20%	9.90%
Tankless	5.70%	10.50%	17.60%	36.60%	0.00%	0.00%	8.10%	4.90%	6.90%	9.70%	10.10%	5.80%	9.80%	5.10%
Tankless coil	0.00%	5.90%	0.00%	0.00%	0.00%	0.00%	21.80%	1.20%	3.00%	4.90%	5.60%	0.90%	5.30%	0.00%
Don't know	10.80%	13.40%	0.00%	63.40%	0.00%	0.00%	0.00%	16.20%	8.50%	14.40%	10.90%	23.20%	14.70%	5.30%
n	12	100	3	2	-	1	9	66	24	168	164	28	154	38

F6.What type of electric water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	83.20%	77.00%	60.60%	75.00%	0.00%	80.00%	62.60%	68.40%	77.50%	76.90%	76.90%	77.10%	79.10%	74.10%
Heat pump storage	0.00%	9.20%	7.00%	9.80%	0.00%	8.50%	0.00%	4.20%	1.30%	8.70%	8.20%	6.30%	5.70%	10.00%
Indirect storage	1.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.80%	0.30%	0.50%	0.00%	0.00%	0.80%
Tankless	0.00%	1.50%	11.60%	2.50%	0.00%	0.00%	0.00%	1.90%	2.10%	1.30%	2.10%	0.00%	1.20%	1.70%
Don't know	15.70%	11.90%	20.70%	12.60%	0.00%	11.50%	37.40%	25.50%	18.30%	12.80%	12.20%	16.50%	13.90%	13.40%
n	24	167	18	31	-	51	7	37	49	286	253	82	212	123

F6.What type of propane water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	0.00%	56.90%	40.80%	43.40%	100.00%	24.80%	0.00%	22.60%	27.10%	45.50%	43.10%	53.50%	54.50%	33.90%
Indirect storage	100.00%	11.90%	3.10%	15.20%	0.00%	2.50%	0.00%	24.00%	40.80%	10.70%	14.30%	0.00%	8.70%	16.10%
Tankless	0.00%	19.10%	53.00%	21.90%	0.00%	59.70%	0.00%	28.20%	30.30%	29.80%	30.60%	25.10%	21.70%	38.50%
Tankless coil	0.00%	5.60%	0.00%	3.20%	0.00%	7.50%	0.00%	0.00%	0.00%	5.50%	4.90%	6.80%	2.80%	7.70%
Don't know	0.00%	6.50%	3.10%	16.30%	0.00%	5.40%	0.00%	25.20%	1.80%	8.40%	7.10%	14.60%	12.20%	3.70%
n	1	119	15	26	1	47	-	17	17	209	201	25	152	74

F6.What type of water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	65.10%	54.90%	62.00%	50.60%	52.20%	53.30%	77.40%	53.40%	71.00%	65.90%	60.80%	50.90%	54.50%
Heat pump storage	0.90%	1.80%	0.00%	4.10%	0.00%	2.50%	1.30%	3.60%	0.00%	0.10%	0.90%	3.20%	2.50%
Indirect storage	2.70%	13.60%	22.30%	14.40%	13.20%	15.40%	2.40%	8.00%	3.40%	4.50%	10.40%	15.70%	13.30%
Tankless	7.80%	6.30%	1.20%	13.00%	8.20%	10.00%	3.60%	4.30%	4.20%	8.90%	6.90%	8.80%	8.50%
Tankless coil	6.10%	8.40%	0.00%	9.80%	3.60%	9.10%	5.30%	8.20%	2.30%	3.60%	5.50%	10.00%	8.50%
Don't know	17.50%	14.90%	14.50%	8.20%	22.80%	9.80%	10.10%	22.50%	19.10%	17.00%	15.50%	11.50%	12.80%
n	70	694	46	271	99	802	17	163	29	184	87	781	1,081

F6.What type of natural gas water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	75.50%	64.00%	50.30%	84.50%	51.20%	70.80%	91.60%	42.80%	76.50%	67.90%	29.30%	55.60%	67.80%
Indirect storage	5.10%	4.00%	38.60%	5.10%	9.60%	4.10%	8.40%	5.10%	4.90%	4.60%	55.00%	0.00%	5.00%
Tankless	6.30%	10.50%	11.00%	4.10%	14.70%	9.60%	0.00%	10.10%	6.10%	9.30%	15.70%	13.80%	9.20%
Tankless coil	3.40%	5.70%	0.00%	0.00%	6.40%	5.50%	0.00%	1.60%	3.30%	4.00%	0.00%	15.10%	4.60%
Don't know	9.60%	15.70%	0.00%	6.20%	18.10%	10.10%	0.00%	40.50%	9.30%	14.30%	0.00%	15.50%	13.40%
n	20	134	4	34	20	144	4	24	20	154	4	14	192

F6.What type of electric water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	77.60%	79.50%	77.20%	73.60%	58.60%	79.10%	92.40%	72.10%	61.20%	58.40%	80.80%	78.20%	77.00%
Heat pump storage	2.00%	6.60%	0.00%	11.40%	0.00%	9.20%	2.30%	7.70%	0.00%	1.10%	1.60%	9.20%	7.60%
Indirect storage	0.00%	0.00%	2.30%	0.60%	1.80%	0.40%	0.00%	0.00%	0.00%	0.00%	0.90%	0.30%	0.30%
Tankless	3.20%	0.80%	0.00%	1.90%	4.90%	1.80%	0.00%	0.00%	0.00%	7.60%	2.60%	0.80%	1.40%
Don't know	17.20%	13.20%	20.50%	12.40%	34.80%	9.50%	5.30%	20.30%	38.80%	32.80%	14.10%	11.50%	13.70%
n	25	187	24	99	40	213	9	73	7	26	42	260	335

F6.What type of propane water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	32.00%	55.60%	23.10%	34.60%	32.20%	43.70%	0.00%	56.90%	0.00%	0.00%	27.10%	45.80%	44.60%
Indirect storage	0.00%	9.10%	73.70%	12.50%	48.60%	12.50%	0.00%	0.00%	0.00%	0.00%	40.80%	10.80%	12.30%
Tankless	68.00%	19.60%	0.00%	40.90%	17.00%	31.30%	100.00%	20.40%	0.00%	0.00%	30.30%	29.90%	29.80%
Tankless coil	0.00%	3.00%	0.00%	8.20%	0.00%	5.20%	0.00%	7.20%	0.00%	0.00%	.	5.50%	5.20%
Don't know	0.00%	12.70%	3.20%	3.80%	2.10%	7.30%	0.00%	15.50%	0.00%	100.00%	1.80%	8.00%	8.10%
n	9	143	8	66	16	185	1	24	-	1	17	208	226

F6.What type of oil water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	0.00%	28.30%	79.40%	42.70%	0.00%	27.50%	0.00%	28.30%	33.40%	29.40%	31.30%	21.90%	26.70%	34.90%
Indirect storage	12.30%	31.90%	5.20%	27.20%	0.00%	47.90%	0.00%	41.90%	9.20%	35.50%	36.30%	24.80%	35.90%	30.90%
Tankless coil	37.90%	26.70%	15.30%	18.50%	0.00%	18.40%	0.00%	20.80%	27.80%	23.90%	22.40%	31.70%	23.20%	25.80%
Don't know	49.80%	13.10%	.	11.60%	100.00%	6.20%	0.00%	8.90%	29.60%	11.30%	10.10%	21.50%	14.20%	8.40%
n	5	168	13	29	1	59	-	18	19	274	255	38	223	70

F6.What type of solar water heater does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.70%	42.70%	0.00%	61.60%	34.60%
Tankless coil	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	45.80%	45.80%	0.00%	0.00%	65.40%
Don't know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	11.50%	11.50%	0.00%	38.40%	0.00%
n	-	1	-	1	-	1	-	1	-	4	4	-	2	2

F6.What type of water heater using a different fuel type does your home use?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Conventional storage	0.00%	58.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	42.50%	43.30%	0.00%	52.00%	34.00%
Indirect storage	0.00%	24.80%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	34.80%	33.70%	100.00%	0.00%	66.00%
Tankless coil	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.70%	10.90%	0.00%	22.70%	0.00%
Don't know	0.00%	16.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	12.20%	0.00%	25.30%	0.00%
n	-	5	-	1	-	1	-	1	-	8	7	1	4	4

F7.Does your water heater tank have an added insulation blanket or tank wrap?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	18.90%	9.10%	18.20%	5.60%	0.00%	15.10%	0.00%	11.10%	17.30%	10.00%	10.90%	10.60%	9.40%	13.50%
No	56.40%	71.10%	46.00%	74.00%	100.00%	66.70%	70.20%	58.70%	55.60%	69.50%	67.90%	67.80%	67.40%	68.90%
Don't know	24.70%	19.80%	35.80%	20.40%	0.00%	18.20%	29.80%	30.20%	27.00%	20.50%	21.20%	21.50%	23.20%	17.60%
n	44	476	41	74	2	126	15	128	102	804	748	158	638	268

F6.What type of oil water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	22.80%	27.00%	76.70%	33.70%	67.00%	30.20%	0.00%	25.30%	0.00%	100.00%	33.40%	29.10%	29.60%
Indirect storage	8.70%	37.70%	11.20%	31.50%	18.40%	36.80%	0.00%	28.70%	0.00%	0.00%	9.20%	35.60%	34.20%
Tankless coil	34.60%	22.50%	0.00%	26.50%	12.90%	22.70%	42.60%	30.10%	0.00%	0.00%	27.80%	24.00%	24.10%
Don't know	33.90%	12.90%	12.10%	8.30%	1.70%	10.30%	57.40%	16.00%	0.00%	0.00%	29.60%	11.30%	12.20%
n	10	213	9	61	16	239	3	35	-	1	19	273	293

F6.What type of solar water heater does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	0.00%	61.60%	0.00%	34.60%	0.00%	42.70%	0.00%	0.00%	0.00%	0.00%	0.00%	42.70%	42.70%
Tankless coil	0.00%	0.00%	0.00%	65.40%	0.00%	45.80%	0.00%	0.00%	0.00%	0.00%	0.00%	45.80%	45.80%
Don't know	0.00%	38.40%	0.00%	0.00%	0.00%	11.50%	0.00%	0.00%	0.00%	0.00%	0.00%	11.50%	11.50%
n	-	2	-	2	-	4	-	-	-	-	-	4	4

F6.What type of water heater using a different fuel type does your home use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Conventional storage	0.00%	52.00%	0.00%	34.00%	0.00%	43.30%	0.00%	0.00%	0.00%	0.00%	0.00%	42.50%	42.50%
Indirect storage	0.00%	0.00%	0.00%	66.00%	0.00%	33.70%	0.00%	100.00%	0.00%	0.00%	0.00%	34.80%	34.80%
Tankless coil	0.00%	22.70%	0.00%	0.00%	0.00%	10.90%	0.00%	0.00%	0.00%	0.00%	0.00%	10.70%	10.70%
Don't know	0.00%	25.30%	0.00%	0.00%	0.00%	12.20%	0.00%	0.00%	0.00%	0.00%	0.00%	12.00%	12.00%
n	-	4	-	4	-	7	-	1	-	-	-	8	8

F7.Does your water heater tank have an added insulation blanket or tank wrap?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Yes	12.60%	9.00%	28.40%	11.90%	15.30%	10.60%	19.60%	8.00%	3.60%	4.50%	24.70%	11.20%	10.90%
No	60.30%	68.40%	44.90%	71.50%	43.60%	70.00%	68.40%	67.70%	64.20%	73.30%	51.00%	68.70%	67.90%
Don't know	27.20%	22.70%	26.70%	16.60%	41.10%	19.50%	12.10%	24.30%	32.20%	22.20%	24.20%	20.20%	21.30%
n	57	581	45	223	87	661	15	143	26	159	76	645	906

L5.Average # thermostatic restrictor valve per house	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Avg.	0.01	0.12	0.01	0.21	-	0.10	0.02	0.09	0.01	0.12	0.12	0.04	0.11	0.09
n	58	429	62	67	2	135	24	122	146	753	740	159	618	281

F2. Gas Heated Homes - What fuel does your primary water heater use?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Natural gas	77.40%	88.60%	100.00%	24.20%	0.00%	0.00%	100.00%	80.60%	82.00%	85.70%	85.10%	85.20%	88.20%	69.00%
Electric	15.70%	10.70%	0.00%	75.80%	0.00%	0.00%	0.00%	13.00%	12.50%	11.90%	12.10%	11.50%	9.10%	27.50%
Propane	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	5.70%	0.00%	1.70%	1.20%	2.70%	1.10%	3.50%
Don't know	6.90%	0.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.70%	5.50%	0.70%	1.60%	0.60%	1.60%	0.00%
n	10	103	1	3	-	1	8	73	19	180	169	30	158	41

F2. Electric Heated Homes - What fuel does your primary water heater use?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Natural gas	31.60%	10.70%	14.30%	0.00%	0.00%	0.00%	10.30%	55.10%	26.10%	10.60%	14.00%	15.10%	17.70%	8.60%
Electric	63.10%	42.60%	61.00%	64.30%	0.00%	58.90%	89.70%	27.80%	66.10%	47.30%	45.80%	68.00%	50.30%	54.40%
Propane	0.00%	26.10%	3.90%	35.70%	0.00%	35.80%	0.00%	10.50%	0.60%	28.10%	23.20%	16.90%	15.00%	32.70%
Oil	0.00%	11.40%	0.00%	0.00%	0.00%	5.20%	0.00%	0.00%	0.00%	8.00%	8.30%	0.00%	8.40%	2.10%
Solar	0.00%	1.30%	0.00%	0.00%	0.00%	0.00%	0.00%	6.60%	0.00%	1.30%	1.40%	0.00%	1.60%	0.00%
Don't know	5.30%	7.80%	20.80%	0.00%	0.00%	0.00%	0.00%	0.00%	7.20%	4.70%	7.20%	0.00%	7.10%	2.10%
n	15	54	11	9	-	14	7	12	33	89	101	21	79	43

F2. Oil Heated Homes - What fuel does your primary water heater use?	Eversource		Liberty		NHEC		Unitil		MF	SF	Non-LI	LI	CZ5	CZ6
	MF	SF	MF	SF	MF	SF	MF	SF						
Natural gas	2.20%	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	1.10%	1.60%	0.00%	1.80%	0.00%
Electric	64.30%	33.00%	38.20%	30.00%	0.00%	41.30%	0.00%	34.70%	55.60%	34.60%	28.80%	53.60%	33.50%	40.20%
Propane	0.00%	6.80%	4.40%	12.10%	100.00%	4.20%	0.00%	12.50%	2.70%	7.10%	5.90%	8.90%	5.00%	9.80%
Oil	33.50%	56.30%	57.40%	58.00%	0.00%	50.50%	0.00%	50.50%	40.20%	54.80%	61.80%	34.30%	57.50%	47.60%
Other, specify:	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.30%	0.00%	0.30%	0.00%
Don't know	0.00%	1.90%	0.00%	0.00%	0.00%	4.00%	0.00%	2.30%	0.00%	2.20%	1.60%	3.10%	1.80%	2.40%
n	12	266	21	48	1	93	-	40	34	447	385	96	344	137

L5.Average # thermostatic restrictor valve per house	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Avg.	0.01	0.12	0.01	0.10	0.02	0.13	-	0.05	0.01	0.12	0.01	0.12	0.10
n	86	532	60	221	128	612	18	141	30	133	116	620	899

F2. Gas Heated Homes - What fuel does your primary water heater use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	90.30%	87.90%	54.30%	72.70%	65.40%	87.10%	100.00%	78.10%	80.80%	88.50%	100.00%	59.60%	85.20%
Electric	2.60%	10.00%	45.70%	22.90%	24.10%	10.90%	0.00%	17.00%	13.40%	9.90%	0.00%	30.20%	12.00%
Propane	0.00%	1.30%	0.00%	4.40%	0.00%	1.30%	0.00%	4.10%	0.00%	0.80%	0.00%	10.20%	1.50%
Don't know	7.10%	0.80%	0.00%	0.00%	10.50%	0.70%	0.00%	0.80%	5.80%	0.80%	0.00%	0.00%	1.40%
n	15	143	4	37	16	153	3	27	17	163	2	17	199

F2. Electric Heated Homes - What fuel does your primary water heater use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	29.20%	12.10%	7.50%	8.70%	23.80%	11.60%	29.60%	7.60%	56.10%	81.20%	4.10%	0.00%	14.30%
Electric	62.30%	44.60%	88.20%	50.80%	63.30%	41.40%	70.40%	66.70%	34.90%	18.80%	88.90%	51.60%	51.80%
Propane	0.00%	22.10%	4.40%	35.70%	1.00%	28.80%	0.00%	25.70%	0.00%	0.00%	1.10%	32.30%	21.50%
Oil	0.00%	12.40%	0.00%	2.40%	0.00%	10.40%	0.00%	0.00%	0.00%	0.00%	0.00%	9.20%	6.10%
Solar	0.00%	2.30%	0.00%	0.00%	0.00%	1.70%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	1.00%
Don't know	8.40%	6.40%	0.00%	2.40%	11.80%	6.10%	0.00%	0.00%	9.00%	0.00%	5.90%	5.40%	5.30%
n	22	57	11	32	30	71	3	18	10	14	23	75	122

F2. Oil Heated Homes - What fuel does your primary water heater use?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Natural gas	1.90%	1.80%	0%0	0.00%	4.40%	1.50%	0.00%	0.00%	100.00%	37.10%	0.00%	0.60%	1.10%
Electric	56.70%	31.30%	51.10%	39.70%	28.80%	28.80%	69.70%	50.70%	0.00%	50.70%	56.40%	34.30%	36.00%
Propane	0.00%	5.50%	13.00%	9.70%	7.80%	5.90%	0.00%	10.60%	0.00%	0.00%	2.70%	7.20%	6.80%
Oil	41.40%	59.10%	35.90%	48.10%	59.00%	61.90%	30.30%	35.10%	0.00%	12.30%	40.90%	55.40%	53.80%
Other, specify:	0.00%	0.40%	0.00%	0.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.20%	0.20%
Don't know	0.00%	2.00%	0.00%	2.50%	0.00%	1.60%	0.00%	3.70%	0.00%	0.00%	0.00%	2.20%	2.00%
n	17	327	17	120	28	357	6	90	1	6	33	441	481

D1. Have you had any insulation work completed in your home in the last 5 years?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	3.50%	16.00%	7.60%	26.70%	0.00%	18.60%	0.00%	19.50%	3.90%	17.70%	16.20%	13.30%	13.30%	19.20%
No	71.30%	75.50%	58.60%	51.30%	100.00%	74.30%	71.90%	68.40%	68.50%	72.70%	72.10%	71.80%	73.40%	69.50%
Don't know	25.20%	8.50%	33.80%	22.10%	0.00%	7.10%	28.10%	12.10%	27.60%	9.60%	11.80%	14.90%	13.20%	11.30%
n	82	546	74	81	2	168	37	151	195	946	948	193	801	340

D2. In which areas of your home was insulation work completed?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Attic	100.00%	52.93%	84.59%	68.87%	0.00%	70.78%	0.00%	62.13%	92.86%	59.50%	64.98%	45.19%	59.25%	62.79%
2. Floors	0.00%	16.36%	49.88%	27.85%	0.00%	29.73%	0.00%	11.12%	23.13%	19.97%	19.57%	22.10%	17.95%	22.69%
pace and unheated garages, shed roofs, or storage areas	63.68%	34.24%	5.97%	42.90%	0.00%	32.18%	0.00%	34.80%	36.92%	34.92%	29.58%	55.56%	34.38%	35.75%
ndation walls in heated basements or above ground level	0.00%	36.84%	15.41%	40.06%	0.00%	40.42%	0.00%	43.06%	7.14%	38.61%	40.51%	25.24%	34.52%	40.71%
5. Other	0.00%	13.35%	49.88%	15.53%	0.00%	13.62%	0.00%	12.73%	23.13%	13.61%	13.60%	15.48%	11.13%	17.45%
6. Basement	0.00%	0.90%	0.00%	0.00%	0.00%	0.98%	0.00%	3.35%	0.00%	1.06%	1.29%	0.00%	1.87%	0.00%
7. Crawl Space	0.00%	0.91%	0.00%	2.64%	0.00%	6.90%	0.00%	0.00%	0.00%	2.26%	2.74%	0.00%	0.91%	3.69%
n	2	98	5	24	-	35	-	29	7	186	162	31	122	71

D4. Did you have any work done to test and seal air leaks from your windows and exterior doors within the last 5 years?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	7.10%	11.60%	9.30%	12.80%	0.00%	14.70%	2.90%	10.40%	6.90%	12.20%	11.80%	9.90%	10.40%	13.00%
No	64.30%	78.80%	58.30%	65.00%	100.00%	79.50%	65.70%	77.00%	63.20%	77.70%	75.90%	73.60%	76.10%	74.00%
Don't know	28.70%	9.60%	32.40%	22.20%	0.00%	5.80%	31.40%	12.60%	29.90%	10.10%	12.30%	16.50%	13.50%	13.00%
n	82	546	74	81	2	168	37	151	195	946	948	193	801	340

D6. Choose the statement that best describes the windows in your home.	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
All or most are single pane	49.50%	21.10%	14.30%	9.60%	68.30%	19.10%	50.30%	18.70%	41.30%	19.60%	17.60%	40.10%	24.00%	21.40%
All or most are double pane	44.90%	68.20%	78.30%	72.10%	31.70%	71.50%	45.10%	65.20%	52.90%	68.90%	72.40%	47.30%	66.40%	66.20%
All or most are triple pane	2.20%	3.60%	1.00%	4.60%	0.00%	4.00%	0.00%	1.60%	1.60%	3.60%	3.60%	2.30%	2.90%	3.90%
Mixture of single, double, triple pane	3.30%	7.00%	6.50%	13.70%	0.00%	5.40%	4.70%	14.50%	4.30%	7.90%	6.40%	10.40%	6.70%	8.50%
n	82	546	74	81	2	168	37	151	195	946	948	193	801	340

D1. Have you had any insulation work completed in your home in the last 5 years?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Yes	4.50%	15.30%	2.50%	21.50%	2.70%	18.20%	5.90%	15.80%	0.00%	13.30%	5.30%	18.50%	15.50%
No	69.20%	74.40%	66.70%	69.90%	64.70%	73.20%	74.50%	70.90%	82.00%	76.40%	63.70%	72.00%	72.00%
Don't know	26.40%	10.30%	30.80%	8.60%	32.50%	8.60%	19.70%	13.30%	18.00%	10.30%	31.00%	9.50%	12.50%
n	121	680	74	266	169	779	26	167	40	166	155	780	1,141

D2. In which areas of your home was insulation work completed?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
1. Attic	100.00%	56.57%	58.75%	62.86%	83.28%	64.57%	100.00%	38.26%	0.00%	54.88%	92.86%	60.09%	60.86%
2. Floors	27.97%	17.29%	0.00%	23.05%	0.00%	20.02%	40.37%	19.79%	0.00%	12.45%	23.13%	20.94%	20.10%
pace and unheated garages, shed roofs, or storage areas	41.31%	33.92%	15.98%	36.06%	6.48%	30.11%	59.63%	55.05%	0.00%	35.82%	36.92%	34.80%	35.00%
ndation walls in heated basements or above ground level	0.00%	36.80%	41.25%	40.70%	16.72%	41.05%	0.00%	28.43%	0.00%	26.21%	7.14%	40.20%	37.33%
5. Other	27.97%	10.02%	0.00%	17.73%	0.00%	13.91%	40.37%	12.33%	0.00%	14.80%	23.13%	13.45%	13.99%
6. Basement	0.00%	1.99%	0.00%	0.00%	0.00%	1.32%	0.00%	0.00%	0.00%	4.53%	0.00%	0.62%	1.02%
7. Crawl Space	0.00%	0.97%	0.00%	3.75%	0.00%	2.81%	0.00%	0.00%	0.00%	0.00%	0.00%	2.56%	2.17%
n	4	118	3	68	5	157	2	29	-	27	7	159	193

D4. Did you have any work done to test and seal air leaks from your windows and exterior doors within the last 5 years?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
Yes	6.90%	11.20%	7.10%	13.80%	8.50%	12.30%	4.40%	11.80%	2.60%	12.70%	8.50%	12.10%	11.30%
No	66.30%	78.30%	54.80%	76.70%	53.40%	79.30%	78.90%	71.80%	77.20%	76.80%	58.20%	77.90%	75.40%
Don't know	26.80%	10.50%	38.10%	9.60%	38.10%	8.40%	16.70%	16.40%	20.20%	10.50%	33.30%	10.10%	13.30%
n	121	680	74	266	169	779	26	167	40	166	155	780	1,141

D6. Choose the statement that best describes the windows in your home.	CZ5		CZ6		Non-LI		LI		Gas		No Gas		Total
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	
All or most are single pane	41.50%	20.10%	40.60%	18.80%	33.50%	15.20%	53.80%	35.40%	38.60%	16.70%	42.20%	20.10%	23.10%
All or most are double pane	52.30%	69.60%	54.30%	67.80%	59.20%	74.40%	42.70%	48.80%	59.80%	69.50%	50.40%	68.80%	66.30%
All or most are triple pane	2.20%	3.10%	0.00%	4.50%	0.40%	4.10%	3.50%	1.80%	0.00%	1.30%	2.10%	4.00%	3.30%
Mixture of single, double, triple pane	4.00%	7.30%	5.10%	9.00%	6.90%	6.30%	0.00%	13.90%	1.50%	12.60%	5.20%	7.10%	7.30%
n	121	680	74	266	169	779	26	167	40	166	155	780	1,141

C1. Do you have the following room HVAC measure?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Room air conditioner (window/portable/through-the-wall)	29.75%	20.05%	20.46%	13.70%	0.00%	14.97%	25.09%	19.86%	26.66%	18.54%	18.91%	22.67%	20.94%	17.80%
Portable electric space heater	11.34%	11.83%	15.00%	16.26%	0.00%	11.73%	23.12%	8.98%	14.01%	11.88%	12.74%	10.48%	11.06%	14.20%
Air purifier/cleaner	8.01%	6.15%	11.70%	5.08%	0.00%	5.95%	10.73%	4.10%	9.31%	5.84%	6.86%	4.77%	6.91%	5.43%
Dehumidifier	8.24%	9.16%	9.65%	21.22%	68.32%	5.48%	4.46%	10.78%	8.20%	9.52%	9.75%	7.90%	9.23%	9.48%
Ceiling fan	39.51%	40.89%	31.95%	49.63%	0.00%	39.88%	22.05%	32.27%	34.84%	40.56%	38.48%	43.61%	38.66%	41.45%
Window fan	1.92%	4.56%	3.69%	5.87%	0.00%	3.93%	10.21%	5.99%	3.62%	4.67%	5.06%	2.72%	4.83%	3.96%
Portable fan	22.69%	12.31%	15.83%	7.66%	68.32%	9.69%	1.80%	10.13%	17.94%	11.23%	11.67%	14.17%	13.22%	10.60%
n	77	470	63	74	2	146	36	132	178	822	830	170	701	299

C1. How many do you have of the following?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Room air conditioner (window/portable/through-the-wall)	0.37	0.36	0.33	0.18	-	0.34	0.38	0.41	0.36	0.35	0.30	0.52	0.38	0.29
Portable electric space heater	0.15	0.15	0.21	0.24	-	0.18	0.45	0.15	0.21	0.16	0.17	0.15	0.15	0.20
Air purifier/cleaner	0.16	0.10	0.17	0.05	-	0.08	0.14	0.05	0.16	0.09	0.10	0.09	0.11	0.07
Dehumidifier	0.09	0.10	0.10	0.21	1.37	0.07	0.11	0.11	0.10	0.10	0.11	0.08	0.10	0.11
Ceiling fan	0.53	0.81	0.63	1.11	-	0.76	0.42	0.58	0.53	0.80	0.75	0.80	0.72	0.83
Window fan	0.02	0.06	0.04	0.12	-	0.17	0.10	0.08	0.04	0.09	0.07	0.12	0.07	0.10
Portable fan	0.33	0.23	0.17	0.09	1.37	0.16	0.05	0.17	0.25	0.20	0.19	0.27	0.24	0.16
n	77	470	63	74	2	146	36	132	178	822	830	170	701	299
C3C. How many months per year are the Air purifier used?	**Eversource**		**Liberty**		**NHEC**		**Unitil**							
	MF	**SF**	**MF**	**SF**	**MF**	**SF**	**MF**	**SF**	**MF**	**SF**	**Non-LI**	**LI**	**CZ5**	**CZ6**
0. Never	0.00%	2.74%	0.00%	0.00%		0.00%	0.00%	0.00%	0.00%	1.82%	1.72%	0.00%	2.06%	0.00%
1. Less than 1 month	0.00%	18.83%	12.47%	18.77%		8.65%	7.65%	19.13%	5.20%	16.81%	12.65%	21.51%	17.05%	7.99%
2. 1-3 months	0.00%	31.46%	15.99%	15.69%		23.88%	0.00%	5.97%	4.93%	27.20%	26.94%	0.00%	19.90%	27.24%
3. 3-5 months	0.00%	32.15%	0.00%	0.00%		22.00%	0.00%	16.39%	0.00%	26.91%	25.32%	0.00%	22.45%	17.43%
4. 6-8 months	0.00%	7.34%	9.83%	0.00%		31.42%	0.00%	14.48%	3.03%	12.13%	11.49%	3.56%	7.43%	15.91%
5. 9-12 months	100.00%	38.87%	61.70%	65.55%		21.44%	92.35%	50.00%	86.84%	37.92%	40.67%	87.44%	56.87%	31.42%
n	4	29	9	5	-	9	4	8	17	51	60	8	45	23

C3D. How many months per year are the Dehumifier used?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. Never	0.00%	2.26%	0.00%	18.04%	0.00%	2.74%	0.00%	1.27%	0.00%	4.94%	5.18%	0.59%	0.43%	10.70%
1. Less than 1 month	0.00%	6.16%	0.00%	0.00%	0.00%	13.85%	0.00%	0.00%	0.00%	5.31%	4.49%	5.01%	5.75%	2.66%
2. 1-3 months	83.14%	20.96%	7.47%	19.11%	0.00%	0.00%	88.97%	0.00%	59.53%	16.05%	17.27%	40.67%	27.87%	11.95%
3. 3-5 months	0.00%	23.10%	26.26%	11.94%	0.00%	17.17%	77.95%	31.54%	14.11%	21.39%	22.11%	13.54%	23.55%	15.16%
4. 6-8 months	0.00%	17.79%	0.00%	39.38%	0.00%	23.20%	0.00%	18.42%	0.00%	22.20%	20.78%	12.87%	13.56%	28.65%
5. 9-12 months	16.86%	29.73%	66.27%	11.53%	100.00%	66.24%	11.03%	48.77%	32.89%	32.73%	33.00%	31.75%	28.85%	39.29%
n	5	51	7	13	1	12	3	15	16	91	92	15	69	38

C14. How old is the dehumidifier?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 6 years	8.09%	16.93%	28.28%	0.00%		3.39%	11.03%	0.00%	13.47%	11.49%	16.22%	0.00%	8.78%	16.61%
2. 6-18 years	91.91%	57.44%	39.31%	27.78%		52.69%	0.00%	100.00%	68.82%	54.40%	53.51%	67.99%	68.20%	41.03%
3. 19 years or older	0.00%	22.26%	0.00%	19.63%		43.92%	77.95%	0.00%	8.38%	25.29%	18.10%	32.01%	20.19%	24.25%
98. Don't know	0.00%	3.36%	32.42%	52.60%		0.00%	11.03%	0.00%	9.32%	8.82%	12.17%	0.00%	2.84%	18.11%
n	2	26	3	4		8	3	2	8	40	41	7	31	17

C1. Do you have the following room HVAC measure?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Room air conditioner (window/portable/through-the-wall)	28.31%	19.39%	22.47%	17.18%	27.60%	17.63%	24.97%	21.96%	40.08%	18.07%	22.62%	18.63%	19.79%
Portable electric space heater	13.98%	10.44%	14.10%	14.21%	12.29%	12.81%	17.09%	8.44%	22.34%	9.32%	11.51%	12.35%	12.21%
Air purifier/cleaner	9.18%	6.43%	9.63%	4.87%	7.27%	6.80%	12.95%	2.26%	2.31%	8.17%	11.41%	5.42%	6.37%
Dehumidifier	7.20%	9.65%	10.72%	9.31%	5.11%	10.44%	13.70%	6.11%	0.00%	7.62%	10.66%	9.86%	9.32%
Ceiling fan	36.31%	39.15%	31.12%	42.83%	27.89%	40.04%	47.22%	42.50%	41.20%	36.77%	32.93%	41.24%	39.68%
Window fan	1.60%	5.51%	8.76%	3.32%	4.82%	5.09%	1.49%	3.10%	8.01%	5.17%	2.30%	4.58%	4.51%
Portable fan	20.32%	11.73%	11.91%	10.43%	15.20%	11.16%	22.83%	11.50%	30.32%	8.45%	14.22%	11.73%	12.26%
n	113	588	65	234	154	676	24	146	36	143	142	679	1,000

C1. How many do you have of the following?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Room air conditioner (window/portable/through-the-wall)	0.41	0.38	0.25	0.30	0.42	0.28	0.26	0.60	0.51	0.33	0.32	0.35	0.35
Portable electric space heater	0.21	0.14	0.22	0.19	0.17	0.17	0.28	0.11	0.22	0.12	0.21	0.17	0.17
Air purifier/cleaner	0.16	0.10	0.16	0.06	0.11	0.10	0.25	0.04	0.02	0.16	0.20	0.07	0.10
Dehumidifier	0.08	0.10	0.15	0.10	0.07	0.11	0.15	0.06	-	0.08	0.13	0.10	0.10
Ceiling fan	0.54	0.76	0.51	0.87	0.47	0.79	0.65	0.85	0.48	0.65	0.55	0.83	0.76
Window fan	0.02	0.09	0.09	0.10	0.05	0.08	0.01	0.15	0.08	0.08	0.02	0.09	0.08
Portable fan	0.29	0.22	0.15	0.16	0.21	0.18	0.33	0.25	0.34	0.18	0.23	0.20	0.21
n	113	588	65	234	154	676	24	146	36	143	142	679	1,000
C3C. How many months per year are the Air purifier used?	**CZ5**		**CZ6**		**Non-LI**		**LI**		**Gas**		**No Gas**		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	0.00%	2.68%	0.00%	0.00%	0.00%	1.99%	0.00%	0.00%	0.00%	8.55%	0.00%	0.00%	1.42%
1. Less than 1 month	0.00%	22.18%	17.78%	5.41%	2.71%	14.22%	7.69%	45.88%	0.00%	5.91%	5.52%	19.77%	14.21%
2. 1-3 months	4.29%	24.60%	6.49%	32.72%	9.86%	29.63%	0.00%	0.00%	0.00%	1.85%	5.23%	34.07%	22.21%
3. 3-5 months	0.00%	29.21%	0.00%	22.03%	0.00%	29.31%	0.00%	0.00%	0.00%	36.53%	0.00%	24.30%	20.88%
4. 6-8 months	4.29%	8.38%	0.00%	20.12%	6.06%	12.34%	0.00%	9.84%	0.00%	27.39%	3.22%	8.00%	10.09%
5. 9-12 months	91.43%	46.48%	75.73%	19.72%	81.36%	34.26%	92.31%	78.85%	100.00%	67.46%	86.04%	29.91%	48.88%
n	9	36	8	15	14	46	3	5	1	12	16	39	68

C3D. How many months per year are the Dehumifier used?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	0.00%	0.50%	0.00%	12.35%	0.00%	5.56%	0.00%	0.99%		0.00%	0.00%	5.62%	4.27%
1. Less than 1 month	0.00%	6.65%	0.00%	3.07%	0.00%	4.81%	0.00%	8.47%		0.00%	0.00%	6.05%	4.59%
2. 1-3 months	79.22%	19.80%	25.97%	9.79%	17.84%	17.23%	87.22%	8.55%		39.37%	59.53%	12.81%	21.91%
3. 3-5 months	0.00%	27.25%	38.15%	11.62%	19.00%	22.34%	10.86%	15.39%		30.90%	14.11%	20.07%	20.41%
4. 6-8 months	0.00%	15.69%	0.00%	33.07%	0.00%	22.27%	0.00%	21.76%		12.32%	0.00%	23.58%	19.21%
5. 9-12 months	20.78%	30.11%	53.52%	37.10%	63.16%	30.83%	12.78%	44.84%		17.41%	32.89%	34.86%	32.75%
n	6	63	10	28	13	79	3	12		13	16	78	107

C14. How old is the dehumidifier?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 6 years	8.09%	8.97%	23.10%	15.13%	59.11%	13.28%	0.00%	0.00%		15.88%	13.47%	10.71%	11.90%
2. 6-18 years	91.91%	61.52%	27.52%	44.11%	0.00%	57.18%	89.14%	36.61%		68.23%	68.82%	51.94%	57.37%
3. 19 years or older	0.00%	25.88%	23.38%	24.45%	0.00%	19.34%	10.86%	63.39%		15.88%	8.38%	26.96%	21.81%
98. Don't know	0.00%	3.64%	26.00%	16.31%	40.89%	10.20%	0.00%	0.00%		0.00%	9.32%	10.39%	8.93%
n	2	29	6	11	5	36	3	4		6	8	34	48

C3F. How many months per year are the Ceiling fan used?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. Never	4.34%	8.44%	0.00%	0.00%		18.16%	0.00%	7.15%	2.94%	9.42%	8.60%	8.39%	6.90%	11.19%
1. Less than 1 month	14.16%	11.62%	15.11%	23.66%		8.20%	21.62%	12.03%	15.10%	12.14%	13.91%	8.57%	14.02%	10.15%
2. 1-3 months	0.52%	28.29%	26.18%	31.22%		24.87%	5.02%	18.90%	6.73%	27.21%	26.47%	18.62%	23.62%	25.78%
3. 3-5 months	12.55%	21.49%	25.71%	16.68%		19.15%	3.72%	23.16%	14.65%	20.70%	21.83%	14.29%	20.54%	18.85%
4. 6-8 months	5.95%	9.58%	11.80%	5.72%		2.90%	0.00%	20.80%	6.68%	8.76%	6.56%	14.03%	8.98%	7.69%
5. 9-12 months	83.82%	53.54%	52.25%	45.47%		49.32%	69.64%	51.84%	75.34%	51.83%	51.59%	64.83%	54.41%	55.95%
n	19	192	25	36	-	60	9	49	53	337	319	71	269	121

C3G. How many months per year are the Window fan used?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. Never	0.00%	7.42%	0.00%	0.00%		43.31%	0.00%	0.00%	0.00%	11.74%	4.67%	44.43%	5.93%	19.41%
1. Less than 1 month	0.00%	3.47%	0.00%	0.00%		12.86%	0.00%	0.00%	0.00%	4.27%	2.19%	13.19%	2.78%	5.76%
2. 1-3 months	28.90%	37.90%	50.00%	54.82%		17.96%	0.00%	25.31%	21.64%	34.74%	31.55%	42.69%	36.35%	26.38%
3. 3-5 months	71.10%	26.45%	0.00%	20.85%		33.63%	0.00%	40.74%	22.49%	28.81%	32.64%	0.00%	28.77%	26.48%
4. 6-8 months	0.00%	6.95%	0.00%	24.33%		0.00%	100.00%	4.09%	43.37%	7.15%	11.41%	12.88%	6.19%	22.96%
5. 9-12 months	0.00%	17.82%	50.00%	0.00%		5.10%	0.00%	48.03%	12.50%	17.61%	19.78%	0.00%	22.82%	4.76%
n	2	20	2	5	-	6	2	7	6	38	39	5	31	13

C3H. How many months per year are the Portable fan used?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0. Never	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1. Less than 1 month	30.18%	11.94%	4.35%	17.10%	0.00%	17.31%	0.00%	29.68%	23.75%	14.62%	13.84%	24.30%	17.06%	15.84%
2. 1-3 months	6.64%	31.51%	50.58%	18.64%	0.00%	29.33%	27.25%	51.56%	16.39%	32.15%	26.41%	34.54%	24.02%	38.45%
3. 3-5 months	27.74%	34.64%	26.10%	47.07%	0.00%	25.78%	72.75%	19.86%	27.74%	32.55%	34.66%	22.89%	33.69%	26.71%
4. 6-8 months	8.45%	9.16%	4.35%	0.00%	100.00%	4.16%	27.25%	6.64%	8.98%	7.62%	8.98%	5.07%	8.11%	7.52%
5. 9-12 months	36.08%	41.23%	23.32%	29.63%	0.00%	41.41%	54.51%	32.80%	33.16%	39.93%	37.62%	40.54%	41.50%	31.78%
n	11	53	8	6	1	16	3	13	23	88	87	24	72	39

G1B.How many clothes dryers do you have in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0	55.70%	7.80%	14.60%	9.10%	0.00%	8.10%	19.70%	8.50%	43.80%	8.00%	9.40%	23.90%	13.70%	11.20%
1	44.30%	91.80%	85.40%	90.90%	100.00%	91.90%	80.30%	91.20%	56.20%	91.70%	90.40%	75.40%	85.90%	88.70%
2	0.00%	0.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	0.10%	0.60%	0.40%	0.00%
3 or more	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	0.00%	0.00%	0.00%	0.10%	0.00%	0.10%
n	40	491	47	74	2	140	14	130	103	835	783	155	662	276

G1B.How many ELECTRIC clothes dryers do you have in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1	100.00%	99.50%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	99.70%	99.90%	99.10%	99.50%	100.00%
2	0.00%	0.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.30%	0.10%	0.90%	0.50%	0.00%
n	22	401	35	64	1	113	7	96	65	674	622	117	527	212

G1B.How many NATURAL GAS clothes dryers do you have in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1	100.00%	100.00%	100.00%	100.00%	0.00%	100.00%	100.00%	97.10%	100.00%	99.50%	100.00%	96.60%	100.00%	95.60%
3 or more	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.90%	0.00%	0.50%	0.00%	3.40%	0.00%	4.40%
n	1	26	2	1	-	4	4	18	7	49	48	8	50	6

C3F. How many months per year are the Ceiling fan used?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	3.93%	7.48%	0.00%	12.28%	5.73%	8.89%	0.00%	11.25%	0.00%	5.94%	4.04%	9.98%	8.55%
1. Less than 1 month	9.69%	14.87%	31.12%	8.11%	26.45%	12.63%	3.15%	10.42%	10.64%	20.17%	16.78%	10.85%	12.54%
2. 1-3 months	2.21%	27.80%	20.11%	26.33%	11.13%	28.04%	2.11%	24.26%	1.79%	20.86%	8.59%	28.22%	24.45%
3. 3-5 months	14.63%	21.69%	14.71%	19.25%	17.20%	22.31%	11.98%	15.08%	16.39%	25.07%	14.00%	20.00%	19.89%
4. 6-8 months	6.47%	9.46%	7.30%	7.73%	5.18%	6.70%	8.27%	16.00%	0.00%	14.57%	9.20%	7.83%	8.48%
5. 9-12 months	79.58%	49.49%	62.78%	55.29%	64.76%	50.24%	86.47%	57.44%	79.01%	36.05%	73.96%	54.37%	55.00%
n	34	235	19	102	44	275	9	62	12	53	41	284	390

C3G. How many months per year are the Window fan used?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	0.00%	6.29%	0.00%	26.25%	0.00%	5.32%	0.00%	51.00%	0.00%	0.00%	0.00%	14.12%	10.29%
1. Less than 1 month	0.00%	2.95%	0.00%	7.79%	0.00%	2.49%	0.00%	15.14%	0.00%	0.00%	0.00%	5.13%	3.74%
2. 1-3 months	28.90%	36.80%	18.28%	29.24%	25.39%	32.41%	0.00%	49.00%	0.00%	21.52%	44.25%	37.42%	33.12%
3. 3-5 months	71.10%	26.18%	0.00%	35.81%	26.38%	33.51%	0.00%	0.00%	44.01%	44.23%	0.00%	25.68%	28.03%
4. 6-8 months	0.00%	6.57%	63.43%	8.70%	33.56%	8.32%	100.00%	0.00%	55.99%	2.92%	30.19%	8.01%	11.61%
5. 9-12 months	0.00%	24.21%	18.28%	0.00%	14.67%	20.49%	0.00%	0.00%	0.00%	34.24%	25.56%	14.24%	16.98%
n	2	29	4	9	5	34	1	4	2	7	4	31	44

C3H. How many months per year are the Portable fan used?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0. Never	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1. Less than 1 month	28.08%	13.04%	5.02%	17.49%	5.14%	15.59%	45.84%	11.15%	0.00%	1.78%	38.96%	16.29%	16.67%
2. 1-3 months	6.18%	30.54%	60.55%	35.08%	23.73%	26.95%	7.67%	50.95%	0.00%	0.00%	26.88%	36.32%	28.61%
3. 3-5 months	32.76%	34.03%	5.99%	29.87%	51.11%	31.35%	0.00%	36.87%	23.26%	33.25%	30.61%	32.46%	31.47%
4. 6-8 months	7.86%	8.20%	13.83%	6.56%	16.55%	7.46%	0.00%	8.17%	11.63%	4.89%	7.29%	7.97%	7.92%
5. 9-12 months	33.57%	44.40%	31.38%	31.85%	21.91%	40.77%	46.49%	36.90%	65.11%	88.89%	12.69%	33.59%	38.41%
n	12	60	11	28	20	67	3	21	5	10	18	78	111

G1B.How many clothes dryers do you have in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0	49.00%	6.90%	25.10%	9.90%	36.00%	6.50%	54.00%	13.90%	34.60%	12.00%	48.20%	7.30%	12.80%
1	51.00%	92.70%	74.90%	90.00%	64.00%	93.40%	46.00%	85.10%	65.40%	87.80%	51.80%	92.40%	86.90%
2	0.00%	0.40%	0.00%	0.00%	0.00%	0.10%	0.00%	0.80%	0.00%	0.00%	0.00%	0.30%	0.20%
3 or more	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.10%	0.00%	0.20%	0.00%	0.00%	0.00%
n	62	600	41	235	88	695	15	140	25	158	78	677	938

G1B.How many ELECTRIC clothes dryers do you have in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1	100.00%	99.50%	100.00%	100.00%	100.00%	99.80%	100.00%	98.90%	100.00%	100.00%	100.00%	99.60%	99.70%
2	0.00%	0.50%	0.00%	0.00%	0.00%	0.20%	0.00%	1.10%	0.00%	0.00%	0.00%	0.40%	0.30%
n	37	490	28	184	56	566	9	108	14	107	51	567	739

G1B.How many NATURAL GAS clothes dryers do you have in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1	100.00%	100.00%	0.00%	95.60%	100.00%	100.00%	0.00%	96.60%	100.00%	99.30%	100.00%	100.00%	99.50%
3 or more	0.00%	0.00%	0.00%	4.40%	0.00%	0.00%	0.00%	3.40%	0.00%	0.70%	0.00%	0.00%	0.50%
n	7	43	-	6	7	41	-	8	5	39	2	10	56

G1B.How many BOTTLED GAS clothes dryers do you have in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1	0.00%	100.00%	100.00%	100.00%	100.00%	100.00%	0.00%	93.70%	100.00%	99.70%	100.00%	96.50%	100.00%	99.40%
3 or more	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.30%	0.00%	0.30%	0.00%	3.50%	0.00%	0.60%
n	-	36	6	3	1	14	-	6	7	59	57	9	38	28

G12. How old is the clothes dryer	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 5 years	16.66%	12.58%	7.51%	6.87%	0.00%	7.71%	5.74%	9.60%	12.80%	10.92%	9.50%	16.75%	10.87%	11.48%
2. 5 years or more	20.32%	20.87%	26.51%	12.40%	0.00%	14.56%	0.00%	16.93%	20.29%	18.62%	16.09%	28.34%	19.33%	17.76%
98. Do not know	0.00%	1.93%	0.00%	6.21%	0.00%	3.34%	1.53%	4.25%	0.14%	2.75%	2.35%	3.13%	2.47%	2.61%
n	22	401	35	64	1	113	7	96	65	674	622	117	527	212

G1A.How many clothes washers do you have in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0	53.30%	2.80%	1.80%	1.90%	0.00%	7.40%	37.10%	5.90%	40.60%	3.90%	4.80%	22.10%	9.90%	7.00%
1	44.30%	96.50%	98.20%	98.10%	100.00%	92.60%	62.90%	93.10%	57.70%	95.60%	94.60%	76.90%	89.00%	93.00%
2	2.50%	0.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.70%	0.50%	0.50%	1.00%	1.00%	0.00%
3 or more	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.00%	0.00%	0.10%	0.10%	0.00%	0.10%	0.00%
n	40	491	47	74	2	140	14	130	103	835	783	155	662	276

G1AA.Is the clothes washer attached to a clothes dryer as part of a single washer/dryer unit?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	9.60%	4.60%	12.20%	9.30%	.	8.20%	28.30%	4.00%	12.00%	5.60%	6.10%	6.50%	5.10%	8.10%
No	90.40%	95.40%	87.80%	90.70%	100.00%	91.80%	71.70%	96.00%	88.00%	94.40%	93.90%	93.50%	94.90%	91.90%
n	24	479	46	73	2	135	10	120	82	807	751	138	630	259

G1AA.How many are part of a single washer/dryer unit?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
0	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	83.10%	83.10%	100.00%	88.60%	0.00%
1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	16.90%	16.90%	0.00%	11.40%	0.00%
n	1	3	-	-	-	-	-	1	1	4	4	1	5	-

G2.How many clothes washers do you have in your home that are a?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Top loading washer	33.81%	58.65%	65.00%	57.86%	68.32%	55.98%	37.27%	55.14%	41.07%	57.75%	55.89%	54.23%	56.61%	53.46%
2. Front loading washer	15.37%	38.73%	33.16%	40.24%	31.68%	36.59%	25.66%	40.03%	20.11%	38.55%	39.57%	24.65%	34.15%	39.55%
n	40	491	47	74	2	140	14	130	103	835	783	155	662	276

G3. How old is the clothes washer	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 2 year	25.73%	11.30%	37.57%	18.31%	0.00%	9.90%	76.29%	7.56%	33.59%	11.23%	11.84%	17.39%	12.82%	14.87%
2. 2-4 years	8.71%	26.80%	21.22%	12.29%	100.00%	23.91%	0.00%	29.47%	12.17%	25.71%	25.27%	22.16%	24.09%	24.98%
98. Do not know	8.24%	5.68%	0.00%	7.75%	0.00%	3.69%	3.37%	2.63%	5.31%	5.27%	4.42%	7.37%	7.14%	1.10%
n	10	172	13	21	1	43	4	36	28	272	234	66	223	77

G4. How large is the clothes washer	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Compact	17.73%	5.02%	4.30%	3.20%	0.00%	2.09%	63.64%	8.03%	17.67%	4.75%	6.89%	3.96%	7.78%	2.14%
2. Standard	82.27%	91.35%	95.70%	87.71%	100.00%	94.15%	36.36%	90.21%	82.33%	91.42%	90.77%	89.89%	87.59%	97.07%
3. Do not know	0.00%	3.62%	0.00%	9.09%	0.00%	3.76%	0.00%	1.76%	0.00%	3.83%	2.34%	6.15%	4.64%	0.79%
n	10	172	13	21	1	43	4	36	28	272	234	66	223	77

G1B.How many BOTTLED GAS clothes dryers do you have in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1	100.00%	100.00%	100.00%	99.40%	100.00%	100.00%	100.00%	96.40%	0.00%	0.00%	100.00%	100.00%	99.70%
3 or more	0.00%	0.00%	0.00%	0.60%	0.00%	0.00%	0.00%	3.60%	0.00%	100.00%	0.00%	0.00%	0.30%
n	3	35	4	24	6	51	1	8	-	1	7	58	66

G12. How old is the clothes dryer	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 5 years	8.85%	11.09%	22.61%	10.62%	8.23%	9.60%	20.02%	16.13%	7.83%	13.04%	15.78%	10.62%	11.09%
2. 5 years or more	25.02%	18.70%	8.56%	18.48%	9.72%	16.57%	36.99%	26.69%	0.00%	18.47%	32.47%	18.64%	18.77%
98. Do not know	0.00%	2.74%	0.48%	2.77%	0.22%	2.51%	0.00%	3.72%	0.00%	0.73%	0.22%	3.04%	2.52%
n	37	490	28	184	56	566	9	108	14	107	51	567	739

G1A.How many clothes washers do you have in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0	45.80%	2.90%	21.80%	5.60%	31.90%	1.70%	52.00%	12.30%	34.90%	4.00%	43.20%	3.90%	8.80%
1	52.00%	96.30%	78.20%	94.40%	68.10%	97.60%	44.00%	87.70%	65.10%	96.00%	54.20%	95.50%	90.40%
2	2.20%	0.70%	0.00%	0.00%	0.00%	0.60%	4.00%	0.00%	0.00%	0.00%	2.50%	0.50%	0.60%
3 or more	0.00%	0.10%	0.00%	0.00%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.10%
n	62	600	41	235	88	695	15	140	25	158	78	677	938

G1AA.Is the clothes washer attached to a clothes dryer as part of a single washer/dryer unit?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	12.80%	4.30%	10.30%	7.90%	18.00%	5.10%	.	7.60%	15.30%	7.40%	10.20%	5.30%	6.20%
No	87.20%	95.70%	89.70%	92.10%	82.00%	94.90%	100.00%	92.40%	84.70%	92.60%	89.80%	94.70%	93.80%
n	49	581	33	226	72	679	10	128	19	152	63	655	889

G1AA.How many are part of a single washer/dryer unit?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
0	100.00%	83.10%	0.00%	0.00%	0.00%	83.10%	100.00%	0.00%	0.00%	0.00%	100.00%	83.10%	88.60%
1	0.00%	16.90%	0.00%	0.00%	0.00%	16.90%	0.00%	0.00%	0.00%	0.00%	0.00%	16.90%	11.40%
n	1	4	-	-	-	4	1	-	-	-	1	4	5

G2.How many clothes washers do you have in your home that are a?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Top loading washer	36.92%	60.45%	55.91%	53.23%	37.34%	57.96%	45.95%	56.96%	38.50%	60.83%	42.28%	57.20%	55.50%
2. Front loading washer	19.50%	37.00%	22.27%	41.13%	30.80%	40.55%	6.08%	30.77%	26.56%	35.13%	17.05%	39.16%	36.06%
n	62	600	41	235	88	695	15	140	25	158	78	677	938

G3. How old is the clothes washer	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 2 year	26.28%	11.14%	58.36%	11.44%	26.56%	10.88%	39.07%	12.24%	35.76%	16.77%	33.09%	10.17%	13.45%
2. 2-4 years	15.06%	25.22%	2.38%	26.77%	26.53%	25.19%	0.96%	27.20%	28.10%	24.63%	8.47%	25.92%	24.37%
98. Do not know	6.49%	7.22%	1.31%	1.09%	12.11%	3.92%	0.00%	9.12%	26.61%	1.38%	0.37%	6.02%	5.28%
n	19	204	9	68	21	213	7	59	6	51	22	221	300

G4. How large is the clothes washer	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Compact	22.89%	5.89%	0.00%	2.31%	40.32%	4.70%	0.00%	4.90%	74.61%	1.84%	4.47%	5.31%	6.04%
2. Standard	77.11%	88.89%	100.00%	96.83%	59.68%	92.80%	100.00%	87.49%	25.39%	93.97%	95.53%	90.93%	90.52%
3. Do not know	0.00%	5.22%	0.00%	0.86%	0.00%	2.50%	0.00%	7.61%	0.00%	4.19%	0.00%	3.76%	3.45%
n	19	204	9	68	21	213	7	59	6	51	22	221	300

C14. How old is the dehumidifier	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 6 years	8.09%	16.93%	28.28%	0.00%	0.00%	3.39%	11.03%	0.00%	13.47%	11.49%	16.22%	0.00%	8.78%	16.61%
2. 6-18 years	91.91%	57.44%	39.31%	27.78%	0.00%	52.69%	0.00%	100.00%	68.82%	54.40%	53.51%	67.99%	68.20%	41.03%
3. 19 years or older	0.00%	22.26%	0.00%	19.63%	0.00%	43.92%	77.95%	0.00%	8.38%	25.29%	18.10%	32.01%	20.19%	24.25%
98. Don't know	0.00%	3.36%	32.42%	52.60%	0.00%	0.00%	11.03%	0.00%	9.32%	8.82%	12.17%	0.00%	2.84%	18.11%
n	2	26	3	4	-	8	3	2	8	40	41	7	31	17

K1A. How many dishwashers do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
No Dishwashers	64.60%	22.40%	37.00%	21.40%	31.70%	39.80%	54.00%	32.10%	56.00%	26.60%	23.00%	57.80%	27.40%	37.90%
1	35.40%	76.70%	63.00%	78.60%	68.30%	60.20%	46.00%	66.50%	44.00%	72.60%	76.60%	41.00%	71.80%	61.90%
2	0.00%	0.90%	0.00%	0.00%	0.00%	0.00%	0.00%	1.50%	0.00%	0.70%	0.40%	1.20%	0.80%	0.20%
n	64	497	68	69	2	150	28	133	162	849	838	173	705	306

K2.How old is the dishwasher?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 6 years	6.25%	14.76%	23.85%	7.02%	0.00%	13.20%	7.70%	11.61%	12.83%	13.62%	12.86%	17.58%	13.29%	14.07%
2. 6-8 years	2.03%	6.92%	15.41%	2.75%	0.00%	5.05%	0.00%	7.86%	6.60%	6.37%	6.57%	5.33%	7.41%	4.30%
3. 9 years or more	9.36%	8.17%	2.39%	10.08%	0.00%	6.24%	6.88%	6.18%	6.42%	7.83%	7.08%	11.30%	7.08%	8.96%
98. Don't know	16.01%	3.79%	5.71%	1.81%	0.00%	0.51%	8.47%	1.64%	11.10%	2.92%	4.05%	1.84%	4.76%	1.59%
n	32	404	48	53	1	107	19	100	100	664	674	90	562	202

K3.What size is the dishwasher?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Compact	11.50%	1.85%	0.00%	0.00%	0.00%	0.48%	0.00%	0.00%	5.61%	1.32%	1.47%	3.38%	1.39%	2.48%
2. Standard	18.35%	29.92%	45.80%	21.66%	0.00%	24.53%	23.05%	22.28%	28.92%	27.73%	27.15%	31.97%	28.68%	26.13%
98. Don't know	3.81%	1.86%	1.55%	0.00%	0.00%	0.00%	0.00%	5.01%	2.42%	1.69%	1.94%	0.70%	2.47%	0.31%
n	32	404	48	53	1	107	19	100	100	664	674	90	562	202

H1A. How many refrigerators do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
No Refrigerators	0.00%	0.80%	0.00%	1.20%	0.00%	0.20%	0.90%	0.00%	0.10%	0.60%	0.70%	0.00%	0.80%	0.10%
1	99.80%	86.40%	96.70%	83.30%	100.00%	86.20%	93.90%	85.50%	98.20%	86.10%	85.30%	96.30%	87.50%	88.80%
2	0.20%	11.80%	2.20%	15.50%	0.00%	13.40%	5.20%	14.20%	1.50%	12.60%	13.10%	3.70%	10.90%	10.80%
3 or More	0.00%	1.00%	1.00%	0.00%	0.00%	0.20%	0.00%	0.30%	0.30%	0.70%	0.90%	0.00%	0.80%	0.30%
n	65	497	66	70	2	148	28	134	161	849	837	173	707	303

H2. How old is the refrigerator?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 6 years	16.25%	42.51%	65.21%	58.69%	100.00%	41.55%	13.97%	42.21%	36.69%	43.27%	43.84%	38.90%	47.95%	32.73%
2. 6 to 18 years	79.54%	53.99%	31.68%	54.42%	0.00%	55.80%	57.85%	61.61%	57.53%	54.98%	54.63%	57.04%	49.01%	66.66%
3. 19 or more years	4.21%	6.98%	3.11%	0.00%	0.00%	6.09%	28.18%	3.65%	5.78%	6.14%	6.44%	5.11%	7.73%	3.13%
98. Don't know	0.00%	1.73%	0.00%	0.00%	0.00%	0.00%	0.00%	1.07%	0.00%	1.30%	1.56%	0.00%	1.10%	1.27%
n	15	160	18	18	1	41	5	34	39	253	229	63	213	79

H1B. How many stand alone freezers do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
No Refrigerators	87.30%	82.60%	90.20%	79.70%	100.00%	88.20%	98.30%	85.90%	89.60%	83.80%	84.70%	84.80%	84.20%	85.60%
1	12.70%	16.10%	9.20%	18.90%	0.00%	10.70%	1.70%	13.10%	10.20%	15.00%	14.20%	14.20%	14.80%	13.20%
2	0.00%	1.30%	0.00%	1.40%	0.00%	0.50%	0.00%	0.80%	0.00%	1.10%	1.10%	0.50%	1.00%	0.80%
3 or More	0.00%	0.00%	0.60%	0.00%	0.00%	0.60%	0.00%	0.20%	0.20%	0.10%	0.00%	0.40%	0.00%	0.40%
n	65	497	66	70	2	148	28	134	161	849	837	173	707	303

H15. How old is the freezer?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
1. Less than 6 years	0.00%	41.35%	21.73%	53.16%	0.00%	43.72%	0.00%	77.56%	11.75%	45.30%	52.13%	24.91%	43.82%	45.76%
2. 6 to 18 years	100.00%	50.90%	39.13%	38.35%	0.00%	60.59%	0.00%	20.58%	67.08%	49.03%	40.18%	73.35%	51.03%	46.66%
3. 19 or more years	0.00%	9.86%	39.13%	8.49%	0.00%	3.14%	0.00%	3.72%	21.16%	8.37%	10.35%	4.32%	6.69%	12.16%
98. Don't know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
n	1	55	3	6	-	16	-	9	4	86	66	24	61	29

C14. How old is the dehumidifier	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 6 years	8.09%	8.97%	23.10%	15.13%	59.11%	13.28%	0.00%	0.00%	0.00%	15.88%	13.47%	10.71%	11.90%
2. 6-18 years	91.91%	61.52%	27.52%	44.11%	0.00%	57.18%	89.14%	36.61%	0.00%	68.23%	68.82%	51.94%	57.37%
3. 19 years or older	0.00%	25.88%	23.38%	24.45%	0.00%	19.34%	10.86%	63.39%	0.00%	15.88%	8.38%	26.96%	21.81%
98. Don't know	0.00%	3.64%	26.00%	16.31%	40.89%	10.20%	0.00%	0.00%	0.00%	0.00%	9.32%	10.39%	8.93%
n	2	29	6	11	5	36	3	4	-	6	8	34	48

K1A. How many dishwashers do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
No Dishwashers	56.90%	21.10%	53.70%	35.80%	45.30%	19.60%	75.30%	52.50%	56.30%	25.40%	55.90%	26.90%	31.20%
1	43.10%	77.90%	46.30%	64.00%	54.70%	79.90%	24.70%	46.00%	43.70%	72.90%	44.10%	72.60%	68.20%
2	0.00%	1.00%	0.00%	0.20%	0.00%	0.50%	0.00%	1.60%	0.00%	1.80%	0.00%	0.50%	0.60%
n	99	606	63	243	144	694	18	155	35	145	127	704	1,011

K2.How old is the dishwasher?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 6 years	12.15%	13.42%	14.50%	14.03%	13.27%	12.82%	11.06%	18.62%	6.91%	13.21%	15.07%	13.69%	13.54%
2. 6-8 years	7.92%	7.35%	3.36%	4.39%	8.24%	6.40%	0.00%	6.18%	0.00%	6.51%	9.10%	6.35%	6.39%
3. 9 years or more	8.60%	6.90%	1.07%	9.71%	3.95%	7.40%	16.33%	10.51%	3.58%	5.90%	7.50%	8.18%	7.69%
98. Don't know	13.48%	3.74%	5.23%	1.24%	13.86%	3.04%	0.00%	2.13%	18.08%	2.40%	8.46%	3.01%	3.73%
n	62	500	38	164	92	582	8	82	23	116	77	548	764

K3.What size is the dishwasher?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Compact	7.89%	0.63%	0.00%	2.72%	7.01%	0.90%	0.00%	3.92%	12.05%	1.15%	3.17%	1.35%	1.75%
2. Standard	30.85%	28.43%	24.16%	26.32%	29.30%	26.93%	27.39%	32.70%	16.52%	24.76%	33.61%	28.27%	27.85%
98. Don't know	3.41%	2.36%	0.00%	0.34%	3.03%	1.83%	0.00%	0.81%	0.00%	2.11%	3.34%	1.61%	1.76%
n	62	500	38	164	92	582	8	82	23	116	77	548	764

H1A. How many refrigerators do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
No Refrigerators	0.00%	1.00%	0.50%	0.00%	0.20%	0.80%	0.00%	0.00%	0.00%	0.70%	0.20%	0.60%	0.50%
1	98.10%	85.20%	98.40%	87.50%	97.10%	83.50%	100.00%	95.20%	98.20%	89.60%	98.10%	85.40%	87.90%
2	1.60%	12.90%	1.10%	12.10%	2.20%	14.70%	0.00%	4.80%	1.80%	8.20%	1.30%	13.40%	10.90%
3 or More	0.40%	0.90%	0.00%	0.40%	0.40%	0.90%	0.00%	0.00%	0.00%	1.60%	0.40%	0.60%	0.60%
n	99	608	62	241	143	694	18	155	35	146	126	703	1,010

H2. How old is the refrigerator?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 6 years	41.48%	48.81%	24.98%	33.48%	41.84%	44.07%	24.61%	40.92%	33.30%	52.07%	37.19%	41.95%	42.57%
2. 6 to 18 years	50.38%	48.83%	75.02%	65.85%	49.91%	55.17%	75.39%	54.44%	66.70%	36.03%	56.17%	57.83%	55.26%
3. 19 or more years	8.15%	7.67%	0.00%	3.43%	8.25%	6.24%	0.00%	5.84%	0.00%	13.62%	6.64%	5.01%	6.10%
98. Don't know	0.00%	1.24%	0.00%	1.40%	0.00%	1.74%	0.00%	0.00%	0.00%	3.47%	0.00%	0.97%	1.16%
n	27	186	12	67	33	196	6	57	6	39	33	214	292

H1B. How many stand alone freezers do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
No Refrigerators	88.00%	83.40%	93.80%	84.60%	90.60%	83.80%	87.80%	83.90%	80.30%	90.90%	93.10%	82.60%	84.70%
1	12.00%	15.40%	5.60%	14.20%	9.20%	15.00%	12.20%	14.80%	19.70%	9.10%	6.60%	16.00%	14.20%
2	0.00%	1.20%	0.00%	0.90%	0.00%	1.20%	0.00%	0.70%	0.00%	0.00%	0.00%	1.30%	0.90%
3 or More	0.00%	0.00%	0.60%	0.30%	0.20%	0.00%	0.00%	0.60%	0.00%	0.00%	0.20%	0.10%	0.10%
n	99	608	62	241	143	694	18	155	35	146	126	703	1,010

H15. How old is the freezer?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
1. Less than 6 years	0.00%	45.27%	100.00%	45.35%	11.75%	53.48%	0.00%	24.91%	0.00%	35.16%	11.75%	46.38%	44.52%
2. 6 to 18 years	76.02%	50.21%	0.00%	47.01%	67.08%	39.28%	0.00%	73.35%	0.00%	49.07%	67.08%	49.03%	49.45%
3. 19 or more years	23.98%	6.11%	0.00%	12.25%	21.16%	9.99%	0.00%	4.32%	0.00%	15.77%	21.16%	7.58%	8.67%
98. Don't know	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
n	3	58	1	28	4	62	-	24	-	8	4	78	90

J3. How many interior lighting sockets do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
LED	7.90	16.42	11.25	21.20	25.95	21.17	6.58	14.48	8.64	17.53	18.07	9.97	15.25	17.81
CFL	0.98	3.54	2.49	7.40	-	2.08	3.91	3.38	1.74	3.53	3.38	2.84	2.60	4.44
Incandescent	3.40	8.10	4.43	7.68	3.42	6.16	2.36	6.50	3.52	7.54	7.70	4.40	7.02	6.76
Fluorescent Tube	2.02	1.52	1.28	1.82	1.68	1.24	0.33	1.76	1.61	1.51	1.55	1.46	1.55	1.48
Halogen	0.84	1.06	0.41	0.45	-	0.95	0.14	0.69	0.64	0.96	1.03	0.51	0.81	1.08
Infrared	0.05	0.01	0.10	0.02	-	0.06	-	0.02	0.06	0.02	0.03	0.03	0.01	0.06
Other	0.12	0.59	0.17	0.86	-	0.14	-	0.25	0.12	0.49	0.43	0.45	0.59	0.15
DK	0.77	2.15	2.32	1.71	-	0.97	1.43	2.86	1.25	1.96	1.93	1.58	2.19	1.24
n	63	472	66	69	2	144	22	131	153	816	799	170	679	290

J4/J5. LEDs - How many…	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg Bulbs	10.73	20.88	14.66	25.58	25.95	24.97	12.36	17.93	12.03	21.81	22.14	14.08	19.42	22.24
Avg Standard Bulbs	9.71	17.39	11.27	20.44	25.63	20.15	11.13	14.16	10.33	17.87	17.79	12.86	16.36	17.45
Avg Reflector	0.58	1.74	2.19	3.56	-	1.11	0.49	1.39	1.01	1.72	1.95	0.36	1.54	1.74
Pct Standard Bulbs	89%	75%	70%	74%	99%	70%	88%	73%	83%	74%	73%	83%	76%	71%
Pct Reflector Bulbs	5%	7%	13%	11%	0%	4%	4%	7%	7%	7%	7%	2%	7%	7%
n	43	379	52	60	2	125	13	106	110	670	661	119	544	236

J4/J5. CFLs - How many…	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg Bulbs	3.16	12.55	11.96	17.78	-	7.52	15.84	13.28	6.33	12.24	11.41	11.20	9.75	13.76
Avg Standard Bulbs	2.79	11.17	9.79	17.12	-	6.94	15.77	10.01	5.71	10.86	10.02	10.15	8.29	12.69
Avg Reflector	0.20	0.62	1.41	1.14	-	0.30	0.07	1.70	0.43	0.71	0.70	0.54	0.69	0.63
Pct Standard Bulbs	85%	82%	82%	79%	0%	85%	100%	68%	88%	81%	79%	90%	79%	84%
Pct Reflector Bulbs	6%	4%	12%	6%	0%	4%	0%	12%	6%	5%	6%	5%	6%	4%
n	19	134	18	25	-	35	4	42	41	236	236	41	183	94

J4/J5. Incandescents - How many…	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg Bulbs	9.94	17.47	13.12	15.42	5.00	12.65	9.76	15.92	10.72	16.19	16.34	12.27	16.04	14.77
Avg Standard Bulbs	8.98	13.71	10.84	12.61	5.00	9.23	7.89	12.00	9.34	12.60	12.66	10.31	12.60	11.57
Avg Reflector	0.13	0.93	0.54	0.77	-	0.92	1.87	0.83	0.41	0.90	1.01	0.11	0.79	0.92
Pct Standard Bulbs	90%	76%	83%	77%	100%	67%	81%	71%	87%	74%	74%	80%	76%	74%
Pct Reflector Bulbs	1%	5%	4%	5%	0%	7%	19%	5%	4%	5%	6%	1%	4%	6%
n	21	225	24	36	1	70	9	59	55	390	373	72	307	138

J4/J5. Halogens - How many…	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg Bulbs	4.67	6.32	5.71	2.49	-	5.13	4.00	6.01	4.79	5.73	5.95	4.08	5.31	6.08
Avg Standard Bulbs	4.25	3.98	4.14	1.06	-	2.95	4.00	3.31	4.23	3.43	3.51	3.68	3.85	3.10
Avg Reflector	0.25	1.87	0.18	0.68	-	1.87	-	3.33	0.23	1.86	1.87	0.52	1.24	2.21
Pct Standard Bulbs	91%	53%	72%	42%	0%	54%	100%	43%	88%	52%	53%	78%	62%	48%
Pct Reflector Bulbs	5%	25%	3%	27%	0%	34%	0%	52%	5%	29%	29%	11%	20%	35%
n	10	79	8	10	-	26	1	20	19	135	133	21	102	52

J4/J5. Other - How many…	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg Bulbs	2.00	10.89	8.15	11.86	-	6.38	-	4.53	2.78	9.93	10.07	6.69	11.67	3.38
Avg Standard Bulbs	1.94	8.18	1.93	12.89	-	1.05	-	4.08	1.94	7.47	7.13	5.61	9.42	1.69
Avg Reflector	-	0.39	4.07	-	-	0.25	-	-	0.52	0.28	0.49	0.06	0.53	-
Pct Standard Bulbs	97%	56%	24%	90%	0%	16%	0%	75%	70%	59%	54%	78%	62%	46%
Pct Reflector Bulbs	0%	2%	50%	0%	0%	4%	0%	0%	19%	2%	3%	1%	3%	0%
n	3	27	2	4	-	5	-	9	5	45	35	15	36	14

J3. How many interior lighting sockets do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
LED	9.22	16.54	7.02	19.16	8.30	19.51	9.25	10.19	5.67	17.80	9.74	17.48	16.17
CFL	1.44	2.84	2.60	4.67	1.54	3.65	2.11	3.07	1.38	2.63	1.88	3.69	3.26
Incandescent	3.59	7.75	3.33	7.19	3.28	8.35	3.95	4.53	6.16	6.54	2.56	7.72	6.92
Fluorescent Tube	1.90	1.48	0.79	1.56	1.16	1.61	2.42	1.16	4.04	1.51	0.72	1.51	1.53
Halogen	0.59	0.86	0.76	1.12	0.69	1.08	0.54	0.50	1.45	0.63	0.34	1.02	0.91
Infrared	0.04	-	0.10	0.05	0.05	0.02	0.07	0.02	-	-	0.08	0.02	0.03
Other	0.12	0.69	0.10	0.15	0.14	0.47	0.07	0.56	-	0.74	0.16	0.45	0.43
DK	1.13	2.42	1.58	1.20	1.84	1.94	0.20	2.00	0.85	1.95	1.40	1.96	1.85
n	94	585	59	231	135	664	18	152	30	142	123	674	969

J4/J5. LEDs - How many…	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg Bulbs	12.30	20.86	11.09	23.32	12.22	23.33	11.73	14.91	9.90	21.59	12.61	21.85	20.45
Avg Standard Bulbs	10.46	17.66	9.85	18.19	9.96	18.76	10.86	13.67	7.88	18.82	11.03	17.71	16.76
Avg Reflector	1.17	1.63	0.49	1.86	1.18	2.05	0.73	0.23	1.52	1.66	0.86	1.73	1.61
Pct Standard Bulbs	83%	76%	82%	71%	76%	73%	93%	80%	80%	75%	83%	73%	74%
Pct Reflector Bulbs	8%	6%	4%	7%	9%	7%	5%	1%	15%	6%	6%	7%	7%
n	68	476	42	194	97	564	13	106	19	118	91	552	780

J4/J5. CFLs - How many…	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg Bulbs	4.72	11.02	13.66	13.76	7.16	11.85	5.50	14.32	4.81	9.63	6.92	12.67	11.37
Avg Standard Bulbs	4.00	9.45	13.31	12.64	6.08	10.45	5.36	12.82	3.99	8.91	6.40	11.22	10.05
Avg Reflector	0.47	0.75	0.24	0.66	0.74	0.70	0.14	0.77	0.50	0.47	0.40	0.75	0.67
Pct Standard Bulbs	82%	78%	97%	83%	81%	79%	97%	88%	83%	93%	90%	79%	81%
Pct Reflector Bulbs	9%	6%	2%	5%	9%	5%	3%	5%	10%	5%	5%	5%	5%
n	28	155	13	81	35	201	6	35	8	43	33	193	277

J4/J5. Incandescents - How many…	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg Bulbs	10.32	16.97	12.13	14.96	11.55	16.74	9.69	13.21	10.88	15.07	10.58	16.37	15.57
Avg Standard Bulbs	8.95	13.21	10.72	11.63	9.05	12.98	9.69	10.55	10.16	11.62	8.62	12.77	12.22
Avg Reflector	0.30	0.88	0.79	0.93	0.73	1.03	-	0.15	0.08	0.73	0.69	0.94	0.84
Pct Standard Bulbs	86%	75%	88%	73%	78%	74%	100%	75%	93%	77%	81%	74%	75%
Pct Reflector Bulbs	3%	5%	6%	6%	6%	6%	0%	1%	1%	5%	7%	5%	5%
n	34	273	21	117	45	328	10	62	13	63	42	327	445

J4/J5. Halogens - How many…	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg Bulbs	3.73	5.66	12.76	5.82	6.16	5.93	3.19	4.50	5.18	4.23	4.28	5.96	5.61
Avg Standard Bulbs	3.17	4.04	12.21	2.72	5.37	3.32	2.89	4.14	4.83	2.25	3.45	3.61	3.54
Avg Reflector	0.24	1.50	0.20	2.29	0.45	2.00	-	0.84	0.35	2.02	0.06	1.84	1.64
Pct Standard Bulbs	85%	59%	96%	44%	87%	49%	91%	74%	93%	47%	80%	53%	56%
Pct Reflector Bulbs	6%	22%	2%	37%	7%	31%	0%	14%	7%	45%	1%	27%	26%
n	13	89	6	46	16	117	3	18	5	25	14	110	154

J4/J5. Other - How many…	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg Bulbs	5.55	12.18	1.00	4.18	5.55	10.45	1.00	8.59	-	10.45	2.78	9.78	8.97
Avg Standard Bulbs	3.41	10.11	1.00	1.95	3.41	7.55	1.00	7.30	-	9.73	1.94	6.85	6.56
Avg Reflector	1.33	0.43	-	-	1.33	0.38	-	0.09	-	-	0.52	0.36	0.32
Pct Standard Bulbs	61%	62%	100%	42%	61%	53%	100%	78%	0%	73%	70%	55%	60%
Pct Reflector Bulbs	24%	2%	0%	0%	24%	2%	0%	1%	0%	0%	19%	3%	3%
n	4	32	1	13	4	31	1	14	-	11	5	34	50

N1. Exterior Lighting Statistics	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
pct Sites with Ext Lit	61.60%	90.30%	69.70%	85.40%	100.00%	92.00%	37.60%	87.20%	60.60%	90.00%	86.50%	82.40%	85.10%	86.30%
pct Sites with Ext Lit Bulbs	61.60%	90.00%	67.60%	85.40%	100.00%	92.00%	32.40%	87.20%	59.40%	89.80%	86.00%	82.40%	84.60%	86.00%
Avg # Ext Lit Bulbs	1.46	4.51	4.00	5.33	2.68	4.47	2.64	4.13	2.30	4.53	4.77	2.65	4.21	4.42
Avg # Ext Lit Bulbs for Sites that Have Inc and Hal Bulbs	1.42	4.66	4.58	5.45	2.68	4.67	2.65	4.64	2.38	4.72	4.98	2.76	4.36	4.67
pct Sites with Inc and Hal Bulbs	34.50%	68.60%	59.70%	51.00%	100.00%	65.90%	29.90%	66.70%	40.50%	66.60%	64.20%	57.40%	64.20%	59.60%
Avg # Ext Lit Inc and Hal Bulbs	0.78	2.68	2.62	2.77	2.68	2.27	2.30	2.41	1.39	2.59	2.65	1.82	2.50	2.39
pct Inc and Hal Ext Bulbs	45.90%	61.50%	72.90%	48.90%	100.00%	54.40%	88.30%	53.60%	56.10%	58.50%	57.70%	60.10%	60.40%	54.50%
n	59	436	64	64	2	136	22	118	147	754	741	160	620	281

N7. How many of the exterior incandescent/halogen lamps are controlled by timers?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg # Inc/Hal Ext Lit Bulbs	1.36	3.76	3.30	4.88	2.68	3.34	2.60	3.64	2.30	3.74	3.75	2.99	3.64	3.58
Avg # Inc/Hal Ext Lit Bulbs Controlled by Timers	0.06	0.49	0.59	0.77	-	0.54	0.51	0.55	0.32	0.52	0.50	0.49	0.55	0.41
Pct Inc/Hal Ext Lit Bulbs Controlled by Timers	3.00%	13.60%	15.30%	14.70%	0.00%	18.90%	27.80%	19.60%	10.50%	15.20%	14.60%	15.70%	16.00%	12.80%
n	19	252	33	28	2	73	5	61	59	414	385	88	327	146

N8. How many of the exterior incandescent/halogen lamps bulbs are controlled by motion sensors?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg # Inc/Hal Ext Lit Bulbs	1.36	3.76	3.30	4.88	2.68	3.34	2.60	3.64	2.30	3.74	3.75	2.99	3.64	3.58
Avg # Inc/Hal Ext Lit Bulbs Controlled by Motion Sensors	0.02	0.88	0.72	1.76	-	1.06	0.55	0.77	0.35	0.96	0.95	0.77	0.88	0.96
Pct Inc/Hal Ext Lit Bulbs Controlled by Motion Sensors	0%	25%	23%	44%	0%	34%	20%	21%	12%	28%	26%	28%	24%	30%
n	19	252	33	28	2	73	5	61	59	414	385	88	327	146

N10. How many of the exterior incandescent/halogen lamps bulbs are controlled by photocells?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg # Inc/Hal Ext Lit Bulbs	1.36	3.76	3.30	4.88	2.68	3.34	2.60	3.64	2.30	3.74	3.75	2.99	3.64	3.58
Avg # Inc/Hal Ext Lit Bulbs Controlled by Photocells	-	0.28	0.15	0.32	-	0.37	-	0.13	0.06	0.29	0.31	0.09	0.25	0.30
Pct Inc/Hal Ext Lit Bulbs Controlled by Photocells	0%	10%	6%	11%	0%	11%	0%	4%	2%	10%	10%	3%	8%	10%
Avg # Inc/Hal Ext Lit Bulbs Controlled by Photocells	-	0.28	0.15	0.32	-	0.37	-	0.13	0.06	0.29	0.31	0.09	0.25	0.30
Pct Inc/Hal Ext Lit Bulbs Controlled by Photocells	0%	10%	6%	11%	0%	11%	0%	4%	2%	10%	10%	3%	8%	10%
n	19	252	33	28	2	73	5	61	59	414	385	88	327	146

N1. Exterior Lighting Statistics	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
pct Sites with Ext Lit	60.20%	90.40%	61.90%	89.30%	53.20%	91.40%	73.90%	85.00%	59.40%	91.80%	61.10%	89.70%	85.50%
pct Sites with Ext Lit Bulbs	59.30%	90.10%	59.90%	89.30%	51.40%	91.10%	73.90%	85.00%	59.40%	91.00%	59.50%	89.50%	85.10%
Avg # Ext Lit Bulbs	2.21	4.49	2.56	4.58	2.81	4.93	1.65	2.92	1.81	3.83	2.48	4.65	4.28
Avg # Ext Lit Bulbs for Sites that Have Inc and Hal Bulbs	2.21	4.69	3.05	4.76	3.12	5.12	1.65	3.09	1.85	3.89	2.60	4.88	4.48
pct Sites with Inc and Hal Bulbs	35.10%	70.50%	55.80%	60.10%	42.00%	67.40%	37.80%	63.40%	54.90%	66.20%	35.20%	66.60%	62.60%
Avg # Ext Lit Inc and Hal Bulbs	1.17	2.71	2.27	2.40	1.82	2.71	0.97	2.08	1.43	1.96	1.38	2.70	2.46
pct Inc and Hal Ext Bulbs	49.20%	62.10%	83.20%	52.80%	68.80%	56.90%	43.60%	65.10%	82.00%	57.50%	45.50%	58.70%	58.20%
n	88	532	59	222	129	612	18	142	29	133	118	621	901

N7. How many of the exterior incandescent/halogen lamps are controlled by timers?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg # Inc/Hal Ext Lit Bulbs	2.24	3.77	2.42	3.69	2.49	3.85	1.95	3.19	1.35	2.91	2.90	3.88	3.62
Avg # Inc/Hal Ext Lit Bulbs Controlled by Timers	0.33	0.57	0.30	0.42	0.31	0.52	0.34	0.52	0.19	0.85	0.39	0.47	0.50
Pct Inc/Hal Ext Lit Bulbs Controlled by Timers	8.90%	16.60%	13.50%	12.70%	9.90%	15.00%	11.80%	16.40%	10.60%	26.30%	10.50%	13.30%	14.80%
n	28	299	31	115	50	335	9	79	12	65	47	349	473

N8. How many of the exterior incandescent/halogen lamps bulbs are controlled by motion sensors?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg # Inc/Hal Ext Lit Bulbs	2.24	3.77	2.42	3.69	2.49	3.85	1.95	3.19	1.35	2.91	2.90	3.88	3.62
Avg # Inc/Hal Ext Lit Bulbs Controlled by Motion Sensors	0.20	0.95	0.61	0.99	0.41	0.99	0.21	0.86	-	0.98	0.56	0.96	0.91
Pct Inc/Hal Ext Lit Bulbs Controlled by Motion Sensors	6%	26%	22%	30%	12%	27%	10%	31%	0%	26%	19%	28%	26%
n	28	299	31	115	50	335	9	79	12	65	47	349	473

N10. How many of the exterior incandescent/halogen lamps bulbs are controlled by photocells?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg # Inc/Hal Ext Lit Bulbs	2.24	3.77	2.42	3.69	2.49	3.85	1.95	3.19	1.35	2.91	2.90	3.88	3.62
Avg # Inc/Hal Ext Lit Bulbs Controlled by Photocells	0.06	0.26	0.06	0.33	0.07	0.33	0.04	0.10	-	0.48	0.10	0.26	0.27
Pct Inc/Hal Ext Lit Bulbs Controlled by Photocells	1%	9%	6%	11%	1%	11%	4%	3%	0%	14%	4%	9%	9%
n	28	299	31	115	50	335	9	79	12	65	47	349	473

I6. Do you use smart power strips for home electronics?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes	17.00%	15.00%	12.10%	12.90%	0.00%	11.80%	27.00%	21.20%	17.00%	14.80%	15.80%	13.00%	17.10%	11.60%
No	65.70%	68.40%	69.50%	77.70%	100.00%	71.00%	69.50%	59.30%	67.30%	68.70%	67.10%	73.00%	64.80%	75.00%
Don't know	17.30%	16.60%	18.40%	9.40%	0.00%	17.20%	3.50%	19.50%	15.70%	16.50%	17.10%	14.00%	18.10%	13.40%
n	59	435	64	64	2	136	22	117	147	752	740	159	619	280

I7. Saturation of Power Strips at sites	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
No Power Strips	66%	68%	70%	78%	100%	71%	70%	59%	67%	69%	67%	73%	65%	75%
Tier 1 Power Strips	16%	14%	12%	12%	0%	11%	18%	21%	15%	14%	14%	13%	16%	11%
Tier 1 Power Strips	2%	3%	3%	3%	0%	2%	9%	4%	3%	3%	3%	2%	3%	3%
Tier 2 Power Strips	17%	17%	18%	9%	0%	17%	4%	20%	16%	17%	17%	14%	18%	13%
n	59	435	64	64	2	136	22	117	147	752	740	159	619	280

I7. Average # of Power Strips	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Tier 1 Power Strips	2.97	1.70	1.77	1.11	-	1.71	1.95	1.65	2.58	1.66	1.70	2.21	1.90	1.56
Tier 2 Power Strips	3.36	2.11	1.51	1.00	-	2.00	1.00	1.68	1.92	1.94	2.09	1.00	1.99	1.82
n	12	62	8	8	-	15	4	21	24	106	110	20	98	32

I8A. What systems do you use the tier 1 smart power strips for?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Television/Cable	1.00	0.86	0.70	0.61	-	0.88	0.86	0.89	0.92	0.85	0.83	1.00	0.85	0.90
Computer	0.72	0.66	0.85	0.53	-	0.58	0.82	0.68	0.76	0.64	0.70	0.54	0.68	0.61
Other	0.08	0.05	-	0.24	-	0.02	0.20	0.05	0.08	0.06	0.08	-	0.08	0.02
n	12	62	8	8	-	15	4	21	24	106	110	20	98	32

I8B. What systems do you use the tier 2 smart power strips for?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Television/Cable	1.00	0.77	0.34	1.00	-	1.00	-	0.92	0.42	0.85	0.83	0.43	0.70	0.91
Computer	0.79	0.92	0.83	-	-	0.58	-	0.20	0.48	0.68	0.66	0.57	0.68	0.57
Other	0.79	0.08	0.17	-	-	-	1.00	-	0.71	0.05	0.19	-	0.17	0.14
n	3	12	3	2	-	3	1	5	7	22	26	3	19	10

I10. Do you have the use of a swimming pool at your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Yes, and I pay for its energy use	0.00%	9.80%	4.10%	12.30%	0.00%	2.50%	0.00%	18.00%	1.00%	9.40%	9.00%	5.00%	10.10%	4.40%
Yes, but it is in a common area and I do not pay for its ...	15.70%	3.50%	1.30%	4.70%	0.00%	0.00%	17.10%	2.00%	12.20%	2.70%	3.60%	6.20%	5.90%	1.10%
No pool	84.30%	86.70%	94.60%	83.00%	100.00%	97.50%	82.90%	80.00%	86.80%	87.90%	87.40%	88.80%	83.90%	94.50%
n	59	435	64	64	2	136	22	117	147	752	740	159	619	280

I11. How is your pool heated?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Pool is not heated	0.00%	81.12%	66.67%	66.53%	0.00%	81.21%	0.00%	78.91%	66.67%	79.28%	77.09%	90.38%	78.76%	80.13%
Natural gas	0.00%	2.48%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.65%	1.90%	0.00%	2.02%	0.00%
Electricity	0.00%	5.45%	33.33%	20.89%	0.00%	18.79%	0.00%	6.83%	33.33%	7.93%	9.88%	0.00%	10.51%	0.00%
Solar heater (using solar collectors)	0.00%	3.65%	0.00%	0.00%	0.00%	0.00%	0.00%	11.89%	0.00%	4.59%	5.28%	0.00%	2.97%	10.70%
Bottled gas (propane/butane/LP)	0.00%	3.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.43%	2.79%	0.00%	2.97%	0.00%
Other	0.00%	3.64%	0.00%	12.58%	0.00%	0.00%	0.00%	2.37%	0.00%	4.10%	3.06%	9.62%	2.75%	9.17%
n	-	52	3	9	-	10	-	19	3	90	81	12	76	17

I12. How many pool pumps do you have?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	-	1.00	1.00	0.87	-	1.00	-	0.98	1.00	0.98	0.98	1.00	1.00	0.93
n	-	51.00	3.00	9.00	-	10.00	-	19.00	3.00	89.00	80.00	12.00	75.00	17.00

I13. Indicate the quantity and type of pool pump(s) used in your home	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Single speed pool pump	-	0.60	0.67	0.53	-	0.61	-	0.78	0.67	0.63	0.61	0.74	0.59	0.76
Dual speed pool pump	-	0.13	0.33	0.12	-	0.09	-	-	0.33	0.10	0.13	-	0.13	-
Variable speed pool pump	-	0.09	-	0.23	-	0.09	-	0.02	-	0.09	0.11	-	0.11	-
Dont know	-	0.19	-	0.12	-	0.21	-	0.21	-	0.19	0.17	0.26	0.17	0.24
n	-	50	3	8	-	10	-	18	3	86	77	12	73	16

I6. Do you use smart power strips for home electronics?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes	20.10%	16.50%	8.10%	12.00%	20.50%	15.10%	10.70%	13.70%	11.60%	20.90%	18.90%	13.70%	15.10%
No	62.10%	65.40%	81.90%	74.20%	63.30%	67.70%	74.50%	72.60%	64.20%	66.10%	68.40%	69.20%	68.50%
Don't know	17.80%	18.10%	9.90%	13.80%	16.20%	17.20%	14.80%	13.70%	24.20%	13.00%	12.60%	17.10%	16.40%
n	88	531	59	221	129	611	18	141	29	133	118	619	899

I7. Saturation of Power Strips at sites	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
No Power Strips	62%	65%	82%	74%	63%	68%	75%	73%	64%	66%	68%	69%	69%
Tier 1 Power Strips	17%	16%	8%	11%	17%	14%	11%	14%	12%	21%	16%	13%	14%
Tier 1 Power Strips	3%	3%	3%	3%	5%	3%	0%	2%	0%	1%	4%	3%	3%
Tier 2 Power Strips	18%	18%	10%	14%	16%	17%	15%	14%	24%	13%	13%	17%	16%
n	88	531	59	221	129	611	18	141	29	133	118	619	899

I7. Average # of Power Strips	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Tier 1 Power Strips	2.73	1.71	1.62	1.55	1.73	1.69	5.00	1.55	2.01	1.97	2.73	1.57	1.81
Tier 2 Power Strips	2.07	1.98	1.51	1.87	1.92	2.13	-	1.00	-	1.69	1.92	1.96	1.94
n	19	79	5	27	23	87	1	19	5	27	19	79	130

I8A. What systems do you use the tier 1 smart power strips for?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Television/Cable	0.95	0.83	0.73	0.91	0.89	0.81	1.00	1.00	0.90	0.72	0.93	0.89	0.86
Computer	0.76	0.66	0.79	0.60	0.68	0.70	1.00	0.43	0.76	0.85	0.76	0.58	0.66
Other	0.10	0.08	-	0.02	0.11	0.07	-	-	-	0.07	0.11	0.05	0.06
n	19	79	5	27	23	87	1	19	5	27	19	79	130

I8B. What systems do you use the tier 2 smart power strips for?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Television/Cable	0.45	0.76	0.34	1.00	0.42	0.94	-	0.43	-	0.85	0.42	0.85	0.78
Computer	0.36	0.76	0.83	0.53	0.48	0.70	-	0.57	-	1.00	0.48	0.65	0.64
Other	0.90	-	0.17	0.14	0.71	0.06	-	-	-	-	0.71	0.05	0.16
n	4	15	3	7	7	19	-	3	-	3	7	19	29

I10. Do you have the use of a swimming pool at your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Yes, and I pay for its energy use	1.40%	12.00%	0.00%	5.00%	1.60%	10.10%	0.00%	6.50%	0.00%	10.10%	1.40%	9.20%	8.10%
Yes, but it is in a common area and I do not pay for its ...	15.80%	3.80%	1.90%	1.00%	13.00%	2.20%	10.70%	4.80%	8.50%	5.20%	13.50%	2.30%	4.20%
No pool	82.80%	84.20%	98.10%	94.00%	85.40%	87.70%	89.30%	88.70%	91.50%	84.70%	85.10%	88.50%	87.70%
n	88	531	59	221	129	611	18	141	29	133	118	619	899

I11. How is your pool heated?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Pool is not heated	66.67%	79.07%	0.00%	80.13%	66.67%	77.33%	0.00%	90.38%	0.00%	76.95%	66.67%	79.75%	79.04%
Natural gas	0.00%	2.07%	0.00%	0.00%	0.00%	1.94%	0.00%	0.00%	0.00%	9.99%	0.00%	0.00%	1.62%
Electricity	33.33%	9.94%	0.00%	0.00%	33.33%	9.33%	0.00%	0.00%	0.00%	0.00%	33.33%	9.51%	8.43%
Solar heater (using solar collectors)	0.00%	3.05%	0.00%	10.70%	0.00%	5.40%	0.00%	0.00%	0.00%	13.06%	0.00%	2.92%	4.50%
Bottled gas (propane/butane/LP)	0.00%	3.05%	0.00%	0.00%	0.00%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%	2.92%	2.39%
Other	0.00%	2.82%	0.00%	9.17%	0.00%	3.13%	0.00%	9.62%	0.00%	0.00%	0.00%	4.92%	4.02%
n	3	73	-	17	3	78	-	12	-	15	3	75	93

I12. How many pool pumps do you have?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	1.00	1.00	-	0.93	1.00	0.98	-	1.00	-	0.98	1.00	0.98	0.98
n	3.00	72.00	-	17.00	3.00	77.00	-	12.00	-	15.00	3.00	74.00	92.00

I13. Indicate the quantity and type of pool pump(s) used in your home	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Single speed pool pump	0.67	0.59	-	0.76	0.67	0.61	-	0.74	-	0.71	0.67	0.61	0.63
Dual speed pool pump	0.33	0.13	-	-	0.33	0.12	-	-	-	-	0.33	0.12	0.11
Variable speed pool pump	-	0.11	-	-	-	0.11	-	-	-	0.02	-	0.11	0.09
Dont know	-	0.18	-	0.24	-	0.18	-	0.26	-	0.27	-	0.17	0.19
n	3	70	-	16	3	74	-	12	-	14	3	72	89

I14A. How many Sump Pumps are in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	0.18	0.20	0.17	0.17	-	0.11	0.01	0.21	0.15	0.18	0.19	0.14	0.19	0.15
n	59	434	64	64	2	136	22	117	147	751	739	159	618	280

I14B. How many Well Pumps are in your home?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Avg.	0.04	0.33	0.21	0.43	1.00	0.70	0.02	0.38	0.08	0.41	0.39	0.26	0.28	0.50
n	59	434	64	64	2	136	22	117	147	751	739	159	618	280

M1. % of customers willing to enroll in peak demand reduction for?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Air conditioner	0.26%	3.29%	2.34%	5.60%	0.00%	0.00%	16.82%	0.81%	2.93%	2.59%	2.60%	2.78%	3.06%	1.90%
Dehumidifier	0.35%	3.47%	0.58%	5.77%	68.32%	0.46%	16.82%	3.29%	2.77%	3.04%	3.03%	2.87%	2.68%	3.56%
Electric storage water heater	17.54%	5.14%	3.67%	14.73%	0.00%	8.31%	6.09%	5.07%	12.48%	6.47%	6.18%	11.24%	7.25%	7.63%
Pool pump	0.00%	1.91%	0.00%	5.14%	0.00%	0.46%	0.00%	5.01%	0.00%	2.16%	1.99%	1.32%	2.07%	1.40%
Electric vehicle charging	0.00%	0.24%	0.00%	0.00%	0.00%	0.88%	0.00%	0.00%	0.00%	0.32%	0.36%	0.00%	0.00%	0.76%
Willing to adjust equipment myself	8.93%	17.26%	8.36%	15.83%	0.00%	14.94%	18.82%	19.79%	10.04%	16.94%	17.31%	11.33%	18.78%	10.74%
Not interested	13.87%	21.05%	23.26%	29.29%	0.00%	17.64%	12.89%	11.90%	16.08%	20.13%	19.41%	19.87%	19.10%	20.25%
n	59	425	63	63	2	136	22	117	146	741	732	155	609	278

M2. How likely are you to consider replacing your boiler or water heater with a natural gas system?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
I would strongly consider switching natural gas	0.00%	22.90%	30.10%	18.50%	0.00%	16.20%	0.00%	13.30%	21.90%	20.40%	22.80%	8.80%	21.10%	19.50%
I might consider switching natural gas	0.00%	18.90%	18.90%	17.20%	0.00%	24.60%	0.00%	31.90%	13.80%	20.90%	20.90%	19.50%	22.00%	18.80%
I would not consider switching natural gas	71.30%	24.40%	29.00%	14.00%	31.70%	26.10%	0.00%	28.30%	39.10%	24.20%	24.30%	26.30%	23.10%	26.90%
Unsure	28.70%	33.70%	22.10%	50.30%	68.30%	33.10%	0.00%	26.50%	25.20%	34.50%	32.00%	45.50%	33.80%	34.90%
n	4	237	23	37	2	95	-	31	29	400	369	60	298	131

M2B. How likely are you to consider installing an electric heat pump?	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
I would strongly consider replacing my system with a heat pump	0.00%	7.80%	0.00%	4.50%	0.00%	6.90%	0.00%	6.20%	0.00%	7.20%	7.20%	5.90%	5.50%	9.20%
I would strongly consider augmenting my system with a heat pump	0.00%	3.90%	6.10%	4.30%	68.30%	10.40%	0.00%	12.10%	6.70%	5.90%	6.50%	3.30%	5.20%	7.10%
I might consider replacing my system with a heat pump	0.00%	12.40%	14.90%	24.50%	0.00%	13.30%	0.00%	18.70%	10.80%	14.00%	14.10%	13.00%	17.00%	9.50%
I might consider augmenting my system with a heat pump	0.00%	10.10%	13.30%	7.40%	0.00%	10.50%	0.00%	13.50%	9.70%	10.10%	11.80%	2.10%	11.30%	8.40%
I would not consider replacing or augmenting my system with a heat pump	71.30%	27.60%	27.90%	18.00%	31.70%	17.60%	0.00%	8.20%	38.30%	23.30%	23.40%	25.50%	23.60%	23.90%
Unsure	28.70%	38.30%	37.80%	41.30%	0.00%	41.30%	0.00%	41.30%	34.40%	39.40%	37.00%	50.40%	37.50%	41.80%
n	4	237	23	37	2	95	-	31	29	400	369	60	298	131

M2D. On a scale of 1 to 5 (5 being most important), rank the following factors that prevent you from replacing all or a portion of your current heating system	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
I don't know where to find a contractor to do this	1.17	2.05	1.95	2.07	2.27	1.97	1.27	2.03	1.38	2.03	2.00	1.86	2.03	1.88
An alternative system is too expensive	2.87	3.59	3.26	3.79	3.37	3.81	3.18	3.75	3.00	3.66	3.52	3.86	3.56	3.67
I don't think I can change my system to a new fuel source	3.95	2.87	3.35	3.11	2.27	2.59	3.83	2.85	3.77	2.83	2.80	3.32	3.01	2.76
It is too complicated	2.69	2.67	2.62	3.06	2.27	2.39	2.17	2.73	2.63	2.65	2.59	2.87	2.76	2.45
I don't know if my energy bills would increase or decrease if I change my fuel source	3.53	3.29	3.19	3.79	2.63	3.27	3.54	3.19	3.44	3.31	3.25	3.60	3.38	3.23
My energy bills would increase if I change my fuel source	2.53	2.82	2.38	3.24	1.00	2.95	2.55	2.88	2.49	2.88	2.82	2.91	2.91	2.71
I am concerned about the performance of other fuel sources	1.55	2.83	2.25	3.00	1.63	2.93	2.30	2.70	1.79	2.85	2.80	2.60	2.79	2.69
n	23	371	36	52	2	122	9	101	70	646	591	125	500	216

I14A. How many Sump Pumps are in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	0.18	0.19	0.07	0.16	0.08	0.20	0.28	0.09	-	0.17	0.21	0.18	0.17
n	88	530	59	221	129	610	18	141	29	133	118	618	898

I14B. How many Well Pumps are in your home?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Avg.	0.08	0.33	0.11	0.55	0.09	0.44	0.08	0.31	0.01	0.06	0.11	0.48	0.36
n	88	530	59	221	129	610	18	141	29	133	118	618	898

M1. % of customers willing to enroll in peak demand reduction for?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Air conditioner	0.80%	3.54%	8.96%	1.02%	1.17%	2.81%	6.08%	1.79%	0.00%	4.69%	4.00%	2.21%	2.64%
Dehumidifier	0.29%	3.19%	9.79%	2.79%	0.92%	3.35%	6.08%	1.91%	0.00%	0.92%	3.78%	3.42%	3.00%
Electric storage water heater	14.81%	5.63%	5.87%	7.84%	2.51%	6.73%	30.31%	5.53%	0.00%	0.77%	17.05%	7.51%	7.39%
Pool pump	0.00%	2.51%	0.00%	1.57%	0.00%	2.28%	0.00%	1.71%	0.00%	0.56%	0.00%	2.45%	1.83%
Electric vehicle charging	0.00%	0.00%	0.00%	0.86%	0.00%	0.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.38%	0.27%
Willing to adjust equipment myself	11.81%	20.27%	5.03%	11.45%	9.68%	18.43%	10.69%	11.52%	10.32%	21.98%	9.94%	16.02%	15.89%
Not interested	12.23%	20.57%	26.99%	19.41%	15.76%	19.94%	16.66%	20.82%	11.05%	16.84%	17.92%	20.73%	19.52%
n	88	521	58	220	128	604	18	137	29	130	117	611	887

M2. How likely are you to consider replacing your boiler or water heater with a natural gas system?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
I would strongly consider switching natural gas	15.00%	21.30%	34.50%	19.10%	32.50%	22.60%	0.00%	9.40%	0.00%	60.70%	21.90%	19.80%	20.50%
I might consider switching natural gas	16.60%	22.10%	8.60%	19.10%	20.40%	20.90%	0.00%	20.70%	0.00%	6.30%	13.80%	21.10%	20.70%
I would not consider switching natural gas	49.70%	22.20%	19.80%	27.10%	19.60%	24.40%	79.60%	22.80%	0.00%	12.50%	39.10%	24.30%	24.60%
Unsure	18.70%	34.30%	37.10%	34.80%	27.50%	32.10%	20.40%	47.10%	0.00%	20.50%	25.20%	34.70%	34.20%
n	14	284	15	116	25	344	4	56	-	6	29	394	429

M2B. How likely are you to consider installing an electric heat pump?	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
I would strongly consider replacing my system with a heat pump	0.00%	5.70%	0.00%	9.40%	0.00%	7.40%	0.00%	6.20%	0.00%	34.70%	0.00%	6.80%	7.00%
I would strongly consider augmenting my system with a heat pump	0.00%	5.30%	19.00%	6.80%	10.00%	6.40%	0.00%	3.50%	0.00%	0.00%	6.70%	6.00%	6.00%
I might consider replacing my system with a heat pump	4.00%	17.40%	23.30%	9.10%	16.10%	14.00%	0.00%	13.80%	0.00%	0.00%	10.80%	14.20%	13.90%
I might consider augmenting my system with a heat pump	15.00%	11.20%	0.00%	8.60%	14.40%	11.70%	0.00%	2.20%	0.00%	3.60%	9.70%	10.20%	10.10%
I would not consider replacing or augmenting my system with a heat pump	52.80%	22.60%	12.00%	24.30%	18.40%	23.50%	79.60%	22.00%	0.00%	12.50%	38.30%	23.40%	23.70%
Unsure	28.20%	37.80%	45.60%	41.70%	41.10%	36.90%	20.40%	52.30%	0.00%	49.20%	34.40%	39.30%	39.30%
n	14	284	15	116	25	344	4	56	-	6	29	394	429

M2D. On a scale of 1 to 5 (5 being most important), rank the following factors that prevent you from replacing all or a portion of your current heating system	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
I don't know where to find a contractor to do this	1.29	2.12	1.74	1.88	1.62	2.03	1.15	2.05	1.20	2.09	1.51	2.02	1.97
An alternative system is too expensive	3.04	3.63	2.86	3.71	2.66	3.58	3.33	3.99	1.68	3.46	3.85	3.70	3.60
I don't think I can change my system to a new fuel source	3.93	2.89	3.23	2.74	3.72	2.74	3.82	3.19	3.35	2.79	4.05	2.84	2.92
It is too complicated	2.65	2.78	2.53	2.45	2.48	2.59	2.78	2.89	2.14	2.76	2.94	2.63	2.65
I don't know if my energy bills would increase or decrease if I change my fuel source	3.62	3.35	2.77	3.25	3.03	3.26	3.84	3.53	3.24	3.29	3.56	3.32	3.33
My energy bills would increase if I change my fuel source	2.67	2.95	1.82	2.77	2.51	2.84	2.46	3.02	2.08	3.07	2.75	2.84	2.84
I am concerned about the performance of other fuel sources	1.70	2.93	2.11	2.72	2.06	2.85	1.52	2.87	1.77	3.02	1.81	2.82	2.75
n	40	460	30	186	60	531	10	115	20	124	50	522	716

Average HVAC Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
HVAC_Avg_SEER	13.17	12.27	11.80	12.64	-	12.82	11.79	12.57	12.24	12.38	12.40	12.07	12.32	12.68
HVAC_Avg_HSPF	-	9.00	9.50	8.20	-	8.85	-	13.50	9.50	8.95	8.98	-	9.34	8.75
HVAC_Avg_Cool_Cap_BTUH	30,377	31,858	33,955	31,734	-	28,109	31,227	30,804	32,424	31,389	31,430	31,847	31,977	28,364
HVAC_Avg_Heat_Cap_BTUH	-	48,000	33,600	34,600	-	28,400	-	-	33,600	33,330	33,350	-	40,378	28,400
n	6	153	15	20	-	23	5	32	26	228	238	16	226	28

Average Water Heater Effiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
WH_Avg_EF	0.83	0.86	0.84	0.97	0.58	0.98	0.76	0.79	0.82	0.88	0.87	0.90	0.86	0.91
n	13	231	18	31	1	53	7	57	39	372	336	75	283	128

Average Laundry Effiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
CW_Avg_MEF	1.99	2.18	2.28	2.21	2.58	2.04	2.20	2.21	2.10	2.16	2.17	2.13	2.15	2.17
n	18	366	28	59	1	96	5	93	52	614	556	110	471	195

Average Laundry Effiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
CD_Avg_CEF	3.70	3.76	3.76	3.80	-	3.69	3.82	3.68	3.72	3.74	3.73	3.79	3.75	3.72
n	8	103	16	26	-	35	1	32	25	196	200	21	161	60

Average Refriferation Effiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Ref_Avg_EnergykWhPerYr	451.63	526.10	519.10	555.43	583.42	523.27	475.08	548.04	473.01	530.00	532.66	485.25	524.12	522.38
n	40	355	38	51	1	112	14	96	93	614	604	103	502	205

Average Freezer Effiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Frz_Avg_EnergykWhPerYr	236.64	383.53	400.40	337.85	-	381.75	-	363.85	256.09	377.59	369.52	344.23	359.59	370.30
n	6	59	5	9	-	19	-	14	11	101	90	22	77	35

Average Dishwasher Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
DW_Avg_EnergykWhPerYr	330.10	329.87	327.58	328.39	-	322.83	341.94	327.89	330.94	328.42	328.56	328.98	330.62	324.73
n	15	280	37	37	-	75	9	75	61	467	466	62	385	143

Average Room HVAC Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
RAC_Avg_EER	10.90	10.82	9.88	11.61	-	10.06	10.77	10.81	10.78	10.73	10.94	10.30	10.83	10.57
n	8	43	3	5	-	16	2	19	13	83	74	22	65	31

Average Boiler Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Bl_Avg_AFUE	85.99	84.15	83.82	85.01	-	84.49	.	85.68	84.59	84.43	84.47	84.21	84.29	84.64
n	5	133	12	20	-	51	-	34	17	238	230	25	177	78

Average Furnace Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Furn_Avg_AFUE	81.22	83.58	80.83	81.57	80.00	83.11	82.89	84.48	81.30	83.42	83.36	82.76	83.44	82.80
Furn_Avg_Input_Capacity_BTUH	100,488	93,951	79,428	112,628	156,200	108,191	74,770	95,293	95,784	98,420	94,867	105,543	92,451	106,354
n	9	94	6	18	1	26	6	30	22	168	147	43	127	63

Average Humidifier Efficiency Rates	Eversource		Liberty		NHEC		Unitil							
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Non-LI	LI	CZ5	CZ6
Dh_Avg_EnergyFactorLiterPerkWh	1.95	1.87	1.87	1.94	2.00	1.78	1.54	1.91	1.90	1.87	1.89	1.80	1.87	1.87
n	4	42	6	8	1	8	1	8	12	66	68	10	53	25

Average HVAC Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
HVAC_Avg_SEER	12.18	12.33	12.61	12.68	12.56	12.38	10.62	12.33	12.87	12.07	11.76	12.50	12.37
HVAC_Avg_HSPF	9.50	9.31	-	8.75	9.50	8.95	-	-	-	13.50	9.50	8.79	8.98
HVAC_Avg_Cool_Cap_BTUH	32,726	31,918	30,344	28,231	32,933	31,327	29,856	32,205	30,692	31,491	33,739	31,349	31,462
HVAC_Avg_Heat_Cap_BTUH	33,600	41,792	-	28,400	33,600	33,330	-	-	-	-	33,600	33,330	33,350
n	21	205	5	23	25	213	1	15	9	72	17	156	254

Average Water Heater Effiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
WH_Avg_EF	0.81	0.87	0.88	0.91	0.84	0.87	0.81	0.95	0.70	0.71	0.91	0.93	0.88
n	24	259	15	113	32	304	7	68	13	91	26	281	411

Average Laundry Effiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
CW_Avg_MEF	2.01	2.17	2.39	2.16	2.18	2.17	1.98	2.16	1.98	2.11	2.19	2.17	2.16
n	33	438	19	176	43	513	9	101	12	115	40	499	666

Average Laundry Effiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
CD_Avg_CEF	3.69	3.76	3.84	3.71	3.71	3.74	3.75	3.81	3.71	3.70	3.76	3.75	3.74
n	14	147	11	49	22	178	3	18	7	35	18	161	221

Average Refriferation Effiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Ref_Avg_EnergykWhPerYr	480.44	531.17	447.94	528.13	481.09	538.61	451.33	491.73	466.28	532.47	476.13	529.54	523.48
n	63	439	30	175	84	520	9	94	23	103	70	511	707

Average Freezer Effiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Frz_Avg_EnergykWhPerYr	255.88	380.59	259.82	372.50	295.31	375.64	220.00	384.73	220.00	375.94	316.95	377.71	363.16
n	8	69	3	32	10	80	1	21	2	6	9	95	112

Average Dishwasher Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
DW_Avg_EnergykWhPerYr	336.23	330.14	321.00	325.06	332.03	328.26	322.73	329.47	312.43	331.07	338.37	327.93	328.62
n	36	349	25	118	57	409	4	58	13	82	48	385	528

Average Room HVAC Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
RAC_Avg_EER	10.72	10.85	10.90	10.51	10.82	10.97	10.71	10.19	10.69	10.81	10.93	10.72	10.74
n	9	56	4	27	10	64	3	19	6	17	7	66	96

Average Boiler Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Bl_Avg_AFUE	85.98	84.24	83.21	84.71	84.39	84.47	84.80	84.11	95.00	85.86	84.09	84.30	84.44
n	7	170	10	68	14	216	3	22	1	27	16	211	255

Average Furnace Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Furn_Avg_AFUE	81.42	83.83	80.64	82.89	81.31	83.51	81.30	83.16	81.91	85.86	81.19	82.65	83.18
Furn_Avg_Input_Capacity_BTUH	97,520	91,458	85,720	107,237	82,794	95,744	104,960	105,705	69,990	75,075	100,753	105,699	98,120
n	15	112	7	56	19	128	3	40	7	46	15	122	190

Average Humidifier Efficiency Rates	CZ5		CZ6		Non-LI		LI		Gas		No Gas		
	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	MF	SF	Total
Dh_Avg_EnergyFactorLiterPerkWh	1.95	1.86	1.79	1.89	1.88	1.89	1.90	1.71	-	1.88	1.90	1.87	1.87
n	5	48	7	18	9	59	3	7	-	11	12	55	78