

# Additional Peak Load Control Technologies For Small-Medium Business Customers

## 2005 Market Research

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**BOICE  
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GROUP**

**BUSINESS DEVELOPMENT SERVICES**

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# ADDITIONAL PEAK LOAD CONTROL TECHNOLOGIES FOR SMALL-MEDIUM BUSINESS CUSTOMERS

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## Executive Summary

SCE offers many programs to its small and medium-sized business customers (SMBs), and has recently fielded small-scale trials of advanced thermostats and additional control technologies (ACTs) with a few SMBs. Looking forward to a regime of time-based rates with Critical Peak Pricing (CPP), automated metering, and continued load management challenges, SCE is now working to define the role SMBs should play on those hot summer afternoons when load is under strain, and customer energy management could help.

This review of SCE's recent SMB enabling technology pilot program tells the following story:

- *SCE is investigating the role SMBs should play in its small customer demand response strategy. An effective SCE SMB strategy would include tens of thousands of loyal SMBs.*
- *To test the potential of enabling dynamic electricity pricing among SMBs, SCE recruited SMB customers into a pilot program that offered advanced thermostats and an ACT (in this case, a Dencor energy management system).*
- *The SMBs in SCE's trial were thrifty customers, who generally have little time for energy management, but are open to its benefits. They sought savings on their electric bills, and expected their thermostats and energy management systems to work reliably, without disrupting their operations.*
- *Trial participants were only ready to commit to a peak load management program, and recommend it to others, once the program's savings were proven to be significant, and the program's performance was proven to be reliable.*
- *SCE's energy management programs now offer SMBs proven savings and reliable performance. But SCE's energy management offerings need to be more complete -- they need to include a suitable rate, investment decision support, and on-site attention.*

- *An economical SCE SMB enabling technology strategy would focus on specific SMB segments, targeting a specific message, through specific channels, to selected targets. ACTs are not for everybody.*
- *The most attractive SMB segments for enabling technology are franchisees and SMBs who own their own facilities (e.g., restaurants and convenience stores). Builders, building owners, property managers, and tenants are less promising segments.*
- *SCE's message to these attractive SMB targets should be: for you to stay competitive as energy costs rise, you need energy management from SCE -- you will save money, and your business won't be disrupted.*
- *The channels who can best carry SCE's energy management message to SMBs are specialized SMB media, and specialized SCE business partners.*
- *SCE's SMB enabling technology strategy should offer complete energy management offerings to selected SMBs through channels they trust.*

Below, we explain the background and objective of the research that led to these observations, our research design and procedures, and our findings.

## **Background**

### ***1) SCE is investigating the role SMBs should play in its small customer demand response strategy. An effective SCE SMB strategy would include tens of thousands of loyal SMBs.***

One of the many energy management initiatives fielded by Southern California Edison (SCE) during the past three years has investigated the role SMBs might play in demand response events on challenging summer afternoons.

Other work has indicated how to involve larger businesses and residential customers in demand response events. Large customers are distinguished by the potential of large load shed, and often have energy management staff. Residential customers are distinguished by the flexibility many of them have in shedding load, and the members of their households are often the only ones affected by load shedding and shifting.

The collective energy load of SMBs represents a tempting target for load shed, and equity would suggest these customers should do their fair share to help SCE manage load, yet the potential of SMBs is difficult to access. SMBs individually shed load in small amounts, lack energy management staff, have little flexibility in business operations, and must be concerned about employees and customers in their premises.

In earlier work, SCE has found that advanced thermostats controlling air conditioning at SMBs can provide a substantial contribution to demand reduction. In one trial, SMBs tested combinations of a Critical Peak Pricing (CPP) rate and thermostat-based load control. SCE also completed substantial market research among SMBs as part of this prior work.

### ***2) To test the potential of enabling dynamic electricity pricing among SMBs, SCE recruited SMB customers into a pilot program that offered advanced thermostats and an ACT (in this case, a Dencor energy management system).***

SCE next turned to the SMB load control opportunity beyond thermostat regulation of air conditioning. What opportunity might there be for SMBs to deploy ACTs, such as enhanced lighting controls and systems; heating, ventilating and air conditioning (HVAC) controls, and even energy management systems?

Turning again to the customers who had familiarity with time-based electric rates and advanced thermostats, SCE asked Lockheed Martin Aspen Corporation to recruit a set of these SMBs to trial a full-scale energy management system among customers on a Critical Peak Pricing rate (CPP-V).

Lockheed Martin Aspen had very limited information about these customers, who were not selected based on any criteria other than their prior SCE CPP rate experience. With such a small sample to draw from, no further target marketing was employed in recruiting. Across two years, telephone conversations followed by site visits eventually led 20 customers to participate in the SCE trial of advanced energy management systems.

The SCE trial emphasized successful installation, operation, and utility monitoring of the advanced energy management systems. From this perspective, the trial succeeded for almost all of the participants almost all of the time. Customer training and support was provided on request, but few customers chose to be deeply involved with the trial.

## **Objective**

At the conclusion of the field trial with these 20 SMBs, SCE asked the Boice Dunham Group (BDG) to investigate these customers' experiences, and within the modest scope of the project, to identify the SMB demand for ACTs such as energy management systems, and recommend how best to achieve customer adoption of these technologies within the context of a dynamic electrical tariff.

The objective of the research was to provide guidance to SCE about how to address the potential for demand response among its SMB customers.

## **Research Design and Procedures**

The project's modest budget and customers' unavailability precluded comprehensive on-site interviews. Instead, we used three other techniques:

- Background research into: investment decision-making by SMBs; SCE and Lockheed Martin Aspen activities during this trial; and best practices in marketing to SMBs;
- Telephone interviews with SCE customers who had accepted advanced thermostats --both those who had declined to accept an advanced energy management system, and those who had accepted a system;
- Business Dialogues with experts in the fields of SMBs, energy efficiency & conservation, and SCE's programs in these areas.

Our background research focused on identifying how SCE would best launch a major commercial program for SMB demand response program participation. Such a program would be quite different from a small-scale product field trial. Estimating the nature, context, and intensity of customer demand for energy management based on SCE's field trial alone would be misleading. It is more helpful to know why SMBs invest in any systems based on advanced technology.

The 15 telephone interviews focused on the target SMBs' decisions about installing thermostats and energy management systems, their experiences with these technologies, and their attitudes about ACTs. Cypress Ltd. staff conducted our outbound telephone survey according to an instrument we designed, which is reproduced below in an appendix. We also conducted additional conversations with some of the 20 customers who accepted advanced energy management systems.

Each of the three Business Dialogues® brought together 7-8 panelists expert in our target areas of SMBs, energy efficiency and conservation, and SCE's programs. We moderated the three-hour interactive panels, which were held at Trotta Associates market research facilities in Irvine and Marina Del Rey, as well as at the annual meeting of the American Energy Services Professionals (AESP) in San Diego. Attendees are listed in an appendix below. The Business Dialogues® focused on how best to meet the SMB demand for energy management.

### **Findings: Customer Perspective**

Our telephone survey attempted to reach 50 customers who had installed advanced thermostats and were participating in Critical Peak Pricing: of these, 15 were interviewed, 23 received repeated messages but were never available, 7 had numbers no longer in service, and 5 declined to be interviewed. Of the 15 customers interviewed, 7 were customers who had also installed Dencor energy management systems.

We also spoke with some of the Dencor customers in additional telephone conversations and with two customers at length during the Business Dialogues<sup>®</sup>. Below, we summarize their story.

***3) The SMBs in SCE's trial were thrifty customers, who generally have little time for energy management, but are open to its benefits. They sought savings on their electric bills, and expected their thermostats and energy management systems to work reliably, without disrupting their operations.***

**Program participants sought savings on their electric bills.**

Participants offered a variety of reasons why they chose to install advanced energy management systems when they did. Several could not recall why they agreed to participate in the program, or were left to implement a decision made by someone else. Other participants misunderstood what they were getting, or what they were giving up. Few participants had analyzed the trial's results. But all had the same objective: savings.

SMB customers install energy management measures in order to save money, and many SMB customers believe that energy efficiency was good for business (i.e., was an investment that should pay off). However, these customers also believe that avoiding initial investment (e.g., free thermostats) is a good thing. Customers who agreed to trial the Dencor system also liked to trial new technology.

Some customers heard that they might not save money unless they changed business practices, and they should be interested in energy management in order to prepare for a new time-based rate regime. Even these customers were looking for the bottom line: these new energy management technologies would be valuable only if they provide savings, one way or the other.

**Program participants expected their thermostats and energy management systems to work reliably, with little impact on their operations.**

We hypothesize, based on the small sample interviewed, that many customers who received thermostats were challenged to get them working right. Some succeeded, some failed. *"We try to keep it programmed,"* one interviewee said, *"but it does not stay programmed; if it gets too hot we override it, and then SCE*



*cuts us off.*" Many customers got less help than they would have appreciated. *"Once it was installed no one took the time to show us anything,"* one customer said.

At least a few made very expensive mistakes and ended up intensely disliking the program. For example, one thermostat-only interviewee noted:

***"No one took the time to explain how the program worked, so this ended up costing our non-profit organization thousands of dollars in excess electric bills and the money to put our system back the way it was before they installed the new thermostats."***

No surveyed customers who opted for the Dencor system reported a bad experience with thermostats. While some customers who opted for the Dencor system had nothing in particular to report about their experience, many customers who opted for the Dencor system were very pleased with its operation.

Proper operations was a necessary but insufficient attribute of a successful energy management technology, according to surveyed customers. Most important was the bottom line: the cash savings provided. While customers were aware that these net savings related to their new time-of-use rate, some surveyed customers either did not understand their new rate, or regarded it as a negative feature. One interviewee summed it up as ***"terrible in the summer and good in the winter."*** Another customer provided a more graphic description:

***"Had I known that the rate was going to change like this, I would have never done this. I felt like I had been bent over in a dark alley.... I really would like my money back."***

One of SCE's goals in the program was to discover what changes in business routine SMBs would accept in a demand response program. SMB program participants, on the other hand, were aiming to minimize changes in their business routines, while achieving real savings.

The program helped some participants to identify, select, and manage acceptable changes. Many of those customers who took the extra step to receive a Dencor system from SCE invested enough time to appreciate its potential impact on their operations. But other participants, particularly among those who only had advanced thermostats, never engaged with the program, and in the worst cases, found their business routines disrupted and their costs increased.

***4) Trial participants were only ready to commit to a peak load management program, and recommend it to others, once the program's savings were proven to be significant, and the program's performance was proven to be reliable.***

Program participants were open to ACTs offering proven savings.

Many customers agreed with a Dencor participant that they *"are always interested in learning about new ways to save money on our power bills."* But they would be more interested in new measures, if they knew how much they had already saved in this program: *"I would like to know if I had saved money on this program,"* on customer responded, and another said *"I would like to get an up to date comparison of the energy usage. I would be interested in knowing how much I saved, and how much I spent."*

Some customers still interested in savings were skeptical given their experience with the program. *"I would be interested in anything that would save me money,"* one customer said, *"like I thought this program was going to do. I am thinking this is a racket, in order to cost me more money, so SCE gets more money."* Another complained:

*"I am interested in saving money, but I don't like feeling like I have been swindled or lied to about a program. Or, when signed up for a program, I would appreciate that it was explained to me in more detail, and if I call to get information, not leave me hanging."*

Most of those customers surveyed who were interested in ACTs were *"not really sure"* what they wanted: *"lighting, machines?"* one wondered. But even when they didn't know what ACTs were available, customers were open to them. *"Windows, lights, whatever,"* one suggested, while two Dencor customers said *"not sure what else we can do, but I am open to suggestion,"* and *"I don't know, but whatever you have, you can send me."*

Program participants were only ready to recommend a program that provided proven savings.

While customers believed the thermostats and their energy management systems were designed to save money, many surveyed customers did not know how to confirm their savings. As a result, the primary customer benefit of the trial was

unclear to many surveyed customers, some of whom were skeptical, and some of whom chose to believe they saved money.

*"I think it is saving me money,"* one interviewee said, while another noted, *"I have not figured out what I saved. I think the high rates have hit us when we don't have much money. They called and tell us to turn down the usage. The old rate may be better."* Dencor customers tended to believe their savings were substantial.

A few customers claimed they had initiated additional energy conservation and efficiency measures after they had received their new thermostats, including adding occupancy sensors and retrofitting lighting systems. There were also some employee information sessions. All of these additional steps were undertaken in order to save money.

Some interviewees also reported that they had discussed the program with others during its operation. As would be expected, dissatisfied participants were vocal: *I have been so upset about this TOU program that I just tell people to stay away from it. Don't do it, stay away from it,"* one said, while another told others *"how horrible this program was, and how it cost me thousands of dollars in utility charges, and thousands of dollars to put the system back the way it was."*

But satisfied participants were also vocal, particularly Dencor customers. One advocate said *"we often discuss this with a variety of people"*, while another told others *"how much I saved on my bill over last year,"* and a third explained *"how it helped me to reduce my overall electric usage and lower my electric bills."*

When asked if they would like information on other energy conservation and efficiency measures, customers were divided. Some declined outright: e.g., *"No, we are pretty much doing all we can at this point to save energy,"* one said, while another commented, *"No, I really don't have the time or the money to put into an entire retrofit,"* and another agreed, *"we don't have the money to change out a bunch of equipment."* A Dencor customer in the energy business said *"No, this is our business and we have all of the information."*

#### **Proven savings are the difference for participants between nice-to-have ACTs, and need-to-have ACTs.**

One customer summing up his experience in the program began by noting the message that successfully recruited him: *"here's a technology that is going to save you some money, and if you install it it's free, so you don't have to pay anything, and the end results are going to be some savings on your electric bill."*

*"So...nothing to lose, "he thought, and then he asked, "How long is it going to take? Is this going to interrupt the business?" He was told: "Nope. We're just going to come in. We're going to just change the thermostats that you have right now."*

So this customer came to live in the future SCE anticipates, with a time-based rate, Critical Peak Pricing, and an advanced energy management system. His SMB is *"using the thermostats"* and he knows *"the thermostats are connected to a computer"*. His SMB is a 9:00 – 5:00 pm office operation:

*"The only electric consumption that was focused on was the air conditioning and besides the air conditioning we have some lights, we have some computers and pretty much that's it. We have the fluorescent lights... and air conditioners on demand during the peak hours of the summertime when it's hot."*

But this customer emphasizes, *"We haven't seen the savings. The rate plan changed. We were on a 24-hour rate plan that went on a Critical Time and that has offset the savings, basically....We haven't really realized anything."* As a result, asked if he would recommend the program to a friend, this customer responds:

*"I wouldn't have a strong negative response, but I wouldn't be positively promoting or encouraging him to do it.... If the client or if my friend is in the same office environment that we are I would say "It's a nice technology but you wouldn't really benefit from it." "It's not going to save you money off of your electric bill."*

Another customer initially opposed participation in the SCE trial because she thought:

*" They're going to turn my power off when I need it and it's going to be a pain for the managers. And you know what? We're about selling chicken. I know we need the electricity but I don't want to think about it - I just want to flip the switch and have it work."*

Many SMBs agree with this customer that *"the proof is in the pudding,"* but it isn't clear up front how much work the pudding will take to prepare, and how successful it will be. This customer noted that *"if you're busy, you're managing your business and you don't need someone throwing wrenches in that's going to be more work. Let's face it,"* she adds, *"our job is to make sure we serve good chicken, it's not to worry about whether or not the air conditioning is on too high."*

She was worried about air conditioning from the perspective of her customers. When the facility loses *"power about three days in a row...when its 100 degrees*

*out,*" as it did last year, the importance of air conditioning becomes obvious. Thus peak load control seemed to her more of a risk than an opportunity.

But the franchise owner insisted on the system, and the manager changed her mind. *"It's been great,"* she now says. She discovered the Dencor unit had *"saved us about 14%"* compared to prior energy costs. She compliments the SCE/Aspen team because *"they really worked very closely with us in saying that these are the times that these things are going to happen,"* and *"we just have not had problems with it."* Thus the *"savings have really been with very little work from the GM, if any."*

Now she wants to get systems for her other franchisees, particularly for her stronger General Managers who are organized, and focused on operating costs. *"I think we could actually do more with it,"* she says, *"if you put in units where people are just really committed to it, and are going to watch it, it would probably have even bigger savings."*

Some General Managers are *"very good at just running the unit -- making sure that the chicken that goes out the door is right,"* but others could manage energy as well as the restaurant. She now believes that the SCE program *"would work for anyone, because if someone who's not as organized can make it work, and can have those savings, then someone who's really organized could come in and really put some numbers behind this."*

We can sum up the customers we spoke with as focused on reliable performance, and proven savings.

**First, if ACT performance is unreliable or demands too much attention, customers will reject these technologies.** Not all SMBs who had previously accepted thermostats would be more prepared for ACTs, and more interested in them. In fact, it may well be that many SMBs who had previously accepted thermostats, and found their performance lacking, would be less likely than typical SMBs to have another even more challenging lesson in energy management.

**Second, SMB customers install energy management measures in order to save money.** Energy savings and environmental concerns are peripheral. SMBs are open to new sources of savings, from any direction, so if ACTs offer proven savings, SMBs will try them. But if the savings from ACTs are not proven -- no matter how powerful these measures seem -- the SMBs may not try them, and will not advocate them.

## Findings: Expert Perspective

In order to place our customer conversations into perspective, our three Business Dialogues® brought together 21 panelists expert in our target areas: (1) SMBs, (2) energy efficiency and conservation, and (3) SCE's programs. Many of the attendees were not only expert in these fields, but also operated SMBs themselves.

The experts' views ranged widely across the topic at hand. Below, we have integrated their views into an account of how SCE could best meet the SMB demands for energy management.

### **Faced with rising costs, increased competition, and power interruptions, California SMBs have little flexibility to fight back.**

As if it weren't challenging enough to be a SMB in the first place, Southern California SMBs face rising costs, intense competition, and the threat of power interruptions. Any cost savings is welcome, but working as they are on slim margins in a volatile economy, Southern California SMBs can barely afford to invest in their futures, let alone experiment with new technology.

The Southern California economy for SMBs is characterized by rising costs for benefits, taxes, and energy. *"We need some cost savings someplace,"* a Dialogue participant commented. Another participant, an engineer with a marketing background now working in commercial real estate, noted that SMB owners searching for new locations had told him they *"don't want to be in Southern California Edison because energy costs are too high."*

Furthermore, Southern California's SMBs are at the fighting edge of a trade-oriented economy with furious cost pressures. One participant described the competition for local SMBs as *"fierce at the moment, and it's only going to get fiercer."* He continued, *"the amount of trade...there's nothing else like it in the United States."* Over 70% of the nation's Chicago-bound containers, and over 30% of the New York-bound containers, pass through Southern California.

And the economy isn't the only source of volatility for these SMBs: a dialogue participant noted that *"when we had the rolling blackouts, small manufacturers were up in arms, and their production was really impacted."* She cited one integrated circuit manufacturer who lost \$100,000 worth of production on a single blackout day.

She emphasized that SMBs who recognize the costs of rolling blackouts will appreciate the value of energy management to avoid power interruptions, and

another participant said SMBs were *"aware that energy's a big item"* in their budgets, and offers the potential of cost savings. *"There is an increasing interest in minutia of how can we more effectively compete,"* a Dialogue participant observed, including around energy. One participant observed that SMB's *"are probably more hungry than the bigger businesses to find things they can do,"* so energy management could catch the attention of Southern California SMBs.

But demand response isn't a type of energy management well-suited to many SMBs. As SCE has noted, *"Small businesses cannot just leave, and go to the mall. Small business needs to be able to control their loads, in response to special pricing."* Another participant noted, *"the people they're doing business with are operating at the same hours as they are. You can't just simply shift your operational time because of people you have to contact and do business with; they're working in the same timeframe too."*

So although *"the ability to save a couple of hundred dollars per month is very, very appealing"* to SMBs, they may not be flexible enough to capture the opportunity, or successful enough to afford the time and money an investment would require. Only a strong case for proven, available savings will move them -- described by one participant as *"this is what we can do - we've got examples. We've saved these companies this amount of money. This is with our existing technologies. Now we have these, these, these and these technologies in the pipeline."*

**SCE has many programs for its SMBs, but SMB demand response poses its own challenges.**

SCE defines SMBs as non-residential accounts demanding less than 200 kW; these are 'unassigned' accounts lacking dedicated account representatives, unless they are units of a larger chain. SCE has about ~~VERIFY THIS NUMBER LATER~~ 300,000 of these SMB accounts, and their bills range widely, from averages of *"maybe just \$100 a month all the way up to \$100,000 a month."* Half of these SMB accounts are *"Mom & Pops,"* with 20 kW demand or less, *"and the rest graduate their way up."*

Even though it has only 10 staff dedicated to the SMB sector, SCE has *"lots and lots of programs"* for SMBs, *"even programs where a contractor that we've hired will go in and change all your light bulbs at no cost. We'll clean the filters. We'll do all that sort of thing."* Motivated by customer service, SCE's current SMB programs have been offered through traditional marketing channels and media, and have been taken up by those SMBs who have the initiative and persistence to become engaged.

However, SCE's demand response strategy has different requirements. Peak load reduction on hot summer afternoons is one of SCE's most important programs:

*"Sort of the last effort. When it's really hot and we're about to lose electricity in neighborhoods then we start pressing little buttons, we start adjusting temperatures and we start turning off lights here and there. Sort of like the last step before we go to the outage."*

Because the internal operating constraints motivating peak load management require reliable load control at scale, SCE and other utilities have built most of their demand response programs around their largest accounts -- those accounts who have some flexibility in their operations. One very large SCE customer is a good example:

*"They make concrete. They make cement, and they grind rocks. And they said 'You know, if you want me to stop grinding rocks at 3:00 I can do that because I'll just grind them at 6:00. It doesn't make any difference. I'll just turn the machines off and turn them on.'" So when we have a critical day I get a megawatt out of him -- a whole megawatt just out of one place."*

Dialogue participants wondered how much SMBs could contribute to a peak load management strategy. *"Maybe they shouldn't be going after the small guys,"* one suggested, *"maybe they're barking up the wrong tree."* Another agreed:

*"one company can create savings easily for the equivalent of 1,000 air conditioning units.... if you're really after saving, and eliminating your blackouts on those peak times, larger companies can contribute much more easily than small business, and it would be much more effective, and less costly to bring them in line."*

If SMBs were to play a role in peak load management, they would have to participate by the tens of thousands, and participate predictably.

Nevertheless, while it might take 1,000 SMBs to equal the contribution of one rock-grinding facility, SMBs make a tempting target for peak load management because SCE has over VERIFY 300,000 SMB accounts to recruit from. One Dialogue participant suggested that SMBs were probably about 98% of California's businesses, and represented over 50% of California's employment.

Another participant noted that a typical chain restaurant in mid-summer *"will peak at about 145 kW on a hot summer day"* and can be brought down *"to 125-128 kW, without any impact on the operations of the facility at all -- no complaints."*



Finally, participants noted that SCE's largest business customers, its SMBs, and its residential customers would all agree that every account class should share some burden of peak load management. Thus despite the challenges, some sort of SMB peak load management initiative would probably be necessary for SCE.

***5) SCE's energy management programs now offer SMBs proven savings and reliable performance. But SCE's energy management offerings need to be more complete -- they need to include a suitable rate, investment decision support, and on-site attention.***

**SCE will be challenged to supply the rate, investment decision support, and on-site attention involved in delivering energy management to SMBs.**

Before turning to the question of how SCE would design a SMB demand response initiative, it is important to note what ACTs are: what additional control technologies are available beyond typical air conditioning control? In our survey of program participants we asked about typical categories of energy control:

- energy audits
- electric bill reviews
- lighting management
- heating, ventilating, or air conditioning management
- refrigeration management
- hot water management
- management of other machinery or equipment
- insulation, windows, or doors
- employee training

These traditional energy conservation and efficiency technologies were supplemented in the SCE program with an advanced energy management system from Dencor Energy Control Systems.

One Dialogue participant in the business of supplying energy savings to SMBs also offered his list of typical control technologies:

### Recommended Measures for SMB Energy Savings

- Lighting occupancy sensors (regular or infrared)
- T12 to T8 or T5 (high ceiling) fixture conversion
- Day lighting (efficient sky lighting) use in warehouse space
- Air conditioning occupancy sensors (temperature set-back) with smart thermostats
- Air conditioning tune-ups and service
- HVAC outside air economizer with return and outside air temperature control
- vending and office machines Vending Miser® controllers
- Commercial manufacturing machines and equipment motor buss control
- Production cooling load plate and frame heat exchangers
- High efficiency windows
- Attic space, interior/exterior walls re-insulation

Source: Duncan Stark, Quality Control Systems

These are typically successful energy control technologies.

As noted above, survey participants were not particularly well-informed about ACTs, or interested in them. SMB energy management is sold, and not bought; few SMBs ever seek energy management on their own. Energy control as a means to an end for SMBs, and the end is: savings on their bills without disruption to their business. As a result, we need to turn our focus away from technology to focus on three other elements ACTs have in common.

First, the ACTs are provided to the customers under a utility rate of some sort, perhaps with rebates or financing available to help offset the costs. The rate is a key feature of any ACT, just as the price is a key feature of any product. SCE's enabling technology strategy expects to offer ACTs under an unusual rate, opt-out Critical Peak Pricing. Under different rates, ACTs are different products.

For example, SCE aims for energy management systems to reduce the coincident peak, to be deployed under Critical Peak Pricing, and to be purchased and financed with utility support. Most energy management systems to date have aimed to reduce energy all year long, the non-coincident billing peak, to be deployed under a high demand charge, and to be purchased and financed entirely by the customer.

Second, all ACTs are significant investments for the SMBs who adopt them, and so customers need support for their investment decisions. **To be worth a SMB's**

**investments of time and money, an ACT must promise notable savings, and avoid any notable disruption of business operations.** The SMB considering an ACT must first invest the time to estimate the potential risks and returns the ACT might bring, and then must then figure out how to finance the investment.

While a couple of Dialogue participants believed that the \$6,000 – 10,000 investment for an energy management system shouldn't put a strain on a healthy SMB, other participants noted that SMBs had many options competing for their investment capital, and energy management rarely rose to the top of those lists on its own.

Third, all ACTS require some degree of on-site facility diagnostics, design, installation, testing, and maintenance. While ACTs differ in the degree of on-site attention they require, the requirements are serious in each case.

As we have seen, for some SMBs even programmable thermostats aren't plug-and-play technology. A \$6,500 energy management system might be equally simple and obedient in its operations, but customers had to take the time to understand the system's impact on their businesses.

Thus as commercial offerings, ACTs include more than proven energy load control technology. First, ACTs also include a rate. Second, ACTs also include the functionality necessary to support the customers' investment decisions. Third, ACTs also include the functionality necessary for on-site operations.

Thus SCE's enabling technology offerings don't need to be more technically-sophisticated and powerful to succeed. Rather, they need to be more complete.

### The "Right" Rate

A rate, investment decision support and on-site attention are three elements of any program offering ACTs, and these elements may be formidable challenges for SCE. Dialogue participants discussed all three of them.

Potential rates for a SCE SMB peak load program provoked a wide array of reactions from Dialogue participants. One asked, ***"Isn't this market diverse enough so that some businesses won't take to this rate, or won't need or care about energy management, and other businesses will?"*** He believed that ***"certain businesses may be more likely to find CPP acceptable than others"***, and therefore Critical Peak Pricing should be an option rather than a requirement. No rate will fit all.

Other participants emphasized, as noted above, that energy management systems can supply load diversity around both occasional coincident load peaks, and everyday non-coincident peaks. *"It's all in the rates,"* one participant noted, and the rates are not yet defined. *"Put a healthy demand rate in place, and the customer will respond. It doesn't have to be CPP,"* another said, *"it doesn't have to be complicated"*.

How demand charges are handled in a Critical Peak Pricing regime is critical to realizing benefits from energy management systems, and is also critical to communicating an enabling technology strategy to SMBs.

One participant observed that *"right now you're selling your equipment based on demand charges. If you're trying to sell this based on a value proposition under CPP, it will be much harder."* Dencor responded that their analysis indicated one customer in the pilot, now paying \$54,000 annually in electric power charges, should pay \$12,000 less annually under a CPP rate and a "reasonable control strategy."

While ACTs could make sense for some SMBs under many different kinds of rate, some types of customer would be much more likely than others to *"embrace the rate,"* as one participant put it. Some types of rates would be more likely to capture benefits, and SMB customers for peak load control. Customer segmentation and targeting could inform rate design, and vice versa.

Several participants wondered if the benefits from any peak load control strategy could possibly justify SCE providing ACTs to SMBs. *"Does a program like this make sense for about 120 hours?"* one asked. Another participant replied, *"The capacity value of the alternative, which is running a gas peaker for a few hours a year, makes even less sense."* The first participant then questioned whether or not the avoided cost calculations had considered a future scenario of stable or falling rates.

Finally, one participant emphasized that more than rates; it was the expectations of rates that would drive SMB behavior. *"Does the public really expect that the utilities and the PUC are going to jack up their rates over the next five or ten years?"* *"In which case, you don't need the utility to sell your product. You just need them to announce the bad things that are going to happen, in order to shape expectations."*

The participants regarded the rate as an integral element of a SMB peak load control program. Other tasks ranging from recruiting to ACT selection could not be completed effectively without definition of the program's rate.

### Investment decision support

Investment decision support is a fundamental aspect of recruiting SMBs for any program; **technical performance will never find an audience without financial performance**, and the ability to afford the investment. The functionality of SMB investment decision support resides in recruitment and billing. Recruitment persuades the SMB to accept the ACT, while billing validates the ACT's value.

As a recognized industry leader with ubiquitous customer access, strong name recognition, and familiarity with running programs at scale, SCE has some of the resources required for supporting its customers' investment decisions.

However, SCE lacks a direct sales force to call on SMBs, established channel partnerships, a deep marketing database of its SMB customers, and the authority to make strong savings claims on behalf of its energy management offerings. These are the tools most other firms would employ in addressing the SMB market.

Dialogue participants agreed that intensive marketing and sales efforts would be required to recruit SMB peak management program participants. SMB's are skeptical by nature, and by circumstances: *"It's very difficult for small businesses,"* said one participant, *"they are slicing the salami. This is a new concept to them. Everybody and their brother are coming in to sell something to them, and half of it is bogus."*

For SMB investment decisions, this participant adds, there are several issues: *"number one, access to capital. They may have the cash, but they're not willing to put it out there."* SMBs can't afford to experiment. *"Some smaller companies have to work from week to week,"* a participant commented, *"hoping that they have enough money in the checking account to pay their employees. They don't have that kind of luxury that some larger companies may have."*

Education is another issue: SMBs have little time to investigate a new opportunity, preferring instead to learn *"from others whether or not it works"* and provides *"verifiable savings."* *"Some of the managers are enthusiastic about change, and some are not very enthusiastic,"* a participant observed, they *"think they already know everything – or are too busy to do anything. We're so busy making widgets we don't have time to make them better."*

SMB investment decisions regarding energy management are even more difficult, because energy control is not well understood by SMBs. *"People know how to control their staff,"* one participant said, *"but energy isn't a controllable."* Furthermore, SMBs see many energy-related investments as having long and uncertain horizons, according to one participant, so *"they're not going to want*

*you to go in there and say "Oh, we'll do this, this and this and it's going to cost you \$400,000 but you'll save, you know, \$25 a week on your energy bill."*

Finally, the bottom line for SMB investments is the bottom line: verifiable cash savings with no disruption of business operations. *"If you get down into the explanations of the difference between a kilowatt and a kilowatt hour you've lost them,"* a participant notes, and another agrees, *"why would I care about kilowatt hours? I'm talking about my bill."* Dencor takes a simple approach: *"You have to give customers what they want...here's what your demand is without our system, and here's what it is with our system."*

SMBs may change their business practices in response to financial incentives, but cautiously. As one participant wondered:

*"In the garment business, if at Noon or 2:00 or 3:00 in the afternoon you have 300 people working in a sweat shop, and you're going to shut the air off, what is that going to do to your performance? Is it going to reduce the productivity of these people? Is it going to cost you more in lost production?"*

A participant noted that restaurants could try to do *"the cooking during the cheaper-rate time,"* but another imagined a situation when *"it shuts off. It would shut off a special office and everybody starts complaining at me. "Hey, I'm cooking here. What's going on? I'm hot and it's your fault."*

Another participant emphasized that two-degree temperature differences and 30% lighting reductions were examples of *"some things that seem to be pretty well proven, that you can do even in a retail establishment, that can get you a 15% reduction in literally every establishment. Not with no change in comfort, but minimal enough. We've done it."*

Although participants believed there was a modest range of business practice adjustments SMBs could make, participants also noted that these adjustments were risks that have to be paid for. *"Because I have to change my business practice,"* a SMB participant explains, *"if I change my business practice, there's got to be something that you reward me with, for the things that I have given up in my business."*

#### On-site attention

On-site attention spans the entire SMB relationship from recruiting to billing. Recruiting is particularly important, including selling the account, as well as all then

steps taken with the customer to prove in the ACT: diagnostics, design, installation, and testing. Diagnostics matches the ACT to the SMB, while design and installation fit the specific system to the SMB's business practices. Testing confirms ACT operations.

This 'last mile' of selling SMBs on energy management has usually required multiple site visits by qualified technical staff, who can clearly explain the performance and benefits of an energy management system.

The sheer scale of recruiting required to meet SCE's ambitions impressed one participant, who commented ***"to get 100,000 – 150,000 businesses to adopt these programs, means you're going to have an army of people talking to 300,000 of them, or the whole half a million, in order to get a quarter of them to adopt this program."***

Another agreed that the workforce required for a SCE SMB energy management initiative could be substantial, particularly ***"if we get the small business community excited about this and 100,000 people stand up and say, 'I'll take part in it' -- where are the few thousand people who are going to be working with them on this?"***

One participant stressed: ***"it's a very detailed conversation, and it's going to be a sale. There's going to be some convincing. You need the boots on the ground talking to the people to actually make it happen."*** Another said:

***"I think they have to get more down to the street level...to get a guy off his job if he's working a tool machine in a factory, you spend five minutes to shut it down and hear the pitch. You have to go in there and really soften the intro; getting that door open; getting that line of conversation."***

Participants debated whether or not meter-readers, college students, or other large teams of atypical salespeople could recruit among SMBs for ACT use. Participants agreed that whoever was recruiting for SCE, they would need to work in the SMBs' native languages, be familiar with SCE's strategies and the customers' premises, use standard forms to qualify customers, and recruit on the customers' premises.

One participant emphasized that SMB owners aren't eager to drive over to the utility and use up an entire day, while another commented that SMBs would find it curious that ***"Dominos is going to deliver a pizza to everybody's house, and most utilities can't get anybody outside to go to their medium sized customers."*** MY

FAVORITE QUOTE OF THE REPORT

Participants emphasized that energy management is a tough sell to SMBs: "***it was incredibly hard to sell something that was entirely free***" one said from experience. He compared the recruiting challenge to a software company offering a valuable free service to SMBs:

***"I'd say "I don't want to deal with my computer. I hate my computer. I hate the network. It goes; you might make it not work." By looking at it that way I could see how some of these small businesspeople look at their energy. I mean I don't look at energy that way, but I sure do my computer, and how do you get over that hurdle?"***

A Lockheed Martin Aspen engineer noted even cooperative customers could demand expensive, custom ACTs. The engineer "***went a crematorium in Santa Ana and they had refrigeration loads. But we weren't quite prepared for exactly what it was.***" He adds that his crew had "***to actually wire into the coolers... two days inside.***" Custom circumstances also can go wrong when SMBs change their minds, or don't qualify for a SCE program. In the end, the crematorium "***wasn't a legitimate account because it didn't have a smart thermostat, or they wouldn't sign up for the program,***" so the wiring work was in vain for the pilot.

Even once program recruiting is completed, more on-site attention is required in the form of customer service, to solve problems and provide guidance, and maintenance, to guard against the all-too-frequent facility 'adjustments' that other contractors are always providing. While customer service and maintenance for SCE's thermostat-only customers has been limited, Aspen Lockheed Martin provided these services to the SMBs taking part in the Dencor trial.

The Aspen Lockheed Martin engineers found that "***the crew was really very critical***" and continuity made a difference. "***You go back to a customer. You're the same person going back the next year. It's like they're almost amazed.***" While limited, the survey results cited above indicate that SCE's customers trialing the Dencor system found the service and maintenance attention very valuable.

Traditional conservation and efficiency technologies, provided on a one-off basis to a few eager customers, cannot support SCE's enabling technology strategy with SMBs. SCE's ACTs will also require a suitable rate, investment decision support, and on-site attention.

Thus the "additional" aspects of ACTs SCE needs to provide are not so much additional technical capabilities beyond those of programmable thermostats. Rather SCE needs to provide additional business capabilities, which transform a technology into a complete commercial offering.



*Let's review: SCE's enabling technology strategy includes offering ACTs to SMBs, but in order to do so SCE will have to define and deliver complete offerings. Furthermore, SMBs are thrifty customers, who have little time for energy management, unless energy management delivers proven savings without business disruptions.*

*SCE has to offer more, for SMB customers demanding more, and the entire equation has to make financial sense to both. What's a utility to do?*

*Our Business Dialogue® participants agree, ACTs are not for everybody. The participants emphasize that SCE should focus its SMB peak load management strategy. SCE should offer specific SMB segments and targets a specific message, through specific channels. Below, we consider each of these points in turn.*

*We identify the most attractive SMB segments for a peak load management strategy, leading with franchisees and SMBs who own their own facilities. We define the message these targets will respond to: proven savings, with no business disruptions, in order to compete more effectively as energy costs rise. Finally, we identify the channels that can carry that message most effectively: specialized SMB media, channels, and SCE business partners.*

**6) An economical SCE SMB enabling technology strategy would focus on specific SMB segments, targeting a specific message, through specific channels, to selected targets. ACTs are not for everybody.**

SCE needs to aim its demand response enabling technology strategy at specific SMB segments and targets.

We have indicated that SCE needs to offer SMBs proven savings and reliable performance, but the functions required to complete such an ACT are expensive for SCE to provide. Establishing a new rate regime can require many utility staff to work for years, collaborating with a myriad of interests. Investment decision support for any utility-sponsored program would require verified claims developed through extensive product tests, explained in professional materials, and delivered by well-trained staff. From recruiting through diagnostics, testing, customer service

and maintenance, SMB on-site attention scales only with great effort and expense.

Utilities are most familiar with comprehensive strategies, each literally offering something for everybody across a customer class. As regulated entities with authority over franchises, utilities always find themselves faced with issues of equity and cross-subsidization when attempting to pursue more focused strategies. Indeed, as noted above, Dialogue participants called for an SCE SMB peak load management strategy in part because they thought all customer classes should have roles in peak load management.

Yet SMBs are a customer class only in the sense that SMBs are all smaller than a certain benchmark. Not only is the difference between a 20 kW customer and a 200 kW customer huge, the differences between any two 200 kW customers are likely even larger. Even if SCE could imagine a comprehensive SMB peak load management strategy, it would prove to be a contradiction in terms. The differences between SMBs outweigh their similarities.

Furthermore, SCE could certainly develop complete offerings for SMB peak load management, but would SCE value propositions built on these investments be preferable to further investments in the large-customer or residential sectors? Would any value proposition built on any peak load management strategy be preferable to new plant construction, or new power purchasing relationships?

One dialogue participant said the key to economical SMB post-sale diagnostics, design, installation, and testing was to limit *"the diversity in the customer base. Can you come up with a consistent enough approach across a customer base, so that you can do the same thing at facility after facility, so you don't have to redesign, and reprogram?"* This participant and others emphasized that any SCE SMB peak load management strategy would need to be targeted to specific segments.

Analogies may lay in the strategies some utilities have deployed against highly-specific segments such as data centers, agricultural irrigation systems, hospitals, and process manufacturing plants. Utilities have designed differentiated and complete offerings for these customers.

SCE has segmented its customers by industry (e.g., restaurants) as the federal Census does, but has not yet investigated these segments by circumstances or attitude (e.g., *"the owner/user"* or *"those types of segments that we know will adopt programs in a certain way"*). SCE's customer information is limited to *"the service address, the meter number and the amount of kilowatt hours"* the customer uses.

Nevertheless, Dialogue participants believe, SCE can easily recognize which segments to target for SMB peak load management.

***7) The most attractive SMB segments for peak load management are franchisees and SMBs who own their own facilities (e.g., restaurants and convenience stores). Builders, building owners, property managers, and tenants are less promising segments.***

**The most attractive SMB segments for peak load management are franchisees and SMBs who own their own facilities (e.g., restaurants and convenience stores).**

Most Dialogue participants believe that the most attractive SMB segments for an enabling technology strategy are franchisees, and SMBs who own their own facilities (e.g., restaurants and convenience stores). After considering each of these targets, we will review segments participants considered less promising: builders, building owners, property managers, and tenants.

Many participants believe franchisees hold the most promise for developing a SCE SMB demand response program. One participant concludes that SCE should go after franchises because they are ***“the animals that hang together – the ones in the herd...if you can get to a franchise conference all the franchisees are there.”***

One customer participant whose restaurant franchise unit had saved \$6,000 in a single year with the Dencor system said: ***“I can’t imagine if you could convince these people that they’re going to save \$4,000 to \$5,000 a year on electricity that they’re not all going to sign up, or 90%.”*** Similarly, Dencor was ready to make the claim that their system can reduce the electric bill for a typical Southern California convenience store by ***“a couple of hundred dollars per month or more.”***

Among SMBs, franchises are notable in that they may well have energy management staff. One trial participant responsible for the financial performance of several franchisees also had experience at corporate headquarters, so she was ***“very excited about conserving energy and cost...because my bonus relies on that.”*** Another participant pointed out franchisees not only had technical help in many instances, but that they were decisive by nature: ***“they’re all independent small business owners.”***

The restaurant professional explained how franchise SMBs would be recruited for peak load management: ***“You put it in”*** for me, she explained:

*"And then you own that franchise. Because if I'm on the board of the franchise association and I say, 'This is what they've done for us. I want to get up and tell you guys about this.' So all you'd have to do is get somebody in each of the organizations to be your spokesperson. You do something for free, or a very low cost, to get them on board."*

Another participant indicated *"the problem is in reaching the quantity of customers that might be required in order to make an impact on energy savings"* which can be addressed by word-of-mouth: *"This little guy over here – he hears about this – maybe he's friends with this guy that's a franchisee."*

Another participant also described a franchisee success model, where a manager says, *"Hey, I'm managing this and we're saving this', and hopefully the owners are bonusing them at the end of the year for their savings from the rebate they get from you, but also they get a recognition."* Customers of the franchise outlet also become aware of the program, and take pride in it, and talk about it in other neighborhoods.

Most Dialogue participants agreed with the expert who advised:

*"target the most easy ones to get on board – whether it's franchisees or whatever – only because once you get a fairly large group, then other people are going to pick up on this, and that small business that might not know about it will pick up on it, because they hear about it from someone else where they might not let you in the door in the first place."*

Franchisees not only have similar operations, and may have access to specialized expertise, but they meet together and listen to one another.

Some franchisees and SMBs who own their own facilities are more attractive than others for peak load management, according to Dialogue participants. *"Take a business by business, segment by segment plan of attack,"* one participant advises, and another adds *"the one thing that is going to push them past the barriers is seeing that all their competitors are doing it."*

Lockheed Martin Aspen emphasizes that the SCE trials, recruited as they were against a list of randomly-selected SMBs, do not represent SMB demand for ACTs. *"The technology is aimed to save a lot of money in a certain class of customers who operate a certain way,"* the firm says. *"In the segments we want to go after, they mostly own their own premises."*

Dencor and several Dialogue participants agree that these target industry segments should be *"convenience stores, quick-serve dining restaurants, and*

*casual dining restaurants.* In particular, one participant says, SMBs in these segments *“with 5-100 units under one management are dying to get this.”* Liquor retailers, and fueling stations with convenience-store services, also seem to be good targets.

However, one Dialogue participant worried about an overemphasis on restaurants, and another noted that the food service sector, although including a *“monstrous chunk”* of SMBs is *“a niche that’s very difficult.”* Energy *“efficiency and restaurant equipment live across the street from one another: they’ve never met, they’ve never talked.”* Food service SMBs, he believes, are *“not going to put an EnergyStar sticker on the door.”*

One Dialogue participant argued that small garment manufacturers would be worth targeting. *“There are hundreds and hundreds of clothing sewing companies near the downtown areas,”* he said, reporting that their *“buildings are very old.”* One such company has *“300-600 sewing machine workers.”* However, the sewing and knitting facility participating in SCE’s Dencor trial was one of the customers who complained about reduced air conditioning during peak periods. This facility illustrated the challenge SMBs have of maintaining sufficient comfort for their customers and employees.

*“I would go after the chains initially,”* another participant suggested, *“because those people are going to sign. What you want to do is get those people signed on.”* Dencor noted that they have recently signed an agreement with a major East Coast gasoline/convenience store chain to install their systems in every new unit subject to a utility demand charge. Finally, several participants agreed with the one who indicated that a SMB owning its own property would be the best target: *“He owns the property; he runs his business out of it. He’ll make the investment.”*

Despite the potential of particular customer segments, SCE should not look past the task of addressing them properly. One Dialogue participant recalled a meeting at SCE’s Irwindale C-Tech center targeted to women business owners. Not only was this location time-consuming to reach for many attendees, but *“they took us to the kitchen like we were Betty Crocker rather than saying, ‘How many of you own restaurants? We have a commercial section over here.’ We were insulted – absolutely insulted”* she says.

**Builders, building owners, property managers, and tenants are less promising segments.**

Aiming at the wrong segments would be even less rewarding for SCE. Participants were skeptical about the prospects of involving tenant SMBs, and the builders, owners, and managers of SMB facilities in peak load control.

First, tenants seemed unpromising targets. One dialogue participant noted that most women-owned SMBs are *"tenants, and not owners of their real estate, and they could care less. They could really care less about energy...turn it on, make it work. Whatever you're doing, make sure your business is running."* Energy efficiency *"wasn't on their high priority list, although this could be applied to small business across the board."*

She noted that SMBs in general *"don't think in terms of the return on investment for their business"* she says, and tenants in particular aren't concerned with *"streamlining their business, or making incremental improvements"* with lighting and HVAC and windows *"because they're not owners."* Also, tenant SMBs are facing increased costs for benefits, taxes, and health care. Perhaps the strip mall tenant will invest in a little energy efficiency, but not a high-rise tenant, and not the tenant's banker.

Another participant agreed that *"the problem of the tenant pays the bill and the landlord owns the air conditioner"* is a major obstacle. Several dialogue participants agreed that while rate increases focused SMB attention on energy costs, and should increase the demand for sub-metering and individual metering; these ACTs could be complicated for tenants to arrange. Owners and property managers were little help, and many tenants were unaware of the solution.

SCE's anticipated roll-out of time-of-use meters might provide better data at some level, but one participant was skeptical commercial real estate owners and managers would give up a profit center easily, and would be unmotivated to provide tenants with primary access to energy usage information.

One SMB participant explained to general agreement that as a tenant, he could make improvements:

*"In our lease agreement, the interior of the building maintenance is up to us. The exterior of the building maintenance is up to the landlord. Most of the leases are written this way, just the general lease form. Maintenance on the inside of the building is up to the tenant in any way that they feel necessary to be fixed and suited to the business. I can add a room. I can change the lights."*

Another participant went further to argue that tenants could be motivated to make improvements: *"these small businesses don't own their buildings. And they don't own the air conditioners and they don't own the lighting. But they're*

*responsible to maintain it, and they're responsible for the electric bill in most cases – even if they don't own it. They have to pay the bill."*

But another participant cautioned, *"You'd like to save energy and cut your power bill and so on, but as long as you don't want to change too many things, because you've got a business you've got to run."* And another participant noted similarly that the:

*"Split incentive issue, the landlord/tenant, who pays the cost and who gets the benefit, is huge in energy efficiency. In small commercial it is the number one barrier. It's a matter of me turning off that crappy air conditioner except in these high rises where there's a master meter. Why should I turn my lights off when I'm getting the bill divided up and my neighbor isn't?"*

Second, builders seemed unpromising targets, because they are focused on mandatory building codes rather than utility programs. The only way to get to builders, one participant opined, was through requirements: *"rather than just make them think about it, let's make it a law, you know, like seatbelts...you make it a law and you start giving tickets and then all of the sudden everybody starts to wear them."*

*"The same thing with buildings."* He continued, arguing that mandatory rates could work like building codes:

*"You put it in the building code that you have to have tiny windows and thick walls and lower lights...If you want to use electricity during the day when it's hard, difficult, and then you pay more for that. It's getting to the point now where you have to pay for certain things, like parking in Los Angeles."*

Another participant had seen occupancy sensors rapidly deployed in Korea when building codes changed, while a third participant recalled that years ago, when utilities had *"these five different rates in place, it changed the way we designed buildings...We started doing heat exchanges. We started doing different lighting projects. We started doing thermal storage on larger buildings and so on."*

But other participants argued that "Green Building" programs are starting slowly in California, and improved building codes have *"been fought vigorously by the people in the trades."* One of these participants also commented on the difficulty of arranging financing for builders to incorporate ACTs in new building construction, given bankers' reactions, construction time schedules, competitive buildings and unfamiliar technology. Builders, developers, and their bankers will

comply with codes, but need incentives if they are to foster ACTs, and the incentives are not in place.

Third, building owners and their managers seemed unpromising targets. Participants believe owners and property managers are focused on allocating tenants' costs, rather than reducing them. *"Those guys don't like to spend any money, and they like to pass on all the costs, and they'll tell you they can't get more rent for energy efficiency,"* complained one participant, and another agreed: *"There's very little incentive for the property owner right now... to be proactive and go out there and improve his building."*

A SMB participant described his experience with the 'split incentive': *"using or changing the thermostats was not an issue for our landlord, and saving energy was not an issue for the landlord,"* but *"It was for us to decide how we use our air conditioners."* Participants believed that if ACTs were simple or small enough, either the tenant or the landlord might be motivated to install them, but anything that looked like infrastructure would be difficult.

Meanwhile, the owners' property managers prove to be the *"biggest stumbling block"* because *"they don't want to make the improvements."* Property managers aren't decision-makers. The entry-level staff property managers employ may have little or no training in energy management. The owners themselves are distant from the situation.

Thus, while Dialogue participants had varying perspectives, their consensus was that the most attractive SMB segments for a peak load management strategy are franchisees, and SMBs who own their own facilities -- such as restaurants and convenience stores. Tenant SMBs and the builders, owners, and managers of SMB facilities seem to hold less promise for developing a SCE SMB load control program.

***8) SCE's message to these attractive SMB targets should be: for you to stay competitive as times change and energy costs rise, you need energy management from SCE -- you will save money, and your business won't be disrupted.***

As the industry develops a complete set of ACTs for dynamic pricing, and aims them at the SMB segments with the most potential for peak load reduction, a parallel task will be to discover how best to communicate with these customers.



Dialogue participants agree that the message to these attractive SMB targets should be: "times are changing. For you to stay competitive as energy costs rise, you need energy management from SCE -- you will save money, and your business won't be disrupted." As we will see below, this basic four-part message then needs to be sent through highly-specialized channels to SCE's various targets.

Participants emphasized that SCE needs an active, direct message to SMBs: e.g., ***"Hey, we are willing. Edison is available to do something about your energy bill, and we want to be able to help you....Call us and we will come and see you, and we will do something about it."*** SMBs need to understand that although higher, time-based rates are coming, SCE has painless programs and financing available to help SMBs cope.

#### Tell them times are changing...

The introduction to SCE's potential message could sound an alarm among its SMB customers:

*Well, there's bad news and there's worse news.*

*The bad news is on weekday afternoons electricity will be more expensive than it used to be. On a dozen days throughout the summer, which we can't predict more than a day or so in advance, electricity on that afternoon will be much more expensive - eight, nine, ten times more expensive, so that if you don't change how you use electricity on those so-called super-peak days, you'll find your bill will increase drastically.*

*The only way that you can get around that problem is if you change how you use electricity on those super-peak days. So you have to either pay a whole lot more or figure out how to change your business operations on weekday afternoons.*

*And by the way, these 12 weekday afternoons that we predict only 24 hours or so in advance, they're likely to be among the hottest days of the year."*

Although many of them were relatively expert in the California energy industry, many Dialogue participants were surprised at SCE's plans for deployment of advanced metering and new rates for all SMBs in the next few years. They heard clearly that times were changing -- new meters, new rates, new bills -- and the best message SCE could give would begin with a ***"carrot and stick thing"*** along the lines of ***"that's what we're doing to you, now maybe we can help."***

*"I think you have to condition people this is coming," one participant advised, "you'll need a program up front." Another agreed, and cautioned, "I think people will respond, but their first reaction is going to be 'My God - not again! We're getting screwed!'" SMB customers may feel "they're ripping me off, the big companies, the Enrons, you know?" A third participant said "It's coming. I think it comes all down to it's coming."*

Participants believed customers would understand the supply constraints SCE faces, but they were of two minds about how much advance notice of peak load management SCE should provide. Some believed that the threat of a big rate increase, or expectations of big rate increases, could motivate SMBs to consider energy management. Other participants thought that only a big bill would work: *"the day you get your electric bill and it's three times as much as it was, that's when panic strikes."*

One participant argued for a middle road, focused on the bill but still delivered well in advance:

*"Look, here's what your bill is right now. This is your usage. Now, we have received approval from the Public Utilities that in 2007 this same bill is going to cost you this much. Now, here's what we can do...if we do these things instead of your bill costing you this much, it will be a certain percentage lower because your usage will change."*

Many participants agreed that SMBs would look for real savings, rather than savings over against what their bill would have been otherwise under the newer, higher time-based rates -- but that in any case it would help to explain to SMBs that times were changing.

**...For you to stay competitive as energy costs rise, you need energy management from SCE.**

The second part of SCE's message to SMBs could be that SCE could provide them help in staying competitive as energy costs rise. SCE realizes that it's not enough to merely describe the tough times coming. It won't work to *"go out and say "oh, your energy's going to go up if you don't do something."....We'd better have something to give them as an alternative. We just can't say "You'd better find ways to save on energy or your bill's going to go up. Nice meeting you,' and leave."*

Once SMBs realize that *"I'd better change some things, or I'm going to have a very bad dozen days this year,"* participants believe they would immediately

want to know what they could do about it. SMBs are opportunists, as one participant put it, so SCE would want to *"take advantage of their disposition, which would be, 'I want to seize opportunities'....not necessarily playing to their fears."*

One participant argued that once SMBs understood that a dozen of their summer afternoons were changing, and *"when they go to these new rates they're going to be charged a very, very high rate during that critical window,"* these SMBs would want SCE to help them *"automate ways to respond to this very specific window and lower their usage during that time."*

While "savings in the traditional sense is not necessarily what's being marketed and delivered here" at least SMBs could have their operations more *"automated, so that they don't have to think about 'When is a CPP event occurring and what has to happen when it does to make sure that I don't get nailed with a super-duper surcharge?'"*

Participants believed SMBs would wonder if they were being unfairly burdened compared to other customer classes. *"You might point out to the little guy that the big guy is contributing,"* a participant suggested. But the SMBs will be even more concerned that their competitors have found an advantage they have not, another participant stressed, so SCE should focus on competitiveness, simple awareness of energy information, and moving energy management up the priority list for *"herd leaders"*.

Of course, some SMBs might view the situation as SCE offering a solution to a problem of its own making. But in so doing, SCE *"can turn it around to become an ally where there's a positive element to it as well"* one participant said. SCE would be telling SMBs that *"we need customers to participate"* in order to meet the utility's *"number one objective....to maintain reliable service"*

### You will save money...

The third part of SCE's message, Dialogue participants believe, is a necessary move into uncharted waters. *"Now, we move onto the next thing,"* one participant said:

*"I don't think that this message that we're talking about here has ever been delivered. But this word's got to get out to everybody and it's got to get out fast if they really think that they're going to put in this pricing structure, because you're changing something that they didn't understand in the first place."*

Unless SMBs understand the financial impact of SCE's rate changes on their bills, they won't know why it makes financial sense for them to change how they use energy. If SCE explains how SMBs can save money, ***"Edison comes out looking good because they're providing something in response to the question."*** SCE needs to say more than 'pay this amount.' SCE needs to say, ***"here's how to prevent your bill from going up when everybody else's does."*** Big red letters: ***"here's what it would have been. Here's what it really is now. Here's what it's going to be."***

Another participant called for the utility to be a ***"market maker,"*** undertaking ***"a very strategic and very sophisticated marketing campaign – an information campaign that would create an awareness in all stakeholders"***, because:

***"Electricity pricing and all that goes with it is a foreign language to most people. It's too complicated. They don't understand it. At the same time, for anybody in everyday life in the workplace or whatever, electricity is invisible. They're not aware of how much it costs per hour. "***

As a result, ***"there's this mystique that's built up and nobody really knows"*** the facts about electricity pricing, availability and energy management in Southern California.

Another participant agreed with the need for a SMB energy information campaign, to overcome SMB ***"cynicism and resignation"*** about energy costs. He asked, ***"Who do you trust? I mean you're talking about energy, and Exxon just did ten billion dollars last quarter."*** And although not an oil company but a utility, SCE sells ***"the electricity that no one can explain to me how I use. "***

One participant observed:

***"We're not trying to make them PhDs in utility pricing, but...there's not too many people that run small businesses that aren't pretty sharp. I mean these are not dummies sitting behind counters working 14 hours a day trying to stay afloat – they know how to save money and they know how to run their businesses..."***

***"If they understood that the way that they're paying for electricity is about to fundamentally change, and they need to understand what that change is going to be, so that they can react in a savvy business way-- they'll appreciate that."***

SCE has to remember that ***"no one cares about you, until they know that you care about how they're going to save money."*** Proving savings is the beginning of

being taken seriously, not the result. While SMB savings calculations will differ from one customer to another and ***“the motivators for action for different people sometimes will surprise you,”*** the most important theme is ***“that saves me money. That will save me money.”***

One irony regarding SMBs and energy management seems to be that ***“the small business owner – that’s really all they care about is how is it going to save me money. There may be some that are conservationists, but bottom line is if it’s not going to save them money they’re probably not going to do it.”*** SMBs are most interested in cash savings -- which are invisible, and hard to discover, participants noted. Yet even with a fair amount of effort, SMB electric bills only enable calculations of energy savings.

Once SMBs have a basic explanation of their rates and their bill, they can ask themselves how they might finance investments in ACTs for energy management. One participant believes SMBs can realize that energy efficiency can be a source of capital, one project generating savings to finance the next project. Along these lines, another participant argues that SMBs, chronically-short of capital, should ask themselves how much more in sales they would have to generate to equal the cash flow available from lowering energy costs.

Whether self-funded or partially offset through devices such as On-Bill Financing, SMB investments in ACTs for energy management require a separate exercise from merely understanding a power bill. ***“The problem goes back to the perceived valuation of whether the investment is worth making,”*** one participant notes. Under an unfamiliar and volatile CPP rate regime, how is a SMB customer to calculate the ROI on peak load management? For ACTs to be broadly adopted, SCE will have to provide these projections based on verified past performance, much as a money manager does backtesting a strategy.

With such projections from SCE, one Dialogue participant believes ***“that behavioral critical price response is extremely possible from virtually every customer of every size.”*** To ***“get persistence...the reward or penalty has to be pretty steep,”*** but if the financial analysis is ***“clearly visible on the bill -- ‘on August 4 we called a critical response and...we’re crediting you \$12.36 for that day’*** SMB customers would learn how to behave.

Finally, in addition to savings, participants also suggested SMBs should be provided the opportunity to participate in a well-publicized California award program for SMB energy management. Such an award program could be as local as Health Department restaurant inspection plaques, or as broad as Avon’s national recognition award, and would be appreciated by the SMB’s customers. ***“If I had an award on my building or a plaque of some sort inside my restaurant that said,***

*'Partner with Edison as a company that's conserving' – that would be a big deal in Irvine," one participant imagined.*

**...and your business won't be disrupted.**

The fourth part of SCE's message according to Dialogue participants should be SCE's commitment to trouble-free and automatic peak load management. *"Don't give me any grief," SMB customers say, "don't give me any trouble. Get this thing to work" and then "get out of here."*

While SMBs need considerable help from SCE to analyze their real and potential energy costs, they may not perceive they need SCE's advice about running their operations. As one Dencor customer put it, SMBs:

*"Pay the bill themselves, so if anything they are also aware that they need to kill that light, turn off the switch and not to waste energy because they're going to have to pay for it... there is not much else that they can do, unless they inconvenience themselves, change their work style, work habits, change their lifestyle, which is very difficult to ask somebody to do for energy unless the price is really that high."*

SCE should tell SMBs *"Pay less on your electric bill. That's all you have to do."* For an SMB energy management program to succeed, SCE must tell the customer *"you don't have to do anything but sign up, because we've got somebody that's going to come in your unit and is going to set this program up. We'll make it painless and you won't know it's happening. You won't be affected."*

The SMB customer wants to believe that the program is painless, and will save money, according to one who attended a Dialogue: *"I'm going to go about selling my chicken all day. I'm not going to worry about whether I have electricity. I'm going to assume it was there yesterday. I'm going to assume, after you get done, I'm going to have it tomorrow."* SMBs *"have to feel like they're not going to be impacted in any negative way."*

With the right investment analysis in hand, dialogue participants say, SMBs will permit automatic changes in how they use energy -- changes that don't affect their key business practices. It is up to SCE to offer ACTs which are unobtrusive and obedient -- as many trial participants found their Dencor energy management systems to be.

9) ***The channels who can best carry SCE's energy management message to SMBs are specialized SMB media, and specialized SCE business partners.***

**SCE needs a focused campaign through specialized media, channels, and business partners to communicate its demand response message to SMBs.**

"The times are changing: for you to stay competitive as energy costs rise, you need energy management from SCE -- you will save money, and your business won't be disrupted." For its SMB demand response strategy to work, SCE needs this message to reach its customers who are franchisees and SMBs who own their own facilities (e.g., restaurants and convenience stores).

Mass marketing through mass media across the Los Angeles-Long Beach SMSA would be a waste of SCE's time and money, many Dialogue participants believe. Rather, SCE has to target its marketing through specialized media, channels, and business partners. SCE's target marketing task is complicated by the many languages and ethnic communities that cross the SMB business segments selected. The Los Angeles-Long Beach SMSA is the nation's most linguistically-diverse metropolitan area. One dialogue participant says, "***You have to research every ethnic group or culture***" regarding how to provide "***education, and how to do promotions.***"

We assume that SCE would begin as one of the Dialogue participants said he did, as a banker targeting "***small to medium-sized businesses...where the growth is happening in the country.***" The banker employed not only his years of experience, but also "***definitive lists of the companies, the owners, what they do, the size, industry sector***" in order to "***identify the most likely suspects.***" Another participant added, "***The ones I think you want to go after are not only the ones where you can get economies of scale in capturing them,***" but also those who "***are politically influential.***"

Another participant agrees that the lists should be of particular individuals: "***communication is key in all this. As I said, you could be giving away gold but if you can't get in there and talk to the right person who makes that decision***" you might as well not try. At big companies the instructions to pursue energy management might get "***filtered right down to the bottom. But the bottom of a small business, they're the guys that are paying the bill right out of their pocket, so you have to get in there and talk to them.***"

Dialogue participants emphasized to SCE those direct SCE sales calls were probably not the most effective way to reach leading SMBs. The participants

advised SCE instead to work through groups where SMBs were active. A participant emphasized, *"It comes back to getting to the watering holes,"* because:

*"All the Outback people get together. All the bankers have an association; they get together...So every one of these little markets – whether you're looking at small businesses and bridal shops, or whether you're looking at flower shops – there are points where they all come to their watering holes."*

Another participant agreed, adding SMBs *"don't have time to know,"* so SCE should *"jump into the stream of commerce"* and work through the SMB's *"national organizations"* who *"have regional associations all around the country.... use those associations to send that message consistently to their members, from the respected association who represents them. Now you have a little better chance that they won't regard it as voodoo."*

Because "small businesses are very isolated" this participant continued, SCE needs a forum to tell SMBs about ACTs, that *"these are worth investing in, and we know because we've measured them...If it comes from their trusted dealers, or their trusted representatives, they're going to listen a little more."* SCE was advised not only to work through the SMBs' groups, but to arrive there as a trusted, endorsed partner of key influencers in those groups.

"We do this all the time when we get together at franchise meetings," a customer participant said, *"You tell me about how great it's been for you. I'd be stupid not to jump on board...We think it's great, and this is why we think it's great.' People do that... because you're Joe Franchisee. You're my friend and I want to help you out."*

*"If a Korean...saves \$5 then he tells another Korean 'Hey, you know, Edison came here and saved me,' they're more apt to believe it and take advantage of it,"* another participant argued. *"The same with an Armenian, same with the Latinos – any ethnic group would believe their fellow ethnic person, you know, if it was a good deal then they would take advantage of it."*

He adds that SMBs trust themselves, *"because they're in the thick of things"*. "Small business people talk with other small business people: *"they will say 'you know what? I put this in and it's doing great things for us. Our energy bill over here is 15%, 20% less.' "*



SCE has already experienced the power of association influencers who endorse products and introduce them to the association. All the product's salesperson has to do is say:

*"I'm the salesperson here, but I want to let Bob here, who runs this plant, tell you about our product.' That's so good -- because then Bob gave the sales pitch to his peers, and for the next 20 minutes he talked about how great this product was and that's why we're here; this is all the savings I got - and that was it. And all the other guy had to do is just take orders."*

SCE has also encountered SMBs who say " *'I don't care who you are. I just can't talk to you right now.'* But when the Chamber of Commerce calls up, it's like *'Hmm. Well, I joined this membership, so maybe they've got something to say.'*" Without the endorsements, one participant said, many promising targets would be unreceptive, *"especially if they don't speak the language. There's a trust factor coming in: 'Why should we tell you this? Why should we tell you that?'"*

SCE agrees, and through its Community Partnerships program is building relationships with "distinguished endorsers" not only from associations, but also from *"communities, cities, and agencies that want to participate in things."* SCE's next steps would be to identify the SMB groups most relevant to the SCE peak load management strategy, and the "distinguished endorsers" within them who would be most useful.

**Preferred channels include direct business partners such as banks and community organizations, and channels such as ethnic media and schools.**

Participants directed SCE to consider several types of partners and channels for its peak load management message: banks, community organizations, and ethnic media might all play roles.

First, *"all franchisees deal with the same bankers - with maybe two or three,"* a participant noted, so SCE could go to *"those bankers, and ...sell this to them, before you go the franchise conference. Now you have them on board with you and then it's a marriage. The banker is already ready to give the loan to make this happen for them."* This participant even believed tenants' bankers might be key, in coming to realize that sustainable, competitive businesses are those who lower costs through prudent investments such as ACTs.

Other participants noted it's the rare bank who is a true partner to SMBs, and rarer still is the bank engaged in on-site marketing top SMBs. *"If their bankers show up, they'll fall over backwards"* one noted. The banker discussing energy

management would cause SMBs to ask *“what’s he getting out of this”*, so the banker would need to be referencing other SMB successes with energy management. Another problem would be the banks’ concern to avoid conflicts of interest. If *“there is no effort on the bank’s part except for the introduction”* of the topic, a program might work.

Second, participants cited a wide variety of community organizations who could be strong partners for SCE’s marketing, including the California Workforce Investment Board, The Los Angeles Economic Development Council, Small Business Development Centers, and specialized ethnic business associations such as Chambers of Commerce, the Garment Contractors Association, the Small Manufacturers Association of California, and the California Restaurant Association.

For example, the California Workforce Investment Board:

*“Receives money to help businesses, small businesses mainly. So they receive grants now to go out and talk to small business, and not just on energy; they’re going to find out what challenges the small business has. Get the line of communications going ... find out what their challenges are... give them resources to help.”*

One participant stressed that *“there has been so much wasted money and opportunity when Edison has aligned themselves with loads of associations”* because SCE has sponsored efforts without any expectations of returns: *“never do you ask for a payback on that by saying, ‘Let us really talk to your association and hone in on these issues’.”* For peak load management, SCE would need tighter partnerships than it has had with community organizations. One participant estimated that improved *“coordination with the associations”* would lead to 90%+ participation in SCE’s programs by association members.

Dialogue participants emphasized the best channels to access these groups were often ethnic media. In their own roles as distinguished endorsers, valuable ethnic media ranged across both major communities such as Hispanics, Chinese, and African-Americans, but also smaller SMB-oriented communities such as the Koreans, Armenians, and Vietnamese. SCE might need many media channels, but even *“just plain advertising”* or the occasional print story on ethnic *“radio and television”* could be powerful.

For example, one participant noted, *“In Korean TV, we have three TV stations. We do one on cable also. And also three radio stations: Radio Korea, Radio Seoul. And two major daily newspapers.”* These media reach the tens of thousands of SMBs operated by ethnic Koreans in the Los Angeles-Long Beach SMSA. Similarly, another participant pointed out that smaller groups also have dedicated media:

*"there's 11 Armenian newspapers. There's three channels... There's 111 different media for the Vietnamese community."*

Finally, one participant suggested schools might be another strong channel for a demand response message to reach SMBs through families and SMB employees. *"The conservation, the recycling programs" were "certainly sustained and helped by children,"* she observed. *"A sophisticated, subtle educational-awareness program that could be addressed specifically to schools and youngsters" could "get them engaged."* Once engaged, schoolchildren usually proved to be *"the best supporters of anything to do with the environment, and animals, and healthy living."*

In each case, one participant noted, SCE should follow a consistent approach with its partners and channels:

*"Engage as a user-friendly partner, and in terms that are relevant to the stakeholder sectors that you're dealing with. Simplify the technology, the savings – put it in terms that are easily understandable by the layman; educate them as to what savings are available and what the potential savings are and the advantages....concentrate on the bottom line... empower them...and perhaps even encourage them to spread the word."*

Through specialized media, channels, and business partners, SCE could field a focused campaign to communicate its load control message to SMBs. With distinguished endorsers from banks, community organizations, and channels such as ethnic media and schools, SCE could most economically address its SMB customers.

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**Appendix A: Telephone Research Instrument**

"We're calling on behalf of Southern California Edison about the energy management technology you've installed. You've received [a] smart thermostat[s].

IF DENCOR: And you've also installed a Dencor energy management system.

We'd like to ask you a few questions about your energy management system -- this survey should take about five minutes or so on the telephone. Can we spend five minutes or so now to finish the survey?

IF YES: Proceed.

IF NO: When should we call back? Who should we ask for?

Your answers are confidential, and very important.

(1) Why did you decide to install the new thermostats [PROBE FOR REASONS, THEN REVIEW LIST]

- it was a free offer
- we needed new thermostats anyway
- we like to try new technology
- energy efficiency is good for business
- energy efficiency is good for the community
- we needed to be ready for new rates

IF DENCOR: why did you decide to go further and install the Dencor energy management system? [PROBE FOR REASONS, THEN REVIEW LIST]

- it was a free offer
- we needed a new energy management system anyway
- we like to try new technology
- energy efficiency is good for business
- energy efficiency is good for the community
- we needed to be ready for new rates

(2) Have the new thermostats worked as well as your old ones, or better, or worse?

IF YES, AS WELL OR BETTER: Proceed.

IF NO: Tell me about the problems you've experienced.

IF DENCOR: has the Dencor energy management system worked well for you, or not?

IF YES: Proceed.

IF NO: Tell me about the problems you've experienced.

(3) Since you received your thermostats, you've been on a new rate for your electricity. Do you understand how your new rate works?

IF YES: How does it work? How is it different from your old rate?

IF NO: Did you understand it at one time, perhaps when you received the thermostats -- or did you never quite understand the new rate?

Do you prefer your new rate, or your old rate? [PROBE FOR REASONS]

(4) Since you installed your new thermostat[s], have you taken any other steps to conserve energy at your business? [PROBE FOR EXAMPLES< THEN REVIEW LIST]

IF DENCOR: Steps other than installing your Dencor energy management system?

- Have you had an energy audit from Southern California Edison?
- Have you reviewed your electric bills with an expert?
- Have you improved energy efficiency in your lighting?
- Have you improved energy efficiency in your heating, ventilating, or air conditioning?
- Have you improved energy efficiency in your refrigeration?
- Have you improved energy efficiency in your use of hot water?
- Have you improved energy efficiency in your use of other machinery or equipment?
- Have you improved energy efficiency in your insulation, windows, or doors?
- Have you trained your employees to be more conscious of energy use?

IF YES: why did you decided to take these steps?

IF NO: Proceed.

(5) There are technologies and tools available to improve energy efficiency in all of the areas we've just mentioned. Would you be interested in hearing more about them?

IF YES: Which ones -- and why? [REVIEW LIST AGAIN] What is the best way to provide you with information about these technologies: an in-person visit, e-mail, regular mail, or telephone? [ALLOW MORE THAN ONE RESPONSE]

IF NO: Why not? [PROBE FOR REASONS, THEN REVIEW LIST] Is it because:

- we really don't have the time
- we've tried it before, and it just didn't work
- we wouldn't save enough money to justify the money we'd invest
- we wouldn't save enough money to justify the time we'd invest
- we couldn't change our business operations in these ways
- we'd rather hear about them from somebody else, other than Southern California Edison

(6) Since you installed your new thermostat[s], have you discussed energy efficiency with other people at work? At home? In the community?

IF YES: Tell me about those conversations.

IF NO: Proceed.

(7) Would you be interested in receiving a copy of our survey results?

IF YES: confirm e-mail.

IF NO: conclude call.

Thank you for taking the time to speak with us today.

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## Appendix B: Telephone Research Instrument With Results Inserted

"We're calling on behalf of Southern California Edison about the energy management technology you've installed. You've received [a] smart thermostat[s].

IF DENCOR: And you've also installed a Dencor energy management system.

We'd like to ask you a few questions about your energy management system -- this survey should take about five minutes or so on the telephone. Can we spend five minutes or so now to finish the survey?

IF YES: Proceed.

IF NO: When should we call back? Who should we ask for?

Your answers are confidential, and very important.

(1) Why did you decide to install the new thermostats [PROBE FOR REASONS, THEN REVIEW LIST]

- |   |                      |
|---|----------------------|
| • it was a free offer                         | <i>8, 6 (Dencor)</i> |
| • we needed new thermostats anyway            | <i>1, 1 (Dencor)</i> |
| • we like to try new technology               | <i>0, 3 (Dencor)</i> |
| • energy efficiency is good for business      | <i>5, 4 (Dencor)</i> |
| • energy efficiency is good for the community | <i>1, 2 (Dencor)</i> |
| • we needed to be ready for new rates         | <i>0, 1 (Dencor)</i> |

*"We did think that someone was going to train us, and show us how to use this system. Once it was installed no one took the time to show us anything."*

*"To save money. I also wanted to install the Dencor system, but SCE came out and told me that I was not able to update my system."*

*"I got a call from an Edison rep who told me that someone was going to get in touch with me to install some energy-saving thermostats, and there was no cost to me, and it would save me money in power bills."*

*"I did this to save energy, and to save money on my electric bill."*

*"Someone called me and told me it would be a good idea, and it would not cost me anything, and would save me money on my power bill."*

*"Someone came to our office, and gave us this great demonstration, and told us that we would save money. This sounded like it would be a great program."*

*"They told us it would save us money."*

*"We were told it was going to save us money."*

*"Someone came by and told us this program was going to save us money."*

*"My electric bills were too high"*

*"Energy conservation sounded like a good idea, to help keep the county from going to blackouts, but money was the biggest factor -- we saved \$6,000."*

*"They said that it would save me money."*

*"To save money on our power bill."*

*"To save money on the electric bill. Someone approached us and asked us to do this, and it was supposed to save us money. No one left us with any other information....I would like to receive a cost analysis."*

*"Energy conservation: we manufacture energy conservation products and lighting controls."*

IF DENCOR: why did you decide to go further and install the Dencor energy management system? [PROBE FOR REASONS, THEN REVIEW LIST]

- it was a free offer
- we needed a new energy management system anyway
- we like to try new technology
- energy efficiency is good for business
- energy efficiency is good for the community
- we needed to be ready for new rates

*"Saving money is important; it's something we are trying to do." (Dencor)*

*"To save money." (Dencor)*



*"To save the most money we could." (Dencor)*

*"To save money." (Dencor)*

*"To save more money." (Dencor)*

(2) Have the new thermostats worked as well as your old ones, or better, or worse?

*"Much, much worse."*

*"Once we got them working right."*

*"No, we don't have them anymore."*

*"Think so: we try to keep it programmed, but it does not stay programmed; if it gets too hot we override it, and then SCE cuts us off."*

*"They worked much better than the old ones." (Dencor)*

*"Yes." (Dencor)*

*"Yes." (Dencor)*

IF YES, AS WELL OR BETTER: Proceed.

IF NO: Tell me about the problems you've experienced.

IF DENCOR: has the Dencor energy management system worked well for you, or not?

*"It has saved me money, and I would like to have them installed in all of my ten stores: can you do that for me?" (Dencor)*

*"Yes." (Dencor)*

*"Yes, it has saved us money on our electric bill." (Dencor)*

*"The rates are working fine; they save us money." (Dencor)*

IF YES: Proceed.

IF NO: Tell me about the problems you've experienced.

*"They were coming on in the middle of the night, and the office was hot, and we did not have much control over it. It took them a week to fix it. They sort of explained how it worked: the guy who installed them was not very communicative about it."*

*"Had too many problems with the thermostats .They would not work in the manner they were supposed to: the heat is either blasting or the AC is blasting in the middle of the night! They would come out and try to fix it, and reprogram them, but that never worked, so we finally gave up and put the old ones back in. They never made the suggestion to replace them. But we got tired of trying to override. If they had been able to fix the problems, we would have considered putting them back in."*

(3) Since you received your thermostats, you've been on a new rate for your electricity. Do you understand how your new rate works?

*"I really don't pay much attention to the bills, because I don't take care of those."*

*"I understand the rate; I'm just not sure if it's saving any money."*

*"Yes, I do, I like the new rate -- it is much better than the old one."*

*"Yes."*

*"NO – no one took the time to explain how the program worked, so this ended up costing our non-profit organization thousands of dollars in excess electric bills and the money to put our system back the way it was before they installed the new thermostats."*

*"Yes, terrible in the summer and good in the winter."*

*"We are still on the same TOU rate, but we just don't have the thermostats. We do understand how it works."*

*"Yes, but the program did not work well for us."*

*"Yes." (Dencor)*

*"Yes." (Dencor)*

*"Yes, energy conservation is our business so we understand how it all works."  
(Dencor)*

IF YES: How does it work? How is it different from your old rate?

*"It is cheaper than the old rate."*

*"The rate is higher in the afternoon during business hours and lower after everyone goes home. Which does not sound like it is saving me money at all. Had I known that the rate was going to change like this, I would have never done this. I felt like I had been 'bent over in a dark alley without so much as Vaseline and a Margarita.' I really would like my money back."*

*"We have different rates for different times of day."*

*"The rate changes during different times of the day." (Dencor)*

*"Yes, we understand it. It seems to have saved us money. We are happy with the new rate." (Dencor)*

*"We have different rates at different times of the day." (Dencor)*

IF NO: Did you understand it at one time, perhaps when you received the thermostats -- or did you never quite understand the new rate?

*"Don't pay the bills, never paid attention to the rates."*

*"I am happy with this program. I think it is saving me money."*

*"No, I did understand it at one time, but I tend to forget things. I don't understand anymore." (Dencor)*

*"I think so." (Dencor)*

Do you prefer your new rate, or your old rate? [PROBE FOR REASONS]

*"Not really sure, because of the type of business we're in, I'm not sure if it saves us money or not."*

*"The rate is much lower than the old rate, and I prefer the lower rate, of course."*

*"I prefer my old rate!"*

*"I have not figured out what I saved. I think the high rates have hit us when we don't have much money. They called and tell us to turn down the usage. The old rate may be better."*

*"This program cost our agency too much money. It would be nice if they reimbursed us for the money we spent REPURCHASING the thermostats that this company took from us to give us these 'energy-saving thermostats' that ended up costing us a lot of money."*

*"I prefer the cheapest rates. I want the rate that is going to save me the most money." (Dencor)*

*"We have saved money on our power bills." (Dencor)*

*I prefer the new rate and would like to stay with the program. The company saved \$6,000 last year." (Dencor)*

*"New." (Dencor)*

*"I am happy with the process overall." (Dencor)*

(4) Since you installed your new thermostat[s], have you taken any other steps to conserve energy at your business? [PROBE FOR EXAMPLES, THEN REVIEW LIST]

*"Yes, we are always trying to find ways to save money."*

*"Yes, we do try to save money wherever we can."*

*"Yes, I have installed sensors on restrooms and rooms that are not used much. These turn lights off automatically when no one is in the room."*

*"We have done some retrofits in the showroom and service area, such as lighting."*

*"We always try to save money. We are a non-profit organization so money is very limited. We cannot afford to waste money in any area. That is why this program hurt us so much. But we feel that if someone had trained us, it may not have been so bad."*

*"Other than turning the lights and AC off during peak hours, we have not done anything else."*

*"No."*

IF DENCOR: Steps other than installing your Dencor energy management system?

*"I have done a few things to save electricity and gas." (Dencor)*

*"We have changed out our lighting ballast to include one fluorescent bulb rather than two." (Dencor)*

- Have you had an energy audit from Southern California Edison?  
*YES: 0, 0 (Dencor) NO or N/A: 8, 6 (Dencor)*
- Have you reviewed your electric bills with an expert?  
*YES: 0, 0 (Dencor) NO or N/A: 8, 5 (Dencor)*
- Have you improved energy efficiency in your lighting?  
*YES: 4, 2 (Dencor) NO or N/A: 4, 3 (Dencor)*
- Have you improved energy efficiency in your heating, ventilating, or air conditioning?  
*YES: 0, 3 (Dencor) NO or N/A: 8, 2 (Dencor)*
- Have you improved energy efficiency in your refrigeration?  
*YES: 0, 0 (Dencor) NO or N/A: 5, 5 (Dencor)*
- Have you improved energy efficiency in your use of hot water?  
*YES: 0, 1 (Dencor) NO or N/A: 3, 4 (Dencor)*
- Have you improved energy efficiency in your use of other machinery or equipment?  
*YES: 3, 1 (Dencor) NO or N/A: 5, 4 (Dencor)*
- Have you improved energy efficiency in your insulation, windows, or doors?  
*YES: 0, 0 (Dencor) NO or N/A: 7, 5 (Dencor)*
- Have you trained your employees to be more conscious of energy use?  
*YES: 4, 2 (Dencor) NO or N/A: 3, 3 (Dencor)*

IF YES: why did you decided to take these steps?

*"To try to save money."*

*"To save money where we can."*

*"To save money."*

*"To save money on my electric bills."*

*"I thought we would save money on our power bill."*

*"To save money on our bill."*

*"I had to do this to save money." (Dencor)*

*"To save money." (Dencor)*

*"To help the environment, help the city to avoid brown-outs, and bottom line -- to save money." (Dencor)*

IF NO: Proceed.

(5) There are technologies and tools available to improve energy efficiency in all of the areas we've just mentioned. Would you be interested in hearing more about them?

*"No, I really don't have the time or the money to put into an entire retrofit."*

*"We are always interested in learning about new ways to save money on our power bills."*

*"No, we are pretty much doing all we can at this point to save energy."*

*"I would be interested in anything that would save me money. Like I thought this program was going to do. I am thinking this is a racket, in order to cost me more money, so SCE gets more money."*

*"I am interested in saving money, but I don't like feeling like I have been swindled or lied to about a program. Or, when signed up for a program, I would appreciate that it was explained to me in more detail, and if I call to get information, not leave me hanging."*

*"I would like to know if I had saved money on this program. If I had received this at the end of the first year, I don't really remember."*

*"Yes, I would like to get an up to date comparison of the energy usage. I would be interested in knowing how much I saved, and how much I spent."*

*"Yes."*

*"I would always be interested in ways to save money." (Dencor)*

*"Yes." (Dencor)*

*"No, this is our business and we have all of the information." (Dencor)*

IF YES: Which ones -- and why? [REVIEW LIST AGAIN] What is the best way to provide you with information about these technologies: an in-person visit, e-mail, regular mail, or telephone? [ALLOW MORE THAN ONE RESPONSE]

*"Not really sure -- lighting, machines?"*

*"I am not sure."*

*"Not really sure."*

*"Not sure."*

*"Windows, lights, whatever. I will talk to the owner of the company"*

*"Yes, additional thermostats for my other stores, because we need to save energy and money." (Dencor)*

*"Not sure what else we can do, but I am open to suggestion." (Dencor)*

*"I don't know." (Dencor)*

*"I don't know, but whatever you have, you can send me." (Dencor)*

IF NO: Why not? [PROBE FOR REASONS, THEN REVIEW LIST] Is it because:

- we really don't have the time **3, Y (Dencor)**
- we've tried it before, and it just didn't work **0, 0 (Dencor)**

- we wouldn't save enough money to justify the money we'd invest 0, 0 (Dencor)
- we wouldn't save enough money to justify the time we'd invest 0, 0 (Dencor)
- we couldn't change our business operations in these ways 0, 0 (Dencor)
- we'd rather hear about them from somebody else, other than Southern California Edison 1, 0 (Dencor)

***"We don't have the money to change out a bunch of equipment."***

(6) Since you installed your new thermostat[s], have you discussed energy efficiency with other people at work? At home? In the community?

IF YES: Tell me about those conversations.

IF NO: Proceed.

***"Yes, we have in some of our safety meetings -- they cover how to be more effective in saving energy in the workplace."***

***"Not really. I have been so upset about this TOU program that I just tell people to stay away from it. Don't do it, stay away from it."***

***"Yes, I told them how horrible this program was, and how it cost me thousands of dollars in utility charges, and thousands of dollars to put the system back the way it was."***

***"Not really."***

***"Yes, I told them how it helped me to reduce my overall electric usage and lower my electric bills." (Dencor)***

***"I tell them how much I saved on my bill over last year." (Dencor)***

***"Yes, conservation is our business, so we often discuss this with a variety of people." (Dencor)***

(7) Would you be interested in receiving a copy of our survey results?

IF YES: confirm e-mail.

IF NO: conclude call.



Thank you for taking the time to speak with us today.

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**Appendix C: Business Dialogue® Participants**

- Helen Anderson, Anderson Associates
- Alex Bisbee, Bisbee & Associates
- Jim Crossman, Financial Energy Management
- Mathew R. Essig, Dencor Energy Control Systems
- Dr. Marvin Horowitz, Demand Research
- Dr. Ky Chueon Kim, Los Angeles County Small Business Commission
- John Krikorian, Krikorian Marketing Group
- Rudy Marloth, OEERE Industrial Assistance Center, Loyola Marymount University
- Mark Martinez, Southern California Edison
- Patrick McCarthy, Lockheed Martin Aspen
- Jennifer Norland, Cluck Brothers/El Pollo Loco
- Hank Ryan, Small Business - California
- Robert St. Amand, Lockheed Martin Aspen
- Dean Schultz, Southern California Edison
- Mark Shirilau, Aloha Systems
- Duncan Stark, Quality Control Systems
- Mike Tabba, Allied Imex
- Annand Vadakkath, Lockheed Martin Aspen
- Javier del Valle, NAI Capital Commercial
- Dr. Dan Violette, Summit Blue Consulting
- Martin D. Webley, Webley & Associates International
  
- Craig Boice, Boice Dunham Group, Moderator

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