FINAL REPORT APPENDICES

STATEWIDE SURVEY OF MULTI-FAMILY COMMON AREA BUILDING OWNERS MARKET

Volume I: Apartment Complexes

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APPENDIX A
PROJECT METHODOLOGY

This appendix describes the methodology that was used to conduct the survey and study of apartment complexes.

A.1 SAMPLING PLAN

The survey of apartment complexes was one part of a larger survey that also included collecting data on common areas of condominium and homeowner associations. A major issue for the overall study related to preparing appropriate sampling frames and using those frames to select samples of multi-family facilities from which to collect data. These issues differed between common areas for apartment complexes and common areas for other types of multi-family housing (e.g., condominium associations).

The total sample for the overall survey consisted of 840 points. Based on consultations with the SCE Project Manager, the Study Liaison from the California Board for Energy Efficiency (CBEE), and interested parties from the other California utilities, it was determined to allocate 540 sample points to the survey of apartment complexes and 300 sample points to the survey of condominium and homeowner associations.

A.1.1 Plan for Surveying Common Areas for Apartment Complexes

An analysis of data on multi-family properties that were collected by the U.S. Department of Housing and Urban Development and the Bureau of the Census in the Property Owners and Managers Survey (POMS) provided some insight into the nature of the issues that arise in sampling apartment complexes. In the POMS, which was conducted in 1995-1996, detailed information was collected from owners and managers of multi-family housing regarding such matters as maintenance, management practices, tenant policy, financial aspects of rental property ownership, owner characteristics, and related topics. The POMS microdata set does not identify properties specifically located in California, but does identify properties located in the West region defined by the Bureau of the Census. The microdata for the West region properties were used to examine sampling issues for this study.

The major conclusion coming out of an analysis of the POMS data was that the number of units in an apartment complex is a significant factor in determining whether a complex will have common area activities that impact energy use. *A priori*, it would be expected that energy use for exterior lighting would be directly correlated with the number of units in a complex; the more units, the higher the lighting use for common areas. In addition, the POMS data show that the saturations of some common area activities differ significantly across complexes of different sizes. These differences are illustrated in

Table A-1 for three common area activities: swimming pool, common laundry room, and athletic/recreation facilities. The data in Table A-1 show that the probability that a complex will have a swimming pool or a athletic/recreation facility rises as the size of the complex increases.

Table A-1. Saturations for Common Area Activities by Size of Apartment Complex (Based on West Region Data from POMS)

Units per Apartment Structure	*Number of Structures*	*Number of Units*	*Percent with Pool*	*Percent with Common Laundry*	*Percent with Athletic or Recreation Facility*
5-10	80,059	551,329	3.8%	62.6%	3.8%
11-25	38,588	633,662	16.1%	81.4%	3.2%
26-100	23,721	1,194,794	48.5%	87.7%	12.4%
101-250	6,339	996,654	79.9%	87.1%	46.2%
Over 250	1,952	713,904	91.3%	75.7%	75.9%
Not reported	33,578		13.8%	23.3%	4.2%

Based on this analysis, it was concluded that a sampling plan that stratifies complexes by number of units was most appropriate. The issue that then arose was related to preparing a sampling frame that had size-related information that could be used in preparing the sampling plan. For many of the surveys of residential, commercial, or industrial customers conducted by California utilities in recent years, records from utility billing files have been used to construct sampling frames. However, there can be considerable effort involved in preparing a sampling frame from the utility records. This was especially true for preparing a sampling frame for common areas of apartment complexes. There have been no previous surveys of common areas, so that there has been little, if any, initial work on identifying apartment complexes *per se* in utility records. Residential surveys have focused on individual households, while commercial and industrial surveys have focused on major building types.

Given that the amount of time available to perform this study was relatively constrained, other sources of information for developing a sampling frame for apartment complexes were examined. Several sources were identified that, taken in combination, provided a sampling frame for apartment complexes throughout California.

The first source of data was from REALFACTS, which is a database publisher that specializes in collecting data on multi-family apartment complexes of 100 units or more. REALFACTS has developed and makes available a database on nearly 3,300 apartment complexes in California that have 100 or more units. (The information in the database is updated quarterly.) The REALFACTS database includes information on the name and address of each apartment complex, identifies the owner and/or manager (along with address and telephone number), shows the year built and number of units for a complex,

and identifies what common area amenities a complex has (e.g., swimming pool, recreation facilities, etc.). Arrangements were made with REALFACTS to obtain a computer file of information from their database.

While the REALFACTS data provided coverage of apartment complexes of 100 or more units, additional sources were required to give coverage of complexes with less than 100 units. One such source was a CD-ROM telephone directory published by CD USA, a division of American Business Information, Inc. This directory identified apartment complexes by SIC (i.e., 6513) and provided the names, addresses, and telephone numbers of the complexes. An extraction of data from this directory identified nearly 12,400 apartment complexes in California. By using a cross-reference between ZIP codes and utility service territories that the California Energy Commission has prepared, each complex could be assigned to an appropriate utility service area.

By matching apartment complexes listed in the REALFACTS database against complexes listed from the CD-ROM telephone directory, complexes that have less than 100 units could be identified.

This procedure for developing the sampling frame for apartment complexes was used because it made use of readily accessible databases and therefore allowed quick development of a sampling frame that had a high degree of specificity for apartment complexes.

Using the sampling frame thus developed, a sampling plan was prepared. The following questions were addressed in developing the sampling plan:

- How should strata be defined?
- How many strata should be defined?
- How should sample points be allocated among different strata?
- What should the sample size be?

Introducing stratification into the sample designs was desirable both for administrative reasons and for reasons of statistical precision.

The administrative reason for stratification arose because estimates of a specified precision were needed not only for statewide estimates but also for service territory estimates. For this study, three service areas were defined:

- for Pacific Gas and Electric's service territory;
- for the combined service territories of Southern California Edison and Southern California Gas; and
- for San Diego Gas and Electric's service territory.

When estimates are desired for separate domains (e.g., service territories), then the precision criteria used to calculate sample sizes must be applied to each such domain. That is, the procedure is to divide the population into the domains and then to treat these domains separately. Key population parameters are identified, and key precision criteria are established for the overall population estimate and for individual domain estimates. The goal is to ensure that acceptable precision will be obtained in each domain for which an estimate is desired. With each domain being treated essentially as a separate sample, the total sample size required for the survey will be the sum of sample sizes across domains.

The statistical reason for using stratification is that estimates of a given precision can generally be gotten with a smaller sample size if stratification is used. That is, with stratification, relatively homogeneous groupings within the population are identified and treated as separate strata. Since the customers in these groupings are relatively similar, the number of customers that need to be sampled can be reduced.

It appeared that energy use for common areas (and hence the potential for energy efficiency improvements) was directly associated with the number of units in the complex. Accordingly, apartment complexes were stratified according to number of units per complex. Four categories were used for the size stratification.

- Strata 1 and 2 were for complexes with under 100 units per complex. These apartment complexes fall into three groups. One group is apartment complexes that are generally older, 2- to 3-story single buildings located in the older sections of city centers. They normally do not have many common area amenities, with the exception of a common laundry area. Moreover, these complexes usually have fairly low outdoor lighting loads. A second group includes single, multi-story buildings with possibly a common area clubhouse and swimming pool and without much area for outdoor lighting. The third group includes two-story garden apartments with possibly a clubhouse and swimming pool
- Stratum 3 was for complexes with 101-250 units per complex. The majority of complexes in this stratum are garden-type apartments with most of the common area amenities (e.g., swimming pool, common laundry, recreation facilities). There are also a few high-rise apartment complexes in this stratum, mainly in the coastal areas.
- Stratum 4 was for complexes with over 250 units per complex. These large complexes generally have 2-story garden-type apartments and a full menu of common area amenities, including multiple pools, exercise room, club house, and extensive outdoor lighting.

Based on consultations with the SCE Project Manager, the Study Liaison from the California Board for Energy Efficiency (CBEE), and interested parties from the other California utilities, it was determined to distribute the 540 sample points for the survey of apartment complexes among service areas as follows:

- SCE/SCG 210
- PG&E 210
- SDG&E 120

For SCE/SCG and PG&E this allowed 110 sample points for strata 1 and 2 and 50 sample points each for stratum 3 (101-250 units per complex) and stratum 4 (over 250 units per complex). For SDG&E, each sampling stratum would receive 30 sample points.

A.2 DATA COLLECTION FORMS

Three types of instruments were prepared for the data collection effort:

- Guide for the in-depth interviews;
- Data collection form for the on-site data collection; and
- Questionnaire for the telephone survey of decision-makers.

The approach to preparing the data collection forms and questionnaires had the following steps. The items of data that need to be collected in the survey were first identified. Recommendations for questionnaire content were reviewed. Based on this information, preliminary versions of the forms and questionnaires were prepared and submitted for review. The preliminary versions of the forms and questionnaires were revised in light of the review comments and suggestions.

The data collection forms that were produced through this process are included in Appendix B.

A.3 DATA COLLECTION PROCEDURES

This section presents a discussion of the major aspects of the procedures to be used for accomplishing the data collection for the statewide survey of the multi-family common area/building owners market.

A.3.1 In-Depth Interview Procedures

TecMRKT Works conducted extended interviews with key market actors. The persons interviewed included large and small property owners, large and small property managers, heads of homeowners associations, on-site property managers, and building professionals such as architects, engineers, and others, serving the multi-housing industry. The interviews were conducted in different regions in California to capture indicators of regional differences. The interviews were also be conducted with people representing different styles of buildings, high-rise residential, low-rise (2–4 story) residential and ground level buildings.

The people to be interviewed were contacted by senior staff by telephone. During this contact the senior staff described the nature of the project, requested a time for an interview, and answered any questions that the potential respondent may have. Respondents were sent a confirmation letter (FAX) along with a list of topics to be covered during the interviews.

The interviews were, for the most part, open-ended, lasting from 45 minutes to an hour-and-a-half.. Senior staff conducted the interviews. With the permission of the respondent the interviews were tape recorded.

A.3.2 On-Site Data Collection Procedures

Site-specific data needed for the analysis of the energy efficiency of equipment installed in the common areas of apartment complexes and condo associations were collected through on-site visits.

The field staff for the on-site survey were existing members of ADM's staff. The field staff were organized into teams that worked out of ADM's offices in Sacramento and in Los Angeles. Each field team was headed by a field supervisor, who was responsible for managing the day-to-day activities of his team during the data collection effort. The field supervisor provided management direction for special situations that arose and for additional training (if necessary) of field staff.

To begin the field work, introductory letters on utility stationery were sent to the apartment complexes selected as candidates for the survey. These letters stated the purpose of the survey and indicated that the complex was a candidate. After the letters were sent, scheduling of on-site visits with the apartment complexes chosen for the sample began. Recruitment and scheduling of visits was handled by ADM staff members who have considerable experience in this area. The contacts with the sample complexes were handled according to a recruitment script that explained the purposes of the survey, indicated the types of data that would be collected, and described the amount of time for the on-site visit. This script also provided the scheduler with appropriate responses to questions that personnel at the complexes might ask.

When an apartment complex agreed to participate in the survey, the scheduler arranged a mutually acceptable time for data collection, based on the convenience of the apartment complex personnel and on the travel schedule of the field staff. As the survey visits were scheduled, a timetable and other particulars for the on-site data collection visit were prepared. This included the names of the apartment complexes to be surveyed, their addresses and telephone numbers, and the dates and times planned for the visits. This information was used to administer and manage the data collection effort.

Complete and accurate records were kept of all attempts to contact a complex and of the final disposition of the attempts. This information was maintained in the Survey Tracking System.

Once the arrangement for a site visit had been made, a member of the field staff visited the apartment complex to collect the data. The on-site data collection was conducted in two parts.

- Before beginning the site inspection, the field interviewer identified an appropriate respondent at the apartment complex and administered the interview portion of the on-site data collection to that person.
- After administering the interview, the field personnel inspected the appliances/equipment in the common area. He/she collected data on type of equipment, size, age, equipment efficiency ratings (if available), etc. The data collected during the physical inspection were recorded on a standardized data collection form. To determine efficiency ratings for some equipment, manufacturer name and model number were collected and used later to look up the information for such ratings.

A.3.3 Telephone Survey Procedures

Additional information needed to assess decision-making was collected through a telephone survey of decision makers for the complexes that had been surveyed on-site. The telephone interviews were used to collect information from the owners and/or managers of apartment complexes regarding their decisions to install energy efficiency measures. Data on an owner/manager's decision-making procedures were collected that could be used to determine the ability and willingness of the customers to invest in energy efficiency improvements. This consideration arose because of the interest in estimating the potential for such energy efficiency improvements and in using the information collected to design programs to encourage energy efficiency improvements.

A.3.4 Procedures to Administer Survey Effort

Because of the volume of data collection work that needed to be accomplished, a computerized system was used for tracking and reporting on the progress of the work. As part of the tracking and reporting system, a Facility Status File was maintained that contained a record of specified characteristics for each apartment complex or homeowner association in the sample, along with information on the survey outcome for that complex or association.

The tracking system was set up to prepare various types of management reports. A status log that recorded the disposition of the contacts with each prospective survey participant was maintained as part of the tracking system. Reports were prepared that detailed the number and types of sites where data collection (either by telephone or on-site) had been

completed. These reports were used to track the progress of the survey work and to identify any problems in work scheduling that needed correction.

A.4 SURVEYS COMPLETED

On-site data collection was completed for 541 apartment complexes, and telephone interviews were completed with decision makers for 420 of the complexes. The distribution of the apartment complexes for the on-site data collection by service area and sampling stratum is shown in Table A-2. The distribution of the telephone interviews is shown in Table A-3.

Table A-2. Distribution of Completed On-Site Surveys by Service Area and Sampling Stratum

Sampling Stratum	Combined Service Areas	Individual Service Areas		
		PG&E	SCE/SCG	SDG&E
Totals	541	219	208	114
Strata 1&2	274	117	103	54
Stratum 3	132	50	48	34
Stratum 4	135	52	57	26

Table A-3. Distribution of Completed Telephone Surveys by Service Area and Sampling Stratum

Sampling Stratum	Combined Service Areas	Individual Service Areas		
		PG&E	SCE/SCG	SDG&E
Totals	420	167	161	92
Strata 1&2	209	86	81	42
Stratum 3	105	43	36	26
Stratum 4	106	38	44	24

A.5 PREPARATION OF DATABASES

Databases were developed that included not only the data collected through the on-site and telephone surveys but also data on equipment efficiencies developed from matching against databases that contain information on the energy efficiencies of equipment and appliances.

The major source of information on equipment and appliance efficiencies was directories prepared by the California Energy Commission. Current and previous directories were obtained for the following types of equipment and appliances:

- Boilers
- Central air conditioners and heat pumps

- Dishwashers, clothes washers, clothes dryers, ranges, and ovens
- Water heaters, electric and gas
- Central gas furnaces
- Gas space heaters (not including central furnaces)
- Pool heaters
- Window air conditioners and heat pumps
- Packaged terminal air conditioners (PTAC) and packaged terminal heat pumps
- Refrigerators and freezers

Various methods were used to assign or impute efficiencies for the equipment observed on-site, depending on the amount of information that could be collected on that equipment. The assignment/imputation methods are summarized in Table A-4. The most straightforward method applied when information on the manufacturer and model number of the equipment could be collected and matched directly against information contained in the CEC appliance efficiency databases. Otherwise, information on equipment make, capacity and age was used as available to assign/impute efficiencies. The efficiencies determined through these methods were merged with the on-site data.

Table A-4. Methods Used to Assign or Impute Efficiencies to Equipment/Appliances

Data Available on?:				*Identified in CEC Database?*	*Exact Match to CEC Data?*	*Assignment or Imputation Method*
Manufacturer	*Model Number*	*Capacity*	*Age*			
Yes	Yes	Yes	Yes	Yes	Yes	Directly from CEC
Yes	Yes	Yes	Yes	No	N/A	Imputed on make, capacity, age
Yes	No	Yes	Yes	No	N/A	Imputed on make, capacity, age
Yes	No	Yes	No	No	N/A	Imputed on make, capacity
Yes	No	No	Yes	No	N/A	No imputation
Yes	No	No	No	No	N/A	No imputation
No	No	Yes	Yes	No	N/A	Imputed on capacity, age
No	No	Yes	No	No	N/A	Imputed on capacity
No	No	No	Yes	No	N/A	No imputation
No	No	No	No	No	N/A	No imputation

A.6 STATISTICAL WEIGHTING

Aggregate analysis of the data collected through the on-site and telephone surveys of apartment complexes was performed to determine population values for equipment saturations and other target variables. Because the surveyed complexes whose data were used for the aggregate analyses were selected through a sampling procedure, statistical

weights were developed so that the data for the individual surveyed complexes could be "weighted up" in the aggregate analyses to represent the complete populations of apartment complexes in the combined service areas and in the individual service areas (i.e., PG&E, SCE/SCG and SDG&E).

For the population estimates of interest for this study, ratio estimation was preferred because it better accounts for the large variation in the sizes of complexes. With the ratio method of estimation, an auxiliary variable that is correlated with the variable of interest is obtained for each complex in the sample; the population total for the auxiliary variable must be known. The ratio estimate of population square footage is then given by the following formulation:

$$\hat{Y}_R = \frac{y}{x} X = \frac{X}{x} y$$

where is Y_R is the population estimate for a variable, y is the sample total for that variable, x is the sample total for the auxiliary variable, and X is the population total for the auxiliary variable. Essentially then, X/x represents the statistical weight to be used for the ratio estimation.

For the ratio estimation used for this study, the auxiliary variable that was used was the number of apartment units. The population totals for apartment units in Strata 3 and 4 were known directly from summation of the units data on the REALFACTs data set. No data were available for directly determining the population totals for Strata 1 and 2. However, population totals for all apartment units were available from the Department of Finance, State of California. In particular, this source provided estimates on the total population of housing units in five plus building structures for January 1, 1999 in cities and counties throughout the state. Using these data, cities and counties were assigned to the utility service areas, and the total population of apartment units was determined for each service area. Tabulations of the REALFACTs data provided estimates of the number of apartment units in Strata 3 and 4 for each service area. The estimates from the REALFACTs data were then subtracted from the total population estimates for each service area to obtain the estimated number of apartment units in Strata 1 and 2 (combined).

Because telephone interviews could not be completed with decision makers for all of the complexes for which data were collected on-site, two sets of weights were developed. One set of weights is based on the group of complexes that were surveyed on-site, and the second set of weights is based on the group of complexes for which telephone interviews were completed. Table A-5 shows the data used to calculate the two sets of statistical weights for the different service areas and sample strata. The statistical weight calculated for each service area/sampling stratum was assigned to all sampled complexes in that stratum, essentially becoming a case weight for each sample case.

Table A-5. Calculation of Statistical Weights

Service Area	Stratum	Population of Units	Units Sampled	Units Weight
Weight Calculation for Complexes Surveyed On-Site				
PG&E	1&2	779,150	8,572	90.895
PG&E	3	124,604	8,178	15.236
PG&E	4	116,154	24,863	4.672
SCE/SCG	1&2	1,312,050	11,321	115.895
SCE/SCG	3	125,847	7,468	16.851
SCE/SCG	4	146,914	22,506	6.528
SDG&E	1&2	214,628	3,321	64.628
SDG&E	3	47,190	5,378	8.775
SDG&E	4	40,690	10,662	3.816
Weight Calculation for Complexes in Telephone Survey				
PG&E	1&2	779,150	6,058	128.615
PG&E	3	124,604	7,166	17.388
PG&E	4	116,154	20,440	5.683
SCE/SCG	1&2	1,312,050	9,391	139.714
SCE/SCG	3	125,847	5,725	21.982
SCE/SCG	4	146,914	17,442	8.423
SDG&E	1&2	214,628	2,590	82.868
SDG&E	3	47,190	3,996	11.809
SDG&E	4	40,690	10,038	4.054

APPENDIX B
DATA COLLECTION FORMS

This appendix contains copies of the forms used for collecting data during the survey. There are two forms: one for the on-site data collection and one for the telephone interviewing of decision makers.

Data Collector:	Date of Site Visit	Date Form Received	Date Form Checked	Date of Data Entry	ID Number
					_ _ _ _ _ _ _

Statewide Survey of Multi-Family Common Area/ Building Owners Market

On-Site Data Collection Form

January 2000

Name of site: _____

Street Address: _____

City, State: _____

Zip Code: __ __ __ __ __ - __ __ __ __

Resident Manager:

Name: _____

Title: _____

Phone Number (__ __ __) __ __ __ __ __ __ __ __ ext. __ __ __ __

Who is responsible for making decisions about energy and equipment purchases for this complex?

Name: _____

Contact: _____

Phone Number (__ __ __) __ __ __ __ __ __ __ __ ext. __ __ __ __

General Information

What best describes buildings at this complex?

__ Single Family Houses
__ 2 to 4 units per building, 1-story
__ 5+ units per building, 1-2 story low-rise
__ Townhouses
__ 2 to 4 units per building, 2-story
__ 5+ units per building, 3+ story
__ Other (describe) _____

How many buildings are in complex? __ __ __ __
How many units are in complex? __ __ __ __
What is the total square footage of all buildings in complex? __ __ __ __ __ __ __ __
What year was complex built? __ __ __ __
What percent of units are currently occupied? __ __ __ __%

Have there been any of the following major renovations/replacements (more than 50%) since complex was built?
If so, what year? (1=No, 2=Yes, 3=Have a phased approach for replacing worn out equipment)
Were any done to improve energy efficiency?: (1=No, 2-Yes)

	Done?	Year?	For EE?
New units added?	__	__ __ __ __	__
Built new swimming pool/spa area?	__	__ __ __ __	__
Built new exercise/athletic facility?	__	__ __ __ __	__
Replaced washers/dryers in common laundry room?	__	__ __ __ __	__
Renovated or replaced water heaters in individual units?	__	__ __ __ __	__
Renovated or replaced water heaters for common areas?	__	__ __ __ __	__
Renovated or replaced heating equipment in individual units?	__	__ __ __ __	__
Renovated or replaced heating equipment for common areas?	__	__ __ __ __	__
Renovated or replaced cooling equipment in individual units?	__	__ __ __ __	__
Renovated or replaced cooling equipment for common areas?	__	__ __ __ __	__
Renovated or replaced lighting fixtures/systems in individual units?	__	__ __ __ __	__
Renovated or replaced lighting fixtures/systems for common areas?	__	__ __ __ __	__
Other (describe) _____	__	__ __ __ __	__

Utility Account Information

What utilities provide electricity and natural gas to this facility?
What are account numbers for the facility's common areas?

Item #	Utility:	Meter Numbers:	Account Numbers:
Electricity	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"		_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
Natural Gas	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
"	_____	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _	_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Code for Utility Companies:

San Diego Gas & Electric, SDG&E	1	Southern California Gas, SCG	4
Southern California Edison, SCE	2	Other _____	5
Pacific Gas & Electric, PG&E	3	Other _____	6

Common Area Amenities for Complex

Which of the following common area amenities are provided to tenants/occupants at this apartment complex or condo development?

Amenity	*Provided?* (1=No 2=Yes)
Club room	___
Common Rooms for Parties	___
Swimming Pool	___
Common Laundry Room	___
Athletic Facilities	___
Play Area for Children	___
Elevator	___
Automatic Sprinkler System	___
Other_____	___

Appliances Provided to Tenants

Who owns the following appliances that tenants/residents may have in their units?

Appliance	*In Units? (1=No 2=Yes)*	*Who Owns? (1=Tenant 2=Complex 3=Either)*
Refrigerator	___	___
Clothes washer	___	___
Clothes dryer	___	___
Dishwasher	___	___
Microwave	___	___
Trash compactor	___	___
Wall/window air conditioner	___	___
Individual cooling (A/C) equipment dedicated to unit	___	___
Individual heating equipment dedicated to unit	___	___
Individual water heater dedicated to unit	___	___

Tenant/Resident Payments for Utility Services

How do tenants/residents pay for different utility services?

Utility Service for Individual Units	*How Paid?* (per code below)*	*Utility Service for Common Area*	*How Paid?* (per code below)*
Electricity	___	Electricity	___
Natural gas	___	Natural gas	___
Water	___	Water	___

*If "How paid?" is "Other", describe: _____

Codes for type of payment

How Service is Paid for:	*Code*
Included in rents	1
Tenants pay for individual use	2
Tenants pay a pro-rated share of total bill	3
Residents pay in association dues	4
Service not provided	5
Paid by the owner/management company	6
Other (describe) _____	7

Have Common Laundry Room? (Y / N)

If Yes: How many common laundry rooms? _____

Common Laundry Room Equipment	# ___	# ___	# ___	# ___
Equipment Type				
Make				
Model				
Number of pieces of equipment (quantity)				
Fuel Type				
Connected Load (kBtu/hr or kW)				
Number of hours in use per day				
Age of equipment?				
Is equipment coin operated? 1=No 2=Yes				
Is equipment operational? 1=No 2=Yes				
Evidence of poor maintenance? 1 = No 2 = Yes				

Water Heating Equipment: (Y / N)

Is the hot water for the tenants paid for by the owner? (Y / N)	# ___	# ___	# ___
Water Heating Equipment Type: 1 = Boiler (Water Heating only) 2 = Space Heating Boiler 3 = Water heater tanks 4 = Instantaneous (Tankless)			
Make			
Model			
Fuel Type?			
Number of water heaters			
Size of tank (Gallons)			
Average Capacity (kBtu/hr or kW)			
Average hot water temperature (F)			
Age of equipment?			
Recirculation pump power (hp) - Enter zero for no pump			

Codes for Laundry Equipment:

Types of Clothes Washers	*Equip Code*	*Types of Clothes Dryers*	*Equip Code*
Clothes washer top-loaded (vertical agitator)	CWT	Clothes dryer top-loaded	CDT
Clothes washer front-loaded (horizontal agitator)	CWF	Clothes dryer front-loaded	CDF
Clothes washer top-loaded (horizontal agitator)	CWH	Other clothes dryer (describe) _____	CDO
Other clothes washer (describe) _____	CWO		
Stacked (washer & dryer)	STK		

Codes for Fuel Types:

Electricity	1
Natural gas	2
Fuel oil	3
LPG	4
Solar	5
Other _____	10

Comments:

Have swimming pools/spas? (Y / N)

	# ____	# ____	# ____
Type: 1 = Swimming Pool 2 = Hot Tub 3 = Other			
Location of swimming pool or spa: 1 = Indoor, 2 = Outdoor			
What is the size of the pool (square feet)?			
Is a pool cover used? 1= No 2= Yes			
Pool Heater Capacity (kBtu/hr or kW)			
Fuel Type (per codes below)			
Age of pool heating equipment?			
Circulation Pump Size (hp)			
Are pump motors high efficiency? 1 = No, 2 = Yes			
Number of hours that the pumps run each day			
Number of months pool/spa is available to residents			

Have Kitchen/Cooking Equipment in Common Areas? (Y / N)

	# ____	# ____	# ____	# ____	# ____	# ____	# ____	# ____	# ____
Equipment Type									
Quantity									
Fuel Type (per codes below)									
Number of hours in use per day									
Age of equipment?									
Is equipment operational? 1=No 2=Yes									

Codes for Cooking/Kitchen Equipment:

Cooking/Kitchen Equipment	*Equipment Code*
Oven	OV
Stove	ST
Griddle	GR
Charbroiler	CB
Fryer	FR
Infrared Broiler	IB
Food Warmer	FW
Soup Pots	SP
Coffee Maker	CM
Microwave	MW
Dishwasher	DW
Garbage Disposal	GD

Refrigerators/Freezers	*Equipment Code*
No Freezer	NF
Freezer Inside	FI
Bottom Freezer	BF
Top Freezer	TF
Top Freezer With Ice Maker	TFI
Side Freezer(Side by Side)	SF
Side Freezer With Ice Make	SFI
Upright Freezer	UF
Chest Freezer	CF
Wine Chiller	WC
Other #1 (describe) _____	
Other #2 (describe) _____	
Other #3 (describe) _____	

Codes for Fuel Types:

Electricity	1
Natural gas	2
Fuel oil	3
LPG	4
Solar	5
Other_____	10

Miscellaneous Equipment in Common Areas? (Y / N)

Item #	Equipment Type	Fuel Type	Qty	Age	Number of Hours in use per day	Common Area Location	Operational (Y or N)

Codes for Miscellaneous Equipment and Common Areas

Equipment Type	*Code*
Audio Equipment	AE
Televisions	TV
Broadcasting equipment	BE
Ceiling/portable fans	CF
Vending machines	VM
Water Cooler	WC
Portable/ceiling fans	CF
Portable Heaters	PH
Coffee Maker	CM
Personal Computers	PC
Printers	PR
Copiers	CP
Fax machines	FX
Soda Machines	SM
No Freezer	NF
Freezer Inside	FI
Bottom Freezer	BF
Top Freezer	TF
Top Freezer w/ Ice Maker	TFI
Side Freezer(Side by Side)	SF
Side Freezer w/ Ice Make	SFI
Other #1 _____	OT1
Other #2 _____	OT2

Common Area	*Code*
All common area	1
Club House	2
Laundry Room/Facility	3
Athletic/Exercise Facility	4
Kitchen	5
Hallway	6
Office area	7
Outdoors	8
Parking garages	9
Other #1 _____	10
Other #2 _____	11

Codes for Fuel Types:

Electricity	1
Natural gas	2
Fuel oil	3
LPG	4
Solar	5
Other _____	10

Outdoor Lighting (Y / N)

Item #	*Fixture Type*	*Lamp Type*	*Watts per Lamp*	*Ballast Type*	*Number of Lamps per Fixture*	*Type of Control*	*Number of Hours In use per day*	*Common Area Served by*	*Count*	*Total*

Fixture Type Codes:

Name	Code
Poles	1
Car ports	2
Wall	3
Ceiling	4
Landscaping/Decorative	5

Ballast Type Codes

Name	Code
Standard Magnetic	1
High Efficiency Magnetic	2
Electronic	3
Hybrid	4

Control Type Codes

Name	Code
On/Off	I
Time Clock	2
Dimmer	3
Occupancy Sensor	4
EMS	5
Photo Cell	6

Lamp Type Codes:

Name	Code	Name	Code	Name	Code	Name	Code	Name	Code
2 Foot fluorescent	2F	Compact fluorescent (pin)	CFP	Incandescent	I	High Intensity Discharge	HID	Exit sign, Incandescent	EI
3 Foot fluorescent	3F	Compact fluorescent (screw)	CFS	Incandescent Elliptical Reflector	IR	Low Pressure Sodium	L	Exit sign, Fluorescent	EF
4 Foot fluorescent	4F	U-tubes	UT	Incandescent Spot/flood light	IS	High Pressure Sodium	H	Exit sign, LED	EL
6 Foot fluorescent	6F	Circline Fluorescent	CLF	Halogen	HG	Mercury Vapor	MV		
8 foot fluorescent	8F	Other fluorescent	OF	Quartz	Q	Metal Halide	MH		

Codes for Common Areas:

Area	*Code*	*Area*	*Code*	*Area*	*Code*
All common area	1	Athletic/Exercise Facility	4	Outdoors	8
Club House	2	Kitchen	5	Parking garages	9
Laundry Room/Facility	3	Hallway	6	Other #1 _____	10
		Office area	7	Other #2 _____	11

Comments:

Indoor Lighting for Common Areas (Y / N)

Item #	*Fixture Type*	*Lamp Type*	*Watts per Lamp*	*Ballast Type*	*Number of Lamps per Fixture*	*Type of Control*	*Number of Hours in use per day*	*Common Area Served by*	*Count*	*Total*

Fixture Type Codes:

Name	Code
Recessed	1
Suspended	2
Wall	3
Table/Floor	4
Ceiling	5

Ballast Type Code

Name	Code
Standard Magnetic	1
High Efficiency Magnetic	2
Electronic	3
Hybrid	4

Control Type Code

Name	Code
On/Off	I
Time Clock	2
Dimmer	3
Occupancy Sensor	4
EMS	5
Photo Cell	6

Lamp Type Codes:

Name	Code	Name	Code	Name	Code	Name	Code	Name	Code
2 Foot fluorescent	2F	Compact fluorescent (pin)	CFP	Incandescent	I	High Intensity Discharge	HID	Exit sign, Incandescent	EI
3 Foot fluorescent	3F	Compact fluorescent (screw)	CFS	Incandescent Elliptical Reflector	IR	Low Pressure Sodium	L	Exit sign, Fluorescent	EF
4 Foot fluorescent	4F	U-tubes	UT	Incandescent Spot/flood light	IS	High Pressure Sodium	H	Exit sign, LED	EL
6 Foot fluorescent	6F	Circline Fluorescent	CLF	Halogen	HG	Mercury Vapor	MV		
8 foot fluorescent	8F	Other fluorescent	OF	Quartz	Q	Metal Halide	MH		

Codes for Common Areas:

Area	*Code*	*Area*	*Code*	*Area*	*Code*
All common area	1	Athletic/Exercise Facility	4	Outdoors	8
Club House	2	Kitchen	5	Parking garages	9
Laundry Room/Facility	3	Hallway	6	Other #1 _____	10
		Office area	7	Other #2 _____	11

Comments:

Have Packaged Air Distribution Systems for Common Areas? (Y / N)

Air Distribution # (Enter A thru C)	# __	# __	# __
Air Distribution system type:			
Common areas served by			
Thermostat control: 1 = Manual (On/Off) 2 = Constant Temp 3 = Night Setback 4 = Weekly Clock 5 = EMS			
Make			
Model			
Quantity			
Cooling Equipment type:			
Capacity Output (kBtu/hr)			
Economizer 1 = Fixed 2 = Temp. 3 = Enthalpy			
Heating Equipment type:			
Fuel Type:			
Capacity Input (kW or kBtu/hr)			
Capacity Output (kW or kBtu/hr)			
Age of the packaged unit?			
Have units been serviced in last year 1 = No 2 = Yes			
Evidence of poor maintenance? 1 = No, 2 = Yes			

Codes for Types of Distribution, Heating, and Cooling Equipment:

Packaged Distribution Systems		***Cooling Equip. Types***		***Heating Equip. Types***	
Evaporative Cooler	EVAP	Direct Expansion	DX	Furnace	FC
Heat Pump	HP	DX w/ Evap Cooler	DXE	Electrical Heat	EH
Window Heat Pump	WHP	Evaporative Cooler	EC	Heat Pump	HP
Packaged Terminal Air Conditioner	PTAC	Not Applicable	N/A	Radiant Heater (Infrared)	RH
Packaged Single Zone	PSZ			Not Applicable	N/A
Packaged Multi Zone	PMZ				
Unit Ventilator	PUV				
Packaged Variable Air Volume	PVAV				
Power Induction Unit	PIU				

Codes for Common Areas:

All common area	1
Club House	2
Laundry Room/Facility	3
Athletic/Exercise Facility	4
Kitchen	5
Hallway	6
Office area	7
Outdoors	8
Parking garages	9
Other #1 _____	10
Other #2 _____	11

Codes for Fuel Types

Electric	1
Natural Gas	2
Fuel Oil	3
LPG	4
Solar	5
Wood	6
Coal/coke	7
Purchased steam	8
Purchased chilled water	9
Other _____	10

Comments:

Have Centralized Built-Up HVAC Air Distribution Systems? (Y / N)

Built-up System # (1 thru 9)	# __	# __	# __
Air Distribution system type:			
Common areas served by:			
Thermostat control: 1 = Manual (On/Off) 2 = Constant Temp 3 = Night Setback 4 = Weekly Clock 5 =			
Have dessicant humidity control system? 1 = No, 2 = Yes			
Supply Air:			
Temperature control: 1 =Constant 2 = Reset OAT 3 = Reset Demand			
Total supply fan power (total HP per system)			
Are the supply fan motors high efficiency? 1 = No, 2 = Yes			
Return Air:			
Total return fan power (total HP per system)			
Are the return fan motors high efficiency? 1 = No, 2 = Yes			
Economizer 1 = Fixed 2 = Temp. 3 = Enthalpy			
VAV Fan Control 1 = Inlet Fan 2 = Variable Speed 3 = Axial Vane 4 = Discharge Damper			
Age of HVAC equipment (years)			
Have the units been serviced in last year? 1 = No, 2 = Yes			
Evidence of poor system maintenance? 1 = No 2 = Yes			

Codes for Built-Up Distribution Systems:

Type of System	*Code*	*Type of System*	*Code*
Single Zone System	SZS	Two Pipe Fan Coil System	TPFC
Multi Zone System	MZS	Four Pipe Fan Coil System	FPFC
Dual Duct System	DDS	Hydronic Heat Pump System	WSHP
Constant Volume Reheat Fan System	CVS	Ceiling Induction Unit	INDUC
Variable Air Volume System	VAV	Floor Panel Heating System	FPHS
Ceiling Bypass VAV System	CVAV	Heating And Ventilating System	HVS

Codes for Common Areas:

All common area	1
Club House	2
Laundry Room/Facility	3
Athletic/Exercise Facility	4
Kitchen	5
Hallways	6
Office area	7
Outdoor	8
Parking garages	9
Other #1 _____	10
Other #2 _____	11

Comments:

Have Centralized Built-Up Heating Equipment? (Y / N)

	# __	# __	# __
Heating equipment type			
Common areas served by			
Make			
Model			
Type of heating fuel			
Quantity			
Output Capacity (kBtu/hr)			
Is this unit a backup 1 = No 2 = Yes			
Age of Heating equipment ? (years)			
Has unit been serviced in last year 1 = No 2 = Yes			
Evidence of poor system maintenance? 1 = No 2 = Yes			

Have Centralized Built-Up Cooling Equipment? (Y / N)

	# __	# __	# __
Cooling equipment type			
Common areas served by			
Make			
Model			
Quantity			
Output Capacity (Tons)			
Backup 1 = No 2 = Yes			
Age of Cooling equipment (years)			
Has unit been serviced in last year? 1 = No 2 = Yes			
Evidence of poor system maintenance? 1 = No 2 = Yes			

Codes for Heating Equipment Types:

Heating equipment types: 1 = None, 2 = Gas Furnace, 3 = Electric Furnace, 4 = Hot Water Boiler, 5 = Steam Boiler

Codes for Cooling Equipment Types:

Cooling equipment types: 1 = Centrifugal, 2 = Reciprocating, 3 = Screw Compressor, 4 = Absorption, 5 = Other

Codes for Common Areas:

All common area	1
Club House	2
Laundry Room/Facility	3
Athletic/Exercise Facility	4
Kitchen	5
Hallway	6
Office area	7
Outdoors	8
Parking garages	9
Other #1 _____	10
Other #2 _____	11

Codes for Fuel Types

Electric	1
Natural Gas	2
Fuel Oil	3
LPG	4
Solar	5
Wood	6
Coal/coke	7
Purchased steam	8
Purchased chilled water	9
Other _____	10

Comments:

Have Circulation Pumps? (Y / N)

	# ___	# ___	#___
Service Type: 1 = Chilled Water 2 = Hot Water 3 = Chilled/Hot Water 4=Condensor pumps			
Motor Type: 1 = Fixed Speed 2 = Variable Speed			
Pump power (hp)			
Quantity			
Age of the Equipment			
Are the pump motors high efficiency? 1 = No, 2 = Yes			
Backup? 1 = No 2 = Yes			

Have Cooling Towers (Built-up)? (Y / N)

	# __	# __	# __
Fan power (hp)			
Quantity			
Are the fan motors high efficiency?			
Fan Control: 1 = One Speed 2 = Two Speed 3 = Variable			
Water Set-Point (F)			
Pump Type: 1 = Fixed Speed 2 = Variable Speed			
Pump Horse Power (HP)			
Quantity			
Are the pump motors high efficiency? 1 = No, 2 = Yes			
Age of the Equipment			
Backup? 1 = No 2 = Yes			

Have Air Cooled Condenser (Built-up)? (Y / N)

	# __	# __	# __
Type: 1 = Air 2 = Evaporative 3 = Air w / pre-cooler			
Fan power (hp)			
Fan Control: 1 = One Speed 2 = Two Speed 3 = Variable			
Quantity			
Are the fan motors high efficiency? 1 = No, 2 = Yes			
Age of the Equipment			
Backup? 1 = No 2 = Yes			

Have Exhaust Fans? (Y / N)

	#__	#__	#__
Exhaust Fan Type: 1 = Restroom 2 = General Space 3 = Hood 4 = Kitchen MAU			
Fan power (total horsepower)			
Are the fan motors high efficiency? 1 = No, 2 = Yes			

Comments:

Notes/Comments

Data Collection Codes:

Name	*Code*
Not Applicable	-7
Not Available	-8
Refused to answer	-9
Minimal Operating Hours	99

Lamp Types and Typical Wattages:

Fluorescent		Incandescent	Incandescent	Compact	Quartz	Metal Halide	High Pressure	Mercury	Low Press.
Standard 4 ft	40 Watts	15 Watts	Spot/flood light	Fluorescent	75 Watts	75 Watts	Sodium	Vapor	Sodium
Energy Saver 4 ft	34 Watts	20 Watts	30 Watts	5 Watts	100 Watts	150 Watts	35 Watts	40 Watts	35 Watts
T8 4 ft	32 Watts	25 Watts	50 Watts	7 Watts	150 Watts	175 Watts	50 Watts	50 Watts	55 Watts
High Output 4 ft	60 Watts	40 Watts	75 Watts	9 Watts	200 Watts	250 Watts	70 Watts	75 Watts	90 Watts
Very H.O. 4 ft	115 Watts	60 Watts	100 Watts	10 Watts	250 Watts	300 Watts	100 Watts	100 Watts	135 Watts
U-Tube 4 ft	40 Watts	75 Watts	120 Watts	13 Watts	300 Watts	325 Watts	150 Watts	175 Watts	180 Watts
Standard 8 ft	75 Watts	100 Watts	150 Watts	18 Watts	350 Watts	400 Watts	200 Watts	250 Watts	
Energy Saver 8 ft	60 Watts	150 Watts	200 Watts	22 Watts	400 Watts	750 Watts	250 Watts	300 Watts	
High Output 8 ft	110 Watts	200 Watts	250 Watts	24 Watts	500 Watts	1000 Watts	310 Watts	400 Watts	
Very H.O. 8 ft	215 Watts	300 Watts	300 Watts	26 Watts	750 Watts	1500 Watts	360 Watts	700 Watts	
		500 Watts	500 Watts	28 Watts	900 Watts		400 Watts	1000 Watts	
Incand. Ellips			750 Watts	36 Watts	1000 Watts		880 Watts		
Reflectors			1000 Watts		1500 Watts		1000 Watts		
50 Watts									
75 Watts									
120 Watts									

Phone Surveyor Name:_____

Start Time: __:____

SCE Multi-family Common Area Decision Maker Survey

Respondent Information (pre-filled)

I1. Name of property that was field audited: _____

I2. Location of the property: _____

I3. Audit sample ID: _____

I4. Name of contact at field audit: _____

I5. Telephone of person at field audit: _____

I6. Name of person to be interviewed: _____

I7. Address 1: _____

I8. Address 2: _____

I9. City: _____ State: _____ Zip _____

I10. Telephone:(___) ____ - ____ Telephone 2: (___) ____ - ____

I11. Fax: (___) ____ - ____

I12. Has common area laundry equipment ❑ Yes ❑ No ❑ DK ❑ NA

Contact log

Date month, day, year mm dd yy	Time in (24 hour clock) h h m m	Time out (24 hour clock) h h m m	Result: 1. Complete, 2. Callback, 3. No answer, 4. No contact, 5. Wrong number, 6. Refusal, 7. Moved known, 8. Moved unknown, 9. Other (describe) Write in call back date and time
I14a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____
I15a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____
I16a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____
I17a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____
I18a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____
I19a.___ ___ ___	b. __ __ __ __	c. __ __ __ __	d. _____ _____

Hello, my name is _____. I'm calling on behalf of Southern California Edison Company. I'd like to speak with *(INSERT NAME FROM QI7*).

I20. Disposition
- 1 Correct person on line-----*>(CONTINUE)*
- 2 Correct person not available-----> *(IDENTIFY A CALLBACK TIME)*
- 3 Correct person no longer at this telephone -----> *(RECONTACT THE REFERRING PARTY TO VERIFY INFORMATION)*
- 4 Correct person asks for callback-----*>(SET CALLBACK OR DROP FROM SAMPLE)*
- 4 Correct person refuses-----*>(TERMINATE AND DROP FROM SAMPLE)*

Introduction

The California Board for Energy Efficiency in cooperation with the investor-owned utilities in California (i.e., Southern California Edison, Southern California Gas, Pacific Gas and Electric and San Diego Gas and Electric) are trying to understand the energy efficiency needs of the multi-family housing market. Just recently we completed a walk-through of the *(INSERT THE NAME OF THE COMPLEX FROM QUESTION I1)* to identify the characteristics of the energy using equipment in the common area. During the walk-through *(PERSON LISTED QUESTON I5)* identified you as a key decision-maker. In order to better understand what we found during the walk-through, we would like to complete a brief survey focusing on how you and your company make energy-related decisions. The information obtained during this project will be used by the California Board for Energy Efficiency and the California utilities to determine what programs may be needed in the multi-family housing sector and how to design them. It is important that we talk with you. Do you have time to complete a 15-minute survey now?

I21. ❑ Yes ❑ No →Set new time

A. FACILITY MANAGEMENT CHARACTERISTICS

1. With respect to *(INSERT THE NAME OF THE COMPLEX FROM QUESTION I1),* who is responsible for managing it?
   a. ❑ Company that owns complex also manages it
   b. ❑ Company managing complex does not own it
   c. ❑ Other _____

2. For the *(FILL IN THE NAME OF COMPLEX FROM QUESTION 1)* complex, how many on-site staff are there? _____

3. Can you help me identify the number of people by position? Do you have one or more . . *(INTERVIEWER: ENTER THE NUMBER)*
   a. ___Site manager
   b. ___Maintenance supervisor / facility engineer
   c. ___Maintenance staff
   d. ___Leasing manager

B. DECISION MAKING FACTORS FOR COMMON AREA ENERGY USING EQUIPMENT

4. When energy-using equipment in the common areas of this facility is changed or replaced, who is most likely to have the most important say in determining the characteristics of the new equipment?
   a. ❑ Maintenance staff
   b. ❑ Maintenance supervisor
   c. ❑ Site or complex manager (*SOMETIMES CALLED A FACILITY MANAGER NOT TO BE CONFUSED WITH A FACILITY ENGINEER OR FACILITY MAINTENANCE MANAGER*)
   d. ❑ Senior housing manager (*INTERVIEWER: THIS IS A MANAGER OF SEVERAL COMPLEXES OR A MANAGER OF MANAGERS OF COMPLEXES*)
   e. ❑ Owner
   f. ❑ Other: _____

5. What sources of information about equipment do you use when changing or replacing equipment in the common areas? *(CHECK ALL THAT ARE MENTIONED)*
   a. ❑ Internal maintenance staff
   b. ❑ Contractors
   c. ❑ Dealers
   d. ❑ Distributors
   e. ❑ Manufacturers
   f. ❑ Utilities
   g. ❑ Trade publications
   h. ❑ Other: _____

6. When replacement equipment for boilers, air conditioners or water heaters is selected for use in the common areas of this facility, how important are the following factors when rated on a scale of "1" to "10", where "1" is "Not at all important" and "10" is "Very important".

	Factor:	*Not at all Important*									*Very Important*	*DKNA*
a.	Replacing the equipment with an identical or nearly identical model	1	2	3	4	5	6	7	8	9	10	11
b.	Purchasing using company guidelines	1	2	3	4	5	6	7	8	9	10	11
c.	Price or first cost	1	2	3	4	5	6	7	8	9	10	11
d.	Prior experience with the equipment	1	2	3	4	5	6	7	8	9	10	11
e.	Reliability	1	2	3	4	5	6	7	8	9	10	11
f.	Ease of maintenance	1	2	3	4	5	6	7	8	9	10	11
g.	Energy efficiency	1	2	3	4	5	6	7	8	9	10	11
h.	Energy cost when company pays the utility cost	1	2	3	4	5	6	7	8	9	10	11
i.	Energy cost when tenant pays the utility cost	1	2	3	4	5	6	7	8	9	10	11

6a. When lighting equipment in the common areas of this facility is installed or replaced, are the same factors considered and given the same weight?

❑ Yes ❑ No ❑ DKNA

↓

6a1. *(IF NO)* What are the most important factors considered in making decisions about lighting?

_____

_____

_____

7. Have you installed energy efficient equipment (e.g., as an attempt to lower the energy costs) in any of the following common areas of this facility? How about for . . .

a.	Lighting in internal hallways, rooms or corridors	❑ Yes ❑ No ❑ DKNA	7a1. If yes, what action did you take? _____ _____ 7a2. What year? _____	7a3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____
b.	Outdoor lighting and lighting in parking areas	❑ Yes ❑ No ❑ DKNA	7b1. If yes, what action did you take? _____ _____ 7b2. What year? _____	7b3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____

c.	Heating or cooling equipment for common area rooms	❑ Yes ❑ No ❑ DKNA	7c1. If yes, what action did you take? _____ _____ 7c2. What year? _____	7c3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____
d.	Central boiler for water heating	❑ Yes ❑ No ❑ DKNA	7d1. If yes, what action did you take? _____ _____ 7d2. What year? _____	7d3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____

e.	Swimming pool, jacuzzi or spa	❑ Yes ❑ No ❑ DKNA	7e1. If yes, what action did you take? _____ _____ 7e2. What year? _____	7e3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____
f.	Laundry equipment for residents to use	❑ Yes ❑ No ❑ DKNA	7f1. If yes, what action did you take? _____ _____ 7f2. What year? _____	7f3. Why did you take the action?(*DON'T READ. CHECK ALL THAT APPLY.*) a. ❑ Equipment failures b. ❑ Poorly working equipment c. ❑ Aging equipment d. ❑ Safety improvements e. ❑ Make complex more marketable f. ❑ Improve energy efficiency g. ❑ Reduce operating cost for company h. ❑ Other_____ _____ _____

8a. When purchasing equipment for the common areas for the *(FILL IN THE NAME FROM QUESTION 1)* complex, have you participated in any energy efficiency programs that California utilities have sponsored?

❑ No ❑ Yes

8b. What programs did you participate in?

_____

_____

9. Are there plans to improve energy efficiency or to reduce the energy costs to operate equipment in the common areas in this facility in the next three years?

❑ No, have no plans to improve energy efficiency or reduce energy costs

Why not?

- ❑ Have already taken actions to improve energy efficiency
- ❑ No interest in taking actions
- ❑ Other _____

❑ Yes

10. What energy efficient equipment are you planning to install?

(DO NOT READ THESE RESPONSES. CHECK APPROPRIATE RESPONSE OR RECORD WHAT THE RESPONDENT SAYS.)

a.	Compact fluorescent lighting	❑ Yes ❑ No ❑ DKNA
b.	High efficiency lighting in outdoor areas	❑ Yes ❑ No ❑ DKNA
c.	Solar heated or solar assisted pool heaters	❑ Yes ❑ No ❑ DKNA
d.	Heat recovery units for pool / spa heating	❑ Yes ❑ No ❑ DKNA
e.	High efficiency clothes washers	❑ Yes ❑ No ❑ DKNA
f.	High efficiency air conditioning units	❑ Yes ❑ No ❑ DKNA
g.	High efficiency furnaces	❑ Yes ❑ No ❑ DKNA
h.	High efficiency central boilers	❑ Yes ❑ No ❑ DKNA
i.	Other:	_____
j.	Other:	_____
k.	Other:	_____

11. I am going to read a list of reasons that may prevent your company from making energy efficiency improvements or from buying energy efficient equipment for common areas. Please rate each on a scale from "1" to "10", where "1" is "Not at all important" and "10" is "Very important".

	Reason:	*Not at all Important*									*Very Important*	*DKNA*
a.	Lack capital	1	2	3	4	5	6	7	8	9	10	11
b.	Higher cost of energy efficient equipment	1	2	3	4	5	6	7	8	9	10	11
c.	Lack knowledge of energy efficient options	1	2	3	4	5	6	7	8	9	10	11
d.	Low or non-existent payback for the company	1	2	3	4	5	6	7	8	9	10	11
e.	Lack of experience with energy efficient equipment	1	2	3	4	5	6	7	8	9	10	11
f.	Concerns about reliability	1	2	3	4	5	6	7	8	9	10	11

12. *(IF I12 = YES OR DK. IF I12 = NO OR NOT APPLICABLE GO TO QUESTION 13)*
With respect to common area laundry equipment for this facility, does your company:
   a. ❑ Own the equipment and collect all of the revenue
   b. ❑ Lease the equipment and collect all of the revenue
   c. ❑ Share the revenue with the company that provides laundry equipment
   d. ❑ Provide space to the company that owns the laundry equipment without revenue
   e. ❑ Other (describe) _____

13. Have any third parties, such as energy services companies, offered to provide energy efficiency services or to make energy efficiency investments for this facility?
   ❑ No➔*Go to 15.*
   ❑ Yes➔*Ask 14.*

14. Was the offer accepted?
   ❑ No ➔Why not? _____
   _____
   ❑ Yes
   ⬇
   14a. What was done at this facility under the offer?
   _____
   _____

C. DECISION MAKING FOR APPLIANCES/EQUIPMENT IN INDIVIDUAL UNITS

15. Do the units in this complex have individual meters for electricity?

❑ Yes ❑ No

15b. Do you plan to convert units to individual electric meters?
❑ Yes ❑ No

16. Do the units in this complex have individual meters for natural gas?

❑ Yes ❑ No

16b. Do you plan to convert units to individual gas meters?
❑ Yes ❑ No

17. Do the units in this complex have individual meters for water?

❑ Yes ❑ No

17b. Do you plan to convert units to individual water meters?
❑ Yes ❑ No

18. When appliances (such as refrigerators, stoves or dishwashers) in individual units for this facility have to be changed out or replaced, do you:

a. ❑ go to a local dealer or an outlet like Circuit City or Home Depot
b. ❑ go to a local distributor or wholesaler
c. ❑ go to a manufacturer's distributor or a manufacturer such as GE or Whirlpool
d. ❑ Other (please specify): _____

19. Are you more likely to buy appliances for units at this facility:

a. ❑ from a pre-negotiated contract
b. ❑ through a bidding process
c. ❑ by making a selection from models that are available at the time you need the appliance
d. ❑ Other (please specify): _____

20. When appliances are purchased for the individual units of this complex, how important are the following factors when rated on a scale of "1" to "10", where "1" is "Not at all important" and "10" is "Very important".

	Factor:	*Not at all Important*									*Very Important*	*DKNA*
a.	Replacing the equipment with an identical or nearly identical model	1	2	3	4	5	6	7	8	9	10	11
b.	Purchasing using company guidelines	1	2	3	4	5	6	7	8	9	10	11
c.	Price or first cost	1	2	3	4	5	6	7	8	9	10	11
d.	Prior experience with the equipment	1	2	3	4	5	6	7	8	9	10	11
e.	Reliability	1	2	3	4	5	6	7	8	9	10	11
f.	Ease of maintenance	1	2	3	4	5	6	7	8	9	10	11
g.	Energy efficiency	1	2	3	4	5	6	7	8	9	10	11
h.	Energy cost when company pays the utility cost	1	2	3	4	5	6	7	8	9	10	11
i.	Energy cost when tenant pays the utility cost	1	2	3	4	5	6	7	8	9	10	11

21. When purchasing appliances for the *(FILL IN THE NAME FROM QUESTION 1)* complex, have you participated in any energy efficiency programs that utilities in California have sponsored?

❑ No ❑ Yes

21b. What programs did you participate in?

_____

_____

D. FINANCIAL CHARACTERISTICS OF FACILITY AND TENANTS

22a. What is the lowest monthly rent in this complex? $_____

22b. About how many square feet is that unit? _____ sq. ft.

23b. What is the highest monthly rent in this complex $ _____

23b. About how many square feet is that unit? _____ sq. ft.

24. Are rents for units in this complex controlled or regulated?
❑ No ❑ Yes

24.b. What controls or regulations?
_____
_____

25. How many of each type of unit are in this complex
a. _____Efficiency, single or bachelor units
b. _____1 bedroom
c. _____2 bedroom units
d. _____3 bedroom units or more

26. Are any of the following changes currently taking place or being planned for this complex in the next three years?
a. ❑ Convert to condominium or cooperative ownership
b. ❑ Convert to nonresidential use
c. ❑ Renovate or replace obsolete features
d. ❑ Combine units to create larger units
e. ❑ Work to change the tenant population
f. ❑ No changes currently taking place or being planned
g. ❑ Don't know or not sure

F. CHARACTERISTICS OF THE FIRM

27. Including this complex, about how many multi-family residential properties does your firm own or manage in California and elsewhere?
_____ *Number of properties*

28 . What is the total number of housing units these properties represent?
_____ *Number of units*

29. Considering just California, about how many properties does your firm . . . . .

a. Own and manage	_____	a2.	and roughly how many units is that	_____
b. Manage only	_____	b2.	and how many units is that	_____
c. Own but not manage	_____	c2.	and how many units is that	_____

30. How many years has your firm been in business owning and/or managing multi-family housing properties? _____ *Years.* (DKNA = 999)

31. Does your firm have business lines other than owning and/or managing multi-family housing properties?
❑ No
❑ Yes Could you tell me what they are:_____
❑ Don't know/no answer

G RESPONDENT CHARACTERISTICS

32. What is your job title?_____
(Interviewer: enter what the person says then code one of the following. If you are not sure use the following categories to probe. If you are still not sure, leave the answer for later coding.)

- ❑ Owner / Partner
- ❑ President
- ❑ Executive vice-president
- ❑ Senior vice-president
- ❑ Construction manager (primarily responsible for constructing new complexes)
- ❑ Operations manager (responsible for managing day-to-day operations for several sites)
- ❑ Maintenance manager (responsible for oversight of maintenance at multiple sites)
- ❑ Project manager (responsible for construction at one or more sites)
- ❑ Site manager (responsible for leasing and day-to-day operations of a complex)
- ❑ Maintenance supervisor / building / site engineer (supervises maintenance at a complex)
- ❑ Maintenance person
- ❑ Other: _____

33. That concludes my questions. Do you have any other comments that you would like to make about energy efficiency for multi-family housing?
Record any customer questions or concerns:
_____
_____

Ms. Shahana Samuillah, the project manager for this study, can be contacted for further questions. She can be reached at Southern California Edison Company at: 626-302-8293.

Thanks for your help!

End Time: __:____

APPENDIX C
SATURATION ESTIMATES FOR COMMON AREA AMENITIES AND EQUIPMENT

This appendix provides tabulations showing population estimates for the saturations of common area amenities and equipment, based on the data collected through the on-site data collection effort at the sample of 540 apartment complexes. The survey data have been expanded to population estimates using statistical weights, as described in Appendix A.

Population estimates are reported in the tables for the individual service areas (i.e., PG&E, SCE/SCG, and SDG&E) and for the combined service areas. The service areas establish the columns for the tables, while the rows represent the estimates prepared for particular subject categories.

The results reported in the table were generated using the SAS software package, with the reported values being rounded. Because of this rounding, the summation of values across categories may not exactly equal the value shown in a "totals" row.

C.1 COMMON AREA AMENITIES, RENOVATION/REPLACEMENT ACTIVITY AND PAYMENT ARRANGEMENT

Table C-1. Percent of Apartment Complexes with Common Area Amenities

Type of Common Area Amenity	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Number of complexes	28,650	11,640	13,120	3,890
Club room	25%	23%	28%	25%
Common party rooms	16%	14%	18%	14%
Swimming pool	78%	76%	81%	77%
Common laundry room	92%	89%	95%	90%
Athletic facilities	20%	19%	25%	8%
Children's play area	17%	14%	19%	15%
Elevator	20%	17%	23%	16%

Table C-2. Percent of Apartment Complexes with Common Area Renovation Activity

Type of Renovation Activity	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
Added new units	5%	6%	4%	3%
Built new swimming pool/spa area	1%	2%		1%
Built new exercise or athletic facility	2%	3%	1%	1%

C.2 LIGHTING FOR OUTDOOR COMMON AREAS

Table C-3. Percent of Apartment Complexes with Specific Types of Outdoor Lighting Fixtures, Lamps, Ballasts, and Controls

Type of Lighting Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
Percent with Types of Fixtures				
Poles	63%	68%	64%	46%
Car ports	55%	57%	59%	32%
Wall	93%	89%	95%	98%
Ceiling	42%	39%	46%	41%
Landscape/decorative	30%	30%	30%	28%
Percent with Types of Lamps				
2-foot fluorescent	3%	2%	3%	4%
3-foot fluorescent	0%	1%		
4-foot fluorescent	37%	37%	45%	12%
6-foot fluorescent	0%		1%	
8-foot fluorescent	4%	5%	3%	2%
Compact fluorescent (pin)	69%	67%	69%	70%
Compact fluorescent (screw)	12%	16%	9%	16%
CircleLine fluorescent	14%	11%	17%	11%
Exit sign fluorescent	0%	0%		
Exit sign, incandescent	1%	0%	2%	
Exit sign, LED	0%	0%		
High pressure sodium	40%	41%	46%	19%
Halogen	12%	18%	10%	2%
High intensity discharge	8%	7%	5%	21%
Incandescent	70%	57%	77%	84%
Incandescent spotlight	15%	15%	17%	5%
Low pressure sodium	7%	7%	6%	8%
Metal halide	9%	14%	7%	2%
Mercury vapor	16%	17%	15%	13%
Other fluorescent	6%	5%	10%	0%
Quartz	8%	4%	8%	20%
U-tube fluorescent	2%	2%	2%	
Percent with Types of Ballasts				
Standard magnetic	70%	74%	71%	57%
High efficiency magnetic	27%	18%	38%	16%
Electronic	75%	78%	72%	76%
Percent with Types of Lighting Controls				
On/off	29%	24%	36%	17%
Time clock	49%	48%	43%	69%
Photo cell	65%	60%	70%	60%

Table C-4. Number of Outdoor Lighting Fixtures for Specific Types of Fixtures, Lamps, Ballasts, and Controls (Fixtures in Thousands)

Type of Lighting Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All fixtures	4,271	1,076	2,801	394
Number by Types of Fixtures				
Poles	451	184	231	36
Car ports	787	241	499	47
Wall	2,201	491	1,492	219
Ceiling	654	114	464	75
Landscape/decorative	178	46	114	17
Number by Types of Lamps				
2-foot fluorescent	35	2	31	2
3-foot fluorescent	-	-		
4-foot fluorescent	488	121	350	17
6-foot fluorescent	2		2	
8-foot fluorescent	49	12	36	1
Compact fluorescent (pin)	1,556	461	951	145
Compact fluorescent (screw)	141	47	48	46
CircleLine fluorescent	166	46	111	8
High pressure sodium	265	74	177	14
Halogen	31	19	12	-
High intensity discharge	22	5	9	8
Incandescent	1,190	198	859	133
Incandescent spotlight	60	10	48	2
Low pressure sodium	27	8	13	6
Metal halide	36	19	16	1
Mercury vapor	70	25	39	5
Other fluorescent	103	25	78	-
Quartz	22	1	18	4
U-tube fluorescent	5	3	2	
Number by Types of Ballasts				
Standard magnetic	805	216	542	47
High efficiency magnetic	383	66	298	19
Electronic	1,774	562	1,024	189
Ballasts not applicable	1,304	228	937	139
Number by Types of Lighting Controls				
On/off	780	83	650	47
Time clock	1,099	390	552	156
Occupancy sensor	8	6		2
EMS	11	11		
Photo cell	2,373	585	1,599	189

Table C-5. Connected Outdoor Lighting Load for Specific Types of Fixtures, Lamps, Ballasts, and Controls (Load in Megawatts)

Type of Lighting Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All fixtures	210.2	49.3	142.5	18.4
Connected Load for Types of Fixtures				
Poles	34.3	9.7	22.4	2.2
Car ports	33.7	9.4	22.8	1.6
Wall	104.6	23.1	70.7	10.9
Ceiling	31.0	5.1	22.7	3.2
Landscape/decorative	6.5	1.9	4.0	0.6
Connected Load for Types of Lamps				
2-foot fluorescent	0.7	-	0.6	-
3-foot fluorescent	-	-		
4-foot fluorescent	24.4	6.1	17.6	0.8
6-foot fluorescent	0.2	-	0.2	
8-foot fluorescent	6.5	1.5	5.0	0.1
Compact fluorescent (pin)	22.3	6.7	13.3	2.2
Compact fluorescent (screw)	2.1	0.8	0.7	0.7
CircleLine fluorescent	3.9	1.1	2.6	0.2
High pressure sodium	26.0	6.4	18.4	1.1
Halogen	6.1	3.6	2.4	0.1
High intensity discharge	2.5	0.4	1.0	1.1
Incandescent	77.7	13.0	55.4	9.3
Incandescent spotlight	5.6	1.3	4.1	0.2
Low pressure sodium	2.1	0.6	1.0	0.5
Metal halide	7.3	3.0	4.0	0.3
Mercury vapor	14.4	3.8	9.6	0.9
Other fluorescent	1.7	0.4	1.3	-
Quartz	6.3	0.2	5.0	1.1
U-tube fluorescent	0.3	0.2	0.1	
Connected Load for Types of Ballasts				
Standard magnetic	71.3	18.4	48.7	4.2
High efficiency magnetic	16.0	3.4	11.9	0.7
Electronic	27.2	9.4	14.9	2.9
Ballasts not applicable	95.7	18.2	67.0	10.6
Connected Load for Types of Lighting Controls				
On/off	48.8	5.8	40.7	2.3
Time clock	56.0	19.1	29.1	7.8
Occupancy sensor	0.7	0.5		0.2
EMS	0.3	0.3		
Photo cell	104.5	23.5	72.8	2

C.3 LIGHTING FOR INDOOR COMMON AREAS

Table C-6. Percent of Apartment Complexes with Specific Types of Indoor Lighting Fixtures, Lamps, Ballasts, and Controls

Type of Lighting Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
Percent with Types of Fixtures				
Recessed	10%	11%	11%	2%
Suspended	28%	32%	28%	17%
Wall	27%	21%	36%	16%
Table/floor	17%	14%	19%	14%
Ceiling	91%	91%	90%	95%
Percent with Types of Lamps				
2-foot fluorescent	7%	9%	6%	4%
3-foot fluorescent	1%	2%	1%	
4-foot fluorescent	81%	76%	87%	75%
6-foot fluorescent	0%	1%		0%
8-foot fluorescent	10%	9%	13%	3%
Compact fluorescent (pin)	17%	16%	19%	13%
Compact fluorescent (screw)	4%	4%	4%	8%
CircleLine fluorescent	11%	11%	12%	8%
Exit sign fluorescent	2%	3%	1%	0%
Exit sign, incandescent	6%	6%	8%	0%
Exit sign, LED	0%	1%		
Halogen	2%	4%	0%	
Incandescent	73%	67%	81%	64%
Incandescent spotlight	6%	4%	8%	4%
Low pressure sodium	0%	0%		
Metal halide	0%	0%	0%	0%
Mercury vapor	0%	0%		0%
Other fluorescent	5%	4%	7%	2%
Quartz	1%	1%	0%	5%
U-tube fluorescent	4%	4%	5%	2%
Percent with Types of Ballasts				
Standard magnetic	47%	41%	53%	45%
High efficiency magnetic	40%	39%	42%	34%
Electronic	30%	38%	25%	21%
Percent with Types of Lighting Controls				
On/off	97%	97%	96%	97%
Time clock	19%	20%	19%	14%
Dimmer	1%	3%	0%	
Occupancy sensor	5%	7%	4%	4%
EMS	0%	1%		
Photo cell	3%	2%	4%	2%

Table C-7. Number of Indoor Lighting Fixtures for Specific Types of Fixtures, Lamps, Ballasts, and Controls (Fixtures in Thousands)

Type of Lighting Equipment	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
All complexes	1,325	430	785	109
Number by Types of Fixtures				
Recessed	79	49	29	2
Suspended	134	32	99	3
Wall	222	109	100	13
Table/floor	32	8	20	4
Ceiling	858	232	539	87
Number by Types of Lamps				
2-foot fluorescent	17	11	6	0
3-foot fluorescent	1	1	0	
4-foot fluorescent	409	116	244	48
8-foot fluorescent	20	2	18	0
Compact fluorescent (pin)	289	117	161	11
Compact fluorescent (screw)	21	2	4	15
CircleLine fluorescent	118	27	82	9
Exit sign fluorescent	14	7	7	0
Exit sign, incandescent	80	23	57	0
Exit sign, LED	2	2		
Halogen	1	1	0	
Incandescent	307	97	187	23
Incandescent spotlight	16	6	9	2
Metal halide				
Mercury vapor	1	0		0
Other fluorescent	12	6	5	0
Quartz	1	1	0	0
U-tube fluorescent	15	10	5	0
Number by Types of Ballasts				
Standard magnetic	192	51	120	21
High efficiency magnetic	357	94	240	23
Electronic	368	155	173	40
Ballasts not applicable	407	130	252	25
Number by Types of Lighting Controls				
On/off	1,205	360	742	103
Time clock	43	18	21	4
Dimmer	1	1	0	
Occupancy sensor	9	3	5	1
EMS	0	0		
Photo cell	62	45	17	0
Control not applicable	4	3		1

Table C-8. Connected Indoor Lighting Load for Specific Types of Fixtures, Lamps, Ballasts, and Controls (Load in Megawatts)

Type of Lighting Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	70.0	21.1	42.6	6.3
Connected Load for Types of Fixtures				
Recessed	5.3	3.1	2.2	0.1
Suspended	6.5	1.9	4.4	0.2
Wall	6.9	2.4	4.1	0.5
Table/floor	1.6	0.4	0.8	0.3
Ceiling	49.6	13.4	31.0	5.2
Connected Load for Types of Lamps				
2-foot fluorescent	0.5	0.3	0.2	0.0
3-foot fluorescent	0.0	0.0	0.0	
4-foot fluorescent	31.3	8.2	19.4	3.7
8-foot fluorescent	2.9	0.3	2.7	0.0
Compact fluorescent (pin)	5.0	2.1	2.8	0.1
Compact fluorescent (screw)	0.3	0.0	0.1	0.3
CircleLine fluorescent	2.6	0.6	1.8	0.2
Exit sign fluorescent	0.1	0.1	0.1	0.0
Exit sign, incandescent	2.3	0.7	1.5	0.0
Exit sign, LED	0.0	0.0		
Halogen	0.2	0.2	0.0	
Incandescent	21.9	7.1	12.9	1.8
Incandescent spotlight	1.1	0.4	0.6	0.1
Low pressure sodium	0.0	0.0		
Metal halide	0.1	0.0	0.1	0.0
Mercury vapor	0.1	0.1		0.0
Other fluorescent	0.3	0.2	0.2	0.0
Quartz	0.1	0.0	0.0	0.0
U-tube fluorescent	1.1	0.7	0.4	0.0
Connected Load for Types of Ballasts				
Standard magnetic	14.2	3.3	9.2	1.7
High efficiency magnetic	22.1	5.7	14.9	1.5
Electronic	8.2	3.7	3.4	1.2
Ballasts not applicable	25.5	8.5	15.1	1.9
Connected Load for Types of Lighting Controls				
On/off	64.7	18.9	39.8	6.0
Time clock	3.0	1.2	1.7	0.2
Dimmer	0.2	0.2	0.0	
Occupancy sensor	0.6	0.2	0.3	0.1
EMS	0.0	0.0		
Photo cell	1.5	0.7	0.7	0.0

C.4 SWIMMING POOLS

Table C-9. Percent of Apartment Complexes with Swimming Pools

Type of Swimming Pool	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
Indoor swimming pool	1%	2%	0%	3%
Outdoor swimming pool	77%	74%	80%	73%

Table C-10. Number of Swimming Pools at Apartment Complexes by Location in Complex and Type of Heating

Type of Swimming Pool	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Total number of pools	25,960	9,960	12,880	3,130
	Indoor			
Total, indoor pools	370	220	20	130
Not heated	360	210	20	130
Heated with natural gas	10	10		
	Outdoor			
Total, outdoor pools	25,590	9,740	12,860	3,000
Not heated	14,110	7,080	4,830	2,210
Heated with natural gas	10,590	2,140	7,660	790
Heated with other fuel	890	520	370	-

Table C-11. Numbers and Total Horsepower of Circulation Pumps for Swimming Pools at Apartment Complexes by Size of Pump

Size of Pool Pump (hp)	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Number of Pumps by Horsepower				
Total number of pool pumps	25,960	9,960	12,880	3,130
1 hp or less	7,280	3,790	2,580	910
1 to 2 hp	15,940	5,000	8,960	1,980
2 to 5 hp	2,170	720	1,250	190
Over 5 hp	240	130	90	30
Hp not known	330	320	0	20
Total Horsepower of Pumps by Horsepower				
Total horsepower of pool pumps	47,920	18,790	23,590	5,570
1 hp or less	6,960	3,620	2,460	880
1 to 2 hp	28,300	8,520	16,390	3,390
2 to 5 hp	7,180	2,410	4,050	730
Over 5 hp	5,480	4,240	690	570

Table C-12. Distribution of Outdoor Gas-Heated Swimming Pools by Capacity of Heating Equipment

Capacity of Pool Heating Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Total number of outdoor pools heated by natural gas	10,590	2,140	7,660	790
250 kBtu/hour or less	1,680	560	980	150
250 to 500 kBtu/hour	6,620	1,080	5,150	390
Over 500 kBtu/hour	1,090	50	1,020	30
KBtu/hour not known	1,200	450	530	220

Table C-13. Distribution of Outdoor Gas-Heated Swimming Pools by Age of Heating Equipment

Age of Pool Heating Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Total number of outdoor pools heated by natural gas	10,590	2,140	7,660	790
Under 1 year	730	110	510	110
1 to 5 years	2,310	330	1,770	220
5 to 10 years	2,410	280	1,810	320
10 to 15 years	3,010	270	2,600	140
Over 15 years	1,820	910	910	
Age not known	300	250	50	

C.5 HOT TUBS

Table C-14. Percent of Apartment Complexes with Hot Tubs

Type of Hot Tub	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
All complexes	28,650	11,640	13,120	3,890
Indoor hot tubs	2%	2%	2%	
Outdoor hot tubs	35%	19%	51%	28%

Table C-15. Number of Hot Tubs at Apartment Complexes by Location in Complex and Type of Heating

Type of Hot Tub	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
Total number of hot tubs	10,380	2,380	6,910	1,110
Indoor				
Total	460	210	260	-
Heated with natural gas	340	210	140	-
Heated with electricity	120	-	120	-
Outdoor				
Total	9,920	2,170	6,640	1,110
Heated with natural gas	9,510	1,940	6,470	1,100
Heated with electricity	10	10	-	-
Heated with other fuel	210	90	120	-
Heating fuel not known	190	130	50	10

Table C-16. Numbers and Total Horsepower of Circulation Pumps for Hot Tubs at Apartment Complexes by Size of Pump

Size of Pump (hp)	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
Number of Pumps by Horsepower				
Total number of hot tub pumps	10,380	2,380	6,910	1,110
1 hp or less	3,300	1,410	1,890	-
1 to 2 hp	5,110	820	3,530	750
2 to 5 hp	1,570	50	1,200	320
Over 5 hp	200	-	170	30
Hp not known	210	100	120	-
Total Horsepower of Pumps by Horsepower				
Total horsepower of hot tub pumps	18,820	2,750	13,220	2,870
1 hp or less	3,080	1,320	1,770	-
1 to 2 hp	9,210	1,280	6,460	1,480
2 to 5 hp	5,070	150	3,930	990
Over 5 hp	1,460	-	1,060	400

Table C-17. Distribution of Gas-Heated Hot Tubs by Capacity of Heating Equipment

Capacity of Hot Tub Heating Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Total number of hot tubs heated by natural gas	9,850	2,150	6,610	1,100
250 kBtu/hour or less	5,500	1,260	3,520	730
250 to 500 kBtu/hour	2,940	280	2,500	160
Over 500 kBtu/hour	20	-	10	10
KBtu/hour not known	1,390	610	580	200

Table C-18. Distribution of Gas-Heated Hot Tubs by Age of Heating Equipment

Age of Hot Tub Heating Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Total number of hot tubs heated by natural gas	9,850	2,150	6,610	1,100
Under 1 year	250	20	120	110
1 to 5 years	2,190	240	1,510	450
5 to 10 years	2,680	320	2,120	240
10 to 15 years	2,970	830	1,970	160
Over 15 years	1,170	420	740	-
Age not known	590	320	140	130

C.6 COMMON AREA LAUNDRY EQUIPMENT

Table C-19. Number of Common Laundry Rooms per Apartment Complex

Common Laundry Rooms per Complex	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
None	4,980	2,220	2,410	350
One	11,130	4,630	4,170	2,340
Two	6,540	2,630	3,230	680
Three	2,620	770	1,550	300
Four	1,420	640	670	100
Five or more	1,960	750	1,080	130

Table C-20. Clothes Washers and Clothes Dryers Installed in Common Areas by Type

Type of Clothes Washer or Dryer	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	Clothes Washer			
All clothes washers	235,910	75,520	133,980	26,410
Top-loaded, vertical agitator	225,580	72,790	126,630	26,160
Top-loaded, horizontal agitator	1,620	-	1,620	-
Front-loaded, horizontal agitator	8,710	2,730	5,730	250
	Clothes Dryers			
All clothes dryers	235,380	75,870	133,370	26,150
Natural gas, front-loaded	210,960	65,360	120,210	25,390
Natural gas, top-loaded	2,800	1,090	1,620	90
Electric, front-loaded	21,040	8,840	11,530	670
Other fuel, front-loaded	580	580	-	-

Table C-21. Distribution of Clothes Washers by Connected kW Load

Connected Load (kW per Unit)	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All clothes washers	235,910	75,520	133,980	26,410
Top-Loaded, Vertical Agitator				
Total	225,580	72,790	126,630	26,160
1 kW per unit	183,900	47,330	111,440	25,130
2 kW per unit	12,040	640	11,020	390
3 kW per unit	2,200		2,200	
kW per unit not known	27,430	24,820	1,970	650
Top-Loaded, Horizontal Agitator				
Total	1,620		1,620	
I kW	1,620		1,620	
Front-Loaded, Horizontal Agitator				
Total	8,710	2,730	5,730	250
1 kW per unit	8,240	2,260	5,730	250
2 kW per unit	90	90		
kW per unit not known	380	380		

Table C-22. Distribution of Clothes Washers by Age

Age of Clothes Washer	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All clothes washers	235,910	75,520	133,980	26,410
Top-Loaded, Vertical Agitator				
Total	225,580	72,790	126,630	26,160
Under 1 year	28,600	7,090	18,210	3,300
1 to 5 years	120,290	36,820	65,950	17,530
5 to 10 years	48,800	13,980	30,430	4,390
10 to 15 years	12,270	1,510	10,190	560
Over 15 years	2,740	980	1,760	-
Age not known	12,880	12,420	80	390
Top-Loaded, Horizontal Agitator				
Total	1,620	-	1,620	-
Under 1 year	1,620	-	1,620	-
Front-Loaded, Horizontal Agitator				
Total	8,710	2,730	5,730	250
Under 1 year	1,300	790	470	50
1 to 5 years	7,160	1,920	5,210	30
5 to 10 years	230		60	180
10 to 15 years	20	20	-	-

Table C-23. Distribution of Clothes Dryers by Connected Load

Connected Load per Unit	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All clothes dryers	235,380	75,870	133,370	26,150
Natural Gas, Front-Loaded,				
Total	210,960	65,360	120,220	25,400
25 kBtu/hour or less	187,490	55,750	109,280	22,460
Over 25 kBtu/hour	18,040	5,880	10,010	2,160
kBtu/hour not known	5,430	3,730	930	780
Natural Gas, Top-Loaded				
Total	2,800	1,090	1,620	90
25 kBtu/hour or less	2,800	1,090	1,620	90
Electric, Front-Loaded				
Total	21,040	8,840	11,530	670
5 kW or less	8,660	3,910	4,570	170
Over 5 kW	11,170	3,940	6,730	500
kW not known	1,220	980	230	-

Table C-24. Distribution of Clothes Dryers by Age

Age of Clothes Dryer	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All clothes dryers	235,380	75,870	133,370	26,150
Natural Gas, Front-Loaded,				
Total	210,960	65,350	120,210	25,400
Under 1 year	30,620	8,620	18,720	3,280
1 to 5 years	111,390	30,930	63,710	16,750
5 to 10 years	45,520	11,920	29,180	4,420
10 to 15 years	9,980	1,150	8,270	560
Over 15 years	1,060	810	250	-
Age not known	12,390	11,920	80	390
Natural Gas, Top-Loaded				
Total	2,800	1,090	1,620	90
1 to 5 years	2,530	910	1,620	-
5 to 10 years	270	180	-	90
Electric, Front-Loaded				
Total	21,040	8,840	11,530	670
Under 1 year	2,540	550	1,990	-
1 to 5 years	8,870	4,840	3,360	670
5 to 10 years	4,590	2,180	2,410	-
10 to 15 years	1,940	360	1,570	-
Over 15 years	2,380	180	2,200	-
Age not known	730	730	-	-

C.7 WATER HEATING EQUIPMENT FOR COMMON AREAS

Table C-25. Water Heating Equipment for Common Areas by Heating Fuel and Type

Type of Water Heating Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All water heaters	173,980	48,950	93,580	31,450
Electric-fired	14,690	480	6,590	7,620
Natural gas-fired boilers	20,110	4,390	14,460	1,270
Natural gas-fired tanks	134,640	43,120	68,960	22,560
Natural gas-fired, other	870	870	-	-
Other water heating fuel	90	90	-	-
Water heating fuel not known	3,580	10	3,570	-

Table C-26. Water Heating Equipment for Common Areas by Heating Fuel, Type, and Size of Tank

Size of Tank (Gallons)	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	Electric			
Total number, electric water heaters	14,690	480	6,590	7,620
40 gallons or less	9,230	230	1,450	7,550
40 to 80 gallons	4,550	250	4,220	70
80 to 120 gallons	810	-	810	-
Over 120 gallons	100	-	100	-
	Natural Gas, Boilers			
Total number, natural gas boilers	20,110	4,390	14,460	1,270
40 gallons or less	520	180	330	-
40 to 80 gallons	1,150	180	660	310
80 to 120 gallons	7,000	1,320	4,920	760
Over 120 gallons	3,910	1,320	2,580	10
Size not known	7,550	1,390	5,980	190
	Natural Gas, Water Heaters with Tanks			
Total number, natural gas tanks	134,640	43,120	68,960	22,560
40 gallons or less	47,180	6,790	38,270	2,120
40 to 80 gallons	31,150	14,600	11,860	4,700
80 to 120 gallons	54,120	20,880	18,500	14,740
Over 120 gallons	840	670	110	70
Size not known	1,340	180	220	940

Table C-27. Water Heating Equipment for Common Areas by Heating Fuel, Type, and Input Heating Capacity

Input Heating Capacity	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	Electric			
Total number, electric water heaters	14,690	480	6,590	7,620
2 kW or less	380	0	370	10
2 to 5 kW	9,770	30	2,130	7,610
Over 5 kW	700	180	510	0
Capacity not known	3,850	270	3,580	0
	Natural Gas, Boilers			
Total number, natural gas boilers	20,110	4,390	14,460	1,270
300 kBtu/hour or less	1,790	620	700	470
300 to 750 kBtu/hour	10,110	1,690	8,010	410
750 to 1,000 kBtu/hour	2,940	290	2,420	230
Over 1,000 kBtu/hour	3,020	500	2,430	90
Capacity not known	2,250	1,280	900	70
	Natural Gas, Water Heaters with Tanks			
Total number, natural gas tanks	134,640	43,120	68,960	22,560
75 kBtu/hour or less	64,040	11,700	41,430	10,910
75 to 150 kBtu/hour	17,360	11,000	5,360	1,000
Over 150 kBtu/hour	47,570	19,830	17,480	10,260
Capacity not known	5,680	590	4,700	390

Table C-28. Water Heating Equipment for Common Areas by Heating Fuel, Type, and Age of Equipment

Age of Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	Electric			
Total number, electric water heaters	14,690	480	6,590	7,620
1 to 5 years	6,690	200	590	5,900
5 to 10 years	6,920	20	5,180	1,720
10 to 15 years	500	270	230	
Over 15 years	580		580	
	Natural Gas, Boilers			
Total number, natural gas boilers	20,110	4,390	14,460	1,270
Under 1 year	890	30	670	190
1 to 5 years	2,970	1,010	1,780	180
5 to 10 years	3,750	590	2,570	600
10 to 15 years	5,430	900	4,330	200
Over 15 years	7,050	1,860	5,120	70
Age not known	30	-	-	30
	Natural Gas, Water Heaters with Tanks			
Total number, natural gas tanks	134,640	43,120	68,960	22,560
Under 1 year	34,960	9,180	24,270	1,500
1 to 5 years	43,300	8,230	20,210	14,860
5 to 10 years	29,630	12,080	13,600	3,950
10 to 15 years	22,130	11,140	9,050	1,940
Over 15 years	4,620	2,490	1,820	310

Table C-29. Water Heating Equipment for Common Areas by Heating Fuel, Type, and Thermal Efficiency of Equipment

Thermal Efficiency of Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Natural Gas, Boilers				
Total number, natural gas boilers	20,110	4,390	14,460	1,270
0.75	230	0	230	0
0.76	590	590	0	0
0.78	530	190	230	120
0.79	550	0	550	0
0.80	5,970	1,140	4,330	500
0.81	610	180	400	30
0.82	9,450	900	8,130	420
0.84	210	20	0	190
Efficiency not known	1,970	1,380	580	10
Natural Gas, Water Heaters with Tanks				
Total number, natural gas tanks	134,640	43,120	68,960	22,560
0.75	2,980	200	2,780	0
0.76	31,330	12,430	15,520	3,390
0.77	5,690	1,890	3,600	190
0.78	2,120	670	30	1,430
0.79	14,090	4,670	2,840	6,580
0.80	33,660	13,710	12,460	7,490
0.81	4,420	2,320	1,410	690
0.82	3,200	1,130	1,760	310
0.83	320	0	0	320
0.84	1,090	270	30	780
Efficiency not known	35,740	5,820	28,530	1,390

C.8 HEATING AND COOLING EQUIPMENT FOR COMMON AREAS

Table C-30. Installed Package HVAC Equipment by System Configuration

System Configuration	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	Heating and Cooling			
Heat pumps	4,914	1,069	3,646	199
DX cooling, electric heat	2,287	674	1,540	73
DX cooling, gas furnace	5,233	2,566	2,516	151
Room AC, electric heat	1,696	879	520	297
Wall/floor Heat pumps	2,878	1,771	1,097	9
	Cooling Only			
Evaporative Coolers	376	25	348	4
DX cooling	1,777	861	794	121
Packaged Terminal AC	382	5	378	
Room AC	7,757	2,327	4,622	809
	Heating Only			
Central gas furnace	1,152	273	879	
Electric heat	189	189		
Package unit gas furnace	2,525	1,075	1,368	82
Wall/floor gas furnace, forced air distribution	108	91	17	
Wall/floor electric heater, natural distribution	1,555	680	875	
Wall/floor gas furnace, natural distribution	49	15	34	
Wall/floor radiant heater, natural distribution	243		232	11

Table C-31. Size Distributions for Major Types of Installed Package HVAC Equipment

Equipment Size Classification	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	DX Cooling Units			
All DX Cooling Units:	9,310	4,100	4,870	350
1 ton or less	590	190	390	10
1 to 2 tons	2,200	910	1,240	50
2 to 3 tons	3,250	1,660	1,540	60
3 to 4 tons	610	330	250	30
4 to 5 tons	1,820	620	1,080	120
Over 5 tons	480	110	360	10
Tons not known	370	290	10	70
	Heat Pumps			
All Heat Pump Units:	7,790	2,840	4,740	210
1 ton or less	2,870	1,690	1,170	10
1 to 2 tons	1,820	470	1,240	110
2 to 3 tons	970	270	680	30
3 to 4 tons	900	130	760	20
4 to 5 tons	800	10	750	40
Over 5 tons	50	10	40	0
Tons not known	390	270	120	0
	Room Air Conditioners			
All Room AC Units:	9,450	3,210	5,140	1,110
.5 ton or less	1,560	1,100	120	350
.5 to .75 ton	2,700	730	1,590	380
.75 to 1 ton	3,890	790	2,790	310
Over 1 ton	890	230	600	70
Tons not known	410	360	50	0
	Gas Furnaces			
All gas furnace units:	9,070	4,020	4,810	230
26 kBtu/hour or less	2,380	1,360	930	90
26 to 42 kBtu/hour	1,810	870	900	50
43 to 59 kBtu/hour	1,630	470	1,120	30
60 to 76 kBtu/hour	2,240	450	1,750	40
77 to 93 kBtu/hour	190	130	60	0
Over 93 kBtu/hour	420	370	50	0
KBtu/hour not known	410	380	10	20

Table C-32. Distributions by Efficiency for Major Types of Installed Package HVAC Equipment

Equipment Energy Efficiency Classification	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	DX Cooling Units			
All DX Cooling Units:	9,310	4,100	4,870	350
SEER 8 or less	410	180	230	0
SEER 8 to 9	800	330	410	60
SEER 9 to 10	5,000	2,410	2,450	140
SEER 10 to 11	1,600	690	880	30
SEER 11 to 12	950	160	740	40
SEER Over 12	190	40	230	230
SEER not known	370	290	10	70
	Heat Pumps			
All Heat Pump Units:	7,790	2,840	4,740	210
SEER 8 or less	700	390	250	70
SEER 8 to 9	2,580	610	1,960	10
SEER 9 to 10	2,180	670	1,450	50
SEER 10 to 11	1,560	960	550	40
SEER Over 12	480	30	420	30
SEER not known	300	180	120	0
	Room Air Conditioners			
All Room AC Units:	9,450	3,210	5,140	1,110
SEER 8 or less	420	300	120	0
SEER 8 to 9	4,900	1,550	2,480	870
SEER 9 to 10	3,440	1,000	2,220	220
SEER Over 10	290	0	280	10
SEER not known	400	360	30	0
	Gas Furnaces			
All gas furnace units:	9,070	4,020	4,810	230
AFUE .79 or less	1,750	1,170	580	0
AFUE .80 to .82	6,020	2,710	3,110	190
AFUE Over .82	1,280	140	1,110	30
AFUE not know	20	0	10	10

Table C-33. Distributions by Age for Major Types of Installed Package HVAC Equipment

Age Category	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
	DX Cooling Units			
All DX Cooling Units:	9,310	4,100	4,870	350
Under 1 year	1,290	1,000	270	20
1 to 5 years	780	360	320	100
5 to 10 years	2,630	1,040	1,480	110
10 to 15 years	1,270	750	490	30
Over 15 years	1,530	780	730	20
Age not known	1,820	170	1,580	80
	Heat Pumps			
All Heat Pump Units:	7,790	2,840	4,740	210
Under 1 year	380	110	270	0
1 to 5 years	1,730	170	1,540	20
5 to 10 years	710	380	260	70
10 to 15 years	2,340	1,200	1,030	110
Over 15 years	1,280	660	620	0
Age not known	1,350	320	1,020	10
	Room Air Conditioners			
All Room AC Units:	9,450	3,210	5,140	1,110
Under 1 year	90	90	0	0
1 to 5 years	2,570	300	1,820	460
5 to 10 years	1,070	180	650	230
10 to 15 years	1,680	910	490	280
Over 15 years	1,900	1,150	760	0
Age not known	2,150	580	1,430	140
	Gas Furnaces			
All gas furnace units:	9,070	4,020	4,810	230
Under 1 year	400	260	140	0
1 to 5 years	690	430	200	70
5 to 10 years	2,410	1,010	1,370	40
10 to 15 years	1,560	810	660	90
Over 15 years	2,030	990	1,010	30
Age not known	2,380	780	1,580	20

C.9 MISCELLANEOUS EQUIPMENT FOR COMMON AREAS

Table C-34. Percentage of Apartment Complexes with Specified Types of Miscellaneous and Kitchen Equipment in Common Areas

Type of Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
All complexes	28,650	11,640	13,120	3,890
Fax machines	74%	69%	82%	61%
Copiers	61%	53%	71%	51%
Personal computers	55%	52%	63%	32%
Printers	49%	41%	61%	34%
Water coolers	33%	19%	48%	24%
Soda machines	32%	26%	40%	24%
Coffee makers	32%	19%	46%	25%
Microwaves	15%	9%	19%	17%
Vending machines	9%	4%	17%	2%
Refrigerators	28%	20%	35%	29%
Dishwasher	8%	8%	10%	1%
Garbage disposal	7%	3%	11%	4%
Stove, electric	5%	3%	8%	2%
Stove, natural gas	5%	2%	9%	3%
Ovens, electric	5%	8%	4%	
Ovens, natural gas	3%	2%	3%	2%
Audio equipment	28%	8%	49%	21%
Television	19%	14%	27%	11%
Ceiling/portable fans	25%	18%	30%	32%
Portable heaters	12%	13%	11%	12%

Table C-35. Number of Pieces of Specified Types of Miscellaneous and Kitchen Equipment in Common Areas of Apartment Complexes

Type of Equipment	*Combined Service Areas*	*Individual Utility Service Areas*		
		PG&E	*SCE/SCG*	*SDG&E*
Fax machines	22,510	8,220	11,760	2,530
Copiers	18,130	6,380	9,660	2,100
Personal computers	20,760	7,540	11,350	1,870
Printers	16,870	5,370	9,740	1,760
Water coolers	10,170	2,280	6,950	940
Soda machines	13,740	3,940	8,520	1,270
Coffee makers	10,330	2,580	6,790	970
Microwaves	4,910	1,220	3,040	660
Vending machines	4,740	450	4,220	70
Refrigerators	8,990	2,480	5,310	1,200
Dishwasher	2,520	1,000	1,470	50
Garbage disposal	1,910	300	1,440	170
Stove, electric	1,510	410	1,020	90
Stove, natural gas	1,530	200	1,240	100
Ovens, electric	1,450	990	460	-
Ovens, natural gas	730	260	380	100
Audio equipment	8,410	980	6,620	810
Television	6,210	1,880	3,810	520
Ceiling/portable fans	11,340	3,730	5,720	1,890
Portable heaters	3,620	1,620	1,510	490