



20th Annual **Utility Energy Forum**

**Market Transformation Program Design and Implementation
for the
Historically Underserved Multifamily Sector**

**Graham Parker, Program Manager
Bill Currie, Senior Program Manager
Battelle Pacific Northwest National Laboratory
Richland WA
May 17, 2000**

Facts and Statistics

Apartment Building Ownership*

% Ownership By:	All Units	2-4 Units	5-49 Units	50+ Units
Individuals	46.9	84.8	57.4	19.2
REIT	20.3	3.9	14.9	32.7
Real Estate Corporation	5.8	1.0	4.0	9.6
All Other	27.0	10.3	23.7	38.5

*U.S. Bureau of Census, March 1999.

The small (2-49 units) individual (“mom & pop”) owners represent the largest group of apartment building owners, and generally they are the most difficult to reach with programs.



Facts and Statistics

Rental Unit Characteristics*

Renter Households	# of Households	%	# of Residents	%
Single Family	11,663,000	34	32,207,000	39
2-4 Units	7,355,000	21	17,934,000	22
5+ Units	15,712,000	45	31,504,000	39
Total	34,730,000	100	81,645,000	100

*U.S. Bureau of Census, March 1999.

Renters make up approximately 40% of the U.S. households. Of these, 2/3 of the households are multifamily (2+units) representing over 60% of the total population of renters.

Facts and Statistics

Apartment Renters by Selected West Coast State*

State	# Apartment Renters	% of Entire Rental Population	New Apartment Units 1998
CA	7,124,000	22.1	30,700
WA	1,076,000	19.2	16,360
OR	549,000	16.9	8,600
NV	455,000	27.1	11,900

*U.S. Bureau of Census, March 1999.

The West Coast states have a greater % of apartment renters compared to the national average (16.2%). California is 1st among all states in total population of apartment renters. Nevada is 5th among all states in % of rental population that are multifamily.

Why Underserved?

- Both small business and residential sector characteristics in one property
 - adopting or adapting programs designed for either sector has not had the desired penetration
 - highly mobile population
 - over 1/3 of occupants move in any given year*
- Significant % of immigrant population
 - in CA, 14% of all apartment residents have moved into the US in last 10 years*

* Goodman, J., National Multi Housing Council, 1999.

Why Underserved?

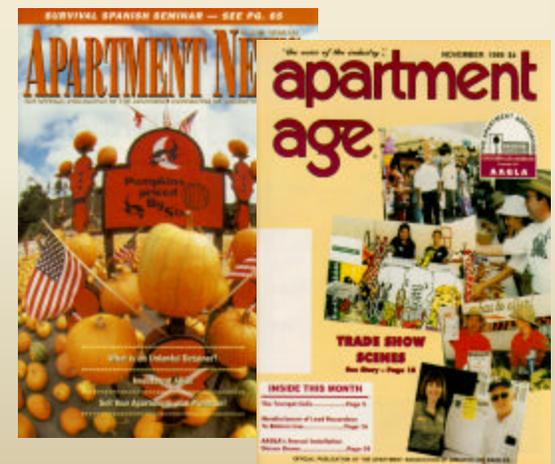
- Apartment residents classified as affordable/middle market (67%*) are the “least publicized” and thus do not receive proportional attention**
 - this large segment also tends to be the most mobile
- Assisted living residents (19%*) are highly visible and are offered an abundance of federal/local programs -- most are subsidized or free
- High income/“lifestyle” residents (14%*) are well-educated, well-informed and self-sufficient and thus a natural target for potential growth and attention

*% of total multifamily population; U.S. Bureau of Census, March 1997.

**Goodman, J., National Multi Housing Council, 1999.

Significant Education Need

- Out of hundreds of articles published each year in apartment journals, few address energy efficiency or energy cost reduction strategies
 - Equipment vendors/suppliers commonly advertise “standard”, “lowest-cost” products
 - “Ask Mr. Maintenance” rarely deals with energy efficiency issues!



Significant Education Need

- In the multifamily community, ENERGY STAR® is neither known, understood nor promoted
 - No evidence of any Energy Star appliances sold to multifamily owners/operators in Southern California Edison's (SCE) service territory prior to 10/99

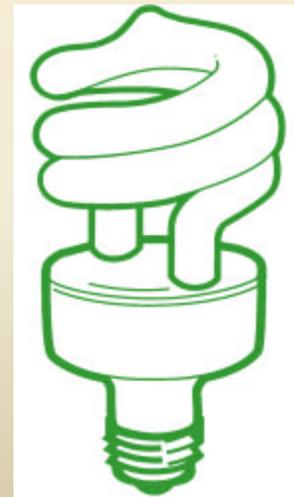
"Is it located in the Milky Way somewhere?"

"I think I've seen one of these on a computer."



Significant Education Need

- >40% of owners/operators surveyed in SCE's service territory did not know what a "compact fluorescent light bulb" was nor the savings/benefits (most of the respondents were "mom and pop" owners/operators)
- Many owners/operators do not understand nor believe the potential savings associated with efficient equipment -- for which they pay the bill



Lighting Characteristics

- There are approximately 1.5 exterior/common area sockets per apartment unit*
- 43% of apartment common areas properties have between 75-100% incandescent light bulbs**



*Nationwide data.

**CA survey data.

Lighting Characteristics

- Only 11% of apartment common areas have between 75-100% compact fluorescent lighting**
- Significantly, 84% of common area ordinary light bulb sockets (Edison sockets) contain ordinary (incandescent) light bulbs**
 - And this is despite the fact that CA utilities have spent millions on efficient lighting programs in the past 10 years

**CA survey data.



Appliance Characteristics

- 100% of apartment units have refrigerators*
 - size range: 14-22 cubic foot
 - 30-95% are purchased and owned by the owner/operators**
 - represents the largest electrical end-use consumption in apartment units
- 60-70% of apartment units have dishwashers*
 - ~100% are purchased and owned by the owner/operator

*CA survey data.

**30% in SCE service territory, 95% in SDG&E and PG&E service territory.

Appliance Characteristics

- 20-40% of apartment units have a room (window or wall) air conditioner*
 - 98+% are purchased and owned by the owner/operator
- Average of 1 coin-operated washer/dryer pair for every 8 apartment units*
 - nearly 50% of washers are purchased and owned by the owners/operators and they pay the utilities for their use
- 60-70% of apartment units have an in-unit hot water heater*
 - ~32% are electric; thus ~20% of all units have electric hot water heaters

*CA survey data.

Technologies for Multifamily

- ENERGY STAR Subcompact Fluorescent Light Bulbs



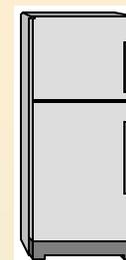
- Wattage 15W-26W
- Size (Maximum Overall Length) 4.56-5.80 in
- Savings/year* 241 kWh
- Retail price** \$5-\$8
- Additional cost (over common CFLs**) **No!** \$2-\$12 less

*A 20W sub-CFL replacing a 75W incandescent that is on 12 hours/day.
At 10 cents/kWh & \$6/lamp, the **net** savings over 2 years is \$42/socket.

**Without rebate or buy-down.

Technologies for Multifamily

- Super-Efficient Apartment-Sized Refrigerator



– Size	15 cubic feet
– Efficiency (better than standard)	31%
– Savings/year*	800-1200 kWh
– Retail price**	<\$400
– Additional cost (over standard model)	\$0-\$20

*Compared to a 10 year old similar-sized refrigerator.

**Without rebate.

Technologies for Multifamily

- ENERGY STAR Built-In Dishwasher



- | | |
|---|-----------------|
| – Efficiency (better than standard) | 35% |
| – Savings/year (electric hot water)* | 352 kWh |
| – Savings/year (gas hot water)* | 29 kWh+11therms |
| – Water savings/year* | 644 gallons |
| – Retail price** | <\$200 |
| – Additional cost (over standard model) | \$0-\$30 |

*Compared to a 9 year old dishwasher.

**Without rebate.

Technologies for Multifamily

- ENERGY STAR Window or Wall Air Conditioner



– Capacity	12,000 Btu/hr
– Efficiency (better than standard)	17%
– Savings/year*	1055 kWh
– Retail price**	~\$360
– Additional cost (over standard model)	\$0-\$60

*Compared to a 10 year old air conditioner at 1500 cooling degree days.

**Without rebate.

Technologies for Multifamily

- ENERGY STAR-Equivalent Coin-Op Family-Size Clothes Washer



– Efficiency	CEE Tier A1
– Savings/year (electric hot water)*	2,450 kWh
– Savings/year (gas hot water)*	92 therms
– Water savings/year*	10,000 gallons
– Retail price**	\$600-\$800 (est.)
– Additional cost (over standard model)	\$100-\$300

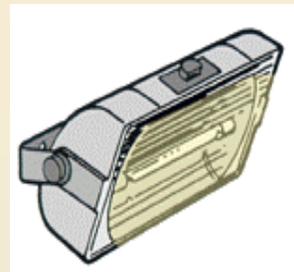
*Compared to a standard clothes washer. Based on 4 cycles/day.

**Without rebate.

Technologies for Multifamily

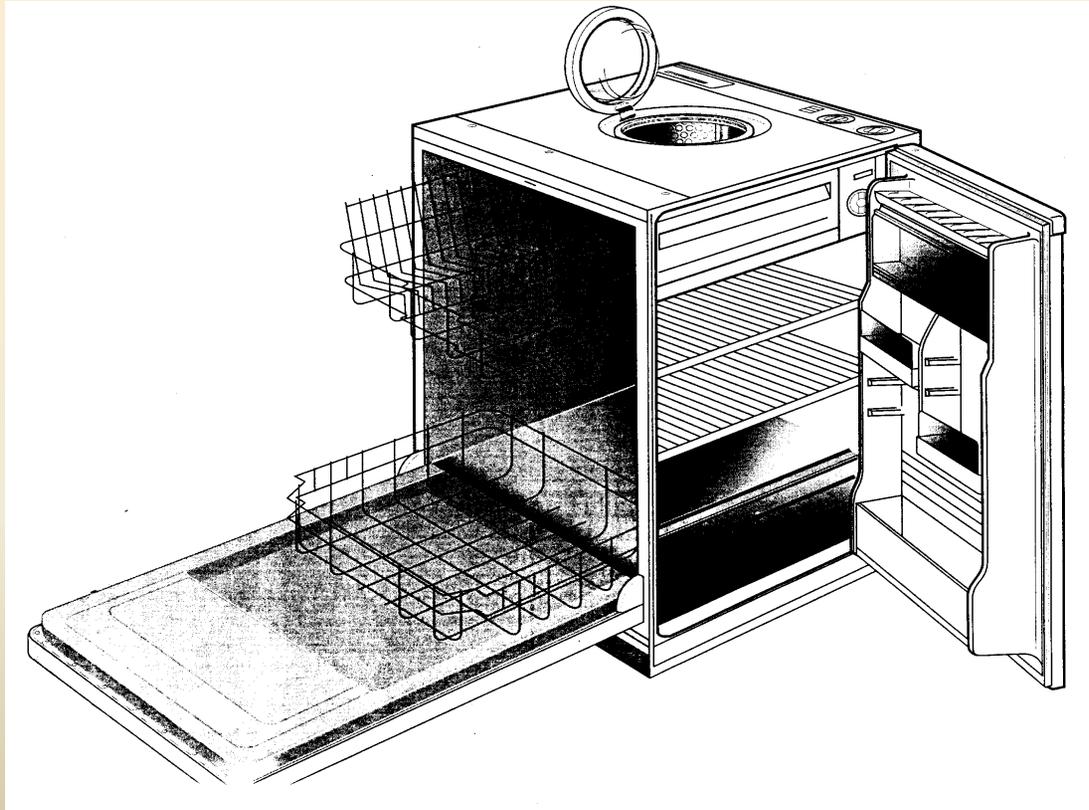
- Other Technologies

- Vending machine load controller
- ENERGY STAR light fixtures/CFL flood-security fixture
- High efficiency pool pumps
- ENERGY STAR heat pumps
- Common-use room occupancy sensors
- ENERGY STAR office equipment



Technologies for Multifamily

“Washerfridge”





Multifamily (MF) Market Transformation Program Design With No Direct Financial Incentives

The Southern California Edison(SCE)
Experience

CEEREEE Initiative Pilot Program

- Consortium for Energy Efficiency Residential Electric End-Use Efficiency (CEEREEE) Initiative Program for SCE
 - Bill Grimm/Karen Greenberg-SCE; Ed Wisniewski-CEE
 - Initiated mid-year 1998
 - Original concept was “aggregated volume purchase” for SCE’s residential sector customers
 - Efforts focused on private multifamily as “volume” purchasers of equipment

CEEREEE Program Objective

- With no reliance on direct financial incentives, create a permanent change in multifamily sector purchase behavior for retrofit/replace with highly efficient/ENERGY STAR:
 - Exterior and common area lighting
 - Refrigerators
 - Dishwashers
 - Wall/window air conditioners (AC)
 - Coin-operated, family-size clothes washers

Characterize MF Accounts and Properties

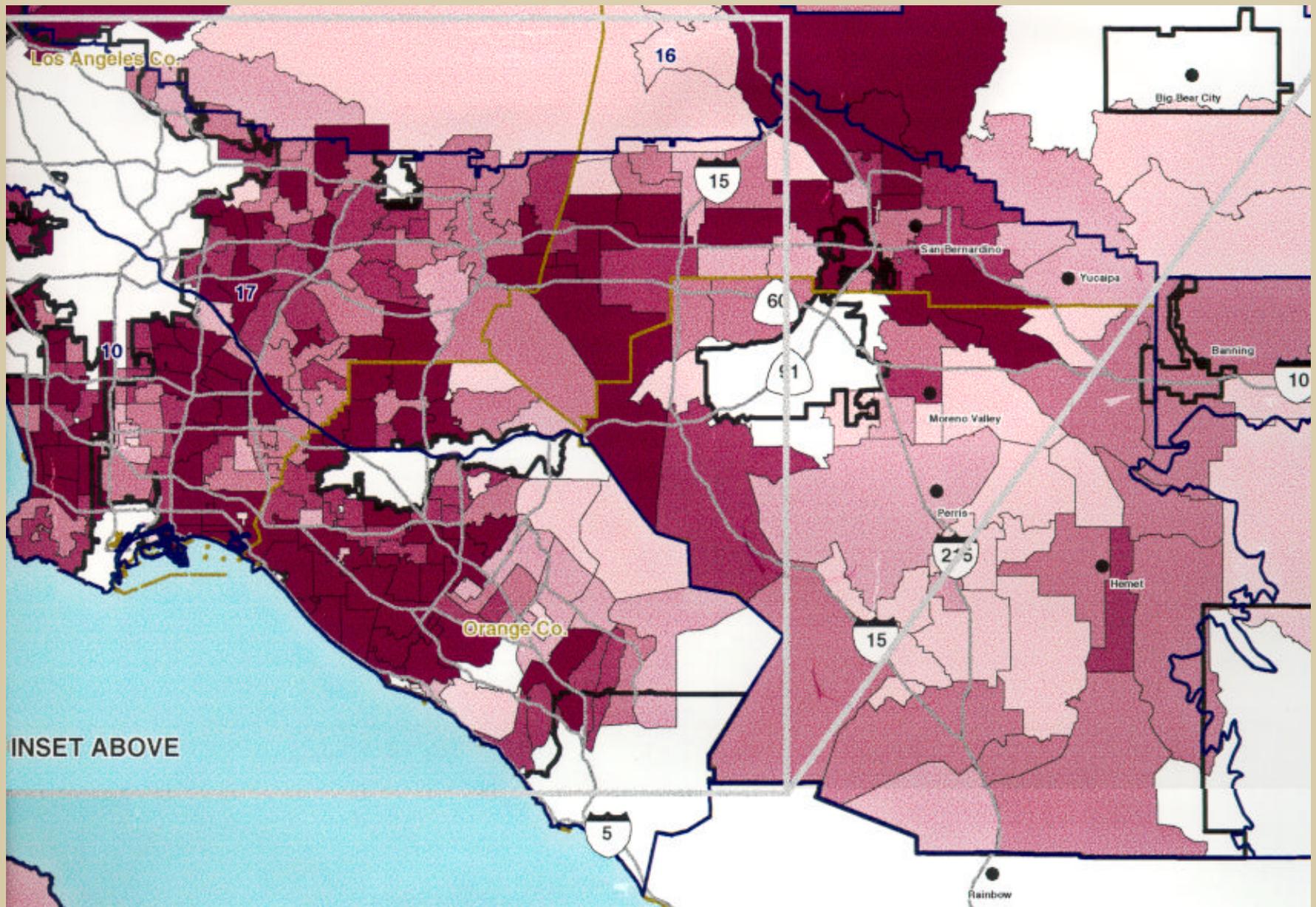
- From SCE customer account data we gleaned the following:
 - MF relative to total residential accounts
 - Owner/operator relative to tenant accounts
 - Property size (number of units/property)
 - Property location by zip (density)
 - Property ownership (private vs public)

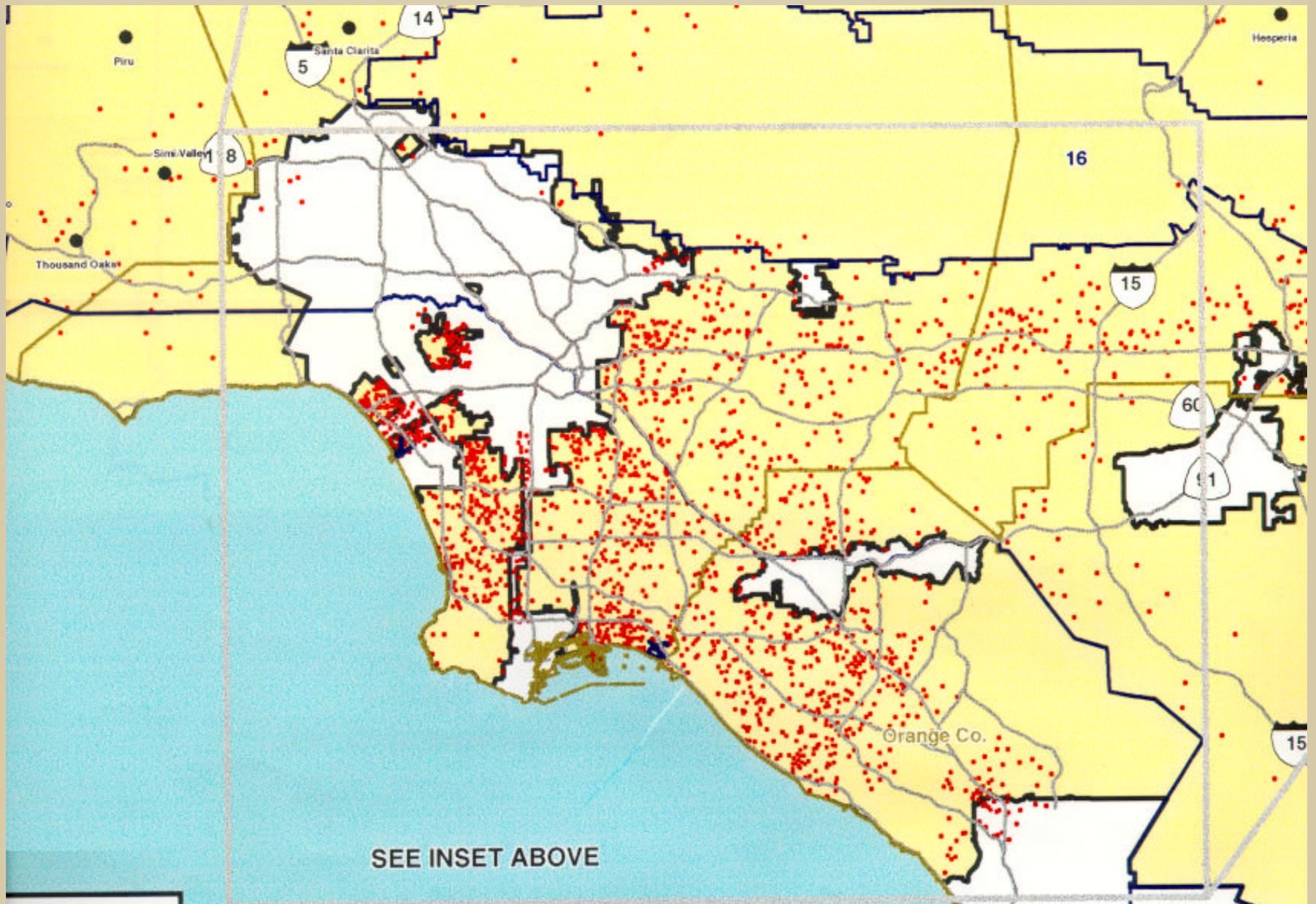
Characterization Results

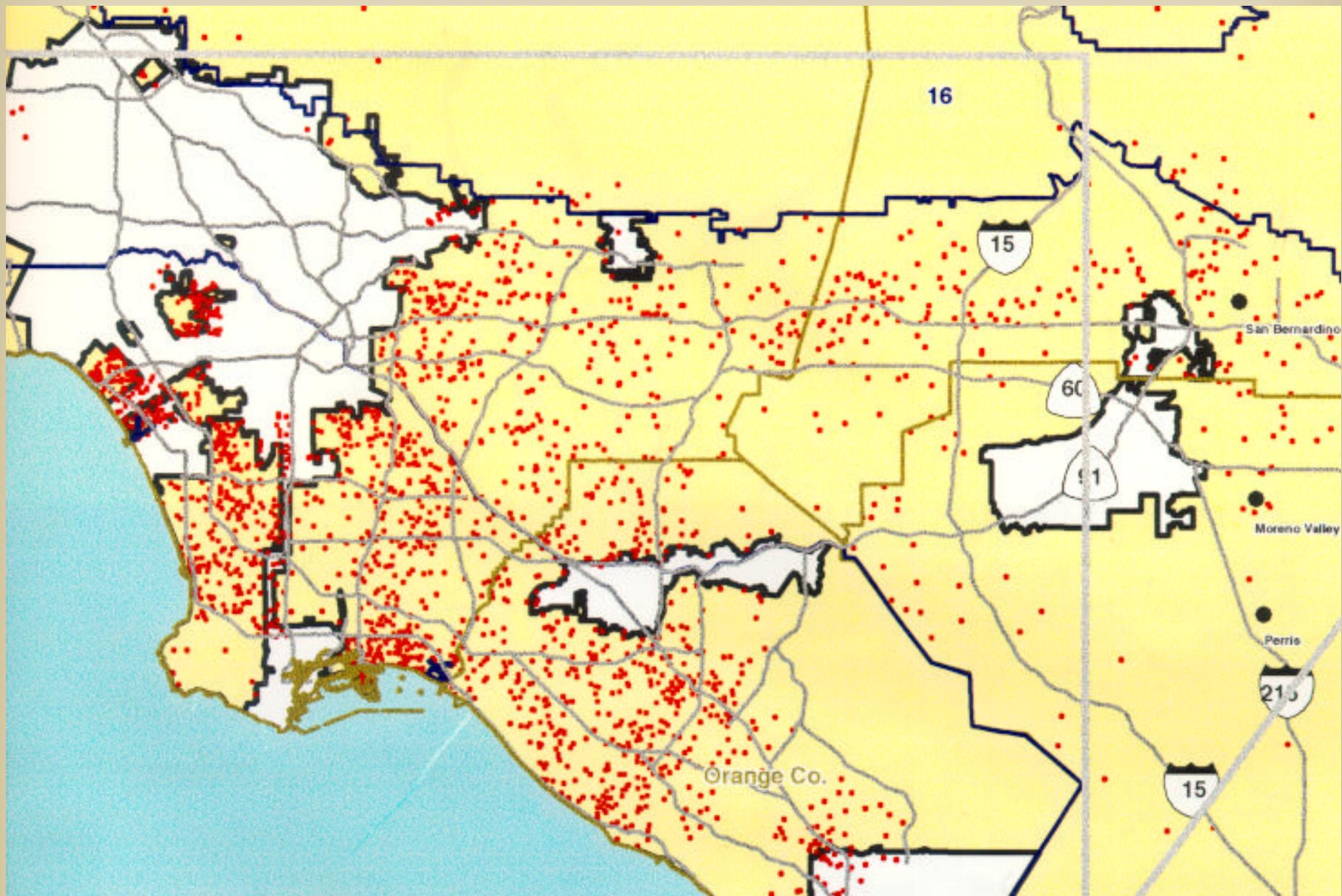
- SCE owners/operators assigned commercial tariffs at MF properties
- ~1,000,000 owner/operator & tenant accounts representing 28% of total residential accounts and 17% of residential kWh sold
- Ratio of 12 tenants accounts to 1 owner/operator account

Characterization Results- Distribution

- 81,000 MF properties
- Less than 1% is public housing
- 58,000 (70%) are in Orange and LA Counties
- 22,000 (38%) in Orange and LA Counties have 5+ apartment units per property



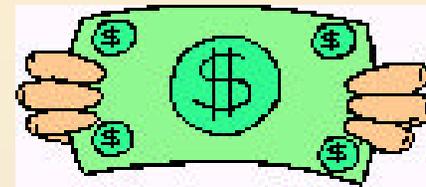




Characterization Results: Electric Billing Data

- Aggregate owner/operator+tenant electric bill is ~\$460 million/year

but



- \$90 is average monthly owner/operator bill
- \$32 is average monthly tenant bill

(Average monthly single family residential bill is \$83)

Cost-Effective Program Design and Delivery Challenge

- For tenants who spend only ~\$30 a month on electricity!!??
- For owners/operators who buy most appliances and equipment for tenants but don't pay the electric bill!!??



General Strategy

- Pursue the owners/operators because:
 - Owners/operators have the higher bill
 - Owners/operators make *daily* purchasing decisions
 - Owners/operators, or their managers, have onsite and frequent contact with tenants
 - We may be able to find a way to cost-effectively reach the tenants through owners/operators

Focused Strategy

- Private multifamily (PMF) properties
- Orange and LA Counties
- Properties with 5+ apartment units
- Apartment/landlord associations

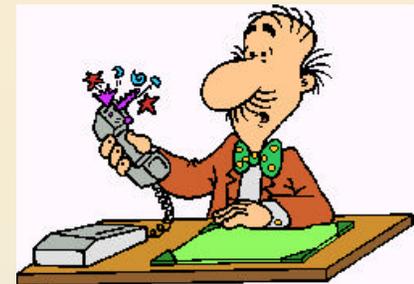


Focused Strategy

- Why properties with 5+ units?
 - Higher owner/operator bill per property
 - Higher owner/operator bill per apartment unit (because of pool, office, recreation room, laundry, etc.)
 - Greater chance of having an *onsite* manager who can serve as gateway to tenants

Program Design Elements

- Understand owners/operators
- Build relationship with apartment associations
- Identify low first-cost ENERGY STAR appliance or lighting products
- Build relationship with manufacturers and regional representatives
- Identify appliance or lighting *distributor(s)*
- Negotiate lowest possible first cost
- Promote purchase of specific appliance or lighting through selected distributor(s)



Understand Owners/Operators

- Based on meetings, discussions and surveys:
 - Purchase price overwhelms other considerations
 - ENERGY STAR logo is not understood
 - Replace lighting and appliances on failure; little warehousing or storage
 - Do not want to change traditional suppliers
 - Apartment association is credible and trusted information source
 - SCE is credible and trusted information source

Apartment Associations Play Key Role

- Between 25% - 70% of PMF owners/operators in Orange and LA Counties belong to at least one apartment association
- Owners/operators trust their apartment associations
- Apartment associations are a vehicle for program implementation and promotion

Build Relationship With Apartment Associations

- Identify largest associations
- Join association in the name of the utility
- Apartment associations will support activities that demonstrate “value added” to members and prospective members



Identify Specific Low First-Cost ENERGY STAR Appliance or Lighting Product

- Owners/operators and tenants are extremely sensitive to first cost and timely availability
- Need to target a specific appliance or lighting product (i.e., 18 ft³ refrigerator, Model 123, made by company ABC)
- First-cost must be near or below the first-cost of lowest-cost non ENERGY STAR alternative -- without incentives if possible



Build Relationship With Appliance Manufacturers

- Need to target manufacturers who appear to have lowest-cost ENERGY STAR appliance or lighting product of interest
- Need to secure manufacturer and regional sales representative commitment to “play” and to find the best distributor(s)
- Need to make manufacturer, sales representative and distributor aware of utility commitment to promote and pay for advertising through multiple venues

Identify Appliance or Lighting Distributor(s)

- Must be member of apartment association “product supply council”
- Must be “known” by purchasers
- Must have support of manufacturer and regional sales representative
- Must have support of apartment association officers



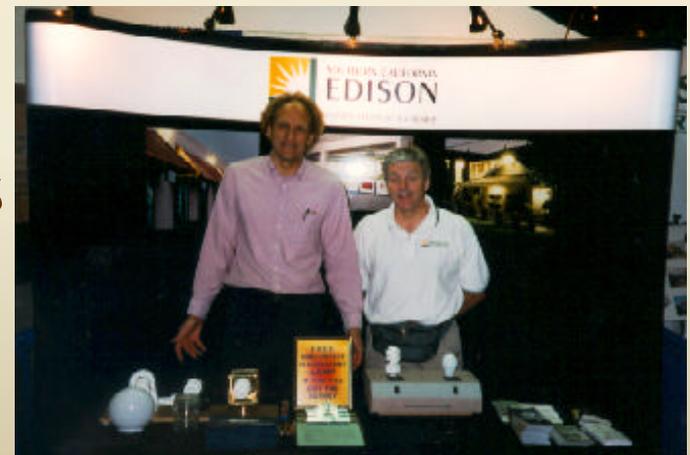
Negotiate Lowest Possible First Cost

You just need to hammer out the deal---
whine, cry, grovel, arm-twist, threaten,
sweet talk—whatever it takes
(but do it from a position of market knowledge!)



Promote Specific ENERGY STAR Appliance or Lighting Product

- Attend apartment association trade shows
- Hold drawings for product giveaways
- Advertise lighting/appliance in apartment association monthly journals
- Produce association mailings/stuffers for members
- Write “technical” articles in apartment association journals
 - Under Battelle PNNL byline
 - “Ask Mr. Maintenance” feature column



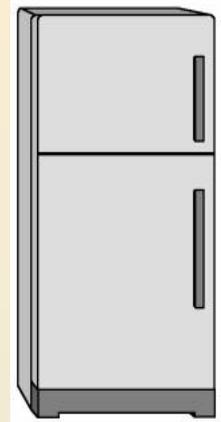
ENERGY STAR Screw-In Sub-CFL Direct Purchase Pilot Program

- ~500,000 incandescent bulbs in exterior and common areas with electric bills paid by owners/operators
- Sales less than expected
 - ~50% of owners/operators not familiar with screw-in CFLs
 - Underestimated required marketing effort
- Need sustained and targeted marketing and education activity to entice first time buyers
- Need to transition direct purchase to traditional retail/distribution channels



Super-Efficient Refrigerator Purchase Pilot Program

- Targeted ~10,000 owners/operators representing 100,000 – 150,000 tenants
- ~7,500 15 ft³ refrigerators owned by owners/operators in place – believe that none were ENERGY STAR
- ~750 15 ft³ refrigerators replaced annually
- ~45% are now being replaced with the 15 ft³ Magic Chef - with NO incentives.



ENERGY STAR Appliance Purchase Pilot Programs

- Owners/operators replace ~100,000 dishwashers per year
 - ENERGY STAR dishwasher (Amana) launched April 1, 2000
- Window/wall AC targeted for July
- Owner/operated-owned coin-operated family-size clothes washers (~50% of the replacement market) targeted for September



Multifamily Program Announcement

Southern California Edison Launches New Program for the Multi-Family Housing Industry



Southern California Edison is initiating a **new program** to help private multi-family housing owners, operators, managers and their tenants to reduce future electricity bills. A primary component of this program is to **identify new and emerging energy**

efficient lighting, appliances and building equipment, and to introduce these products to the multi-family owners, operators, managers and their traditional suppliers through negotiated volume discount pricing.

The goal of this program is for more high-performance products to be readily available to the multi-family community at the lowest possible cost.

The program is focused on new - but proven products and technologies that are not yet being offered nor procured and installed in significant quantities by the multi-family housing industry.

NEW SUBCOMPACT FLUORESCENT LAMPS

An example of one of the newest and greatest cost-saving technologies is the subcompact fluorescent lamp. These "sub-CFLs" are coiled like a spring and thus small enough to fit virtually any existing porch light, walkway, hallway or carport fixture, or post lamp that currently uses standard screw-based incandescent lamps.



They are available in 15-watt versions that thus will replace 60 to 100-watt incandescent lamps with equivalent light output. These new sub-CFLs carry an unconditional guarantee of 10,000 hours, or 10 times longer than an incandescent lamp. For most exterior and cold-weather applications, replacement typically on 12 hours/day, the life span will be less than 6 months. The net savings of \$15/year per lamp is based on a 100-watt incandescent lamp that has a life span of 1,000 hours as compared to a sub-CFL for as long as 10,000 hours continues to be used.

ADDITIONAL TECHNOLOGIES

Southern California Edison is introducing an entire suite of cost-saving technologies:

- refrigerators
- dishwashers
- room air conditioners
- heat pumps
- electric water heaters
- clothes washers/electric dryers
- exit signs

Other technologies may be available through the multi-family housing program.

HOW TO GET INVOLVED

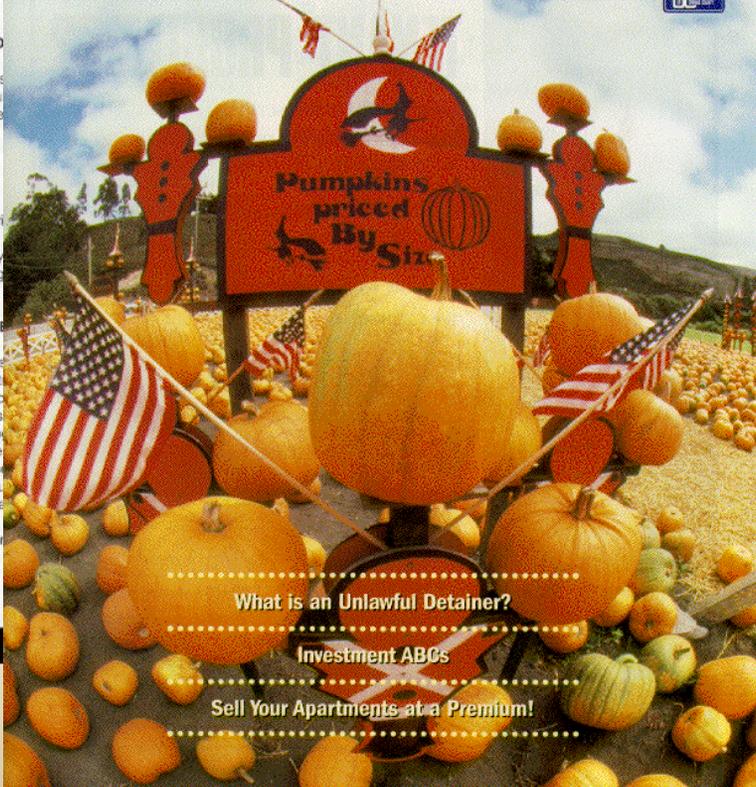
Southern California Edison is offering local and regional apartment property management companies, owners, operators and suppliers the opportunity to implement this new program. To receive electric service under the program, you must receive electric service from Southern California Edison to receive the program. To find out more about the program, please call 1-888-792-8468 or email: theresa.odel@pge.com

SURVIVAL SPANISH SEMINAR — SEE PG. 65

APARTMENT NEWS

THE OFFICIAL PUBLICATION OF THE APARTMENT ASSOCIATION OF ORANGE COUNTY

VOL. XXVII • OCTOBER 1998



What is an Unlawful Detainer?

Investment ABCs

Sell Your Apartments at a Premium!

Super-Efficient Refrigerator Program Advertisement

Save Money with New Highly Energy Efficient Refrigerators

Now you and your tenants can save money on the cost of new ENERGY STAR® apartment-size refrigerators, and your tenants can save \$100 per year or more on their electric bill.



Maytag's 15 ft³ and 18.5 ft³ Magic Chef®

are among the lowest cost ENERGY STAR® refrigerators and are 31% more efficient than standard models, making these the most efficient ENERGY STAR® refrigerators of their size.

These durable refrigerators were specifically designed for apartment use and are backed by the Maytag warranty and service agreement.

Special Offer

Maytag's 15 ft³ Magic Chef®
Model #CTN1511

\$384⁰⁰

plus \$15 delivery

Maytag's 18.5 ft³ Magic Chef®
Model #CTN1911

\$492⁰⁰

plus \$20 delivery

How do I get this Refrigerator?

You and your tenants may purchase these refrigerators at these low prices by mentioning your apartment association name and that you are a SCE customer.



Builder's Appliance Supply, Inc.

1745 N. St. Thomas Circle
Orange, CA 92865
(714) 637-0420



For more information

Call toll free at: 1-888-792-8468

E-mail to: Theresa.Odell@pnl.gov. or

Log on at: <http://www.energystar.gov/products>

HOW TO

AAGLA

By Bill Currie, Battelle, Pacific Northwest National Laboratories

Clip And Copy For Your Tenants New High-Efficiency Refrigerators Save You And Your Tenants Money

New high-efficiency refrigerator models are now available that you can purchase at the same price as regular refrigerators. These refrigerators provide exceptional value to both the buyer and the person paying the electric bill. One model in particular, the Magic Chef 1511, was designed specifically for apartment living. It is exceptionally durable and is the most energy-efficient apartment size refrigerator made. The Magic Chef 1511 just recently has been introduced to this area and is being offered to association members and their tenants at a very attractive price.

two local Maytag distributors, the Magic Chef 1511 is now available to association members and their

Table 1 compares electricity use and savings from the Magic Chef 1511 with that from a new standard refrigerator and old refrigerators of the same size as the 1511.

As you can see, the savings are amazing and can be over \$100 a year when compared with an older refrigerator.

LOW PRICE

Under a special promotion from

tenants for just \$384, or \$399 delivered—an unbeatable price for the

Table 1
Magic Chef 1511 Refrigerator Savings Comparison¹

Refrigerator (15 cu. ft.)	Electricity Use (kWh/yr)	Magic Chef 1511 Savings (kWh/yr)	\$ Saved per Year
Magic Chef 1511	437	---	---
New standard	606	199	24
Order-average use	1042	605	73
Older-high use	1588	1150	139

¹ Data provided by U.S. Department of Energy

Super-Efficient Refrigerator Article

"the voice of the industry" NOVEMBER 1999 \$4

apartment age

TRADE SHOW SCENES
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value and size to the Magic at a low price.

LOTS OF SAVINGS

The Magic Chef 1511 uses less electricity for the person paying the bill than any other refrigerator in its size class. The Magic Chef 1511 uses less electricity than new standard refrigerators of the same size as the 1511.

As you can see, the savings are amazing and can be over \$100 a year when compared with an older refrigerator.

You will get a real service if you buy refrigerators, ask your tenants, ask your electric utility, and ask the Magic Chef 1511. It will go down and

DURABLE FIT

The Magic Chef 1511 is a rugged unit commonly used in public places. It is well anchored and the

Super-Efficient Dishwasher Program Advertisement

Water and Energy Efficient Dishwasher Saves You Money

Amana



Model #DWA22A
(Height 33 1/4", Width 23 7/8", Depth 24 1/4")

Save Money 2 Ways!

The new **ENERGY STAR®**
dishwasher is among the
lowest cost dishwasher made,
plus you can save over
\$40⁰⁰ per year.

Special Price
\$198⁰⁰

delivery and hookup available

Where can I purchase this dishwasher?

This dishwasher is available at this special low price for Association Members.



**Builder's
Appliance
Supply, Inc.**

1745 N. St. Thomas Circle
Orange, CA 92865
(714) 637-0420



For more information
Call toll free at: 1-888-792-8468
E-mail to: Theresa.Odell@pnl.gov. or
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