

FINAL REPORT APPENDICES

**STATEWIDE SURVEY
OF MULTI-FAMILY
COMMON AREA
BUILDING OWNERS MARKET**

**Volume II: Condominium and
Homeowner Associations**

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**California State-Level
Market Assessment
and Evaluation Study**

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APPENDIX A PROJECT METHODOLOGY

This appendix describes the methodology that was used to conduct the survey and study of condominium/homeowner associations.

A.1 SAMPLING PLAN

The survey of condominium/homeowner associations was one part of a larger survey that also included collecting data on common areas of apartment complexes. 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 condominium/homeowner associations and common areas for apartment complexes.

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 300 sample points to the survey of condominium/homeowner associations and 540 sample points to the survey of apartment complexes.

A.1.1 Plan for Surveying Common Areas for Condominium and Homeowner Associations

Condominium and homeowner associations are the governing bodies for Common Interest Developments (CIDs). CIDs may have a variety of architectural types and styles, such as single family detached houses, two-story townhouses, garden style units with shared "party walls," and apartment-like, multi-storied high rises. Although there may be a wide range of differences among CIDs in the type of structures, all CIDs are similar in that they allow individual owners the use of common property and facilities. In many respects, common areas of CIDs differ little from those for apartment complexes. CIDs may have common amenities such as swimming pools, clubhouses, and recreation facilities, as well as exterior lighting.

CIDs are self-governing through an association of the homeowners within the CID. When a person buys a lot, home, townhome, or condominium in a CID, he/she automatically becomes a member of the association. The most common type of association of homeowners is a nonprofit mutual benefit corporation, which is a corporation in which the members of the corporation vote for a board of directors that runs the affairs of the corporation. Some associations, usually older ones, may be unincorporated, but unincorporated associations are treated the same as mutual benefit corporations under California law.

The property owners in a development are in charge of the association. During the annual meeting of the association, members vote for all or part of the board of directors that operates the association. The board of directors' job is to preserve, enhance and protect the value of the development, but the board answers to the members. In practice, a board often contracts with a professional management company to run the day-to-day affairs of the association.

Data on the associations for CIDs are contained in the records of two state agencies.

- Under the Davis-Stirling Common Interest Development Act (California Civil Code Sections 1350 et seq.), the California Department of Real Estate (DRE) reviews the legal framework of all new CIDs to ensure compliance with the Subdivided Lands Law. Each CID is required to submit a public report application to the DRE prior to the homes in the development being offered for sale to the public. This public report provides information regarding the name of the CID, its location, and the number of units in the CID at build-out. The filing date also provides an indicator of the year the CID was built.
- Because homeowner/condo associations are corporations, they are also required to file annual statements of officers with the California Secretary of State. These statements contain more current information on the management of the associations.

The data from these public agency records have been compiled by Levy & Company into a HOA Info™ Community Association Database. The information contained in this database includes the name and address of the CID, the legal form of the CID (e.g., condo, planned unit development), the name and address of the management company (if any), the number of units in the CID, and the year the CID was built.

The HOA Info™ Community Association Database contained data on about 32,280 homeowner/condo associations. However, the focus of the survey was on two particular types of associations: for condominiums and for planned developments. The total population of such associations was about 25,660, of which 17,460 associations were for condominiums and 8,200 were for planned developments. Arrangements were made with Levy & Company to take an extract of associations from the HOA Info™ Community Association Database. This extract provided a sampling frame for condominium/homeowner associations.

A plan for sampling the associations was then developed. 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 sampling units (i.e., associations) in these groupings are relatively similar, the number 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 development. Accordingly, condominium/homeowner associations were stratified according to number of units per association. Four categories were used for the size stratification.

- Stratum 1 included HOAs for developments with 25 or fewer units per development.
- Stratum 2 included HOAs for developments with 26-100 units per development.
- Stratum 3 included HOAs for developments with 101-250 units per development.
- Stratum 4 included HOAs for developments with over 250 units per development.

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 300 sample points for the survey of condominium/homeowner associations among service areas as follows:

-
- SCE/SCG 110
 - PG&E 110
 - SDG&E 80

For SCE/SCG and PG&E this allowed 30 sample points each for strata 1 and 2 and 25 sample points each for strata 3 and 4. For SDG&E, each sampling stratum received 20 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 condominium/homeowner associations 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 condominium/homeowner associations 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 condominium/homeowner associations 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 associations 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 association agreed to participate in the survey, the scheduler arranged a mutually acceptable time for data collection, based on the convenience of the association 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 condominium/homeowner associations 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 an association 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 site 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 site 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 associations that had been surveyed on-site. The telephone interviews were used to collect information from the owners and/or managers of condominium/homeowner associations 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 homeowner association in the sample, along with information on the survey outcome for that 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 303 condominium/homeowner associations, and telephone interviews were completed with decision makers for 273 of the associations. The distribution of the condominium/homeowner associations 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 HOA On-Site Surveys by Service Area and Sampling Stratum

Sampling Stratum	Combined Service Areas	Individual Service Areas		
		PG&E	SCE/SCG	SDG&E
Totals	303	108	114	81
Stratum 1	38	12	16	10
Stratum 2	85	35	31	19
Stratum 3	84	35	29	20
Stratum 4	96	26	38	32

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

Sampling Stratum	Combined Service Areas	Individual Service Areas		
		PG&E	SCE/SCG	SDG&E
Totals	273	97	103	73
Stratum 1	36	12	14	10
Stratum 2	80	33	31	16
Stratum 3	74	29	26	19
Stratum 4	83	23	32	28

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; and
- 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

<i>Data Available on?:</i>				<i>Identified in CEC Database?</i>	<i>Exact Match to CEC Data?</i>	<i>Assignment or Imputation Method</i>
<i>Manufacturer</i>	<i>Model Number</i>	<i>Capacity</i>	<i>Age</i>			
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 condominium/homeowner associations was performed to determine population values for equipment saturations and other target variables. Because the surveyed associations 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 associations that were surveyed could be "weighted up" in the aggregate analyses to represent the complete populations of condominium/homeowner associations in the combined service areas and in the individual service areas (i.e., PG&E, SCE/SCG and SDG&E).

Because telephone interviews could not be completed with decision makers for all of the HOAs for which data were collected on-site, two sets of weights were developed. One set of weights is based on the group of HOAs that were surveyed on-site, and the second set of weights is based on the group of HOAs for which telephone interviews were completed. Accordingly, Table A-5 shows the data used to calculate the statistical weights for the sites surveyed on-site for different service areas and sample strata, while Table A-6 shows the data used to calculate statistical weights for the HOAs surveyed by telephone. The statistical weight calculated for each service area/sampling stratum was assigned to all sampled HOAs in that stratum, essentially becoming a case weight for each sample case.

Table A-5. Calculation of Statistical Weights for HOAs Surveyed On-Site

Service Area	Stratum	Population of HOAs	HOAs Surveyed	Weight
<u>Weight Calculation for Condominiums</u>				
PG&E	1	2,610	9	290.000
PG&E	2	1,257	13	96.692
PG&E	3	492	14	35.143
PG&E	4	176	9	19.556
SCE/SCG	1	6,610	16	413.125
SCE/SCG	2	2,378	20	118.900
SCE/SCG	3	922	10	92.200
SCE/SCG	4	359	18	19.944
SDG&E	1	1,508	8	188.500
SDG&E	2	627	12	52.250
SDG&E	3	397	15	26.467
SDG&E	4	127	18	7.056
<u>Weight Calculation for Planned Developments</u>				
PG&E	1	1,430	3	476.667
PG&E	2	1,722	22	78.273
PG&E	3	732	21	34.857
PG&E	4	357	17	21.000
SCE/SCG	1&2	1,822	11	165.636
SCE/SCG	3	806	19	42.421
SCE/SCG	4	437	20	21.850
SDG&E	1	191	2	95.500
SDG&E	2	322	7	46.000
SDG&E	3	263	5	52.600
SDG&E	4	119	14	8.500

Table A-6. Calculation of Statistical Weights for HOAs Surveyed by Telephone

Service Area	Stratum	Population of HOAs	HOAs Surveyed	Weight
<u>Weight Calculation for Condominiums</u>				
PG&E	1	2,610	9	290.000
PG&E	2	1,257	12	104.750
PG&E	3	492	12	41.000
PG&E	4	176	8	22.000
SCE/SCG	1	6,610	14	472.143
SCE/SCG	2	2,378	20	118.900
SCE/SCG	3	922	9	102.444
SCE/SCG	4	359	14	25.643
SDG&E	1	1,508	8	188.500
SDG&E	2	627	11	57.000
SDG&E	3	397	15	26.467
SDG&E	4	127	15	8.467
<u>Weight Calculation for Planned Developments</u>				
PG&E	1	1,430	3	476.667
PG&E	2	1,722	21	82.000
PG&E	3	732	17	43.059
PG&E	4	357	15	23.800
SCE/SCG	1&2	1,822	11	165.636
SCE/SCG	3	806	17	47.412
SCE/SCG	4	437	18	24.278
SDG&E	1	191	2	95.500
SDG&E	2	322	5	64.400
SDG&E	3	263	4	65.750
SDG&E	4	119	13	9.154

**APPENDIX B
DATA COLLECTION FORMS**

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?

<i>Amenity</i>	<i>Provided?</i> (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?

<i>Appliance</i>	<i>In Units?</i> (1=No 2=Yes)	<i>Who Owns?</i> (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?

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

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

Codes for type of payment

<i>How Service is Paid for:</i>	<i>Code</i>
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:

<i>Types of Clothes Washers</i>	<i>Equip Code</i>	<i>Types of Clothes Dryers</i>	<i>Equip Code</i>
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:

<i>Cooking/Kitchen Equipment</i>	<i>Equipment Code</i>	<i>Refrigerators/Freezers</i>	<i>Equipment Code</i>
Oven	OV	No Freezer	NF
Stove	ST	Freezer Inside	FI
Griddle	GR	Bottom Freezer	BF
Charbroiler	CB	Top Freezer	TF
Fryer	FR	Top Freezer With Ice Maker	TFI
Infrared Broiler	IB	Side Freezer(Side by Side)	SF
Food Warmer	FW	Side Freezer With Ice Make	SFI
Soup Pots	SP	Upright Freezer	UF
Coffee Maker	CM	Chest Freezer	CF
Microwave	MW	Wine Chiller	WC
Dishwasher	DW	Other #1 (describe) _____	
Garbage Disposal	GD	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	1
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	1
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:

<u>Packaged Distribution Systems</u>		<u>Cooling Equip. Types</u>		<u>Heating Equip. Types</u>	
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	
			750 Watts	36 Watts	1000 Watts		880 Watts		
Incand. Ellips			1000 Watts		1500 Watts		1000 Watts		
Reflectors									
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. Interview ID Number: _____
- I5. Name of contact at field audit: _____
- I6. Telephone of person at field audit: _____
- I7. Name of person to be interviewed: _____
- I8. Address 1: _____
- I9. Address 2: _____
- I10. City: _____ State: _____ Zip _____
- I11. Telephone:(____) ____ - ____ Telephone 2: (____) ____ - ____
- I12. Fax: (____) ____ - ____
- I13. Has common area laundry equipment Yes No DKNA

Contact log

Date	Time in	Time out	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) <u>Write in call back date and time</u>
month, day, year	(24 hour clock)	(24 hour clock)	
mm dd yy	h h m m	h h m m	
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 Q17)*.

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) is trying to understand the energy efficiency needs of home owner associations and property management companies. Just recently we completed a walk-through the *(INSERT THE NAME OF THE COMPLEX FROM QUESTION 11)* to identify the characteristics of the energy using equipment in the common area. During the walk-through *(PERSON LISTED QUESTION 15)* 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 for homeowner and condominium associations 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 11)*, are you
 - a. Home owner association that self-manages the property
 - b. Property management company that works with the home owners association to manage the property
 - c. Other: _____
2. Are the units mostly *(Check all that apply)*
 - a. condominiums (high rise)
 - b. townhomes (row house)
 - c. single family attached (duplexes , triplexes, quads)
 - d. single family detached
 - e. other

3. Do you have on-site staff
- a. No (Go to 5)
 - b. Yes (Go to 3)
4. About how many? _____
5. 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. ___ Other _____
6. How often does the home owner association's board of directors meet?
- a. Monthly
 - b. Bi-monthly
 - c. Quarterly
 - d. Semi-annually
 - e. Annually
 - f. Other: _____
7. How often are elections held for the home owner association's board of directors?
- a. Annually
 - b. Bi-annually
 - c. Every 3 years
 - d. Every 4 years
 - e. Every 5 years
 - f. Other: _____
8. How often are reserve studies done for (INSERT THE NAME OF THE COMPLEX FROM QUESTION II)?
- a. Annually
 - b. Bi-annually
 - c. Every 3 years
 - d. Every 4 years
 - e. Every 5 years
 - f. Other: _____

9. What is the name of the company that performs the reserve studies for (*INSERT THE NAME OF THE COMPLEX FROM QUESTION 11*)?
-

B. DECISION MAKING FACTORS FOR COMMON AREA ENERGY USING EQUIPMENT

10. 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. Home owners association board of directors
 - b. Property management company
 - c. On-site manager
 - d. On-site maintenance person
 - e. Consultant company that performs the reserve studies
 - f. Other: _____
11. What sources of information about equipment do you use when changing or replacing equipment in the common areas? (*CHECK ALL THAT APPLY*)
- a. Internal maintenance staff
 - b. Contractors
 - c. Dealers
 - d. Distributors
 - e. Manufacturers
 - f. Utilities
 - g. Trade publications
 - h. Information in the reserve study
 - i. Other: _____

12. When you are selecting replacement equipment such as air conditioners, pool equipment, and water heater equipment 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”.

	<i>Factor:</i>	<i>Not at all</i>									<i>Very</i>	<i>DKNA</i>
		<i>Important</i>									<i>Important</i>	
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 established 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 home owner association pays the utility cost	1	2	3	4	5	6	7	8	9	10	11
i.	Energy cost when home owner pays the utility cost	1	2	3	4	5	6	7	8	9	10	11

12a. When you install or replace lighting in the common areas of this facility do you consider the same factors and give them the same weight?

- Yes No DKNA

↓
 12a1. (IF NO) What are the most important factors you consider in making decisions about lighting?

13. Have you installed energy efficient equipment and / or attempted to lower the energy costs in any of the following common areas of this facility? How about for . . .

<p>a.</p>	<p>Lighting in internal hallways, rooms or corridors</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA</p>	<p>7a1. If yes, what action did you take? _____ _____</p> <p>7a2. What year? _____</p>	<p>7a3. Why did you take the action?(<i>DON'T READ. CHECK ALL THAT APPLY.</i>)</p> <p>a. <input type="checkbox"/> Equipment failures b. <input type="checkbox"/> Poorly working equipment c. <input type="checkbox"/> Aging equipment d. <input type="checkbox"/> Safety improvements e. <input type="checkbox"/> Make complex more marketable f. <input type="checkbox"/> Improve energy efficiency g. <input type="checkbox"/> Reduce operating cost h. <input type="checkbox"/> Reserve study requirements i. <input type="checkbox"/> _____ _____</p>
<p>b.</p>	<p>Outdoor lighting and lighting in parking areas</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA</p>	<p>7b1. If yes, what action did you take? _____ _____</p> <p>7b2. What year? _____</p>	<p>7b3. Why did you take the action?(<i>DON'T READ. CHECK ALL THAT APPLY.</i>)</p> <p>a. <input type="checkbox"/> Equipment failures b. <input type="checkbox"/> Poorly working equipment c. <input type="checkbox"/> Aging equipment d. <input type="checkbox"/> Safety improvements e. <input type="checkbox"/> Make complex more marketable f. <input type="checkbox"/> Improve energy efficiency g. <input type="checkbox"/> Reduce operating cost h. <input type="checkbox"/> Reserve study requirements i. <input type="checkbox"/> Other _____ _____ _____</p>

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

<p>e.</p>	<p>Swimming pool, jacuzzi or spa</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA</p>	<p>7e1. If yes, what action did you take? _____ _____</p> <p>7e2. What year? _____</p>	<p>7e3. Why did you take the action?(<i>DON'T READ. CHECK ALL THAT APPLY.</i>)</p> <p>a. <input type="checkbox"/> Equipment failures b. <input type="checkbox"/> Poorly working equipment c. <input type="checkbox"/> Aging equipment d. <input type="checkbox"/> Safety improvements e. <input type="checkbox"/> Make complex more marketable f. <input type="checkbox"/> Improve energy efficiency g. <input type="checkbox"/> Reduce operating cost h. <input type="checkbox"/> Reserve study requirements i. <input type="checkbox"/> Other _____ _____ _____</p>
<p>f.</p>	<p>Laundry equipment for residents to use</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA</p>	<p>7f1. If yes, what action did you take? _____ _____</p> <p>7f2. What year? _____</p>	<p>7f3. Why did you take the action?(<i>DON'T READ. CHECK ALL THAT APPLY.</i>)</p> <p>a. <input type="checkbox"/> Equipment failures b. <input type="checkbox"/> Poorly working equipment c. <input type="checkbox"/> Aging equipment d. <input type="checkbox"/> Safety improvements e. <input type="checkbox"/> Make complex more marketable f. <input type="checkbox"/> Improve energy efficiency g. <input type="checkbox"/> Reduce operating cost h. <input type="checkbox"/> Reserve study requirements i. <input type="checkbox"/> Other _____ _____ _____</p>

14a. When purchasing equipment common area for (*FILL IN THE NAME FROM QUESTION 1*), have you participated in any energy efficiency programs that California utilities have sponsored?

No Yes



14b. What programs did you participate in?

15. Do you have 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 Yes



16. 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	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
b.	High efficiency lighting in outdoor areas	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
c.	Solar heated or solar assisted pool heaters	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
d.	Heat recovery units for pool / spa heating	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
e.	High efficiency clothes washers	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
f.	High efficiency air conditioning units	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
g.	High efficiency furnaces	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
h.	High efficiency central boilers	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> DKNA
i.	Other:	_____
j.	Other:	_____
k.	Other:	_____

17. I am going to read a list of reasons that may prevent your company or association 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”.

	<i>Reason:</i>	<i>Not at all</i>										<i>Very</i>	<i>DKNA</i>
		<i>Important</i>										<i>Important</i>	
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

- 18 (IF I13 = YES OR DKNA ELSE GO TO QUESTION)

With respect to common area laundry equipment, do you:

- a. Own or lease the equipment and collect all of the revenue
 b. Share the revenue with the company that provides laundry equipment
 c. Provide space to the company that owns the laundry equipment without revenue

19. Have you been approached by any third parties, such as energy services companies, who would provide you with energy efficiency services and share the savings or would provide services if you would buy electricity from them?

No Yes

20. Are you. . .

- a. not at all interested in such proposals
 b. mildly interested
 c. somewhat interested
 d. very interested

C. DECISION MAKING FOR APPLIANCES/EQUIPMENT IN INDIVIDUAL UNITS

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

Yes No



21b. Do you plan to convert units to individual water meters?

Yes No

**D. FINANCIAL CHARACTERISTICS OF FACILITY AND TENANTS**

22a. What is the lowest priced unit in this complex? \$ _____

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

23a. What is the highest priced unit in this complex \$ _____

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

24. How many of each type of unit are in this complex

- a. _____ efficiency units
- b. _____ 1 bedroom
- c. _____ 2 bedroom units
- d. _____ 3 bedroom units or more

25. Are any of the following changes currently taking place or being planned for this complex in the next three years?

- a. Convert to nonresidential use
- b. Renovate or replace obsolete features
- c. Work to change the tenant population
- d. No changes currently taking place or being planned
- e. Don't know or not sure

F. CHARACTERISTICS OF THE FIRM

IF PROPERTY MANAGEMENT FIRM, THEN ASK QUESTIONS IN SECTION F;
OTHERWISE GO TO SECTION G:

26. On about how many residential properties does your firm work with home owners associations to manage properties in California and elsewhere?

_____ *Number of properties*

27. What is the total number of housing units these properties represent?

_____ *Number of units*

28. About how many of these properties and units are in California?
 _____ *Number of properties* _____ *Number of units*
29. How many years has your firm been in business working with home owners associations to manage properties? _____ *Years.* (DKNA = 999)
30. Does your firm have business lines other than working with home owners associations to manage properties?
 No
 Yes Could you tell me what they are: _____
 Don't know/no answer

G RESPONDENT CHARACTERISTICS

31. 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.)
- Member of board of directors
- Management Company Titles
- Owner / Partner
 President
 Executive vice-president
 Senior vice-president
- 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?
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 303 condominium/homeowner associations. 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.

It should also be noted that some of the cell values are based on relatively small numbers of respondents. Because this is the first detailed survey of common areas, these values have been reported. However, these values may not be statistically robust.

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

Table C-1. Percent of Condominium/Homeowner Associations with Common Area Amenities

<i>Type of Common Area Amenity</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Number of HOAs	25,660	8,780	13,330	3,550
Club room	17%	24%	12%	17%
Common party rooms	14%	16%	11%	19%
Swimming pool	43%	38%	43%	58%
Common laundry room	18%	14%	18%	28%
Athletic facilities	8%	13%	3%	10%
Children's play area	6%	3%	9%	5%
Elevator	11%	6%	11%	23%

Table C-2. Percent of Condominium/Homeowner Associations with Common Area Renovation Activity

<i>Type of Renovation Activity</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All HOAs	25,660	8,780	13,330	3,550
Added new units	3%	5%	2%	3%
Built new swimming pool/spa area	1%	0%	1%	0%

C.2 LIGHTING FOR OUTDOOR COMMON AREAS

Table C-3. Percent of Condominium/Homeowner Associations 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 HOAs	25,660	8,780	13,330	3,550
<i>Percent with Types of Fixtures</i>				
Poles	48%	63%	34%	16%
Car ports	11%	9%	11%	4%
Wall	54%	36%	59%	21%
Ceiling	25%	21%	25%	10%
Landscape/decorative	30%	20%	37%	7%
<i>Percent with Types of Lamps</i>				
2-foot fluorescent	2%	1%	1%	3%
4-foot fluorescent	13%	9%	16%	4%
8-foot fluorescent	3%	4%	2%	1%
Compact fluorescent (pin)	39%	34%	38%	16%
Compact fluorescent (screw)	7%	15%	3%	1%
CircleLine fluorescent	2%	2%	1%	2%
High pressure sodium	20%	24%	19%	4%
Halogen	2%	4%	0%	0%
High intensity discharge	10%	4%	13%	4%
Incandescent	46%	33%	48%	19%
Incandescent spotlight	8%	2%	13%	0%
Low pressure sodium	3%	5%	1%	2%
Metal halide	5%	7%	4%	1%
Mercury vapor	6%	7%	4%	2%
Quartz	3%	0%	2%	2%
<i>Percent with Types of Ballasts</i>				
Standard magnetic	38%	40%	32%	15%
High efficiency magnetic	13%	6%	16%	4%
Electronic	44%	44%	38%	18%
<i>Percent with Types of Lighting Controls</i>				
On/off	13%	6%	12%	8%
Time clock	20%	19%	15%	11%
Occupancy sensor	3%	3%	1%	1%
Photo cell	63%	61%	61%	21%

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

<i>Type of Lighting Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All fixtures	1,660	364	1,036	259
<i>Number of Fixtures by Types of Fixtures</i>				
Poles	350	100	201	49
Car ports	128	37	68	24
Wall	579	137	328	114
Ceiling	212	53	109	50
Landscape/decorative	390	37	330	23
<i>Number of Fixtures by Types of Lamps</i>				
2-foot fluorescent	10	0	0	9
4-foot fluorescent	100	13	64	24
6-foot fluorescent	0	0	0	0
8-foot fluorescent	14	4	7	4
Compact fluorescent (pin)	863	178	583	102
Compact fluorescent (screw)	62	41	18	3
CircleLine fluorescent	6	3	2	1
Exit sign fluorescent	0	0	0	0
High pressure sodium	100	27	63	10
Halogen	8	8	0	0
High intensity discharge	56	6	43	7
Incandescent	322	64	173	85
Incandescent spotlight	21	1	20	0
Low pressure sodium	25	8	10	7
Metal halide	39	7	29	3
Mercury vapor	27	3	21	4
Other fluorescent	3	0	3	0
Quartz	2	0	1	1
<i>Number of Fixtures by Types of Ballasts</i>				
Standard magnetic	291	52	186	53
High efficiency magnetic	58	7	43	8
Electronic	950	226	612	112
Ballasts not applicable	360	80	195	86
<i>Number of Fixtures by Types of Lighting Controls</i>				
On/off	153	14	81	59
Time clock	155	40	75	40
Occupancy sensor	3	1	1	2
Photo cell	1,348	309	880	158

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

<i>Type of Lighting Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total connected load	72.6	14.7	43.8	14.1
<u><i>Connected Load for Types of Fixtures</i></u>				
Poles	25.5	6.1	15.0	4.5
Car ports	5.1	1.2	2.8	1.1
Wall	24.3	4.2	14.1	6.0
Ceiling	7.8	1.8	4.0	2.0
Landscape/decorative	9.9	1.4	8.0	0.6
<u><i>Connected Load for Types of Lamps</i></u>				
2-foot fluorescent	0.4	0.0	0.0	0.4
4-foot fluorescent	5.3	0.7	3.6	1.0
8-foot fluorescent	1.4	0.4	0.6	0.4
Compact fluorescent (pin)	10.2	2.3	6.6	1.3
Compact fluorescent (screw)	1.2	0.7	0.4	0.0
CircleLine fluorescent	0.1	0.1	0.1	0.0
High pressure sodium	10.6	2.3	7.6	0.8
Halogen	1.8	1.7	0.0	0.1
High intensity discharge	5.1	0.1	4.5	0.5
Incandescent	23.0	4.2	12.4	6.3
Incandescent spotlight	1.6	0.1	1.5	0.0
Low pressure sodium	2.0	0.6	0.5	0.8
Metal halide	6.4	1.0	3.9	1.4
Mercury vapor	3.2	0.2	1.9	1.0
Quartz	0.6	0.2	0.2	0.2
<u><i>Connected Load for Types of Ballasts</i></u>				
Standard magnetic	29.3	4.5	19.5	5.4
High efficiency magnetic	3.3	0.5	2.5	0.3
Electronic	13.1	3.5	7.7	1.9
Ballasts not applicable	27.0	6.2	14.2	6.5
<u><i>Connected Load for Types of Lighting Controls</i></u>				
On/off	10.0	0.8	5.7	3.5
Time clock	10.7	2.9	4.5	3.3
Occupancy sensor	0.4	0.1	0.0	0.3
Photo cell	51.5	10.9	33.6	7.1

C.3 LIGHTING FOR INDOOR COMMON AREAS

Table C-6. Percent of Condominium/Homeowner Associations 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 HOAs	25,660	8,780	13,330	3,550
<i>Percent with Types of Fixtures</i>				
Recessed	4%	8%	0%	2%
Suspended	10%	14%	9%	1%
Wall	16%	16%	16%	4%
Table/floor	1%	1%	1%	0%
Ceiling	40%	33%	40%	15%
<i>Percent with Types of Lamps</i>				
2-foot fluorescent	3%	3%	2%	1%
4-foot fluorescent	24%	24%	21%	10%
8-foot fluorescent	3%	1%	2%	2%
Compact fluorescent (pin)	12%	9%	13%	5%
Compact fluorescent (screw)	2%	4%	1%	1%
CircleLine fluorescent	5%	2%	5%	3%
Exit sign fluorescent	2%	2%	2%	0%
Exit sign, incandescent	3%	1%	5%	0%
Halogen	2%	4%	0%	0%
Incandescent	31%	31%	27%	13%
Incandescent spotlight	3%	4%	2%	0%
Quartz	0%	0%	1%	0%
U-tube fluorescent	1%	2%	2%	0%
<i>Percent with Types of Ballasts</i>				
Standard magnetic	9%	5%	9%	6%
High efficiency magnetic	17%	13%	18%	7%
Electronic	16%	17%	14%	5%
<i>Percent with Types of Lighting Controls</i>				
On/off	39%	34%	37%	16%
Time clock	9%	5%	11%	4%
Dimmer	0%	1%	0%	0%
Photo cell	1%	0%	2%	0%

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

<i>Type of Lighting Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All fixtures	797	122	531	144
<u><i>Number by Types of Fixtures</i></u>				
Recessed	47	25	1	21
Suspended	63	15	46	1
Wall	190	29	112	50
Table/floor	3	1	2	0
Ceiling	493	53	369	71
<u><i>Number by Types of Lamps</i></u>				
2-foot fluorescent	10	1	7	1
4-foot fluorescent	127	19	72	36
8-foot fluorescent	16	0	7	9
Compact fluorescent (pin)	311	41	235	36
Compact fluorescent (screw)	14	6	7	1
CircleLine fluorescent	59	9	16	34
Exit sign fluorescent	8	3	5	0
Exit sign, incandescent	38	0	38	0
Halogen	2	2	0	0
High intensity discharge	3	0	3	0
Incandescent	196	36	134	26
Incandescent spotlight	10	5	5	0
Quartz	1	0	1	0
U-tube fluorescent	2	0	1	0
<u><i>Number by Types of Ballasts</i></u>				
Standard magnetic	75	7	59	9
High efficiency magnetic	108	12	45	51
Electronic	367	60	250	57
Ballasts not applicable	246	43	177	26
<u><i>Number by Types of Lighting Controls</i></u>				
On/off	712	109	469	134
Time clock	63	9	47	7
Dimmer	1	1	0	0
Occupancy sensor	1	0	1	0
Photo cell	20	3	14	3

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

<i>Type of Lighting Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total connected load	32.0	6.0	21.1	4.9
<i><u>Connected Load for Types of Fixtures</u></i>				
Recessed	1.5	0.5	0.1	1.0
Suspended	2.9	1.1	1.8	0.1
Wall	4.8	1.2	2.7	1.0
Table/floor	0.1	0.1	0.0	0.0
Ceiling	22.7	3.3	16.5	3.0
<i><u>Connected Load for Types of Lamps</u></i>				
2-foot fluorescent	0.4	0.1	0.3	0.0
3-foot fluorescent	0.0	-	0.0	-
4-foot fluorescent	7.8	1.5	4.7	1.6
8-foot fluorescent	1.6	0.1	0.9	0.6
Compact fluorescent (pin)	4.2	0.7	3.0	0.5
Compact fluorescent (screw)	0.2	0.1	0.1	0.0
CircleLine fluorescent	1.3	0.2	0.4	0.8
Exit sign fluorescent	0.1	0.0	0.1	-
Exit sign, incandescent	1.1	-	1.1	-
High pressure sodium	0.1	0.0	-	0.0
Halogen	0.2	0.2	-	-
High intensity discharge	0.4	-	0.4	-
Incandescent	13.8	2.8	9.5	1.4
Incandescent spotlight	0.7	0.3	0.3	0.0
Metal halide	0.1	0.1	-	-
Quartz	0.1	-	0.1	-
U-tube fluorescent	0.1	0.0	0.1	-
<i><u>Connected Load for Types of Ballasts</u></i>				
Standard magnetic	4.5	0.6	3.3	0.6
High efficiency magnetic	5.3	0.6	3.0	1.7
Electronic	6.4	1.5	3.6	1.2
Ballasts not applicable	15.9	3.3	11.1	1.4
<i><u>Connected Load for Types of Lighting Controls</u></i>				
On/off	28.7	5.5	18.7	4.5
Time clock	2.3	0.3	1.5	0.4
Dimmer	0.1	0.1	-	-
Occupancy sensor	0.1	-	0.1	-
Photo cell	0.9	0.1	0.8	0.0

C.4 SWIMMING POOLS

Table C-9. Percent of Condominium/Homeowner Associations with Swimming Pools

Type of Swimming Pool	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
<u>All Associations</u>				
Number of developments	25,660	8,780	13,330	3,550
Percent with swimming pools	29.8%	29.5%	27.9%	37.7%
<u>Condominium Associations</u>				
Number of developments	17,460	4,540	10,270	2,660
Percent with swimming pools	28.1%	20.3%	28.0%	41.7%
<u>Planned Development Associations</u>				
Number of developments	8,200	4,240	3,070	900
Percent with swimming pools	33.4%	39.4%	27.4%	25.6%

Table C-10. Number of Swimming Pools at Condominium/Homeowner Associations by Type of Heating*

Type of Swimming Pool	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
Total number of pools*	16,130	5,510	8,240	2,380
Not heated	4,330	2,820	920	590
Heated with natural gas	10,720	2,170	7,110	1,430
Heated with other fuel	1,080	520	210	360

*All pools are outdoors.

Table C-11. Numbers and Total Horsepower of Circulation Pumps for Swimming Pools at Condominium/Homeowner Associations by Size of Pump

<i>Size of Pool Pump (hp)</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<i>Number of Pumps by Horsepower</i>				
Total number of pool pumps	16,130	5,510	8,240	2,380
1 hp or less	4,830	2,870	1,470	500
1 to 2 hp	9,550	1,860	6,350	1,340
2 to 5 hp	1,360	610	240	510
Over 5 hp	220	120	70	30
Hp not known	170	60	110	-
<i>Total Horsepower of Pumps by Horsepower</i>				
Total horsepower of pool pumps	27,950	8,810	14,400	4,770
1 hp or less	4,530	2,580	1,460	500
1 to 2 hp	17,400	3,240	11,640	2,520
2 to 5 hp	4,270	1,960	880	1,440
Over 5 hp	1,750	1,030	420	310

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

<i>Capacity of Pool Heating Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number of outdoor pools heated by natural gas	10,720	2,180	7,100	1,440
250 kBtu/hour or less	1,510	250	1,250	10
250 to 500 kBtu/hour	6,930	560	5,100	1,270
Over 500 kBtu/hour	500	160	240	100
KBtu/hour not known	1,780	1,210	510	60

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

<i>Age of Pool Heating Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number of outdoor pools heated by natural gas	10,720	2,180	7,100	1,440
Under 1 year	310	20	190	90
1 to 5 years	2,330	230	1,560	530
5 to 10 years	4,270	1,170	2,780	320
10 to 15 years	1,790	360	1,170	260
Over 15 years	2,020	390	1,410	220
Age not known	10	-	-	10

C.5 HOT TUBS

Table C-14. Percent of Condominium/Homeowner Associations with Hot Tubs

	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<i>All Associations</i>				
Number of developments	25,660	8,780	13,330	3,550
Percent with hot tubs	20.5%	12.6%	22.8%	30.7%
<i>Condominium Associations</i>				
Number of developments	17,460	4,540	10,270	2,660
Percent with hot tubs	21.8%	13.0%	23.3%	31.2%
<i>Planned Development Associations</i>				
Number of developments	8,200	4,240	3,070	900
Percent with hot tubs	17.6%	12.3%	21.2%	28.9%

Table C-15. Number of Hot Tubs at Condominium/Homeowner Associations by Type of Heating

<i>Type of Hot Tub</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number of hot tubs*	8,380	1,610	5,240	1,530
Heated with natural gas	8,090	1,540	5,080	1,480
Heated with other fuel	170	40	140	-
Heating fuel not known	110	40	20	50

*All hot tubs are outdoors.

Table C-16. Numbers and Total Horsepower of Circulation Pumps for Hot Tubs at Condominium/Homeowner Associations by Size of Pump

<i>Size of Pump (hp)</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<i>Number of Pumps by Horsepower</i>				
Total number of hot tub pumps	8,380	1,610	5,240	1,530
1 hp or less	2,390	770	1,620	-
1 to 2 hp	4,430	440	3,150	840
2 to 5 hp	1,060	130	280	650
Over 5 hp	200	-	150	40
Hp not known	310	260	40	-
<i>Total Horsepower of Pumps by Horsepower</i>				
Total horsepower of hot tub pumps	14,160	1,910	8,420	3,830
1 hp or less	2,260	680	1,580	-
1 to 2 hp	8,420	830	5,920	1,670
2 to 5 hp	3,480	400	920	2,160
Over 5 hp	1,380	-	1,070	300

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

<i>Capacity of Hot Tub Heating Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number of hot tubs heated by natural gas	8,090	1,540	5,080	1,480
250 kBtu/hour or less	5,180	980	3,250	950
250 to 500 kBtu/hour	2,030	270	1,230	520
Over 500 kBtu/hour	170	0	160	10
KBtu/hour not known	730	280	440	0

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

<i>Age of Hot Tub Heating Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number of hot tubs heated by natural gas	8,090	1,540	5,080	1,480
Under 1 year	410	0	320	80
1 to 5 years	1,570	170	1,010	400
5 to 10 years	2,720	250	2,130	340
10 to 15 years	1,460	410	740	310
Over 15 years	1,750	530	880	350
Age not known	180	180	0	10

C.6 COMMON AREA LAUNDRY EQUIPMENT

Table C-19. Number of Common Laundry Rooms for Developments with Condominium/Homeowner Associations

<i>Common Laundry Rooms per Development</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All developments	25,660	8,780	13,330	3,550
None	21,020	7,450	10,880	2,690
One	2,800	820	1,250	730
Two	380	170	140	70
Three	350	0	350	0
Four	110	40	20	50
Five or more	1,020	300	700	10

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

<i>Type of Clothes Washer or Dryer</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<i>Clothes Washer</i>				
All clothes washers	51,850	13,340	34,290	4,220
Top-loaded, vertical agitator	51,550	13,140	34,200	4,210
Front-loaded, horizontal agitator	300	200	100	10
<i>Clothes Dryers</i>				
All clothes dryers	51,420	12,980	34,040	4,410
Natural gas, front-loaded	25,970	9,190	13,040	3,740
Electric, front-loaded	25,450	3,790	21,000	670

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

<i>Connected Load (kW per Unit)</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All clothes washers	51,850	13,340	34,290	4,220
1 kW per unit	45,450	7,240	34,290	3,920
2 kW per unit	300	0	0	300
kW per unit not known	6,100	6,100	0	10

Table C-22. Distribution of Clothes Washers by Age

<i>Age of Clothes Washer</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
All clothes washers	51,850	13,340	34,290	4,220
Under 1 year	3,320	290	1,790	1,240
1 to 5 years	30,920	8,930	19,390	2,600
5 to 10 years	15,910	3,420	12,300	200
10 to 15 years	1,330	420	720	190
Over 15 years	380	280	100	-

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	51,420	12,980	34,040	4,410
<u>Natural Gas.</u>				
Total	25,970	9,190	13,040	3,740
25 kBtu/hour or less	23,580	8,640	11,590	3,360
Over 25 kBtu/hour	2,130	290	1,460	380
kBtu/hour not known	260	260	-	-
<u>Electric</u>				
Total	25,450	3,790	21,000	670
5 kW or less	20,230	490	19,740	-
Over 5 kW	3,200	1,280	1,260	670
kW not known	2,020	2,020	-	-

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	51,420	12,980	34,040	4,410
Under 1 year	3,030	-	1,790	1,240
1 to 5 years	30,840	9,150	18,920	2,770
5 to 10 years	16,050	3,270	12,570	210
10 to 15 years	1,330	420	720	190
Over 15 years	180	140	40	-

C.7 WATER HEATING EQUIPMENT FOR COMMON AREAS

Table C-25. Water Heating Equipment for HOA 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	40,760	10,400	25,390	4,970
Electric-fired	11,760	580	10,960	230
Natural gas-fired boilers	6,080	650	4,390	1,040
Natural gas-fired tanks	22,520	8,820	9,990	3,710
Other water heating fuel	400	350	40	-

Table C-26. Water Heating Equipment with Tanks by Heating Fuel and Size of Tank

Size of Tank (Gallons)	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
<u>Natural Gas Water Heaters with Tanks</u>				
Total number, natural gas water heaters with tanks	22,520	8,820	9,990	3,710
40 gallons or less	4,020	1,170	2,150	700
40 to 80 gallons	5,860	2,740	1,930	1,190
Over 80 gallons	12,450	4,900	5,910	1,630
Size not known	190	-	-	190
<u>Electric Water Heaters with Tanks</u>				
Total number, electric water heaters with tanks	11,760	580	10,960	230
40 gallons or less	10,220	190	9,810	220
40 to 80 gallons	1,540	380	1,150	10

Table C-27. Distribution of Gas Water Heaters with Tanks by Input Heating Capacity

Input Heating Capacity	Combined Service Areas	Individual Utility Service Areas		
		PG&E	SCE/SCG	SDG&E
Total number, natural gas water heaters with tanks	22,520	8,820	9,990	3,710
75 kBtu/hour or less	8,370	3,250	3,790	1,340
75 to 150 kBtu/hour	10,030	4,250	4,500	1,290
Over 150 kBtu/hour	3,360	1,110	1,390	860
Capacity not known	760	210	320	220

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

<i>Age of Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<i><u>Natural Gas Water Heaters with Tanks</u></i>				
Total number, natural gas water heaters with tanks	22,520	8,820	9,990	3,710
Under 1 year	680	430	250	-
1 to 5 years	6,840	3,430	1,260	2,150
5 to 10 years	6,680	2,500	3,450	740
10 to 15 years	5,020	360	3,860	800
Over 15 years	3,290	2,100	1,170	10
<i><u>Electric Water Heaters with Tanks</u></i>				
Total number, electric water heaters with tanks	11,760	580	10,960	230
Under 1 year	120	80	40	-
1 to 5 years	5,230	80	5,150	-
5 to 10 years	5,740	40	5,490	220
10 to 15 years	80	70	-	10
Over 15 years	600	310	280	-

*Table C-29. Natural Gas Water Heating Equipment for Common Areas
by Thermal Efficiency of Equipment*

<i>Thermal Efficiency of Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Total number, natural gas water heaters with tanks	22,520	8,820	9,990	3,710
Under 0.75	630	630	-	-
0.75	20	20	-	-
0.76	9,220	1,540	5,650	2,030
0.77	2,390	1,720	560	110
0.78	120	20	90	10
0.79	180	90	40	50
0.80	4,930	1,890	2,630	410
0.81	690	-	530	160
0.82	1,360	980	-	380
0.83	-	-	-	-
0.84	160	-	-	160
Efficiency not known	2,810	1,920	490	410

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
<u>Heating and Cooling</u>				
Heat pumps	5,110	260	4,830	10
DX cooling, electric heat	240	130	110	0
DX cooling, gas furnace	3,140	1,650	1,270	-
Room AC, electric heat	240	-	240	-
Wall/floor Heat pumps	800	-	640	-
<u>Cooling Only</u>				
Evaporative Coolers	70	-	70	-
DX cooling	760	220	530	20
Packaged Terminal AC	20	20	-	-
Room AC	230	-	40	-
<u>Heating Only</u>				
Central gas furnace	780	660	100	10
Package unit gas furnace	480	260	160	60
Wall/floor electric heater, natural distribution	540	360	180	-
Wall/floor gas furnace, natural distribution	60	-	60	-

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

<i>Equipment Size Classification</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<u><i>DX Cooling Units</i></u>				
All DX Cooling Units:	4,150	2,000	1,910	240
1 ton or less	40	-	40	-
1 to 2 tons	590	460	110	20
2 to 3 tons	1,170	660	360	150
3 to 4 tons	910	190	680	40
4 to 5 tons	1,260	620	630	20
Over 5 tons	50	-	40	10
Tons not known	120	80	40	-
<u><i>Heat Pumps</i></u>				
All Heat Pump Units:	5,900	420	5,470	10
1 ton or less	720	80	640	-
1 to 2 tons	150	150	-	-
2 to 3 tons	4,410	110	4,280	10
3 to 4 tons	550	-	550	-
4 to 5 tons	40	40	-	-
Over 5 tons	40	40	-	-
<u><i>Room Air Conditioners</i></u>				
All Room AC Units:	470	160	280	30
.5 to .75 ton	50	20	-	30
.75 to 1 ton	180	140	40	-
Over 1 ton	240	-	240	-
<u><i>Gas Furnaces</i></u>				
All gas furnace units:	4,460	2,570	1,600	290
25 kBtu/hour or less	870	610	200	60
26 to 42 kBtu/hour	680	250	310	120
43 to 59 kBtu/hour	1,020	530	440	60
60 to 76 kBtu/hour	920	620	260	40
77 to 93 kBtu/hour	210	170	40	10
Over 93 kBtu/hour	410	350	60	-
KBtu/hour not known	350	40	300	-

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

<i>Equipment Energy Efficiency Classification</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<u><i>DX Cooling Units</i></u>				
All DX Cooling Units:	4,150	2,000	1,910	240
SEER 8 or less	270	160	110	-
SEER 8 to 9	520	40	470	10
SEER 9 to 10	2,340	1,270	890	170
SEER 10 to 11	580	270	280	40
SEER 11 to 12	260	170	70	20
SEER Over 12	80	40	40	-
SEER not known	100	60	40	-
<u><i>Heat Pumps</i></u>				
All Heat Pump Units:	5,900	420	5,470	10
SEER 8 or less	170	170	-	-
SEER 8 to 9	100	100	-	-
SEER 9 to 10	1,330	150	1,170	10
SEER 10 to 11	20	-	20	-
SEER 11 to 12	4,280	-	4,280	-
<u><i>Room Air Conditioners</i></u>				
All Room AC Units:	470	160	280	30
SEER 8 or less	110	110	-	-
SEER 8 to 9	300	20	280	-
SEER 9 to 10	60	40	-	30
<u><i>Gas Furnaces</i></u>				
All gas furnace units:	4,460	2,570	1,600	290
AFUE .79 or less	1,010	610	300	110
AFUE .80 to .82	2,540	1,580	790	170
AFUE Over .82	910	380	510	10

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

<i>Age Category</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
<u><i>DX Cooling Units</i></u>				
All DX Cooling Units:	4,150	2,000	1,910	240
Under 1 year	290	130	160	-
1 to 5 years	1,340	1,120	180	40
5 to 10 years	800	250	470	80
10 to 15 years	920	120	690	110
Over 15 years	790	380	410	-
Age not known	10	-	-	10
<u><i>Heat Pumps</i></u>				
All Heat Pump Units:	5,900	420	5,470	10
1 to 5 years	260	40	230	-
5 to 10 years	80	80	-	-
10 to 15 years	4,870	40	4,830	-
Over 15 years	600	190	410	-
Age not known	90	80	-	10
<u><i>Room Air Conditioners</i></u>				
All Room AC Units:	470	160	280	30
5 to 10 years	30	0	0	30
10 to 15 years	80	40	40	0
Over 15 years	360	130	240	0
<u><i>Gas Furnaces</i></u>				
All gas furnace units:	4,460	2,570	1,600	290
Under 1 year	180	110	70	-
1 to 5 years	1,100	860	180	60
5 to 10 years	860	250	490	120
10 to 15 years	710	140	470	110
Over 15 years	1,600	1,210	400	-

C.9 MISCELLANEOUS EQUIPMENT FOR COMMON AREAS

Table C-34. Percentage of Condominium/Homeowner Associations 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 HOAs	25,660	8,780	13,330	3,550
Fax machines	9%	5%	11%	17%
Copiers	8%	4%	8%	17%
Personal computers	9%	6%	11%	12%
Printers	9%	5%	10%	12%
Water coolers	5%	2%	6%	6%
Soda machines	2%	1%	2%	2%
Coffee makers	4%	0%	6%	4%
Microwaves	1%	0%	0%	4%
Vending machines	0%	0%	0%	0%
Refrigerators	6%	2%	6%	17%
Audio equipment	2%	2%	1%	6%
Television	5%	7%	3%	8%
Ceiling/portable fans	6%	9%	5%	4%
Portable heaters	1%	2%	0%	1%

Table C-35. Number of Pieces of Specified Types of Miscellaneous and Kitchen Equipment in Common Areas of Condominium/homeowner associations

<i>Type of Equipment</i>	<i>Combined Service Areas</i>	<i>Individual Utility Service Areas</i>		
		<i>PG&E</i>	<i>SCE/SCG</i>	<i>SDG&E</i>
Fax machines	2,540	400	1,520	630
Copiers	2,260	350	1,310	600
Personal computers	3,470	740	2,140	580
Printers	2,980	660	1,770	550
Water coolers	1,220	190	810	220
Soda machines	450	120	270	60
Coffee makers	1,050	20	870	160
Microwaves	190		20	160
Vending machines	60	40		20
Refrigerators	1,760	150	980	630
Audio equipment	600	200	190	210
Television	1,490	610	450	440
Ceiling/portable fans	3,470	740	2,140	580
Portable heaters	170	150		30