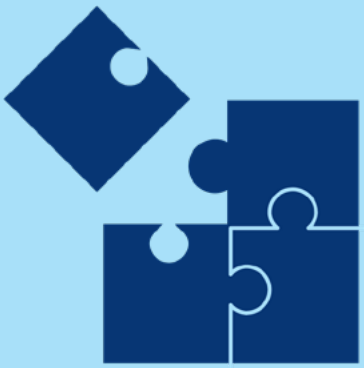
VOL. 1

Appendix 1

Commercial Baseline Study

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

Contents



SECTION 1A

Detailed Methodology

Detailed Methodology

This appendix provides additional detail about the methodology used to develop the results of the New York Commercial Baseline Study. This appendix covers three topics:

- Primary data collection methods
- Sample development and segmentation
- Weighting and other adjustments

1.1 Primary Data Collection Methods

The baseline results presented in Volume 1 are based on telephone/web survey responses of 3,882 commercial customers and on-site audits at 826 businesses. The data collection instruments for both efforts are provided in Appendix 1C.

TELEPHONE/WEB SURVEY

The telephone/web survey collected high-level penetration information on energy-using equipment, information about customers' energy-related decision-making, and information on business and occupancy characteristics (see Table 1).

To maintain a reasonable length and to reduce the likelihood of collecting inaccurate information, the survey did not include questions about equipment counts or characteristics as respondents often cannot accurately self-report this type of information over the phone or online.

Table 1 | Types of Information Collected in Commercial Baseline Survey

Penetration of Major End Uses	Energy Decision-Making	Business & Occupancy Characteristics
• Lighting • Cooling • Space heating • Ventilation • HVAC controls • Refrigeration • Water heating • Commercial kitchen equipment • Motors • Compressed air • Office equipment • Energy management • On-site generation	• Decision-making structure • Equipment investment criteria • Barriers to energy efficiency • Role of incentives on energy efficiency • Familiarity and use of ESCOs	• Business segment verification • Own/rent space • Building structure type • Square footage • Number of employees • Hours of operation

The survey was aimed at building owners, business managers, and facility managers with knowledge of energy-using equipment at the sampled business. We also used the telephone/web survey to recruit a subset of survey respondents for on-site audits.

SURVEY FIELDING

The Study Team fielded the survey between June and December 2018, contacting over 175,000 customers of participating New York investor-owned utilities (IOUs).[1] Due to differences in data provided by the IOUs, the survey outreach differed for businesses in each utility service territory. When possible, the Study Team contacted businesses by telephone, using a combination of utility-provided and public information, and gave respondents the option to complete the survey over the phone or online. If email addresses for businesses were available, the Study Team sent email invitations to businesses to complete the survey online. For cases where neither phone numbers nor email addresses were available, the Study Team sent mail invitations with a weblink to complete the survey online. In many cases, the Study Team contacted businesses through multiple modes to maximize responses rates.

Overall, 3,522 commercial customers completed the survey, 2,057 over the phone and 1,465 online (see Table 2). The statewide response rate was 3.3%. The Upstate region had the highest response rate (5.1%), followed by the Long Island/Hudson Valley region (3.9%), and the Downstate region (2.1%). Appendix C provides more detail about the survey dispositions and response rates.

Table 2 | Types of Information Collected in Commercial Baseline Survey

	Statewide	Downstate	Long Island/Hudson Valley	Upstate
Completed interview	3,522	1,237	687	1,598
Response rate	3.3%	2.1%	3.9%	5.1%

It should be noted that the baseline analysis is based on survey responses from 3,882 commercial customers. The 3,522 responses referred to above are based on the primary sample frame used for this study (based on utility data). In addition, the study leveraged (1) 390 responses from a 2018 baseline study conducted by Opinion Dynamics for PSEG Long Island; (2) 33 responses from a temporary InfoGroup-based sample frame; and (3) 13 responses from a CoStar-based sample frame developed for multi-family facilities. In contrast, 76 of the 3,522 responses could not be used in the analysis because the final business segment was outside the scope of this study. As such, the total number of survey responses for the analysis was 3,882 (i.e., 3,522 + 390 + 33 + 13 – 76).

[1] While the sample was mostly based on customer data provided by the New York IOUs, the Study Team also used two other sources for sampling: (1) a sample of 24,510 multifamily buildings from CoStar, a commercial real estate database; and (2) an interim sample of 8,288 Orange & Rockland customers from InfoGroup.

1.1.1 ON-SITE VISITS

The Study Team supplemented the phone/web survey with on-site visits. Performed by trained auditors, these visits collected detailed information on the penetration and saturation of energy-using equipment, equipment and building characteristics, and energy management parameters that are difficult to reliably gather via self-report (see Table 3).

The on-site data collection tool was designed to be flexible and easy to implement in the field, ensuring that auditors could easily navigate the instrument as they move through a facility and annotate sections with site notes to facilitate data QA/QC functions.

Table 3 | Types of Information Collected in On-Site Visits

Presence and Quantity of Major End Uses	Equipment Characteristics	Business, Occupancy & Behavioral Characteristics
• Lighting • Cooling • Heating • HVAC Controls and EMS • Refrigeration • Water heating • Motors, fans and pumps • Compressed air • Office equipment • Food service equipment • On-site generation • Electric vehicles	• Equipment type • Nameplate information (make, model, age, size/capacity) • Lighting wattage • Efficiency rating (e.g., EER/SEER, AFUE) • ENERGY STAR status • Efficient and inefficient components (e.g., VFDs, demand-controlled ventilation, tank insulation)	• Square footage • Space types (% of overall SF, % conditioned) • Occupancy hours • Monthly, weekly, and daily operation • Equipment hours-of-use • Control strategy (lighting: manual, EMS, occ. sensors, dimmers, daylighting, etc.; HVAC: thermostat, EMS, etc.)

ON-SITE VISIT FIELDING

The Study Team conducted 727 on-site visits between July 2018 and January 2019. On-site visit participants were recruited through the survey.

Similar to the phone/web survey, the Study Team leveraged on-site visits from a 2018 baseline study conducted by Opinion Dynamics for PSEG Long Island. In total, the baseline analysis was based on 826 on-site visits, 727 conducted for this study and 99 conducted for the PSEG Long Island baseline study.

[3] Some businesses in the Downstate region were offered $200 to complete an on-site visit due to the low response rates in that region.

1.2 Sample Development and Segmentation

One of the early tasks of the Baseline Study was to develop sampling options for the primary data collection tasks. The Study Team used two key considerations: (1) the source for customer data needed to develop the population and the sample; and (2) different sampling segmentation approaches.

The Study Team first reviewed pertinent existing studies to identify common sampling approaches for commercial baseline studies, potential data sources, and any existing data that might reduce the need for new primary data collection. This review identified three potential data sources to support development of the study population and sampling: (1) utility customer data, (2) CoStar (a commercial real estate database), and (3) commercially available lists for businesses from firms like InfoGroup and Dun & Bradstreet. The review also identified business segment, energy usage, and geography as desirable sampling dimensions. Since business-level energy usage is only available from utility customer data, this data source was selected as the first choice.

The sampling and analysis unit for this study was the business, which is defined as a unique company or organization at a unique location. A business may consist of a single stand-alone building, there may be many businesses within a single building, or (less commonly) a business may consist of multiple buildings or parts of buildings. Additionally, many businesses have multiple electric utility accounts. For purposes of this study, the study team rolled up all applicable accounts associated with each business.

The Study Team therefore requested customer data from the participating New York IOUs. To meet customer privacy concerns, the IOUs provided this data in two parts: (1) anonymized account data, including monthly and annual electric usage (kWh and kW) and business segment information (i.e., NAICS or SIC codes); and (2) customer information, including business name and address. Most utilities provided the customer information separately, after the sampling dimensions were established, and only identified the business' assigned study stratum (based on business segment, usage category, and geographic region) to preserve customer anonymity. Notably, NYSEG and RG&E did not provide any customer information, other than the anonymized usage data, to the Study Team and instead directly reached out to sampled customers.

After processing anonymized account information from the utilities, the Study Team met with NYSERDA and utility stakeholders in November 2017 to discuss and agree upon the study's sampling dimensions. Based on these discussions, all parties decided on the following sampling dimensions:

BUSINESS SEGMENT – Working with NYSERDA, the Study Team identified nine business segments to include in the scope of the study, listed in Table 4. In some cases, similar business segments were grouped together, such as office and government, in order to maximize the coverage of commercial businesses.

Table 4 | Business Segments Included in Study

Segment	Number of Businesses	Major Business Types Included
Office/Government	127,046	Executive offices; operators of nonresidential buildings
Retail	94,969	Retail; salons; barbers
Food Service	39,345	Restaurants; caterers, bars
Warehouse	25,527	Warehouse; wholesale
Grocery/Convenience	16,342	Grocery stores; gasoline service stations
Health Services	32,110	Doctor's offices; dentist offices
Hospitals	1,240	Hospitals, including specialty and psychiatry hospitals
Education	18,541	Elementary schools; high schools; colleges and universities
Lodging/Hospitality	12,103	Hotels and motels; civil, social, and fraternal organizations
TOTAL	**367,223**	

The Study Team separated "Hospitals" from the "Health Services" business segment because hospitals tend to have very different equipment and savings opportunities from other types of health service facilities. Splitting out hospitals creates two more homogeneous subsegments, which allowed the Study Team to make combinations across size and/or regional segments within those separate business types. However, note that for analysis purposes, Health Services and Hospitals are typically combined into a single segment in the baseline report.

The commercial segments included in the study represent approximately 70% of electric accounts and close to 90% of electric usage in the commercial sector.[4] Notably, this study does not include the Multifamily and the Other Commercial segments, which represent approximately 3% and 4% of annual kWh:

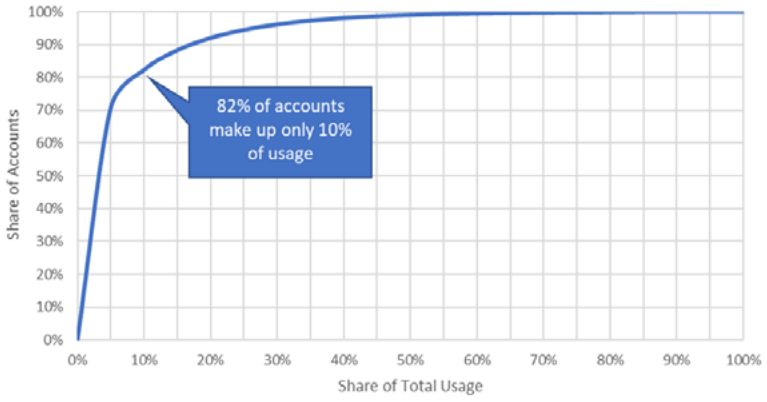
- NYSERDA originally identified master-metered multifamily buildings as a study segment of interest. However, population-level data that would have allowed the Study Team to identify and target master-metered multifamily buildings is not available. As a result of this lack of a clearly defined target population, the Study Team was required to identify master-metered buildings through the survey. Due to the low incidence of master-metered buildings in the multifamily segment, combined with the very low response rate for the segment overall, NYSERDA decided to exclude the multifamily segment from the quantitative analyses of the Commercial Baseline Study.

- NYSERDA chose to exclude the miscellaneous "Other Commercial" segment. This segment accounts for relatively little usage (<5%) and would likely have been very heterogeneous, limiting the value of data collection for this segment.

Additionally, approximately 4% of annual kWh was in segments outside the scope of the study (e.g., businesses in industrial and agriculture segments with commercial rate codes).

CUSTOMER USAGE CATEGORY – As illustrated below, most commercial accounts in New York are small and only a small share make up the majority of overall usage. To ensure sufficient representation of larger usage businesses, the Study Team stratified the sample into two usage categories: Small, with annual usage of less than 75 MWh, and Medium/Large, with annual usage of 75 MWh or more.

Figure 1 | Breakout of Commercial Accounts by Percentile of Total Annual Usage



[4] These percentages are based on the total commercial accounts and usage provided by the seven investor-owned utilities included in the study and does not include municipal utilities. The percentages may not correctly reflect segments not included in the study as the utilities varied in how they identified or excluded out-of-scope accounts.

GEOGRAPHIC REGION – Following precedent in other New York studies, as well as consideration of climate zones, building stock, and feedback from NYSERDA and stakeholders, the Study Team divided the state into three geographic regions, based on the electric service territories of the seven New York investor-owned utilities (IOU). The figure below shows the three geographic regions and the utilities contained within.

Table 5 | Types of Information Collected in On-Site Visits

Geographic Region	Number of Businesses	Ulitities Included
Downstate	155,158	Consolidated Edison
Upstate	112,477	National Grid, NYSEG, RG&E
Long Island/Hudson Valley	99,588	PSEG Long Island, Central Hudson, Orange & Rockland
Total	**367,223**	

Note that the Study Team considered grouping Westchester County with Long Island and the Hudson Valley, as done in some other Statewide studies. However, this was logistically impossible because utility data could not be provided for subregions, due to data confidentiality concerns.

In total, the three sampling dimensions would have resulted in 54 individual strata (or sampling cells), i.e., nine business segments times two size categories times three regions. However, based on the available budget for the data collection tasks and precision targets, the Study Team had set a target number of no more than 36 strata, which allowed for approximately 150 survey completes and 30 onsite visits per stratum. The Team set these targets using the following assumptions:

1. Targeting 30 completed on-site visits per stratum, where supported by the population, would result in at least 70 completes for most business segments and region/usage category combinations. This would maximize the opportunity to meet the 90/10 confidence/precision threshold for key data collected in the on-site visits.
2. Approximately 20% of survey respondents would be willing to participate in an on-site visit.

For strata where the assumed response rate meant the population could not support 150 completed interviews, the Study Team planned to contact all customers with available contact information (i.e., a census attempt) to complete as many interviews as possible. The Study Team targeted fewer completed on-site visits in each stratum due to their high cost.

In order to reduce the total number of sampling segments, the Study Team reviewed which sampling dimensions could be collapsed with a minimal loss of insight (i.e., which sampling dimensions were expected to exhibit little to no variation across key study outputs). For instance, if equipment/building characteristics and savings potential (on a per square foot basis) of health service businesses were similar across the two usage categories but different by geographic region, then NYSERDA would lose little insight by collapsing the usage strata but would want to retain geographic segmentation. Based on this review, the Study Team combined several segments across usage categories and/or regions. Additionally, some segments were combined where sample sizes would have been too small for separate reporting.

Overall, these combinations resulted in a total of 32 strata, with six strata each for the office/government, retail, and food service segments; four strata each for the grocery/convenience and education segments; two strata each for the health services and lodging/hospitality segments; and one stratum each for the warehouse and hospitals segment, as illustrated below.

Figure 2 | Sampling Strata

		Upstate	Long Island/ Hudson Valley	Downstate
Office/Government Retail Food Service	Small	✓	✓	✓
	Large	✓	✓	✓
Grocery/Convenience	Small	✓	✓	✓
Education	Large		✓	✓
Health Services Lodging/Hospitality	Small		✓	✓
	Large		✓	✓
Warehouse	Small		✓	✓
Hospitals	Large		✓	

The table below shows, for each of the 32 strata, the sample frame in terms of number of businesses and annual electric usage, as well as the targeted number of completed survey and site visits.

Table 6 | Sampling Strata Details

Business Segment	Region	Usage Category	Number of Businesses	Usage (MWh)	Targeted Completes	
					Survey	On-Site Visits
Office/Government	Downstate	75 MWh and Greater	7,103	7,335,735	150	30
		Less Than 75 MWh	48,654	974,434	150	30
	Upstate	75 MWh and Greater	4,479	5,275,834	150	30
		Less Than 75 MWh	29,943	258,151	150	30
	Long Island/ Hudson Valley	75 MWh and Greater	4,362	2,218,827	150	30
		Less Than 75 MWh	32,505	659,966	150	30
Retail	Downstate	75 MWh and Greater	3,848	1,866,090	150	30
		Less Than 75 MWh	35,516	1,031,822	150	30
	Upstate	75 MWh and Greater	3,541	1,321,145	150	30
		Less Than 75 MWh	25,870	289,506	150	30
	Long Island/ Hudson Valley	75 MWh and Greater	3,244	1,243,198	108	22
		Less Than 75 MWh	22,950	481,156	150	30
Food Service	Downstate	75 MWh and Greater	8,122	1,769,721	150	30
		Less Than 75 MWh	9,502	410,509	150	30
	Upstate	75 MWh and Greater	4,173	849,371	123	25
		Less Than 75 MWh	8,105	157,767	150	30
	Long Island/ Hudson Valley	75 MWh and Greater	4,052	856,564	108	22
		Less Than 75 MWh	5,391	232,202	150	30
Warehouse	All Regions	All Usage Categories	25,527	4,296,780	150	30
Grocery/Convenience	Downstate	75 MWh and Greater	3,979	1,449,497	115	23
		Less Than 75 MWh	4,806	154,854	150	30
	Upstate & Long Island/ Hudson Valley	75 MWh and Greater	4,287	1,883,427	150	30
		Less Than 75 MWh	3,270	87,062	150	30
Health Services	Downstate	All Usage Categories	17,265	2,416,702	150	30
	Upstate & Long Island/ Hudson Valley	All Usage Categories	14,845	1,246,230	150	30
Hospitals	All Regions	All Usage Categories	1,240	1,339,993	85	17
Education	Downstate	75 MWh and Greater	2,080	2,540,129	30	6
		Less Than 75 MWh	3,582	82,762	150	30
	Upstate & Long Island/ Hudson Valley	75 MWh and Greater	3,743	3,058,310	123	25
		Less Than 75 MWh	9,136	145,072	150	30
Lodging/Hospitality	Downstate	All Usage Categories	805	808,911	50	10
	Upstate & Long Island/ Hudson Valley	All Usage Categories	11,298	984,753	150	30
Total			**367,223**	**47,726,483**	**4,342**	**870**

1.3 Weighting and Other Adjustments

The results presented in this report were weighted to be representative of the population. In addition, data collected in both the survey and the on-site visits went through an adjustment process that takes advantage of both the greater number of survey completes and the higher accuracy of auditor-collected on-site data. The section below describes the weighting and data adjustments.

1.3.1 TELEPHONE SURVEY AND ON-SITE VISIT WEIGHTING

The Study Team developed and applied weights to ensure that the telephone survey and on-site results are representative of the population of commercial businesses in New York State. The results in this report are weighted to account for the differences in the distribution of customer counts by region, usage category, and business segment within our sample compared to the population. These distributions differ because our approach set the same survey and on-site targets for all strata, independent of the population in each stratum (with the exception of some strata with very small populations, as noted above).

Table 7 | Survey and On-Site Visit Weighting

Business Segment	Region	Usage Category	Number of Businesses	Survey Completes	Survey Weight	On-Site Visits	On-Site Visit Weight
Office/Government	Downstate	75 MWh and Greater	7,103	78	0.9627	15	1.0767
		Less Than 75 MWh	48,654	173	2.9730	26	4.4252
	Upstate	75 MWh and Greater	4,479	113	0.4190	33	0.4959
		Less Than 75 MWh	29,943	187	1.6927	42	2.5486
	Long Island/ Hudson Valley	75 MWh and Greater	4,362	101	0.4566	21	0.3183
		Less Than 75 MWh	32,505	152	2.2606	26	1.7021
Retail	Downstate	75 MWh and Greater	3,848	59	0.6895	12	0.7291
		Less Than 75 MWh	35,516	186	2.0185	28	2.8842
	Upstate	75 MWh and Greater	3,541	88	0.4254	24	0.2516
		Less Than 75 MWh	25,870	262	1.0438	51	1.2005
	Long Island/ Hudson Valley	75 MWh and Greater	3,244	69	0.4970	12	0.6147
		Less Than 75 MWh	22,950	176	1.3785	40	1.4910
Food Service	Downstate	75 MWh and Greater	8,122	104	0.8256	23	0.7695
		Less Than 75 MWh	9,502	80	1.2556	14	1.5433
	Upstate	75 MWh and Greater	4,173	119	0.3707	32	0.2875
		Less Than 75 MWh	8,105	180	0.4760	42	0.4388
	Long Island/ Hudson Valley	75 MWh and Greater	4,052	94	0.4557	15	0.6581
		Less Than 75 MWh	5,391	104	0.5480	22	0.5572
Warehouse	All Regions	All Usage Categories	25,527	240	1.1085	42	1.2618
Grocery/Convenience	Downstate	75 MWh and Greater	3,979	71	0.5938	11	0.8225
		Less Than 75 MWh	4,806	74	0.6882	18	0.6071
	Upstate & Long Island/ Hudson Valley	75 MWh and Greater	4287	103	0.4542	32	0.3361
		Less Than 75 MWh	3,270	75	0.4559	18	0.3913
Health Services	Downstate	All Usage Categories	17,265	193	0.9479	25	1.5099
	Upstate & Long Island/ Hudson Valley	All Usage Categories	14,845	206	0.7599	45	0.7338
Hospitals	All Regions	All Usage Categories	1,240	19	0.6569	2	1.4098
Education	Downstate	75 MWh and Greater	2,080	40	0.5510	6	0.7883
		Less Than 75 MWh	3,582	74	0.5129	17	0.4791
	Upstate & Long Island/ Hudson Valley	75 MWh and Greater	3,743	112	0.3479	30	0.2660
		Less Than 75 MWh	9,136	168	0.5728	52	0.3920
Lodging/Hospitality	Downstate	All Usage Categories	805	23	0.3709	6	0.3051
	Upstate & Long Island/ Hudson Valley	All Usage Categories	11,298	159	0.7435	44	0.5585
Total			**367,223**	**3,882**		**826**	

1.3.2 RESPONSE ADJUSTMENTS

The phone/web survey was designed to avoid questions that respondents are generally unable to accurately answer and, as a result, did not include overly technical questions. Despite this, the Study Team noted some differences between the self-reported results and what auditors found on site. To account for any self-reporting error, the Study Team developed and applied response adjustment factors based on independent verification from trained auditors during the site visits.

ADJUSTMENT METHODOLOGY

The Study Team used a ratio adjustment approach to adjust the phone/web survey responses. This method first develops an adjustment factor, based on (1) the weighted values of the completed phone survey responses[5] for sites that also received an on-site visit and (2) the equivalent weighted values from site visits. The adjustment factor is then multiplied by the value from the survey responses for all sites. The values to be adjusted can be either a mean or a proportion. For categorical questions, a separate adjustment factor is developed for each response category.

When adjusting proportions, an additional step is necessary. Because each response category is adjusted separately, the total number of responses no longer sums to the correct valid number of observations ("n"). To correct for this, the Study Team developed an additional balancing factor, which is the ratio of the correct "n" and the adjusted "n". This ratio is multiplied by the adjustment factor for each response category to derive the final adjustment factors for the question.

The equations for the adjustment factor and balancing factor are shown below.

$$Adjustment\ Factor\ (AF) = \frac{Z_{OS,i}}{Y_{OS,i}}$$

$$Balancing\ Factor = \frac{1}{\sum_i (Y_{P,i} * AF_i)}$$

$$Y = Weighted\ Phone/Web\ Survey\ Response\ Value$$

$$Z = Weighted\ On-site\ Response\ Value$$

$$OS = On-site\ (OS)\ Respondent\ Pool$$

$$P = Phone/Web\ (P)\ Respondent\ Pool$$

$$i = Response\ Option\ i$$

The resulting adjustment factors are then multiplied by phone/web survey result for all businesses to develop adjusted values.

Consider the following example:
In the phone/web survey, 15% (weighted) of the 826 businesses that received an on-site visit reported having motors. However, when on-site, the Study Team found that only 9% of these businesses had motors, meaning that businesses overstated the prevalence of motors in the survey. Using these values, the Study Team first developed the adjustment factor for motors, as follows:

Have motors: $Adjustment\ Factor = \frac{8.8\%}{14.7\%} = 0.59$

Do not have motors: $Adjustment\ Factor = \frac{91.2\%}{85.3\%} = 1.07$

The Study Team then developed a balancing factor of 0.98 to the account for adjusted responses not summing to the correct valid "n."

[5] Judith T. Lessler and William D. Kalsbeek. Nonsampling Error in Surveys. 1992. p. 269.

The Study Team then applied these adjustment factors and balancing factor to the full phone/web survey results by response category. Of all phone/web survey respondents, 11% reported that they had motors in their businesses. Multiplying these responses by the adjustment factor yields:

Have motors: $Adjusted\ Value = 11.4\% * 0.59 * 0.98 = 6.6\%.$

In most cases, adjustment factors were developed at the statewide-level and applied to the applicable questions. However, for about 20% of adjustment ratios (27 out of 128), the Study Team calculated and applied adjustment ratios at a stratum-level (e.g., Upstate-Small Usage-Offices). In these cases, the Study Team relied on a raking methodology, where an adjustment ratio was iteratively developed for each stratum based on adjustment ratios of each dimension independently. Raking retains the cross-product ratios in the individual stratum while producing estimates that are consistent with the adjustment ratios of the independent sample dimension. Raking is useful in cases where adjustment ratios differed for individual strata, yet the sample sizes in each stratum was too small to develop an independent factor.

1.3.3 POPULATION ADJUSTMENTS

As is often the case with utility customer data, large shares of the customer data used to develop the population and sample lacked a business segment classification or included an incorrect segment. Because of this, the Study Team developed and applied population adjustment factors to correct for businesses with misclassified or missing segment information in the utility data. The phone/web survey included a series of questions to confirm or correct the respondents' business segments from the utility data, if present, or to establish the business segment if it was not present in the utility data.

In addition to moving businesses from one study segment to another, this process also moved some businesses to segments outside the scope of the study, such as the Other Commercial or Industrial segments. Recognizing that some businesses listed as being in segments outside the scope of the study in the utility data may also be misclassified and should be included, we also surveyed a sample of businesses in the Other Commercial and Industrial segments to verify and potentially reclassify those respondents into in-scope segments. After determining the reclassification needed for the phone/web survey respondents, the study team developed adjustment factors and applied them to the population of businesses to create a final population of commercial businesses in each segment. The figure below shows a simplified example of how respondents' segments may be confirmed or corrected, both within and outside the study scope.

Figure 3 | Illustration of Segment Reclassification from Survey

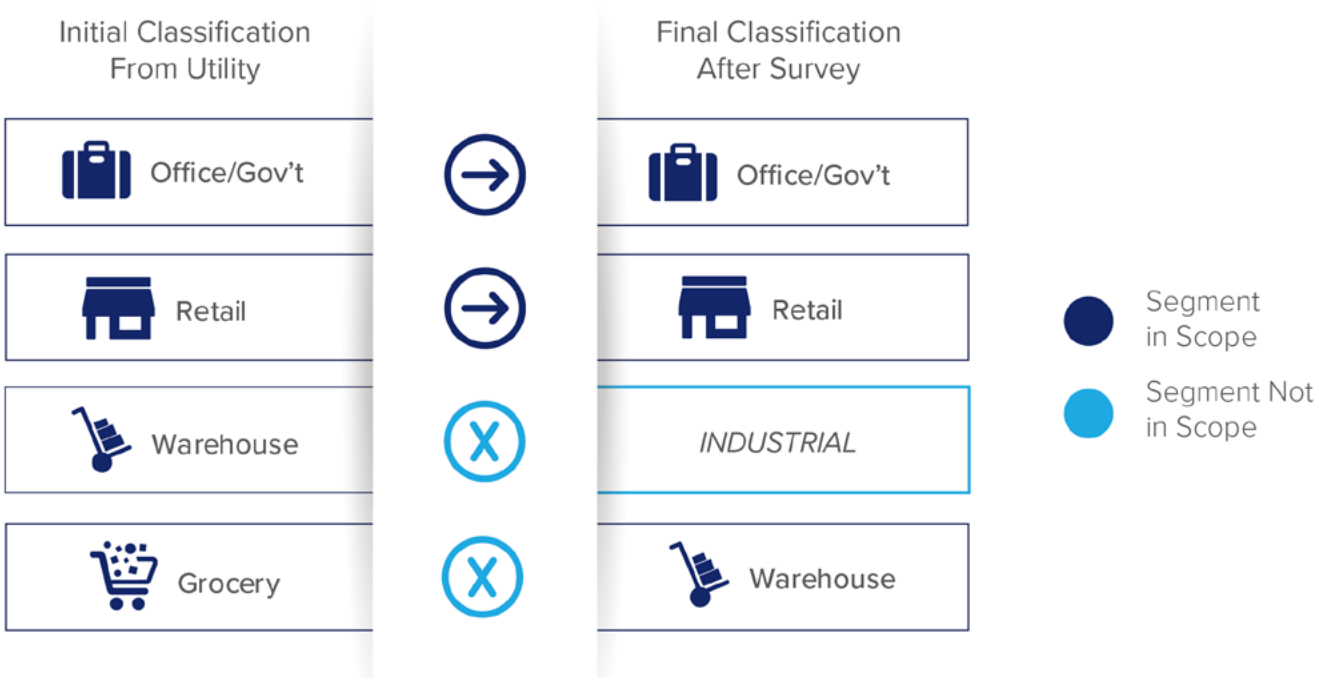


Table 8 | Population Adjustments by Segment

Original Segment	Final Segment														Total of Original Segment
	In Study Scope									Not In Study Scope					
	Office/ Government	Retail	Food Service	Warehouse	Grocery/ Convenience	Health Services	Hospitals	Education	Lodging/ Hospitality	Multifamily	Industrial	Agricultural	Residential	Other	
Office/ Government	61%	6%	3%	3%	1%	1%	0%	4%	2%	12%	2%	1%	0%	3%	100%
Retail	6%	76%	1%	3%	2%	1%	0%	1%	1%	1%	3%	1%	0%	5%	100%
Food Service	2%	5%	87%	1%	0%	1%	0%	0%	0%	2%	0%	0%	0%	2%	100%
Warehouse	11%	14%	1%	60%	0%	0%	0%	0%	0%	1%	3%	0%	0%	7%	100%
Grocery/ Convenience	3%	14%	6%	3%	60%	4%	0%	0%	0%	1%	2%	1%	0%	6%	100%
Health Services	5%	2%	0%	0%	0%	83%	0%	4%	0%	4%	0%	0%	0%	0%	100%
Hospitals	7%	3%	0%	0%	0%	24%	55%	0%	0%	7%	0%	0%	0%	3%	100%
Education	5%	4%	0%	0%	0%	1%	0%	81%	0%	3%	0%	0%	0%	3%	100%
Lodging/ Hospitality	4%	9%	2%	1%	0%	2%	0%	1%	66%	3%	1%	4%	1%	5%	100%
Unknown/ Industrial	17%	12%	6%	11%	2%	2%	0%	2%	1%	6%	26%	3%	1%	8%	100%
Other	9%	6%	1%	7%	0%	1%	0%	1%	0%	2%	8%	6%	0%	59%	100%

1.3.4 ADDITIONAL ADJUSTMENTS

In addition to the global adjustments described above, the Study Team also made adjustments to specific responses, including the square footage of sampled businesses and technical equipment information.

SQUARE FOOTAGE

Square footage is a key input into the baseline study and potential model. The Study Team asked each phone/web survey respondent about the size of their business in square feet and also collected this information during the on-site visits. Although telephone survey interviewers prompted respondents to give their best estimate, 22% of customers were still unable to estimate the square footage of their business. In these cases, we used the site visit estimate if available. Additionally, our initial review of the survey responses found that many of the estimates were not accurate. The self-report error adjustment methodology (described above) used for many questions did not work in this case because the square footage estimates from the site visits may also have been incorrect, either from auditor error or from being provided by the same contact at the site who supplied the erroneous first estimate. Instead, to determine the square footage of these properties, the Study Team used public property records where available, as well as aerial and satellite photographs along with a web-based application designed to obtain the square footage of a building from these photos.

EQUIPMENT INFORMATION

Whenever possible and reasonable, the site visit auditors collected detailed information (e.g., efficiency level of central air conditioning systems (SEER) and horsepower of motors) for the equipment found on-site. In cases where it was impossible to determine this information on-site, the Study Team used to the model number, collected during the on-site visit, to research this information following the visit.[6]

[6] In some cases, to minimize the time on-site and disruption to customers, auditors only collected the model numbers of equipment knowing that other nameplate information could be researched later.

Precision of Results

After conducting the data collection efforts based on the best feasible sample design, the Study Team developed precision estimates for the results. Precision levels for commercial baseline study results can vary widely because the two drivers of precision (the number of observations and the variation of results) can vary dramatically from question to question. While the penetration estimates (i.e., the share of all businesses with that equipment) for most equipment can typically meet the industry standard 90/10 threshold, meeting this threshold for saturation (i.e., the average number of widgets per business among all businesses) and equipment characteristics is often impossible, especially if the equipment is rare (e.g., chillers) or the number of widgets varies widely from business to business (e.g., light fixtures).

With this in mind, the Study Team sought to establish rules to ensure the usability of the vast amount of data collected in the commercial baseline study by balancing the desire for rigorous results (i.e., highly precise estimates) with the need to show results at high levels of granularity (e.g., by combinations of region, segment, and usage category). After assessing the precision estimates for this study, reviewing the treatment of this issue in other baseline studies of similar size and scope, and discussions with NYSERDA, the Study Team used the following rules:

- For reporting purposes, Opinion Dynamics only reported penetration results with absolute precision of better than 0.15 at the 90% confidence level for percentage-based estimates, such as penetration and distributions of equipment characteristics.

- Due to the difficulty of achieving highly precise estimates without extremely large numbers of observations, the Study Team reported all saturation estimates and equipment characteristics (regardless of the precision) for all equipment that meets the precision threshold for penetration.

It should be noted that the precision estimates for some of the study strata are not true “precision” estimates, as generally understood in the industry. Precision is a measure of sampling error when estimating population parameters based on a sample. In a stratified design, as was used for the baseline survey, the concept of sampling error is not relevant for any strata for which a census was attempted – and is typically not calculated (i.e., the sampling error is 0). This is true even if a census was not attained because the lack of a census was due to non-response, not sampling. Nevertheless, the Study Team developed standard errors (which are used to develop estimates of precision) for results in all strata, regardless of whether they were based on a sample or a census attempt. This implicitly treats the interviewed group as a sample and acknowledges that data was not gathered from all customers in the census strata, i.e., there is non-response error. This approach allows for a consistent measurement of uncertainty around the estimates, but it overstates sampling error (making the results appear less precise and thus is conservative compared to the alternative) because census-attempt strata are not assigned a sampling error of 0.

SECTION 1B

Survey Response Rates

Survey Response Rates

To complete the Baseline Study survey, the Study Team contacted over 175,000 customers. Overall, 3,522 commercial customers completed the survey, 2,057 over the phone and 1,465 online.[1] The statewide response rate was 3.3%. The Upstate region had the highest response rate (5.1%), followed by the Long Island/Hudson Valley region (3.9%), and the Downstate region (2.1%).

RESPONSE RATE METHODOLOGY

The survey response rate (RR) is the number of completed interviews divided by the total number of potentially eligible respondents. The team calculated RR3, using the standards and formulas set forth by the American Association for Public Opinion Research (AAPOR).[2] The formulas used to calculate RR3 and the definitions of the letters used in the formulas are shown below.

Equation 1 | Formula for RR3

$$RR3 = \frac{I}{(I + N + e1(U1 + e2 * U2))}$$

Where:

$$e1 = \frac{(I + N)}{(I + N + X1)} \qquad e2 = \frac{(I + N + X1 + U1)}{(I + N + X1 + U1 + X2)}$$

Table 1 | Disposition Categories

Disposition Category	Disposition Category Key
RR3	Response rate
e1	Estimated proportion of cases of unknown survey eligibility that are eligible (incidence)
e^2	Estimated proportion of cases of unknown business eligibility that are eligible
I	Complete interview
N	Eligible incomplete interview
X1	Survey-ineligible business
X2	Not an eligible business
U1	Business with undetermined survey eligibility
U2	Undetermined if eligible business

[1] Note that the baseline analysis is based on survey responses from 3,882 commercial customers. The 3,522 responses referred to in this section are based on the primary sample frame used for this study (based on utility data). In addition, the study leveraged (1) 390 responses from a 2018 baseline study conducted by Opinion Dynamics for PSEG Long Island; (2) 33 responses from a temporary InfoGroup-based sample frame; and (3) 13 responses from a Costar-based sample frame developed for multi-family facilities. In contrast, 76 of the 3,522 responses could not be used in the analysis because the final business segment was outside the scope of this study. As such, the total number of survey responses for the analysis was 3,882 (3,522 + 390 + 33 + 13 – 76).

[2] Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys, AAPOR, 2011. http://www.aapor.org/AM/Template.cfm?Section=Standard_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156.

Table 2 shows the detailed disposition codes used for the Baseline Study survey, including the applicable survey modes and code definitions.

Table 2 | Disposition Categories

Disposition Category	Disposition Code	Survey Mode	Definition
I	Complete	All	An eligible business completed the survey
N	Partial complete - survey eligibility confirmed	All	An eligible business partially completed the survey
U[1]	Partial complete - survey eligibility unknown	All	A business that may or may not be eligible partially completed the survey
U1	Answering machine	Phone	The interviewer reached the answering machine of a business
U1	Substitute phone number entered	Phone	The interviewer was provided a substitute phone number to call instead
U1	Not available	Phone	The interviewer was told a knowledgeable respondent was unavailable
U1	Language problems	Phone	The interviewer encountered language barriers
U1	Hard appointment	Phone	The interviewer scheduled a specific time to call back for an interview
U1	Soft appointment	Phone	The interviewer was provided a general time to call back for an interview
U1	Refusal	Phone	The respondent refused the interview
U1	Gatekeeper refusal	Phone	A call screener for the respondent declined the interview
U1	Added to DNC list	Phone	The respondent refused the interview and asked to be added to the Do Not Call list
U1	Referred to online survey	Phone	The respondent was contacted by phone and referred to the online survey but did not access it
U2	No response	Email/Mail	No response to email or mail outreach
U2	No answer	Phone	Nobody answered the phone
U2	Busy	Phone	There was a busy signal
U2	Privacy line/Number blocked	Phone	The phone number was blocked
U2	Sample loaded/opened but not used	All	The customer was in the sample but never contacted
X1	Ineligible to participate	All	The respondent did not qualify for the survey and was screened out
X2	Disconnected phone/Bad number	Phone	The respondent's phone was disconnected
X2	Residential phone	Phone	The respondent is a household and not a business
X2	Out of business	Phone	The respondent is out of business
X2	Computer tone	Phone	There was a computer tone
X2	Wrong number	Phone	The respondent indicated the wrong number was called
X2	Bounced email	Email	Email was not deliverable to the email address on record

RESPONSE RATE RESULTS

The tables below show the disposition results for the Baseline Study survey, statewide and by region. It should be noted that two inputs to the RR calculations were not available: (1) counts of email bounce-backs for ConEd customers contacted by email and (2) counts of undeliverable mail for ConEd, NYSEG, and RG&E customers contacted by mail.[3] Since customers with these dispositions are considered ineligible businesses (category X2), any such instances would result in a higher RR.

Table 3 | Disposition Summary

Disposition Category Key	Disposition Category	Statewide	Downstate	Long Island/ Hudson Valley	Upstate
Response rate	RR3	3.3%	2.1%	3.9%	5.1%
Estimated proportion of cases of unknown survey eligibility that are eligible (incidence)	e1	79.7%	79.6%	80.5%	79.4%
Estimated proportion of cases of unknown business eligibility that are eligible	e2	76.3%	79.6%	73.1%	73.8%
Complete interview	I	3,522	1,237	687	1,598
Eligible incomplete interview	N	974	421	259	294
Survey-ineligible business	X1	1,146	426	229	491
Not an eligible business	X2	23,805	9,313	6,519	7,973
Business with undetermined survey eligibility	U1	70,893	34,283	16,574	20,036
Undetermined if eligible business	U2	74,929	45,576	5,744	23,609

[3] These counts were not available since the utilities directly reached out to their customers, rather than providing Opinion Dynamics with customer contact information.

Table 4 | Disposition Detail

Disposition Code	Disposition Category	Statewide	Downstate	Long Island/ Hudson Valley	Upstate
Complete	I	3,522	1,237	687	1,598
Partial complete - survey eligibility confirmed	N	974	421	259	294
Partial complete - survey eligibility unknown	U1	331	174	53	104
Answering machine	U1	12,754	4,325	3,467	4,962
Substitute phone number entered	U1	7,939	3,068	1,951	2,920
Not available	U1	16,663	9,915	3,264	3,484
Language problems	U1	2,827	2,027	605	195
Hard appointment	U1	592	401	80	111
Soft appointment	U1	2,517	1,164	770	583
Refusal	U1	15,575	7,266	3,488	4,821
Gatekeeper refusal	U1	8,032	4,551	1,869	1,612
Referred to online survey	U1	709	166	258	285
Added to DNC list	U1	2,954	1,226	769	959
No response	U2	54,525	36,444	479	17,602
No answer	U2	17,546	8,194	4,399	4,953
Busy	U2	795	411	166	218
Privacy line/Number blocked	U2	12	8	2	2
Sample loaded/opened but not used	U2	2,051	519	698	834
Ineligible to participate	X1	1,146	426	229	491
Disconnected phone/Bad number	X2	11,685	4,426	3,335	3,924
Residential phone	X2	1,827	319	591	917
Out of business	X2	805	211	228	366
Computer tone	X2	3,040	2,052	552	436
Wrong Number	X2	6,322	2,305	1,813	2,204
Bounced email	X2	126	-	-	126
Total		**175,269**	**91,256**	**30,012**	**54,001**

SECTION 1C

Phone/Web Surveys

Phone/Web Surveys

Welcome to the New York State Energy Research and Development Authority (NYSERDA) Energy Survey. NYSERDA has partnered with Opinion Dynamics to conduct this study of energy-using equipment among commercial customers.

The information collected in this survey will help <UTILITY> and NYSERDA develop energy efficiency programs to better serve organizations like you. These questions will take about 20 minutes. If you are eligible for and complete the survey, we will send you an incentive of $25 to thank you for your time. Please be assured that the information you provide will be kept confidential to the extent permitted by law. NYSERDA's analysis will only use summary level data and will not identify individual respondents.

Commercial Web Survey

SAMPLE VARIABLES

ADDR = Street address
CITY = City
SEGREAD = Binary variable indicating a read-in of “Company” or “Organization”
SEG_READIN = Initial Segment assignment read-in
SEGMENT = Initial Segment assignment
SEGFIN = Final segment assignment
BNAME = Business name
PHONE = Telephone number
UTILITY = Electric utility
SCHED_MONTH = Month of start of site visits
USAGE_CATEGORY = Usage category (1=Small, 2=Medium/Large)
INFO = If sample came from a third party source

Introduction

Welcome to the New York State Energy Research and Development Authority (NYSERDA) Energy Survey. NYSERDA has partnered with Opinion Dynamics to conduct this study of energy-using equipment among commercial customers.

The information collected in this survey will help <UTILITY> and NYSERDA develop energy efficiency programs to better serve organizations like you. These questions will take about 20 minutes. If you are eligible for and complete the survey, we will send you an incentive of $25 to thank you for your time. Please be assured that the information you provide will be kept confidential to the extent permitted by law. NYSERDA’s analysis will only use summary level data and will not identify individual respondents.

SURVEY VARIABLES

For verification purposes, please enter the following information about the facility that was selected for inclusion in this study. You will find this information on your invitation.

SV1. Company Name [OPEN END]
SV2. Facility Street Address [OPEN END]
Facility City [OPEN END]
Facility ZIP Code [OPEN END]

[GENERATE <BNAME> = SV1]
[GENERAGTE <ADDR> = SV2 – STREET ADDRESS]
[GENERAGTE <CITY> = SV2 – CITY]

SCREENER

SC1. Are you the person most knowledgeable about energy-using equipment at <BNAME>'s facility at <ADDR> in <CITY>?

1. Yes
2. No

[ASK IF SC1=2]

SC2. Is there someone else that might be more knowledgeable about the energy-using equipment at <BNAME>'s facility?

1. Yes
2. No [THANK AND TERMINATE]

[ASK IF SC2=1]

SC3. Could you provide that person's email address or phone number so that we may contact them?

Name: _____

Email: _____

Phone: _____

Do not have their contact information (96)

[IF SC2=1 THANK AND TERMINATE]

SCREENING

[ASK IF INFO = 1]

OV0a Does Orange & Rockland provide electric service to the facility at <ADDR>?

01 Yes

02 No [THANK AND TERMINATE]

[IF OV0a = 01]

OV0b Is your [IF SEGREAD=1: organization, IF SEGREAD=2: company] responsible for paying the electric bill to Orange & Rockland for the facility at <ADDR>?

01 Yes

02 No

A critical component of NYSERDA's study is learning more about commercial buildings in New York, including what energy-using equipment they have. The next series of questions is about your [IF SEGREAD=1: organization's, IF SEGREAD=2: company's] facility and energy-using equipment.

[IF DESKTOP VERSION SHOW]

Throughout this survey the availability of additional information will be indicated by bolded letters. If you place your mouse cursor over these words a pop-out box will appear. (These pop-out boxes will be used to provide helpful information on specific terms or concepts)

OCCUPANCY VERIFICATION AND ELIGIBILITY

OV1 Does [IF SEGREAD=1: your organization, IF SEGREAD=2: your company] currently occupy all, part, or none of the facility located at <ADDR>? (If you manage the facility but do not occupy it – like vacation rentals, housing or office space – answer "none" here)

01 All
02 Part
03 None
98 Don't know [THANK AND TERMINATE]

[ASK IF OV1=03 OR SEGMENT = 90]

OV2 Does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] manage the facility?

01 Yes [THANK AND TERMINATE IF OV0b=2]
02 No [THANK AND TERMINATE IF OV1=03]
98 Don't know [THANK AND TERMINATE IF OV1=03]

[ASK IF OV1=01]

OV3a How would you describe your facility at this address?

01 A stand-alone building
02 A building that shares walls with other buildings
03 Multiple buildings
00 Other, please specify:
98 Don't know

[ASK IF OV1=02 AND OV2 <>1]

OV3b How would you describe the space your [IF SEGREAD=1: organization, IF SEGREAD=2: company] occupies at this address?

01 Part of an enclosed mall
02 Part of a strip mall, or
03 Space within a building along with other businesses (For example, an office suite; not part of an enclosed mall)
00 Other, please specify:
98 Don't know

[ASK IF OV2=01]

OV3c How would you describe the space your [IF SEGREAD=1: organization, IF SEGREAD=2: company] manages at this address?

01 A stand-alone building
02 Part of an enclosed mall
03 Part of a strip mall
04 Space within a building along with other businesses (For example, an office suite; not part of an enclosed mall)
05 Multiple buildings
00 Other, please specify:
98 Don't know

[ASK IF OV1=02,03 AND OV3c <> 5]

OV4 Approximately what percentage of the building at <ADDR> does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] [IF OV2<>1: occupy; IF OV2=1: manage]? [Percentage, 0 TO 100; 998=Don't know]

[ASK IF OV3a=03 OR OV3c=05]

OV5 How many buildings does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] [IF OV2<>1: occupy; IF OV2=1: manage] at this location? [Number, 0 TO 100; 998=Don't know]

OV6 What year was this facility built? (Please provide what year the original or oldest part of the structure was built) [NUMERIC OPEN END 1600 THROUGH 2018, 9998 = DON'T KNOW]

[IF OV6>=2017 THANK AND TERMINATE]

[ASK IF OV6 = 9998]

OV7 Was this facility built…

01 Before 1900
02 Between 1900 and 1949
03 Between 1950 and 1969
04 Between 1970 and 1989
05 Between 1990 and 2009
06 Between 2010 and 2016
07 2017 or after? [THANK AND TERMINATE]
98 Don't know

BUSINESS SEGMENT

[READ IF OV2< >1] Next are a few general questions about the facility at <ADDR>.

[READ IF OV2=1] If you are in the real estate or property management business, please tell us about the facility located at <ADDR>.

[SKIP IF (SEG_READIN=00)]

S1 Our records indicate that the primary use of this facility is <SEG_READIN>. Is that correct?

01 Yes
02 No
98 Don't know

[ASK IF S1=02,98,99 OR (IF SEG_READIN=00)]

S2 Which of the following best describes the primary use of this facility? (READ LIST)

01 Retail or personal services (Personal services could include salons, barbers; Retail can include retail banks)
02 Health Services (including medical offices, dental offices, hospitals, medical laboratories)
03 Offices, or professional services (but excluding government services (Private sector only; includes real estate offices)
04 Government or public administration (If your facility is an office in the government sector, use this category)
05 Restaurant or food service (excluding industrial-scale food preparation)
06 Housing (rental housing, vacation rentals/condos, senior housing, assisted living, multifamily)
07 Education (Including colleges, technical schools and universities as well as K-12 education)
08 Warehousing, distribution or wholesale trade
09 Grocery or convenience store (including supermarkets, and convenience stores with gas)
10 Lodging (Hotel, motel, bed & breakfast)
11 Recreation and Entertainment (Including movie theaters, bowling alleys and gyms) [THANK AND TERMINATE]
12 Agricultural [THANK AND TERMINATE]
13 Manufacturing or industrial
00 Something else
98 Don't know [THANK AND TERMINATE]

[ASK IF S2=00]

S3 How would you describe the primary use of this facility?

01 Repair services, including automotive [THANK AND TERMINATE]
02 Church or religious organization
03 Construction, general contracting [THANK AND TERMINATE]
04 Data center
05 Mining [THANK AND TERMINATE]
06 Residential
07 Utility pole or cell tower [THANK AND TERMINATE]
08 Water/Wastewater treatment [THANK AND TERMINATE]
00 Other, please specify:
98 Don't know [THANK AND TERMINATE]

[ASK IF S2=02 OR ((SEGMENT=61 AND S1=01)]

S4 Which of the following best describes this facility?

01 Medical office or outpatient health center
02 Hospital
03 Inpatient services, but not a hospital (e.g., rehabilitation or extended care)
04 Nursing home
00 Other, please specify:
98 Don't know

[ASK IF S2=06 OR S3=O6 OR (SEGMENT=90 AND S1=01)]

S5 Which of the following best describes this facility?

01 Vacation rental (short-term single-family home or condo rentals)
02 Multifamily housing (Either affordable or market rate)
03 Nursing home, assisted living or long-term care (with medical facilities on site)
04 Senior housing (without medical facilities on site)
05 Dormitory
00 Other, please specify:
98 Don't know

[ASK IF S2=07 OR (SEGMENT=70 AND S1=01)]

S6 Which of the following best describes this facility?

01 College or University
02 High school
03 Elementary school
00 Other, please specify:
98 Don't know

[ASK IF S2=13]

S7 Which of the following best describes this location?

01 The primary use of this facility is industrial [THANK AND TERMINATE]
02 This facility is housed at an industrial site but its primary use is commercial, such as an office or warehouse space
03 This facility engages in both commercial and industrial operations [THANK AND TERMINATE]
98 Don't know [THANK AND TERMINATE]

[ASK IF S7=2]

S7b How would you describe the primary use of the commercial portion of this facility?

01 Retail or personal services
02 Offices, or professional services (but excluding government services)
03 Government or public administration
04 Warehousing, distribution or wholesale trade
05 Water/Wastewater treatment [THANK AND TERMINATE]
06 Mining [THANK AND TERMINATE]
07 Agricultural [THANK AND TERMINATE]
08 Construction, or general contracting [THANK AND TERMINATE]
00 Other, please specify:
98 Don't know [THANK AND TERMINATE]

[ASK IF S2=01 OR S7b=1 OR (SEGMENT=20 AND S1=01)]

S8 Which of the following categories best describes this facility?

01 Large retail or "Big box" store (Such as Target, Macys, Home Depot, Walmart, etc.)
02 Small retail store or personal services (Such as CVS, Walgreens, dollar stores, specialty stores, tattoo parlor, etc.)
00 Other, please specify:
98 Don't know

[ASK IF S8=01]

S9 Is this facility a superstore with both refrigerated grocery sections and retail in the same building?

01 Yes
02 No
98 Don't know

[ASK IF S2=08 OR S7b = 4 OR SEGMENT=40 AND S1=01]

S10 Is this warehouse refrigerated?

01 Yes
02 No
03 Partially
98 Don't know

[IF S1<>1 UPDATE SEGREAD ACCORDING TO THE FOLLOWING]
[SET <SEGREAD> = 1 IF (S2=02 06, OR 07) OR (S3=02,06); ELSE SET <SEGREAD> = 2]

VARIABLE "SEGFIN" IS CREATED BASED ON RESPONSES TO THE SEGMENTATION QUESTIONS ABOVE. SEE SECTION "SEGMENT ASSIGNMENT" ON THE LAST PAGE OF THIS DOCUMENT.

[ASK IF SEGFIN=61,62,90 OR (SEGFIN =70 AND QS3<>2) OR (SEGFIN=10 AND QS3=4) OR SEGFIN=13]

S11 Is the space at <ADDR> a public-sector facility?

01 Yes
02 No
03 Partially
98 Don't know

[ASK IF SEGFIN=90]
S12 Are tenant units at this facility individually metered by <UTILITY>? (Do tenants pay utility bills directly to <UTILITY>?)

01 Yes [THANK AND TERMINATE]
02 No
98 Don't know

[TERMINATE IF SEGFIN = 90 & OV2< >1]

[GENERATE PUBLIC = 1 IF S2 = 4 OR S11 = 1]

On-Site Recruitment

In addition to this survey, this study will include on-site visits with commercial businesses in New York State. If your facility is eligible and selected for the on-site survey portion of this research, a trained NYSERDA representative would come to your facility at a scheduled time to collect additional information on your business' energy-using equipment. A typical on-site survey takes between 2 and 4 hours, and as a token of our appreciation, we would provide you with a complimentary summary of specific energy-saving recommendations for your facility or an incentive of $150.

(The information you provide will be kept confidential to the extent permitted by law. NYSERDA's analysis will only use summary level data and will not identify individual respondents or firms.)

If you are interested, we will schedule the date and time of the site visit to fit your schedule. Right now, we are scheduling visits <SCHED_MONTH>. A NYSERDA representative will follow up with you to figure out a specific time that works for you.)

OS1 Are you interested in participating in the on-site survey?

01 Yes
02 No

CONTACT INFORMATION

[READ IF OS1=1, ELSE SKIP TO OV_INTRO]
QNAME Thank you! In order for a representative to follow up about the on-site survey, please provide the following contact information. Your name:

QPHONE Best phone number to reach you at, including area code:

BUILDING CHARACTERISTICS

[READ IF OS1=1]
Great! Next are a few questions about the facility at <ADDR> [IF SEGFIN=90 show "Please consider the entire facility included on your organization's <UTILITY> account, including tenant units."]

[READ IF OS1=2,98,99]
OV_INTRO. Thank you anyway. Next, are a few questions about the facility at <ADDR>. [IF SEGFIN=90 show "Please consider the entire facility included on your organization's <UTILITY> account, including tenant units."]

BC1a Approximately how much space does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] [IF OV2<>1: occupy] [IF OV2=1: pay the utility bills for], in square feet? If you do not know the exact square footage, please provide your best estimate. [NUMERIC OPEN END, 0 TO 9,999,997; 9,999,998=Don't know]

BC1b How many floors does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] [IF OV2<>1: occupy] [IF OV2=1: pay the utility bills for] not including basements? [NUMERIC OPEN END, MAX 97, 98=Don't Know]

BC2 Does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] own or lease your space at this facility?

01 Own or partially own
02 Lease/Rent
03 Only manage, neither lease nor own
98 Don't know

[IF SEGFIN=62 OR 90), SKIP TO BC7]

BC3 Is this facility operational year-round?

01 Yes
02 No
98 Don't know

[ASK IF BC3=02]

BC4 What months of the year is this location not operational? [ACCEPT MULTIPLE UP TO 11]

01 January
02 February
03 March
04 April
05 May
06 June
07 July
08 August
09 September
10 October
11 November
12 December
98 Don't know

BC5 Approximately how many hours per day is this facility occupied on weekdays? (This may extend beyond normal business hours when the business is open to customers.If daily schedules are varied, please provide an average.) [NUMERIC OPEN END, MAX 24, 98=DK]

BC6 Approximately how many hours per day is this facility occupied on weekends? (This may extend beyond normal business hours when the business is open to customers. If daily schedules are varied, please provide an average.) [NUMERIC OPEN END, MAX 24, 98=DK]

MULTIFAMILY BATTERY

[ASK IF SEGFIN = 90, ELSE SKIP TO BC14]

BC7 How many residential units does the facility at <ADDR> have? [OPEN END NUMERIC 1 -1000, 9996=NOT APPLICABLE, 9998 = DON'T KNOW]

[TERMINATE IF BC7 <5, KEEP IF BC7 >= 5]

[ASK IF BC7=9998]

BC7a Does the facility have 5 or more residential units?

- 01 Yes
- 02 No
- 98 Don't know

[TERMINATE IF BC7a=2,98]

BC8 Which of the following unit types does this facility contain? Please select all that apply. [ACCEPT UP TO 4]

- 01 Studio
- 02 One-bedroom
- 03 Two-bedroom
- 04 Three-bedroom or larger
- 98 Don't know

[ASK IF BC7 <= 1000]

BC9 What percentage of the <BC7 RESPONSE> units in this facility are... [FOR EACH OPEN END NUMERIC 1 - 100, 996=NOT APPLICABLE, 998 = DON'T KNOW]

- a Studio units? [ASK IF BC8 = 01]
- b One-bedroom units? [ASK IF BC8 = 02]
- c Two-bedroom units? [ASK IF BC8 = 03]
- d Three-bedroom or more units? [ASK IF BC8 = 04]

BC10 In your facility, what is the average square footage of... [FOR EACH OPEN END NUMERIC 1 - 9995, 9996=NOT APPLICABLE, 9998 = DON'T KNOW]

- a Studio units? [ASK IF BC8 = 01]
- b One-bedroom units? [ASK IF BC8 = 02]
- c Two-bedroom units? [ASK IF BC8 = 03]
- d Three-bedroom or more units? [ASK IF BC8 = 04]

BC11 Approximately what percent of units are currently vacant? [OPEN END NUMERIC 0 -100, 996=NOT APPLICABLE, 998 = DON'T KNOW]

BC12 Which of the following common areas does your facility contain? Please select all that apply. [MULTIPLE RESPONSE, UP TO 8]

- 01 Lobby or atrium
- 02 Hallway, corridor, or stairwell
- 03 Restrooms
- 04 Lounge
- 05 Health club or gym
- 06 Laundry room
- 07 No common areas
- 96 Something else
- 98 Don't know

[ASK IF BC12 = 96]

BC13 What other common areas does your facility contain? Please select all that apply.

[MULTIPLE RESPONSE, UP TO 4]

01 Restaurant
02 Pool
03 Tennis Courts
04 Storage Units
05 Clubhouse / Game room
00 Other, please specify:
98 Don't know

BC14 Does this space have a basement?

01 Yes
02 No
98 Don't know

END-USE QUESTIONS

EU_INTRO. The next few questions are about the types of energy-using equipment in your facility. Please answer for the part of your facility that your [IF SEGREAD=1: organization, IF SEGREAD=2: company] [IF OV2<>1: occupy] [IF OV2=1: pay the utility bills for] [IF OV2=1 & SEGFIN <> 90: If you are the landlord or property manager and tenants pay some bills themselves, please think only about the areas of the site for which you pay the utility bills.] [IF OV2=1 & SEGFIN=90 show "Please consider the entire facility included on your company's <UTILITY> account, including tenant units"] (If your [IF SEGREAD=1: organization, IF SEGREAD=2: company] includes multiple facilities, please think about the facility located at <ADDR>).

LIGHTING

L1 Thinking about the interior lighting in your facility, what types of lighting do you have? [01=Yes, 02=No, 98=Don't know] [ROTATE]

a Linear fluorescent lights (Long tube lighting, rather than a round bulb; this category also includes U-tube or U-bent lighting)
b Compact fluorescent lights / CFLs (The bulbs usually are in a spiral or double U-shape and screw into a normal light socket)
c Incandescent bulbs (An incandescent bulb is the standard, low cost light bulb with a filament)
d Halogen bulbs (A halogen bulb looks similar to an incandescent light bulb. The exterior of a halogen bulb looks like incandescent bulb but the interior contains a little capsule that produces the light)
e Screw-in LEDs (LEDs are the newest type of light bulb on the market. They typically cost more than the other types of light bulbs)
f Linear LEDs (The newest type of lighting on the market, linear LEDs are a type ofLED technology usually four feet in length that can replace linear fluorescent lights)
g High Intensity Discharge (HID) lamps, such as metal halide, high pressure sodium, or mercury vapor bulbs

L2 Does your facility have any spaces where the ceilings are over twenty feet high?

01 Yes
02 No
98 Don't know

ASK IF L2=01]

L3 Are these spaces lit with overhead lighting? (Overhead lighting could include linear lamps, hanging lamps, recessed cans or track lighting)

01 Yes
02 No
98 Don't know

L4 Are any of your facility's lights controlled by any of the following? [01=Yes, 02=No, 98=Don't know,] [ROTATE]

a Occupancy sensors? (Occupancy sensors turn off or dim lights when rooms are unoccupied)
b Daylight dimming? (Daylight dimming automatically adjusts lighting levels based on the amount of daylight in the space)
c Timing controls? (Timing controls automatically turn off or dim lights based on the time of day)
d Bi-level lighting? (Bi-level lighting refers to lights that are on constantly but dim when the area is unoccupied, like in parking garages or stairwells)

L5 Does this facility have any exterior lighting, not including street lighting provided by the town? (This may include lighting for parking lots, parking garages, signs, or walkways.)

01 Yes
02 No
98 Don't know

[ASK IF L5=01 AND OV4<100 AND OV1<>1]

L6 Does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] pay for exterior lighting on your electric bill [IF BC2=2: or as part of your lease]? (This may include lighting for parking lots, parking garages, signs, or walkways.)

01 Yes
02 No
03 Some
98 Don't know

HVAC - COOLING

C1a Does your facility have central air conditioning? (A Central AC is a cooling system that provides cooling for an entire building or large areas of a building, which may or may not also provide heating. Traditionally installed with ducts, this excludes window or wall units that cool just one room).

01 Yes
02 No
98 Don't know

[ASK IF C1a = 1 AND ((OV1=2 & OV2<>1) OR OV3a=2 OR OV3c = 2,3,4)]

C1b Is your central AC system dedicated to only your [IF SEGREAD=1: organization's, IF SEGREAD=2: company's] space or is it shared among other organizations?

01 I have a dedicated AC system
02 I have a shared AC system
98 Don't know

[ASK IF C1a=01]

C2 What types of central AC equipment does your facility have? Please select all that apply. [MULTIPLE RESPONSE, UP TO 4]

- 01 Packaged system unit (Typically mounted on the roof, a package system central air conditioner or heat pump contains both the air handler fan, compressor and condenser in a single unit.)
- 02 Split system unit (A type of central air conditioner or heat pump that has an evaporator indoors and the compressor and condenser outdoors.)
- 03 Chiller (A system that produces cold liquid sent around to individual spaces used for cooling air usually found in larger facilities)
- 00 Other, please specify:
- 96 My facility doesn't have any central AC equipment
- 98 Don't know

[ASK IF C2=02, ELSE SKIP TO C4]

C3 How many split system units does your facility have? (Please count the inside and outside units of the system as 1 unit.) [NUMERIC OPEN END, 0-95, 98=DK]

C3a Does your facility have ductwork? (The duct system, used in heating and cooling the air in your facility, is a collection of tubes or channels that distributes the heated or cooled air to the various rooms.)

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF C3<>0]

C3b [IF C3>1: "Are any of your facility's split systems"] [IF C3=1 "Is your facility's split system"] a Variable Refrigerant Flow, or "VRF," system? (A VRF System is a ductless multi-split system where each outdoor unit serves multiple indoor units according to their individual refrigerant needs)

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF C3 <>0]

C3c [IF C3 > 1: "Are any of your facility's split systems"] [IF C3 = 1 "Is your facility's split system"] a heat pump? (Heat pumps use electricity to move heat. During the heating season, heat pumps move heat from the cool outdoors into your warm facility and during the cooling season, heat pumps move heat from your cool facility into the warm outdoors)

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF C3 > 1 AND C3c = 1]

C3cc How many split system heat pumps does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C3c = 1 AND C3cc <>0]

C3d What kind of split system heat pump does your facility have? Please select all that apply. [MULTIPLE RESPONSE, UP TO 3]

- 01 Ground source or Geothermal
- 02 Water source
- 03 Air source
- 06 My facility doesn't have a heat pump
- 98 Don't know

[ASK IF C2=01, ELSE SKIP TO C5]

C4 How many packaged system units does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C4 <> 0]

C4a [IF C4 > 1: "Are any of your facility's packaged systems"] [IF C4 = 1 "Is your facility's packaged system"] a heat pump? (Heat pumps use electricity to move heat. During the heating season, heat pumps move heat from the cool outdoors into your warm facility and during the cooling season, heat pumps move heat from youcool facility into the warm outdoors)

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF C4 > 1 AND C4a = 01]

C4aa How many packaged system heat pumps does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C4a = 1 AND C4aa <>0]

C4b What kind of packaged system heat pump does your facility have? Please select all that apply. [MULTIPLE RESPONSE, UP TO 3]

- 01 Ground source or Geothermal
- 02 Water source
- 03 Air source
- 06 My facility doesn't have a heat pump
- 98 Don't know

[ASK IF C2=03]

C5 What fuel does your chiller use?

- 01 Electricity
- 02 Natural gas
- 03 District steam
- 06 My facility doesn't have a chiller
- 00 Other, please specify:
- 98 Don't know

C6 Does your facility have any room, window or through-wall air conditioning? (This type of air conditioning typically cools just one room and doesn't require inside ductwork)

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF C6=01]

C7 What types of room or window AC equipment does your facility have? [IF SEGFIN = 90 "Please include those found inside tenant units."] Please select all that apply [MULTIPLE RESPONSE UP TO 4]

- 01 Window or wall units (Such as typical window units, packaged terminal air conditioners (PTACs) and classroom unit ventilators, including heat pumps)
- 02 Ductless mini-split (These units, which could be an AC or a heat pump, have an indoor unit, which is typically mounted on the wall near the ceiling, and an outdoor unit. They typically only cool one room and do not have any ductwork inside the walls or ceilings)
- 03 Portable AC (typically on wheels)
- 00 Other, please specify:
- 98 Don't know

[ASK IF C7=01, ELSE SKIP TO C9]

C8 How many window or wall units does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C8 <>0]

C8a [IF C7 > 1: "Are any of your facility's window or wall units"] [IF C7 = 1 "Is your facility's window or wall unit"] a heat pump? (Heat pumps use electricity to move heat. During the heating season, heat pumps move heat from the cool outdoors into your warm facility and during the cooling season, heat pumps move heat from your cool facility into the warm outdoors)

01 Yes
02 No
98 Don't know

[ASK IF C8a=01 AND C8 > 1]

C8aa How many window or wall heat pumps does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C8a = 1 AND C8aa <> 0]

C8b What kind of window or wall system heat pump does your facility have? Please select all that apply.[MULTIPLE RESPONSE UP TO 2]

01 Water source
02 Air source
06 My facility doesn't have a heat pump
98 Don't know

[ASK IF C7=02, ELSE SKIP TO V1]

C9 How many ductless mini-split units does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C9 <>0]

C9a [IF C9 > 1: "Are any of your facility's ductless mini-splits"] [IF C9 = 1 "Is your facility's ductless mini-split"] a heat pump? (Heat pumps use electricity to move heat. During the heating season, heat pumps move heat from the cool outdoors into your warm facility and during the cooling season, heat pumps move heat from your cool facility into the warm outdoors)

01 Yes
02 No
98 Don't know

[ASK IF C9a=1 AND C9 > 1]

C9aa How many ductless mini-split heat pumps does your facility have? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF C9a = 01 AND C9aa <> 0]

C9b What kind of ductless mini-split heat pump does your facility have? Please select all that apply. [MULTIPLE RESPONSE UP TO 2]

01 Water source
02 Air source
06 My facility doesn't have a heat pump
98 Don't know

HVAC – VENTILATION

V1 Does your facility have ventilation that varies depending on the level of occupancy in the space, using carbon dioxide sensors or other sensors? This is known as “Demand Controlled Ventilation.”

01 Yes
02 No
98 Don’t know

V2 Does your facility have any ventilation hoods? (either in a laboratory, commercial kitchen or classroom)

01 Yes
02 No
98 Don’t know

[ASK IF V2=01]

V3 Do the ventilation hoods have variable fan speed depending on the level of occupancy in the space or the level of pollutants? (This is also known as Demand Controlled Ventilation for hoods).

01 Yes
02 No
98 Don’t know

HVAC - HEATING

H1a What fuel is used to heat your facility? Please select all that apply. (This refers to heating spaces in the winter, not water heating) [MULTIPLE RESPONSE UP TO 7]

01 Fuel oil
02 Natural gas
03 Electricity
04 Propane
05 Coal
06 District steam
00 Other, please specify:
96 My facility does not have heating
98 Don’t know

[ASK IF H1a = MULTIPLE]

H1b What is the primary fuel used to heat your facility? (This refers to heating spaces in the winter, not water heating)

01 [ASK IF H1a = 1] Fuel oil
02 [ASK IF H1a = 2] Natural gas
03 [ASK IF H1a = 3] Electricity
04 [ASK IF H1a = 4] Propane
05 [ASK IF H1a = 5] Coal
06 [ASK IF H1a = 6] District steam
00 [ASK IF H1a = 0] <H1a OPEN END READ IN>
98 Don’t know

HVAC – VENTILATION

[ASK IF H1a <> 96,98,99 AND ((OV1=2 & OV2<>1) OR OV3a=2 OR OV3c = 2,3,4)]

H1c Is your heating system dedicated to only your [IF SEGREAD=1: organization's, IF SEGREAD=2: company's] space or is it shared with other organizations in your building?

- 01 I have a dedicated heating system
- 02 I have a shared heating system
- 98 Don't know

[ASK IF H1a=01]

H2a What type of oil space heating equipment does your facility use? Please select all that apply. [MULTIPLE RESPONSE UP TO 3]

- 01 Boiler
- 02 Furnace (This may or may not be housed inside your central air conditioning unit)
- 00 Other, please specify:
- 98 Don't know

[LOOP H2b FOR EACH H2a RESPONSE]
[ASK IF H2a=1 OR 2]

H2b How many oil <H2a RESPONSE>s does your facility use? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF H1a=02]

H3a What type of natural gas space heating equipment does your facility use? Please select all that apply. [MULTIPLE RESPONSE UP TO 4]

- 01 Boiler
- 02 Furnace (This may or may not be housed inside your central air conditioning unit)
- 03 Infrared heater
- 04 Unit heater (A self-contained heater with a fan and an indirect radiator designed to circulate and warm the air of a room)
- 00 Other, please specify:
- 98 Don't know

[LOOP H3b FOR EACH H3a RESPONSE]
[ASK IF H3a=1,2,3,4]

H3b How many natural gas <H3a RESPONSE>s does your facility use? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF H1a=03]

H4a What type of electric space heating equipment does your facility use? Please select all that apply.
[MULTIPLE RESPONSE UP TO 4]

- 01 Heat pump (heats and cools)
- 02 Electric resistance heaters (baseboard, ceiling, floor or wall)
- 03 Electric furnace (This may or may not be housed inside your central air conditioning unit)
- 04 Electric unit heater (A self-contained heater with a fan and an indirect radiator designed to circulate and warm the air of a room)
- 00 Other, please specify:
- 98 Don't know

[LOOP H4b FOR EACH H4a RESPONSE]
[ASK IF H4a=1,2,3,4]

H4b How many <H4a RESPONSE>s does your facility use? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF H1a=04]
H5a What type of propane space heating equipment does your facility use? Please select all that apply. [MULTIPLE RESPONSE UP TO 4]

01 Boiler
02 Furnace (This may or may not be housed inside your central air conditioning unit)
03 Infrared heater
04 Unit heater (A self-contained heater with a fan and an indirect radiator designed to circulate and warm the air of a room)
00 Other, please specify:
98 Don't know

[LOOP H5b FOR EACH H5a RESPONSE]
[ASK IF H5a=1,2,3,4]
H5b How many propane <H5a RESPONSE>s does your facility use? [NUMERIC OPEN END, 0-95, 98=DK]

[ASK IF H1a=05]
H6a What type of coal space heating equipment does your facility use? Please select all that apply. [MULTIPLE RESPONSE UP TO 3]

01 Boiler
02 Furnace
00 Other, please specify:
98 Don't know

[LOOP H6b FOR EACH H6a RESPONSE]
[ASK IF H6a=1,2]
H6b How many coal <H6a RESPONSE>s does your facility use? [NUMERIC OPEN END, 0-95, 98=DK]

HVAC CONTROLS

HC1a Does your facility use one or more programmable thermostat to control the heating or cooling system? [IF OV0b <> 2: Please think only about the areas you pay the utility bills for]. (A programmable thermostat can be set to automatically adjust the temperature set point based on the time of day)

01 Yes, my facility has at least one programmable thermostat
02 No, my facility does not have any programmable thermostats
96 Not applicable, my facility has no thermostats
98 Don't know

[ASK IF HC1a=01 ELSE SKIP TO WH1]
HC1b How many programmable thermostats does your facility have? [NUMERIC OPEN END 1 – 95, 96=NOT APPLICABLE, 98=DON'T KNOW]

[ASK IF HC1b<96 ELSE SKIP TO WH1]
HC2a [IF HC1b>1 "Are any of these", IF HC1b=1 "Is this"] thermostat Wi-Fi-enabled? (A Wi-Fi enabled thermostat is able to be controlled by devices, such as smartphones or other equipment, wirelessly through the internet)

01 Yes
02 No
98 Don't know

[ASK IF HC1b>1 AND HC2a=1]
HC2b How many of these programmable thermostats are Wi-Fi enabled? [NUMERIC OPEN END 1 – 95, 96=NOT APPLICABLE, 98=DON'T KNOW]

[ASK IF HC1a=1 AND HC1b<>HC2b]

HC3a What percentage of your facility's square footage is controlled by programmable thermostats that are not Wi-Fi enabled? [NUMERIC OPEN END 1 – 100, 996=NOT APPLICABLE, 998=DON'T KNOW]

[ASK IF HC2a=1 AND HC2b <> 96]

HC3b What percentage of your facility's square footage is controlled by Wi-Fi enabled programmable thermostats? [NUMERIC OPEN END 1 – 100, 996=NOT APPLICABLE, 998=DON'T KNOW]

WATER HEATING

WH1a Does your facility have equipment for water heating?

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF WH1a = 1 AND ((OV1=2 & OV2<>1) OR OV3a=2 OR OV3c = 2,3,4)]

WH1b Is your water heater dedicated to only your [IF SEGREAD=1: organization's, IF SEGREAD=2: company's] space or is it shared among other organizations?

- 01 I have a dedicated water heating system
- 02 I have a shared water heating system
- 98 Don't know

[ASK IF WH1a=01, ELSE SKIP TO R1]

WH2 What type of water heating equipment does your facility use? [IF SEGFIN = 90 "Please include those found inside tenant units."] Please select all that apply.[MULTIPLE RESPONSE UP TO 5]

- 01 Storage water heater with dedicated heater (Water heater with a tank and dedicated heater)
- 02 Indirect storage water heater (Water storage tank connected to a space heating boiler)
- 03 Tankless water heater (Also called "on demand")
- 04 Heat pump water heater
- 00 Other, please specify:
- 98 Don't know

[SKIP IF WH2=04 ONLY]

WH3 What fuel is used for water heating? Please select all that apply. [MULTIPLE RESPONSE UP TO 7]

- 01 Fuel oil
- 02 Natural gas
- 03 Electricity
- 04 Propane
- 05 District steam
- 06 Solar
- 00 Other, please specify:
- 98 Don't know

WH4 How does your facility use hot water? Please select all that apply. [MULTIPLE RESPONSE, UP TO 6]

- 01 Commercial Dishwashing
- 02 Laundry
- 03 Bathroom/shower
- 04 Industrial/process
- 05 Commercial Food prep
- 00 Other, please specify:
- 98 Don't know

[ASK IF WH4=02]
WH5 How many clothes washers does your facility have? [NUMERIC OPEN END, 0-1000, 998=DK]

[ASK IF WH4=02]
WH6 How many clothes dryers does your facility have? [NUMERIC OPEN END, 0-1000, 998=DK]

[ASK IF WH6>0 AND WH6<998]
WH7 What fuel do your facility's clothes dryers run on? Please select all that apply. [ACCEPT UP TO 4]
- 01 Electricity
- 02 Natural Gas
- 03 Propane
- 00 Other, please specify:
- 98 Don't know

[ASK IF WH4=02 AND SEGFIN = 90]
WH8 Is the laundry equipment located in common spaces or inside individual units?
- 01 Common Areas
- 02 Individual Units
- 03 Both individual units and common areas
- 98 Don't know

REFRIGERATION

R1 Does your facility have commercial or industrial refrigeration equipment? (Refrigeration beyond what you'd find in a typical house or employee break room.)
- 01 Yes
- 02 No
- 98 Don't know

[ASK IF R1=01, ELSE SKIP TO R6]
R2 Do you have stand-alone commercial refrigeration units or is the equipment part of a larger refrigeration system with a separate compressor?
- 01 Stand-Alone Units (These are stand-alone refrigerators or freezers cases with self-contained refrigeration not connected to a larger system).
- 02 Part of a larger refrigeration system (Including large display cases or walk –in coolers where the compressor is located separate from the refrigeration equipment)
- 03 Facility has both
- 98 Don't know

R3a Does your facility have any refrigerated or freezer display cases, which typically are open or have glass doors?
- 01 Yes
- 02 No
- 98 Don't know

[ASK IF R3a=01]
R3b Does your facility use night covers on at least one refrigerated display case?
- 01 Yes
- 02 No
- 98 Don't know

[ASK IF R2=02, 03]

R4a Does your facility have a walk-in cooler or freezer?

01 Yes
02 No
98 Don't know

[ASK IF R4a=01]

R4b Does at least one of your refrigerated walk-ins have strip curtains?

01 Yes
02 No
98 Don't know

R5 What type of refrigerant does your refrigeration system use? Please select all that apply. [MULTIPLE RESPONSE, ACCEPT UP TO 3]

01 Freon (Such as R-22 or R-404a)
02 Ammonia
00 Other, please specify:
98 Don't know

R6 Does your facility have residential-type refrigeration equipment? [IF SEGFIN = 90 "Please include those found inside tenant units."] (The type of refrigerator you'd find in a typical house or employee break room)

01 Yes
02 No
98 Don't know

[ASK IF R6=01]

R7 How many residential-type refrigerators does your facility have? [NUMERIC OPEN END, 0-1000, 9998=DK]

R8a Does your facility have any refrigerated vending machines?

01 Yes
02 No
98 Don't know

[ASK IF R8a = 01]

R8b How many refrigerated vending machines does your facility have? [NUMERIC OPEN END, 0-95, 96 = NOT APPLICABLE, 98=DON'T KNOW]

R9 Does your facility have any standalone or dedicated ice machines, excluding those found inside refrigerators?

01 Yes
02 No
98 Don't know

COMMERCIAL KITCHEN

FS1 Does your facility have commercial dishwashers or food service equipment, such as fryers, ovens, or food holding cabinets? (This is equipment used to prepare food at a commercial scale, not just a residentially-sized stove or residential dishwasher.)

01 Yes
02 No
98 Don't know

[ASK IF FS1=01 ELSE SKIP TO CA1]

FS2 Does your facility have commercial dishwashers?

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF FS2=1]

FS3a What type of commercial dishwashers do you have? Please select all that apply. [MULTIPLE RESPONSE UP TO 3]

- 01 Single tank dishwasher
- 02 Multitank dishwasher
- 03 Under the counter dishwasher
- 00 Another type of dishwasher (specify)
- 98 Don't know

[ASK IF FS2=1]

FS3b Does your commercial dishwasher have an electric hot water booster?

- 01 Yes
- 02 No
- 98 Don't know

FS4 Which of the following types of food service equipment does this facility have? [01=Yes, 02=No, 98=Don't know] [ROTATE]

- a Conveyor oven (Conveyor ovens move food products through a heated chamber)
- b Convection oven (An oven that has fans used to circulate hot air around food)
- c Combination oven (An oven that can produce both dry (convection) and moist (steam) heat)
- d Griddle
- e Commercial fryer
- f Steam cooker
- g Holding cabinet
- h Rack Oven (A high-capacity oven, with the ability to produce steam internally and fitted with a motor-driven mechanism for rotating pans fitted into pan racks within the cavity.)

[ASK IF ANY OF FS4=01]

FS5 For each type of food service equipment you mentioned, what fuel does it use? Please select all that apply. [01=Electricity, 02=Natural Gas, 03=Propane, 04=Other, 98=Don't know] [MULTIPLE RESPONSE UP TO 3]

- a Conveyor oven [SHOW IF FS4a=01]
- b Convection oven [SHOW IF FS4b=01]
- c Combination oven [SHOW IF FS4c=01]
- d Griddle [SHOW IF FS4d=01]
- e Commercial fryer [SHOW IF FS4e=01]
- f Steam cooker [SHOW IF FS4f=01]
- g Holding cabinet [SHOW IF FS4g=01]
- h Rack Oven [SHOW IF FS4h=01]

COMPRESSED AIR

CA1 Does your facility use compressed air?

- 01 Yes
- 02 No
- 98 Don't know

[ASK IF CA1=01]

CA2 Are any of these air compressors controlled by adjustable speed drives? (Also known as variable speed drives or variable frequency drives.)

01 Yes
02 No
98 Don't know

Motors

M1 Does your facility use motors for anything other than equipment that's part of your heating, cooling, and ventilation systems? (These could be used for pumping, conveyors, hydraulics, dust collection, or other automotive or distribution processes.)

01 Yes
02 No
98 Don't know

[ASK IF M1=01]

M2 How are these motors used? Please select all that apply. [MULTIPLE RESPONSE, UP TO 5]

01 Process exhaust or ventilation (Including dust collection)
02 Pumping of water or other liquid
03 Conveyors
04 Hydraulics
05 Process Lines
00 Other, please specify:
98 Don't know

M3 Are any of these motors controlled by adjustable speed drives? (Also known as variable speed drives or variable frequency drives.)

01 Yes
02 No
98 Don't know

ENERGY MANAGEMENT

EMS1 An energy management system, also known as an EMS, is centralized hardware and software usually used for scheduling heating, ventilation, air conditioning, and lighting, but can also be used for motors and industrial process equipment. Does your facility have an energy management system?

01 Yes
02 No
98 Don't know

[ASK IF EMS1=1, ELSE SKIP TO EMS3]

EMS1a How many square feet does your energy management system control at your facility? [NUMERIC OPEN END, 1 TO BC1a; 9,999,997 = Whole Facility; 9,999,998=Don't know; show error if response > BC1a response]

[ASK IF EMS1a=9999998]

EMS1b What percentage of your facility is controlled by your EMS? [NUMERIC OPEN END, 0 TO 100; 998=Don't know]

EMS2 What type of equipment does your energy management system control? Please select all that apply.

[MULTIPLE RESPONSE UP TO 8]

01 Cooling
02 Heating
03 Lighting
04 Refrigeration
05 Motors/Industrial processes
06 On-site generation
07 District Steam system
00 Other, please specify:
98 Don't know

EMS2a In what year did you install your EMS?

[NUMERIC OPEN END, 1900 TO 2018; 9998=Don't know]

[ASK IF EMS2a=9998]

EMS2b Did you install your EMS in the past calendar year?

01 Yes
02 No
98 Don't know

[SKIP IF SEGFIN = 90]

EMS3 Does your [IF SEGREAD=1: organization, IF SEGREAD=2: company] practice Strategic Energy Management (SEM) at this facility? (SEM is a continuous optimization of energy use intensity through a set of business practices based on setting energy performance goals, tracking performance, and reporting on results)

01 Yes
02 No
98 Don't know

OFFICE EQUIPMENT

OFE1 How many computers are in regular use in facility [IF SEGFIN=90: excluding those inside tenant spaces]? (This includes desktops and laptops, and shared workstations.) [NUMERIC OPEN END, 0-9997, 9998=Don't Know]

OFE2 Does your facility have any onsite computer servers?

01 Yes
02 No
98 Don't know

[ASK IF OFE2=1]

OFE3 Do your facility's servers have dedicated cooling or are they cooled by the facility's space cooling systems?

01 Dedicated Cooling (servers are cooled by Computer Room Air Conditioners, or CRACs)
02 Space Cooling Systems (servers are cooled by the building's central AC system)
03 Servers are cooled by both dedicated and space cooling systems
00 Other, please specify:
98 Don't know

ON-SITE GENERATION

OSG1 Does your facility have any on-site electricity generation equipment, including emergency generation, renewable generation, or cogeneration?

01 Yes
02 No
98 Don't know

[ASK IF OSG1=1 ELSE SKIP TO EV1]

OSG2 Which of the following does your facility have? Please select all that apply. [ACCEPT MULTIPLE UP TO 4]

01 Renewable energy generation
02 Emergency or backup energy generation
03 Cogeneration or Combined-Heat and Power (CHP)
00 Other, please specify:
96 None [SKIP TO EV1]
98 Don't know [SKIP TO EV1]

[ASK IF OSG2=1]

OSG3a Which of the following types of on-site renewable generation equipment does your facility have? Please select all that apply. [MULTIPLE RESPONSE UP TO 5]

01 Wind turbines
02 Solar Photovoltaics
03 Biomass
04 Fuel Cells
00 Other, please specify:
96 My facility does not have on-site renewable generation
98 Don't know

[ASK IF OSG2=2]

OSG3b What fuel does your emergency/back-up generation equipment use?

01 Natural gas
02 Fuel oil
03 Propane
04 Diesel
05 Gasoline
06 Both natural gas and fuel oil
07 Biogas
00 Other, please specify:
96 My facility does not have emergency/back-up generation
98 Don't know

[ASK IF OSG2=3]

OSG3c What fuel does your cogeneration equipment use?

01 Natural gas
02 Fuel oil
03 Both natural gas and fuel oil
04 District steam
96 My facility does not have cogeneration
00 Other, please specify:
98 Don't know

OSG4 Does your facility directly meter on-site generation system output?
01 Yes
02 No
98 Don't know

Solar Photovoltaics

[ASK IF OSG3a = 2, ELSE SKIP TO EV1]

OSG5a What is the rated capacity of your facility's solar photovoltaic system, in kilowatts? [NUMERIC OPEN END WITH ONE DECIMAL PLACE, MAX 995, 996 = NOT APPLICABLE, 998 = DON'T KNOW]

[ASK IF OSG5a = 9998]

OSG5b How many solar panels are in the system? [NUMERIC OPEN END, MAX 9995, 9996 = NOT APPLICABLE, 9998 = DON'T KNOW]

OSG6 Does the system have associated battery storage?
01 Yes
02 No
98 Don't know

[ASK IF OSG6 = 1]

OSG6b What is the size of the battery, in kilowatt hours? [NUMERIC OPEN END, MAX 9995, 9996 = NOT APPLICABLE, 9998 = DON'T KNOW]

OSG7 Does your facility own or lease the solar photovoltaic system?
01 Lease
02 Own
03 Power purchase agreement (A Power Purchase Agreement is a financial arrangement in which a third-party developer owns the solar photovoltaic system, and a host customer agrees to site the system on its property and purchases the system's electricity)
98 Don't know

ELECTRIC VEHICLES

EV1 Does your facility own or manage an electric vehicle charging station?
01 Yes
02 No
98 Don't know

[ASK IF EV1=1, ELSE SKIP TO OE1]

EV2 How many electric vehicle charging stations does your facility have? [NUMERIC OPEN END, 0-95, 96=NOT APPLICABLE, 98=DON'T KNOW]

[SKIP IF EV2= 0 OR 96]

EV3 What type of electric vehicle charging station is present at this facility? Please select all that apply. [MULTIPLE RESPONSE, ACCEPT 4]
01 AC Level 1 charging (AC Level 1 charging station is limited to 120 volts of alternating current (AC) and uses a typical household three-pronged plug)
02 AC Level 2 charging (AC Level 2 charging station provides electrical energy at 208 to 240 volts of alternating current (AC))
03 DC Fast Charging (DC fast charging uses direct current (DC) energy transfer and a 480 volt AC input)
04 Tesla Supercharger (Tesla Supercharger stations rely on Tesla's proprietary technology and are only available for Tesla owners).
98 Don't know

OTHER EQUIPMENT

OE1 Does your facility have other equipment, beyond what we have discussed so far, that you think uses significant amounts of electricity?

01 Yes
02 No
98 Don't know

[ASK IF OE1=1]

OE2 What other types of electric equipment does your facility have? Please select all that apply. [MULTIPLE RESPONSE UP TO 10]

01 Electric Forklifts/Charger
02 Industrial printing equipment
03 Battery chargers (non-forklift)
04 Medical equipment
05 Elevators
06 Escalators
07 Power tools, drills, saws
08 Dust collection system
09 Office printers, copiers and other office equipment
00 Other, please specify:
98 Don't know

[GENERATE NG=1 IF C5=2, H1a=2, WH3=2, WH7=2, FS5a-h = 2, OSG3b=1 OR 6, OSG3C=1 OR 3]
[ASK IF NG = 1]

OE3 Does your facility have other equipment, beyond what we have discussed so far, that uses significant amounts of natural gas?

01 Yes
02 No
98 Don't know

[ASK IF OE3=1]

OE4 What other types of natural gas equipment does your facility have? [MULTIPLE RESPONSE UP TO 5]

00 Other, please specify:
98 Don't know

[GENERATE PROP=1 IF H1a=4, OSG3b=3, WH3=4, OR WH7=3, FS5a-h = 3]
[ASK IF PROP = 1]

OE5 Does your facility have other equipment, beyond what we have discussed so far, that uses significant amounts of propane?

01 Yes
02 No
98 Don't know

[ASK IF OE5=1]

OE6 What other types of propane equipment does your facility have? [MULTIPLE RESPONSE UP TO 5]

00 Other, please specify:
98 Don't know

[GENERATE OIL=1 IF H1a=1, OSG3b=2 OR 6, OSG3c=2 OR 3, OR WH3=1]
[ASK IF OIL = 1]

OE7 Does your facility have other equipment, beyond what we have discussed so far, that uses significant amounts of fuel oil?

01 Yes
02 No
98 Don't know

[ASK IF OE7=1]

OE8 What other types of fuel oil equipment does your facility have? [MULTIPLE RESPONSE UP TO 5]

00 Other, please specify:
98 Don't know

DECISION MAKING STRUCTURE

The next series of questions is about how your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] makes decisions about replacing or installing the types of energy-using equipment that have been discussed so far. By "energy-using equipment", we mean the things we asked you about earlier, like lighting, heating and cooling, and refrigeration equipment. If your organization includes multiple facilities, please think about the facility located at <ADDR>.

D1 Does someone within your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] have the authority to purchase or replace at least some of the energy-using equipment at your facility? (This could be you or someone else at your facility or [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"].)

01 Yes, someone has authority to make decisions about ALL energy-using equipment
02 Yes, someone has authority to make decisions about SOME energy-using equipment
03 No, no one at the [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] has authority to make decisions about energy-using equipment
98 Don't know

[IF USAGE_CATEGORY = 2 AND D1=1,2, GENERATE RANDOM BINARY "ESC" = 0,1]
[SKIP TO MF1 IF ESC=1]
[SKIP TO FM0 IF D1=3,98]

FINANCIAL FACTORS

F1 Does your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] have any policies, procurement rules, or general practices regarding major purchases related to the efficiency of equipment? This could be always purchasing ENERGY STAR labeled equipment when available, or always investing in better efficiency if the payback is under a certain threshold?

Please think of "major" purchases as those for which you spend additional time in the planning process, e.g., investments for which there is a more rigorous corporate approval process, which require a study of costs and benefits, or which are separated from smaller investments by some other criteria.

01 Yes
02 No
98 Don't know

F2 When choosing to go ahead with a major energy-related improvement, which of the following financial factors are most important to you? Please select all that apply. [MULTIPLE RESPONSE UP TO 4] [ROTATE options 1-4]

01 Upfront cost (including equipment, delivery & installation)
02 Operating & maintenance cost (including energy cost to operate)
03 Energy savings payback period
04 Return on investment from energy savings (Often called R.O.I.)
00 Or other financial factors (Specify) (such as IRR (internal rate of return) or NPV (net present value)
96 I don't make decisions about energy-using equipment
98 Don't know
99 (Refused)

[ASK IF F2=3, ELSE SKIP TO ROLE OF BARRIERS]

F3. What is your typical threshold in terms of the payback your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] uses before deciding to proceed with major energy efficient equipment improvements? Is it…

01 0 to 6 months
02 6 months to 1 year
03 1 to 2 years
04 2 to 3 years
05 3 to 5 years
06 Over 5 years
96 Don't have a threshold
98 Don't know

[ASK IF F3=1,2,3,4,5,OR 6]

F4. How often does your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] deviate from this payback threshold?

01 Never (0% of projects)
02 Rarely (less than 33% of projects)
03 Often (about half of projects)
04 Very often (more than 67% of projects)
98 Don't know

OLE OF BARRIERS

BR1 Below are some barriers that may prevent some [IF SEGREAD=2: "companies"; IF SEGREAD=1: "organizations"] from installing energy efficient equipment. Please indicate how much of a barrier each typically is to installing energy efficient equipment at your facility. [If D1=2: As you think about these barriers, please think about the types of equipment that your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] has decision-making authority to purchase or replace] Please answer from the perspective of your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"].

[SCALE 1 "not a barrier at all" to 7 "a major barrier"; 96=Not applicable, 98=Don't know]
[RANDOMIZE LIST]

a The higher cost of energy efficient equipment
b Access to financing or capital for energy improvements
c Limited resources to plan and implement efficiency projects
d Uncertainty about the savings from energy efficiency improvements
e Limited resources to assess the relative benefits of energy efficient options
f [IF BC2=2] Limited upside to investment as a renter
g No remaining efficiency upgrade opportunities exist
h Difficulty finding qualified contractors
i Limitations of building characteristics, such as age, layout, or construction
j The relatively lower return on investment and/or longer payback period of energy efficiency upgrades
k Potential negative impacts on aesthetics, comfort, or other operational issues

ROLE OF INCENTIVES

IN1 The next few questions are about how incentives might influence your decision to install energy efficient equipment. Sometimes incentives are available through rebates or direct discounts applied at the point of sale. Incentives help cover the higher cost of energy efficient equipment.

Incentives could come from <UTILITY> or NYSERDA, an equipment manufacturer, a contractor, a federal or state agency, etc.

Please think of replacing failed equipment where the cost of purchasing a high efficiency model is 20% higher than that of a standard efficiency model. [USE SCALE: 1 is "not at all likely" and 7 is "very likely]

a How likely are you to purchase energy efficient equipment to replace failed equipment if there is NO incentive? [1-7, 8=Don't know]
b [ASK IF IN1a<>7] How likely would you be to purchase energy efficient equipment to replace failed equipment if there was an incentive for HALF of the difference in cost between energy efficient equipment and standard equipment? [1-7, 8=Don't know]
c [ASK IF IN1b<>7] How likely would you be to purchase energy efficient equipment to replace failed equipment if there was an incentive for ALL of the difference in cost between energy efficient equipment and standard equipment? [1-7, 8=Don't know]

[ASK IF IN1c<5]
IN2 Why wouldn't you be likely to purchase energy efficient equipment to replace the failed equipment even if you were offered an incentive for ALL of the difference in cost? [OPEN END, 98=Don't know]

MULTIFAMILY PROPERTY MANAGERS

[ASK IF SEGFIN = 90, ELSE SKIP TO NEXT SECTION]

MF1 Does your organization have a corporate environmental policy to reduce environmental emissions or energy use?

01 Yes
02 No
98 Don't know

[ASK IF MF1=1, ELSE SKIP TO ESCOs]

MF2 How influential is this policy on your purchasing decisions regarding energy using equipment in the common areas in your facility? [SCALE: 1"not at all influential" to 7 "very influential", 8=Don't know]

MF3 How influential is this policy on your purchasing decisions regarding energy using equipment in the tenant spaces in your facility? [SCALE: 1"not at all influential" to 7 "very influential", 8=Don't know]

[ASK IF ESC=1 OR (PUBLIC = 1 & USAGE_CATEGORY = 2) OR SEGFIN=90, ELSE SKIP TO NEXT SECTION]

ENERGY SERVICES COMPANIES

The next few questions are about your experience with companies that provide a wide-range of energy efficiency services for non-residential facilities. These companies are referred to as "Energy Services Companies" or "ESCOs. Usually, ESCOs will work with building owners and decision makers to develop plans for energy efficiency upgrades and facilitate the installation. These are NOT energy supply firms, which are also referred to as ESCOs.

Some ESCOs may also offer other services, such as options for project financing and assistance securing grants or equipment rebates from utility companies.

E1 Prior to this call, how would you rate your familiarity with ESCOs and the services they provide? [SCALE: 1 is not familiar at all and 7 is very familiar ; 8=Don't know]

E2 Has <BNAME> ever worked with an ESCO on an energy efficiency project at <ADDR> or at another facility? Please select all that apply. [MULTIPLE UP TO 2]

01 Yes – at this facility
02 Yes – at another facility
03 No
98 Don't know

[ASK IF E2=1 OR 2]

E3 Has <BNAME> worked with the same ESCO on more than one energy efficiency project?

01 Yes
02 No
98 Don't know

[ASK IF E2=1 OR 2]

E3 Has <BNAME> worked with the same ESCO on more than one energy efficiency project?

01 Yes
02 No
98 Don't know

[ASK IF E3=2]

E4 What are the main reasons that <BNAME> has not worked with an ESCO on more than one energy efficiency project? Please select up to three. [MULTIPLE UP TO 3]

01 The price was too high
02 No access to financing or capital for energy improvements
03 We did not achieve the savings they promised
04 No remaining opportunities exist
05 The quality of the ESCO's work was not good
00 Or something else? (SPECIFY)
98 Don't know

E5 What do you see as the primary barriers to working with an ESCO on energy efficiency projects? Please select up to three. [ROTATE; MULTIPLE UP TO 3]

01 The structure of many ESCO contracts
02 Internal procurement processes
03 Our projects are typically not large enough
04 Not familiar with ESCOs
00 Or something else? (SPECIFY)
96 None – I don't see any barriers
97 Not applicable – don't have energy efficiency projects
98 Don't know

E6 Does your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] have any policies, procurement rules, or general practices that would present barriers to working with an ESCO to implement energy efficiency projects?

01 Yes
02 No
98 Don't know

[ASK IF E6 = 01]

E7 What are the main policies or procedures that create barriers to <BNAME> working with an ESCO to implement energy efficiency projects? Please select up to three. [MULTIPLE UP TO 3]

01 Specific return on investment criteria
02 Payback period thresholds
03 Length of procurement process
04 Specific contracting requirements
05 Preferred vendor lists
00 Or something else? (SPECIFY)
98 Don't know

FIRMOGRAPHICS

[SKIP TO END IF OV2=1]
You are almost done. There are just a few questions left.

FM0 How many facilities does <BNAME> operate in New York, including the one located at <ADDR>? Please consider all facilities <BNAME> owns, manages, or occupies.
[NUMERIC OPEN END, 1-9997, 9998=DK]

FM1 How many employees, full plus part-time, are employed at <ADDR>?
[NUMERIC OPEN END, 1-9997, 9998=DK]

[ASK IF FM1=9998]
FM2 At this location, would you say your [IF SEGREAD=2: "company"; IF SEGREAD=1: "organization"] has...

10 0 Employees (If this is rental housing that you manage, please select "0 employees")
01 1-4 employees
02 5-9 employees
03 10-24 employees
04 25-49 employees
05 50-99 employees
06 100-249 employees
07 250-499 employees
08 500-999 employees
09 1,000 or more employees
98 Don't know

FM3 About what percentage of the operating costs of this facility come from electric energy use?

01 Up to 20%
02 Between 21% and 40%
03 Between 41% and 60%
04 Between 61% and 80%
05 Between 81% and 100%
98 Don't know

FM4 Which of the following best describes your job function?

01 Business owner
02 Property manager
03 Facilities manager
04 Executive
05 Operations, maintenance, or engineering employee
06 Accounting, finance, or payroll employee
00 Other, specify
08 Energy manager
09 Office manager
98 Don't know

E1. Has this facility participated in energy efficiency incentive programs in the past five years?
01 Yes
02 No
98 Don't know

[ASK IF EE1=1]
EE2 In what year did you participate? Please select all that apply. [MULTIPLE RESPONSE]
01 2013
02 2014
03 2015
04 2016
05 2017
06 2018
98 Don't know

[ASK IF SEGFIN=62,70,80]
RR1 NYSERDA is currently conducting another study to understand current energy management practices among facilities like yours. The study involves a brief survey which will take no more than 5 minutes of your time but is of great importance for NYSERDA in developing energy efficiency program offerings. We would like to invite your company to participate in the study and provide feedback. We can contact you at the time that is most convenient for you. Will you be open to participating in the study?
01 Yes
02 No

[ASK IF RR1=01]
RR2 For that study, we are looking to speak to the person most knowledgeable about the energy management practices at <BNAME>. Are you that person?
01 Yes
02 No

[ASK IF RR2=01 AND OS1=1]
RR3a And is <QPHONE> the best number to reach you at?
01 Yes
02 No

[ASK IF RR2=01 AND OS1=2]
RR3b What is the best number to reach you at?
[COLLECT PHONE NUMBER]

[ASK IF RR2=02]
RR4 What is the name and contact information for the best person for us to speak with about your facility's energy management practices?
[COLLECT NAME AND PHONE NUMBER]

OUT1 Those are all of the questions I have. As a thank you for your participation in this survey, we will be providing you with a $25 Amazon gift card.
What is the best email address so we can send you a link to redeem your gift card? [ASK OUT1A TO RE-ENTER EMAIL ADDRESS; MAKE SURE EMAILS MATCH]
Please be assured this email address will only be used to send your gift card link and will not be shared with any other parties.

OUT1b. Please enter your full name:
[OPEN END, 96=Do not have email address, 99=Do not wish to receive gift card]

[ASK IF OUT2<>96,99 AND OS1=1]

OUT2a. Earlier you had expressed interest in participating in the on-site survey. May we contact you via email to schedule the on-site survey? (Please be assured this email address will only be used to send your gift card link and to contact you about the on-site survey and will not be shared with any other parties)

1. Yes
2. No

[ASK IF OUT1=96, ELSE SKIP TO END]

If you would prefer, we can offer you a $25 American Express gift card mailed to your home or place of business.

[IF OS1<>1]

OUT3 Please enter your full name:

OUT4 Is <ADDR> the best address to mail your gift card or would you like to provide a different address?

3. Use <ADDR>
4. Use different address, please specify: [open text]
9. Do not wish to receive gift card

[ASK IF OS1=1]

A NYSERDA representative will follow up with you within a few weeks to set up an appointment for the on-site survey. Please allow 3 to 5 weeks for processing before your incentive will arrive.

[ASK IF OS1<>1]

Thank you for your participation in this study. Please allow 3 to 5 weeks for processing and delivery of your gift card.

END USE PROGRAMMING

[SET TOP FOUR END USES BASED ON FOLLOWING LOGIC]

Criteria	End Use	Rank
(CA1a = 1 OR M1 = 1)	Compressed air or motors	1
(WH1a = 1)	Water Heating	2
(FS1= 1)	Kitchen Equipment	3
(R1 = 1)	Refrigeration Equipment	4
(C1 = 1 OR H1a <> 96,98,99)	HVAC	5
1 > 0	Lighting	6

SEGMENT ASSIGNMENT

Generate analysis segment (SEGFIN) based on (a) sample segment (SEGMENT), and (b) responses to the business segment questions (S1-S12):
SEGFIN=SEGMENT IF S1=1 & SEGMENT <> (20,61,90)
Replace SEGFIN if S1<>1 OR SEGMENT = (20,61,90) based on the following logic:

Code	SEGFIN	Assign respondent to SEGFIN if...
10	Office Buildings	S2=04,03 OR S7b =(02,03) OR S3=04
20	Retail	S8=(02,00,98,99) OR S9=(02,98,99)
30	Food Service	S2=5
40	Warehouse	S2=8 OR S7b=4
50	Grocery/Convenience	S2=9 OR S9=1
61	Health Services	S4=1,3,4,00,98,99 OR S5=3
62	Hospitals	S4=2
70	Education	S2=7 OR S3=2
80	Lodging/Hospitality	S2=10 OR S5=1
90	Multifamily	S5=2,4,5 OR (S5=00,98,99 AND S3<>6)
Code After	12. Residential	S3=06 AND S5=00,98,99
Code After	13. Other (specified in open end)	S3=00 OR S7b=00
Terminate	Utility pole, cell tower, waste water	S3=5,7,8 OR S7b=5,6
Terminate	Don't Know/Refused segment	S2=98,99 OR S3=98,99 OR S7b=98,99
Terminate	Other Commercial	S2=11,12 OR S3=1,3 OR S7b=7,8
Terminate	Industrial	S7 = 1,3,98,99

SEG_READIN

Code	Label
00	EMPTY
01	Agriculture, Forestry & Fishing
02	Communications
03	Construction
04	Education
05	Entertainment/Recreation
06	Food Service
07	Government
08	Grocery/Convenience
09	Health Services
10	Hospital
11	Lodging/Hospitality
12	Industrial
13	Multifamily
14	Office Space
15	Repair Services
16	Residential
17	Retail
18	Warehouse

SECTION 1D

On-site Data Collection Instrument

On-site Data Collection Instrument

BUILDING CHARACTERISTICS

		General Building Characteristics
		Question
BC4		Is the customer site a standalone building or part of a larger facility?
BC5		% of the building occupied by customer site
BC7	Shared vs Dedicated Systems	Does this facility have dedicated unitary cooling, shared unitary cooling, or both?
		Does this facility have dedicated heating, shared heating, or both?
		Does this facility have dedicated water heating, shared water heating, or both?
BC6		Does the business occupy more than 1 building at that address?
BC8	If customer occupies multiple buildings	How many buildings does the business occupy?
BC9		Year that building was built
BC10		Year of last full renovation (0 if never renovated)
BC11		Did this renovation include an expansion?
BC12		Foundation type
BC13		Number of Stories of Building
BC14	If customer does not occupy full building	Number of Stories of Tenant Space
BC15		Number of employees (if known #)
BC16	If Number of Employees Not Known	Number of full-time equivalent employees (Range)
BC17	If Health Services	Type of Health Services
BC18	If Hospital	Number of Beds
BC19	If Educational Facility:	Type of Educational Facility
BC20	If Grocery/Convenience Store:	Type of Grocery/Convenience Store
BC21	If Lodging	Number of Guest Rooms
BC22	If Warehouse	Type of Warehouse
BC23	If Retail - Large	Type of Large Retail
BC24	If Multifamily	Number of Units Overall
BC25		Number of Studio Units
BC26		Number of One Bedroom Units
BC27		Number of Two Bedroom Units
BC28		Number of Three or More Bedroom Units
BC29		Is the facility master metered?
BC30		Is the facility sub-metered?
BC31	If Industrial	Does this facility engage in commercial activities on an industrial site?

SPACES

Space Types		Please Complete Space Types Allocation Below			
	Space Type (Excluding Parking Garage)	% of Overall Site Sq Ft	Is Space Cooled?	Is Space Heated?	20ft or higher?
1	Office				
2	Lobby or atrium				
3	Warehouse				
4	Refrigerated Storage				
5	Other General Storage				
6	Retail sales area				
7	Athletic facility/arena				
8	Auditorium or assembly hall				
9	Conference room or classroom				
10	Laboratory				
11	Data center/server room				
12	Food preparation area				
13	Dining area				
14	Manufacturing/Product Assembly				
15	Auto service/repair				
16	Guest/Patient/Dorm Rooms				
17	Exam/Treatment Room				
18	Operating Room				
19	Hallway/corridor/stairwell				
20	Restrooms				
21	Residential				
22	Other specify:				
23		Total	0%		
24		Remaining	100%		

Note: For the purpose of this survey, parking garages and exterior dock areas are considered EXTERIOR spaces, and should not be tabulated on this sheet. However, lighting in parking garages, dock areas, and other exterior spaces should go on “Exterior Lighting”

OCCUPANCY HOURS

	Months Of Operation	
OH1	Does the facility operate year-round?	
	If NOT, is the facility generally open in…	
OH2	January	
OH3	February	
OH4	March	
OH5	April	
OH6	May	
OH7	June	
OH8	July	
OH9	August	
OH10	September	
OH11	October	
OH12	November	
OH13	December	

Operating Hours Per Day		NOTE: This table is generated based on responses in the Spaces tab. Please complete the Spaces tab.							
			OH14	OH15	OH16	OH17	OH18	OH19	OH20
	Question		Mon	Tues	Wed	Thurs	Fri	Sat	Sun
1	Overall (Average) Building Occupancy Hours								
	Occupancy Hours, By Space Type	Same as Overall?	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
2	Office								
3	Lobby or atrium								
4	Warehouse								
5	Refrigerated Storage								
6	Other General Storage								
7	Retail sales area								
8	Athletic facility/arena								
9	Auditorium or assembly hall								
10	Conference room or classroom								
11	Laboratory								
12	Data center/server room								
13	Food preparation area								
14	Dining area								
15	Manufacturing/Product Assembly								
16	Auto service/repair								
17	Guest/Patient/Dorm Rooms								
18	Exam/Treatment Room								
19	Operating Room								
20	Hallway/corridor/stairwell								
21	Restrooms								
22	Residential								

INDOOR LIGHTING

Back to Start	Indoor Lighting									
	IL1	IL2	IL3	IL4	IL5	IL6	IL7	IL8	IL9	IL10
	Location (Optional -- for tracking only)	Space Type	Fixture Quan-tity	Light-ing Type	Base Type	Ballast	Length	Number of Lamps per Fixture	Lamp Watt-age	How Was Wattage Determined?
1										

Indoor Lighting- Continued								
← OR →					Lighting Controls			
IL11	IL12	IL13	IL14	IL15	IL16	IL17	IL18	IL19
Hours On are same as space type occupied hours (put 1 if same, else 0)	Hours On per week (Manual Entry)	Hours Per Week (Auto Populated)	Fixture is plugged into wall	20+ ft Ceiling	Control Type	Non-Man-ual Control Type 1	Non-Man-ual Control Type 2	Control Type Notes

EXTERIOR LIGHTING

	Exterior and Parking Garage Lighting	
	Question	Answer
EL1	Does the company's electric bill or lease include lighting outside of the building?	

	Exterior Lighting Associated with Facility							
th1	EL2	EL4	EL3	EL5	EL6	EL7	EL8	EL9
row	Location	Lighting Type	Base Type	Ballast	Length	Number of Lamps per Fixture	Wattage	How Was Wattage Determined?
1								

Exterior Lighting Associated with Facility- Continued							
				OR			
EL9	EL10	EL11	EL12	EL13	EL14	EL15	EL16
How Was Wattage Determined?	Fixture Quantity	In parking garage?	Control Type	Hours On are same as overall occupied hours (put 1 if same, else 0)	Hours On per week (Manual Entry)	Hours Per Week (Auto Populated)	Notes

HVAC UNITARY SYSTEMS

	Exterior and Parking Garage Lighting	
Does this building have the following cooling types?	HU1	Packaged System
	HU2	Split System
	HU3	Chiller or Large DX System
	HU4	Window, Wall, or PTAC Units

	tv3	Packaged Systems	PS1	PS2	PS3	PS4	PS5	PS6
	HU5	System Type						
	HU6	Ground source heat pump type						
	HU7	Desuperheater?						
	HU8	Is this system a rooftop unit (RTU)?						
	HU9	Number of Units of This Model and Size:						
	HU10	Average Age of Units (years):						
	HU11	Rated Cooling Capacity (tons):						
	HU12	Cooling/heating use						
	HU13	Manufacturer:						
	HU14	Model Name/Number:						
	HU15	Nameplate Cooling Efficiency						
	HU16	Nameplate Cooling Efficiency Unit (e.g. SEER, EER, etc.)						
	HU17	Does the system have variable or multi-speed fan control?						
	HU18	Does the system have integrated econo-mizer control?						
	HU19	Date of last Tune - Up?						
	HU20	Energy Star? (Y/N):						
Heat Pumps	HU21	Nameplate Heating Input Capacity (BTU):						
	HU22	Nameplate Heating Efficiency						
	HU23	Nameplate Heating Efficiency Unit						
	HU24	Does this system have a auxiliary heat?						
	HU25	Auxiliary Heating Capacity (kW)						
	HU26	Is this system the primary or a secondary heating system?						

		Split Systems	SS1	SS2	SS3	SS4	SS5	SS6
	HU27	System Type						
	HU28	Ground source heat pump type						
	HU29	Desuperheater?						
	HU30	Number of Units of This Model and Size:						
	HU31	Average Age of Units (years):						
	HU32	Rated Cooling Capacity (tons):						
	HU33	Nameplate Cooling Efficiency						
	HU34	Nameplate Cooling Efficiency Unit (e.g. SEER, EER, etc.)						
	HU35	Date of last Tune - Up?						
	HU36	Outdoor Unit Make:						
	HU37	Outdoor Unit Model:						
	HU38	Cooling/heating use						
Heat Pumps	HU39	Nameplate Heating Input Capacity (BTU):						
	HU40	Nameplate Heating Efficiency						
	HU41	Nameplate Heating Efficiency Unit						
	HU42	Does this system have an auxiliary heat source?						
	HU43	Auxiliary Heating Capacity (kW)						
	HU44	Is this system the primary or a secondary heating system?						
	tv3	Window, Wall, PTAC, and Ductless Minisplit Units						
	HU45	System Type						
	HU46	Is system hard-wired or plugged into wall?						
	HU47	PTAC/PTHP Wall Opening Height (in.)						
	HU48	PTAC/PTHP Wall Opening Length (in.)						
	HU49	Number of Units of This Model and Size:						
	HU50	Average Age of Units (years):						
	HU51	Rated Output (Btu/hr):						
	HU52	Manufacturer:						
	HU53	Model Name/Number:						
	HU54	Nameplate Efficiency						
	HU55	Nameplate Efficiency Unit						
	HU56	Louvered sides?						
	HU57	Cooling/heating use						
	HU58	Are the units in working condition?						
	HU59	Energy Star? (Y/N):						
Heat Pumps	HU60	Nameplate Heating Input Capacity (BTU):						
	HU61	Nameplate Heating Efficiency						
	HU62	Nameplate Heating Efficiency Unit						
	HU63	Is this system the primary or a secondary heating system?						

		Window, Wall, PTAC, and Ductless Minisplit Units	WS1	WS2	WS3	WS4	WS5	WS6
	HU45	System Type						
	HU46	Is system hard-wired or plugged into wall?						
	HU47	PTAC/PTHP Wall Opening Height (in.)						
	HU48	PTAC/PTHP Wall Opening Length (in.)						
	HU49	Number of Units of This Model and Size:						
	HU50	Average Age of Units (years):						
	HU51	Rated Output (Btu/hr):						
	HU52	Manufacturer:						
	HU53	Model Name/Number:						
	HU54	Nameplate Efficiency						
	HU55	Nameplate Efficiency Unit						
	HU56	Louvered sides?						
	HU57	Cooling/heating use						
	HU58	Are the units in working condition?						
	HU59	Energy Star? (Y/N):						
Heat Pumps	HU60	Nameplate Heating Input Capacity (BTU):						
	HU61	Nameplate Heating Efficiency						
	HU62	Nameplate Heating Efficiency Unit						
	HU63	Is this system the primary or a secondary heating system?						

HVAC HEATING

	Heating
tv1	Site ID
HH1	Furnace
HH2	Boiler
HU4	Window, Wall, or PTAC Units
HH3	Standalone Unit

tv3	Does this building have the following heating fuel types?		Primary Fuel?
HH4	Fuel Oil		
HH5	Natural Gas		
HH6	Electricity		
HH7	Propane		
HH8	Coal		
HH9	Solar		
HH10	Wood		
HH11	District Steam		

tv3	Furnace	F1	F2	F3	F4	F5	F6
HH12	Number of Units of This Model and Size:						
HH13	Average Age of Units (years):						
HH14	Nameplate Heating Input Capacity (BTU):						
HH15	Manufacturer:						
HH16	Model Name/Number:						
HH17	Nameplate Heating Efficiency						
HH18	Nameplate Heating Efficiency Unit						
HH19	Date of last Tune - Up?						
HH20	Heating fuel						
HH21	Is this system the primary or a secondary heating system?						
HH22	Is this unit associated with a cooling system?						
HH23	Which system? (i.e. PS1, SS3, etc.)						

	Boiler	B1	B2	B3	B4	B5	B6
HH24	Number of Units of This Model and Size:						
HH25	Average Age of Units (years):						
HH26	Nameplate Heating Input Capacity (BTU):						
HH27	Manufacturer:						
HH28	Model Name/Number:						
HH29	Boiler Type						
HH30	System Type						
HH31	Boiler Material						
HH32	Boiler Output						
HH33	Nameplate Heating Efficiency						
HH34	Nameplate Heating Efficiency Unit						
HH35	Year of Last Tune-up?						
HH36	Steam Trap?						
HH37	Steam Trap Count						
HH38	Natural Draft?						
HH39	Condensing?						
HH40	O2 trim?						
HH41	Reset controls?						
HH42	Heating fuel						
HH43	Integrated with domestic hot heating water heating?						
HH44	Is this system the primary or a secondary heating system?						
HH45	Is this unit associated with a cooling system?						
HH46	Which system? (i.e. PS1, SS3, etc.)						

	Standalone Heating Systems	EHS1	EHS2	EHS3	EHS4	EHS5	EHS6
HH47	System Type						
HH48	Fuel Type						
HH49	Rated Capacity (BTU)						
HH50	Rated kW						
HH51	Linear ft of baseboard						
HH52	Number of Units of This Model and Size:						
HH53	Average Age of Units (years):						
HH54	Manufacturer:						
HH55	Model Name/Number:						
HH56	Is this system the primary or a secondary heating system?						
HH57	Is this unit associated with a cooling system?						
HH58	Which system? (i.e. PS1, SS3, etc.)						

HVAC CHILLERS

		Site ID
Does the Building have the following types of HVAC components?	HC1	Chiller
	HC2	Non-Traditional DX System
	HC3	Cooling Tower / Evaporative Condenser

	Chillers/Large DX Systems				
tv3	System Reference Number:	C1	C2	C3	Notes
HC4	Chilled Water Loop (CHWL) #:				
HC5	Configuration (primary or secondary)				
HC6	Manufacturer				
HC7	Model Name/Number				
HC8	Chiller Type:				
HC9	Fuel				
HC10	Age of Equipment (years)				
HC11	Time since last major refurbishment (years)				
HC12	Number of compressors				
HC13	Design Nominal Capacity (tons)				
HC14	Design Full Load kW				
HC15	Performance Rating Metric:				
HC16	Performance Rating Value:				
HC17	TOTAL Square Footage Cooled by Chiller (ft2)				
tv3	HEAT REJECTION SYSTEM(S)				
HC18	Condenser Type				
HC19	Number of cells				
HC20	Make and Model # if available				
HC21	Sump heater kW				
HC22	Average HP of Condenser Fan Motors				
HC23	Number of condenser Fan Motors				
HC24	# of Condenser Fan Motor with VFDs				
HC25	# of Condenser Fan Motor where VFDs are possible				
HC26	# of Condenser Fan Motor where VFDs are practical				
HC27	Installed HP of Cond. Water Pump Motors				
HC28	VSD on Cond. Water Pump motors				
HC29	Is installing a VSD possible?				
HC30	Is installing a VSD practical?				
HC31	Water Side Economizer				
tv3	CHILLED WATER SYSTEM PUMPS				
HC32	Average HP of Chilled Water System Pumps				
HC33	Number of Chilled Water System Pumps				
HC34	# of Chilled Water System Pumps with VFDs				
HC35	# of Chilled Water System Pumps where VFDs are possible				
HC36	# of Chilled Water System Pumps VFDs are practical				
tv3	SYSTEM USE				
HC37	Space or Process Cooling?				
HC38	Process Description				

AIR HANDLING UNITS AND VENTILATION

	Packaged Systems	PS1	PS2	PS3	PS4	PS5	PS6
AHU1	ECM Fan Motor? (Y/N):						
AHU2	Motor size (horsepower)						
AHU3	Variable air volume control? (Y/N):						
	Shut Off Damper?						
AHU4	Economizer? (Y/N):						
AHU5	Economizer Presence Determined From:						
AHU6	Is economizer dual enthalpy? (Y/N):						

	Split Systems	SS1	SS2	SS3	SS4	SS5	SS6
AHU7	Indoor Unit Make:						
AHU8	Indoor Unit Model:						
AHU9	Nameplate Efficiency						
AHU10	Nameplate Efficiency Unit of Measure						
AHU11	# of Watersource Heat Pump Circulator Pumps						
AHU12	Average HP of Watersource Heat Pump Circulator Pumps						
AHU13	# of Watersource Heat Pump Circulator Pumps with VFDs						
AHU14	# of Watersource Heat Pump Circulator Pumps where VFDs are possible						
AHU15	# of Watersource Heat Pump Circulator Pumps where VFDs are practical						
AHU16	ECM Fan Motor? (Y/N):						
AHU17	Motor size (horsepower)						
AHU18	Average Age of Units (Years)						
AHU19	Variable air volume control? (Y/N):						
AHU20	Shut Off Damper?						
AHU21	Economizer? (Y/N):						
AHU22	Economizer Presence Determined From:						
AHU23	Is economizer dual enthalpy? (Y/N):						
AHU24	Is this a variable refrigerant flow (VRF) system?						
AHU25	Ductless System? (Y/N)						

AIR HANDLING UNITS AND VENTILATION

	CHILLERS	C1	C2	C3
AHU26	Air Distribution System:			
AHU27	Economizer present (Y/N)?			
AHU28	Economizer Status Determined From:			
AHU29	Is economizer dual enthalpy? (Y/N):			
AHU30	Air Handler Make:			
AHU31	Air Handler Model:			
AHU32	Average Age of Units (Years)			
AHU33	Supply Air Temperature Control:			
AHU34	Outside Air Setpoint			
AHU35	Terminal Reheat:			
AHU36	Is ductwork insulated? (Y/N):			
AHU37	Energy recovery ventilation system			

	Air Handler System Reference Number:	AH1	AH2	AH3	AH4	AH5	AH6
AHU38	Fan Type						
AHU39	HP of Fan Motor:						
AHU40	Fan Control:						
AHU41	Number of Fans of Same Type, HP and Controls (across all AHU units) (including original)						
AHU42	# where VFDs are possible						
AHU43	# where VFDs are practical						

tv1	HVAC - Other Ventilation
	Question
AHU44	Does this building have other ventilation not captured above?

	Other Ventilation										Hoods Only	
	AHU45	AHU46	AHU47	AHU48	AHU49	AHU50	AHU51	AHU52	AHU53	AHU54	AHU55	AHU56
row	Ventilation Type	Equipment Description	Quantity	Avg. Age (Years)	Horse-power (HP)	Hours Run Per Day	Type of System	Control Type	# able to have VFDs installed	# where installing VFDs is practical	Space Type	Hood Size (Sq Ft of Opening)

HVAC CONTROLS

	Hvac Controls (Complete For All Hvac Controls, Including Room/Window Ac)	
	Question	Answer
CTRL1	Does this facility use Demand Controlled Ventilation?	Does this building have other ventilation not captured above?
tv1		
CTRL2	Heated Square Feet (from Spaces Tab)	-
CTRL3	Cooled Square Feet (From Spaces Tab)	-

	tv3	Question	Control 1	Control 2	Control 3	Control 4	Control 5
	CTRL4	Heating / Cooling Control Type					
	CTRL5	Connected equipment					
OR	CTRL6	Space Type					
	CTRL7	% of Total Site Square Feet					
	CTRL8	Square Feet Controlled					
	CTRL9	Square Feet Controlled (auto populated)					
Guest, dorm or patient rooms only	CTRL10	Are there occupancy sensors to control packaged terminal AC units?					
	CTRL11	Temperature Set Point During Occupied Hours (F) (Set to -1 if OFF)					
	CTRL12	Temperature Set Point Outside of Occupied Hours in SUMMER (F) (Set to -1 if OFF)					
	CTRL13	Temperature Set Point Outside of Occupied Hours in WINTER (F) (Set to -1 if OFF)					
If occupied 24/7	CTRL14	If occupied 24/7, what is the nighttime temperature? (e.g., setback) (Set to -1 if OFF)					

BUILDING CONTROLS

Building And Energy Management Systems	
Question	
Are Building Controls present?	
Is an EMS present?	
Is EMS in use?	
How often do you override system settings?	
Age of Control System	
Digital or pneumatic controls?	
Maintenance contract in place?	
Can the System Control....	HVAC systems
	Lighting
	Non-HVAC Motors
	On-Site Generation
Does the System Employ...	Automated System Communication
	Multi-use Sensors
	Energy Information Systems
	Advanced Energy Information Systems
	Basic Control
	Data Trending
	Optimized start/stop
	Reset Optimization
	Demand/Load limiting
	Other
	(Please describe)

REFRIGERATION SYSTEMS

	Refrigerated System	
	Fill in this page, making a separate entry for each refrigeration system that serves multiple cases, and/or one or more walkin freezers or refrigerators	
tv1	Question	Answer
RS1	Does this building have a refrigeration system that serves multiple cases?	
CTRL2	Heated Square Feet (from Spaces Tab)	-
CTRL3	Cooled Square Feet (From Spaces Tab)	-
RS2	Does this building have a refrigeration system that serves walk-in coolers or freezers?	

	Refrigeration System (Complete for All Systems Serving Cases or Walk-Ins)									
	RS3	RS4	RS5	RS6	RS7	RS8	RS9	RS10	RS11	RS12
row	System Index Number	Case or Walk-in System Index Number	Quantity	Avg. Age (Years)	Horse-power (HP)	Hours Run Per Day	Type of System	Control Type	# able to have VFDs installed	# where in-stalling VFDs is practical
1	RS1									
2	RS2									
3	RS3									
4	RS4									
5	RS5									
6	RS6									
7	RS7									
8	RS8									

	Compressors					
th1	RS13	RS14	RS15	RS16	RS17	RS18
row	Refrigeration System Index Number	Compressor Type	Compressor HP	Manufacturer	Model Number	Compressor Count
1						

	Condenser		
	RS19	RS20	RS21
1	Refrigeration System Index Number	Condenser Type	Fan HP
2			

REFRIGERATED WALKINS

	Walk In Cooler/Freezer	
	Question	Answer
RW1	Are there walk-in coolers or freezers in the building?	

th1	RW2	RW3	RW4	RW5	RW6	RW7	RW8	RW9	RW10
row	Walk-in Index Number	Walk In Type	Compressor System	Associated refrigeration system index number	Floor Area (ft2)	Door Area (ft2)	Age (Years)	Door Type	Door Gaskets Missing / Damaged
1	W1								
2	W2								

RW11	RW12	RW13	RW14	RW15	RW16	RW17
Strip curtains	Anti-sweat door heater controls	Fan Motor Type	Has fan motor been replaced?	How was this determined?	Fan Controls	Defrost Control

REFRIGERATED CASES

	Walk In Cooler/Freezer	
	Question	Answer
RC1	Stand-Alone Commercial Refrigeration	
RC2	Refrigerated Cases w/ Remote Compressors	
RC3	Residential-Style Refrigeration	

Refrigerated Cases (Connected with Remote/Shared Compressor System									
RC4	RC5	RC6	RC7	RC8	RC9	RC10	RC11	RC12	RS12
Case Index Number	Equipment Type	Associated refrigeration system index number	Quantity	Age (Years)	Temperature	Linear Feet per Case	Linear Feet of Doors or Opening	# able to have VFDs installed	# where installing VFDs is practical
C1									
C2									
C3									
C4									
C5									
C6									
C7									
C8									

								Freezers Only
RC13	RC14	RC15	RC16	RC17	RC18	RC19	RC20	RC21
Light Length	Light Controls	Anti-sweat door heater controls	Fan Motor Type	Has fan motor ever been replaced?	How was this determined?	Door Gaskets Missing / Damaged	Curtains/ Covers	Defrost Control

Stand-Alone Units (i.e., with self-contained compressor)								
RC23	RC24	RC25	RC26	RC27	RC28	RC29	RC30	RC31
Equipment Type	Quantity	Estimated Volume per Unit (ft3)	Linear Feet of Doors (per unit)	Age (Years)	Temperature	Energy Star	Light Type	Light Length
C1								
C2								
C3								
C4								
C5								
C6								
C7								
C8								

								Freezers Only
RC13	RC14	RC15	RC16	RC17	RC18	RC19	RC20	RC21
Light Length	Light Controls	Anti-sweat door heater controls	Fan Motor Type	Has fan motor ever been replaced?	How was this determined?	Door Gaskets Missing / Damaged	Curtains/ Covers	Defrost Control

Stand-Alone Units (i.e., with self-contained compressor)								
RC23	RC24	RC25	RC26	RC27	RC28	RC29	RC30	RC31
Equipment Type	Quantity	Estimated Volume per Unit (ft3)	Linear Feet of Doors (per unit)	Age (Years)	Temperature	Energy Star	Light Type	Light Length
C1								
C2								
C3								
C4								
C5								
C6								
C7								
C8								

							Freezers Only
RC32	RC33	RC34	RC35	RC36	RC37		RC38
Light Controls	Anti-sweat door heater controls	Fan Motor Type	Has fan motor ever been replaced?	How was this determined?	Curtains/ Covers	Door Gaskets Missing / Damaged	Defrost Control

WATER FIXTURES

	Water Faucets / Appliances	
tv1	Question	Answer
WF1	Are there water faucets or showers at this site that are connected to water heating?	
WF2	Does this facility have commercial laundry equipment?	
WF3	Does this facility have residential laundry equipment?	

th1	WF4	WF5	WF6	WF7	WF8	WF9
row	Fixture Type	Application/ Location	Quantity	Flow (GPM)	Source for determining flow	Notes
1						

	Clothes Washers										
	WF10	WF11	WF12	WF13	WF14	WF15	WF16	WF17	WF18	WF19	WF20
row	Manufacturer	Model	Count	Type	Energy Star®	Size (ft3)	Age (years)	Cycles per month	Ozone Laundry?	Xeros Beads?	Notes
1											

	Clothes Dryers									
	WF21	WF22	WF23	WF24	WF25	WF26	WF27	WF28	WF29	WF30
row	Manufacturer	Model	Count	Type	Energy Star®	Fuel	Size (ft3)	Age (years)	Cycles per month	Notes
1										
2										
3										

KITCHEN AND COOKING EQUIPMENT

	Kitchen and Cooking Equipment	
	Question	Answer
CE1	Does the facility have cooking equipment?	
CE2	Does the facility have dishwashing equipment?	

	Cooking Equipment									
	CE3	CE4	CE5	CE6	CE7	CE8	CE9	CE10	CE12	CE13
row	Equipment Type	Quantity	Fuel	Name-plate Wattage	Input Rate (btu/hr)	Energy Star®	Manufacturer	Age	Equipment Capacity	Infrared?
1										

	Dishwashers				
	CE15	CE16	CE17	CE18	CE19
row	Type	Quantity	Low or High Temperature?	Booster Fuel?	Energy Star®
1					
2					
3					

VENDING MACHINES

	Vending Machines	
	Question	Answer
VM1	Does this building have Vending Machines?	

	Non-Refrigerated Vending Machines	
	Question	Answer
VM2	Total quantity	

	Refrigerated Vending Machines									
	VM3	VM4	VM5	VM6	VM7	VM8	VM9	VM10	VM11	VM12
row	Equipment Type	Quantity	Age	Name-plate Wattage	Energy Star®	Vending Miser Present?	How was this determined?	Shut Off Timer Present?	How was this determined?	Notes
1										

ICE MACHINES

	Ice Machines	
	Question	Answer
IM1	Does this building have Ice Machines	

	Ice Machines					
	IM2	IM3	IM4	IM5	IM6	IM7
row	Equipment Type	Quantity	Pounds of Ice per Day	Age	Energy Star	Notes
1						

MOTORS & OTHER INDUSTRIAL

	Question	Answer
MO1	Are there Non-HVAC motors?	
MO2	Is there other equipment with large energy loads?	

	Non-Hvac Motor Loads					Record any process ventilation on the AHU and Ventilation Tab		
	MO3	MO4	MO5	MO6	MO7	MO8	MO9	MO10
row	Equipment Description	Motor Load Type	Motor Type	Motor Size (HP)	Quantity (#)	Avg Age	Efficiency (%)	NEMA Certified?
1								

MO11	MO12	MO13	MO14	MO15	MO16	MO8
Hours Run Per Day	Pumping Control System	# able to have VFDs installed	# where installing VFDs is practical	# with VFDs installed	Maintenance Schedule	Avg Age
1						

	Large Energy-Using Equipment Not Covered Elsewhere			
	MO18	MO19	MO20	MO21
row	Equipment Type	Quantity	How Used	Notes
1				

COMPRESSED AIR

	Compressed Air	
	Question	Answer
CA1	Is there a compressed air system here?	

	System Information						
	CA2	CA3	CA4	CA5	CA6	CA7	CA8
row	Compressor System Number (put a 1, 2, or 3 here to reference below for compressors on this system)	Primary Compressed Air Use	How many compressors are present?	Hours On Per Week	Type of control	Size of Air Storage Tank/ Receiver (Gallons)	Type of Dryer in System
1							

CA9	CA10	CA11	CA12	CA13	CA14	CA15
Refrigerated Dryer Type	Refrigerated Dryer CFM Capacity	Does system have Low Pressure Drop Filters?	Quantity of Low Pressure Drop Filters	Does system have Zero Loss Condensate Drains?	CFM Capacity of Piping	Receiver Capacity (gallons/ CFM)

	Compressor Information			
	MO18	MO19	MO20	MO21
row	Equipment Type	Quantity	How Used	Notes
1				

ELECTRONICS - SERVERS

	Servers	
	Question	Answer
ES1	Does this site have Rack-mounted servers?	

	Rack-Mounted Servers							
	ES2	ES3	ES4	ES5	ES6	ES7	ES8	ES9
row	Space Type	In Own Space?	Cooling Type?	Has Separate Cooling System?	Number of Racks Present	Number of Servers total	What System Number(s) Corresponds to Where the CRAC Cooling Equipment Information is Collected? (i.e. SS2, HR1, PS3)	Please Describe the CRAC System
1								

OTHER ELECTRONICS

	Other Electronics	
	Question	Answer
Does the Building have...	Computers (Exclusing Servers)	
	Printers/copiers/imaging equipment	
	Televisions	
	Point-of-sale/cash register equipment	

	Electronics Except Servers				
	OE5	OE6	OE7	OE8	OE9
row	Type	Quantity	% Connected to Advanced Power Strips	Average # of External Monitors per Computer	Notes
1	Computers				
2	Televisions				
3	Point-of-sale/cash register equipment				
4	Small printers/copiers (for workstation)				
5	Large printers/copiers (shared/network printer)				

MAINTENANCE AND RCX

		Maintenance	
		Question	Answer
What type of maintenance program do you have for...	MA1	the HVAC system	
	MA2	the Lighting system	
What do you do for that maintenance? (e.g. - how often do you change filters/ belts/sheeves, etc. for HVAC or replace lamps for lighting)	MA3	HVAC	
	MA4	Lighting	

Commissioning		
Question	Answer	Notes
Was this building commissioned when it was built?		
Have you ever had this building retro-commissioned?		
Date of last retro-commissioning		
Do you do ongoing retro-commissioning?		

BUILDING ENVELOPE

	Building Envelope	
	Question	Answer
BE1	Does the building have ducts? (Y/N):	
BE2	Roof Color?	
BE3	Predominant Framing Type	
BE4	Does the building have a basement or crawlspace?	

	Orientation	Walls	Roof	Floor	Notes
BE5	Insulation in Cavity?				
BE6	Insulation Type?				

		BE7	BE8	BE9	BE10	BE11	BE12
row	Windows	Count	Window Area (% of outer wall)	Type	Average age	Glazing	Window film?
1	North						
2	East						
3	South						
4	West						
5	Skylight						

	Ducts	Response	Notes
BE18	Is ductwork insulated? (Y/N):		
BE19	Share of ductwork insulated or in a conditioned space (%)		
BE20	Has a leak test ever been completed?		
BE21	Is the ductwork sealed?		
BE22	Year of last ductwork inspection or repair		

DISTRICT STEAM

	District Steam		
	Question	Answer	Notes
DS1	Is this facility served by district steam?		
DS2	Are the district steam pipes, valves and fittings insulated?		
DS3	Does the facility implement condensate heat recovery?		
DS4	Does the facility reuse condensate?		
DS5	Steam System Condensate Steam Trap count?		
DS6	Does this facility have a Back-Pressure Steam Turbine Generator?		
DS7	Direct or indirect through a steam to water heat exchanger?		

		On-Site Generation
		Site ID
OSG1	Does this building have the following generation types?	Backup Generator
OSG2		Renewable Generation
OSG3		Co-Generation or Back-pressure District Steam Generator?
OSG4	Metering/Monitoring	Does this facility have net utility metering?
OSG5		Does your company monitor generator performance or output?

	Backup Generators	OSG1	OSG2	OSG3
OSG6	Type of Generator			
OSG7	Fuel Type			
OSG8	Capacity (kW)			
OSG9	Quantity of Units	RG1	RG2	RG3
	Renewable Generation			
OSG10	Type of Renewable Generation			
OSG11	Capacity (kW)	SLR1	SLR2	SLR3
	Solar			
OSG12	Inverter Type			
OSG13	Advanced Inverter Capabilities?			
OSG14	Number of Panels			
OSG15	Does the system have a battery?			
OSG16	Battery size?			
OSG17	Battery Size Unit	COGN1	COGN2	COGN3
	Co-Generation Systems			
OSG18	Fuel Type			
OSG19	Capacity (kW)			
OSG20	Average operating hours per year			
OSG21	Number of operating days per year			
OSG22	Does this unit have dedicated utility metering?			

ELECTRIC VEHICLES

	Electric Vehicles		
	Question	Answer	Notes
EV1	Does this facility have an electric vehicle charging station?		
EV2	Type		
EV3	System nameplate power rating (kW)		
EV4	Does the charging station have internet connectivity?		
EV5	Number of parking spots		
EV6	Does the facility operate a fleet of electric vehicles?		
EV7	How many electric vehicles operate out of this facility?		