Application No.: A.08-07-021

Exhibit No.: SCE-6 Second Amended

Witnesses: G.E. Rodrigues



An EDISON INTERNATIONAL Company

(U 338-E)

SCE's 2009-2011 <mark>2010-2012</mark> Energy Efficiency Demand Side Management Integration and Coordination

Before the

Public Utilities Commission of the State of California

Rosemead, California July 2, 2009 March 2, 2009

DEMAND SIDE MANAGEMENT INTEGRATION AND COORDINATION

A. Background

In D.07-10-032, the Commission directed the California IOUs to undertake a strategic planning process and develop a draft California Energy Efficiency Strategic Plan (CEESP) designed to lay out a comprehensive long-term strategy through 2020. This decision also directed that the CEESP include a strategy for integration across the full range of Demand Side Management (DSM) options. Further, the Commission directed the utilities use the draft CEESP to inform the 2009-2011 portfolio of energy efficiency programs. On September 18, 2009 the Commission adopted the final version of the CEESP, the California Long Term Energy Efficiency Strategic Plan (Strategic Plan or CLTEESP), which specifically addresses the need for integrated DSM in Chapter 8 as well as throughout the Strategic Plan.

The Commission convened a coordinated DSM workshop on March 7, 2008, which included discussion of foundational issues and IOU presentations of proposed coordinated marketing efforts and program pilots. The Commission then issued the April 11, 2008 Joint ACR in R.06-04-010 and R.07-01-041, providing additional guidance to the utilities in this regard. In particular, an order of priority was established for Integrated Demand Side Management (IDSM) activities:4

- 1. Comprehensive and coordinated marketing, packaging and delivery
- 2. Operation improvements
- 3. Optimization

D. 07-10-032, p. 141.

² *Id.*, p.73., D. 07-10-032, p. 141.

³ *Id.*, p.144.

Joint Assigned Commissioners' Ruling Providing Guidance on Integrated Demand-Side Management in 2009-2011 Portfolio Applications dated April 11, 2008, p. 7.

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The Joint ACR also included instructions that "IDSM programs involving the use of demand response funds should be clearly indicated in both energy efficiency and demand response applications."5

Southern California Edison's (SCE) Proposed Program Plan for 2009-2011 2010-2012 complies with this direction. The portfolio includes new initiatives to promote IDSM and a fully integrated strategy of information, messaging, and outreach. SCE's proposed portfolio continues and expands its efforts focused on integration of energy efficiency and demand response programs. In alignment with the December 12, 2008 Assigned Commissioner and Administrative Law Judge's Ruling Modifying Schedule and Requiring Additional Information For 2009-2011 Supplemental Filings⁶, each Program Implementation Plan for the 2009-2011 2010-2012 funding period addresses integrated DSM. In response to Energy Division constructive comments on draft plans for 2009-2011, the IOUs have collaborated with the Energy Division to develop a Statewide Integrated Demand Side Management Strategy.

The Statewide strategy for IDSM proposes a statewide task force comprising IOU members from EE, DR, and other stakeholder organizations as well as members from the Energy Division and selected third-party experts. This activity is described in the Statewide Demand-Side Management Coordination Program Implementation Plan. In brief, the Task Force will coordinate the activities described in this testimony as well as addressing issues such as costeffectiveness, shared savings, etc. that affect the penetration of IDSM. The Task Force represents an important policy evolution, as SCE will join forces with both the other IOUs and the Commission to move IDSM forward.

В. **Protocols For Funding Source Allocations And Disbursements**

An important consideration for the successful integration and coordination of energy efficiency and demand response is the development of financial protocols for the allocation of

Id., p. 14.

Assigned Commissioner and Administrative Law Judge's Ruling Modifying Schedule And Requiring Additional Information For 2009-2011 Supplemental Filings, dated December 12, 2008, OP#4, p. 4.

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program-specific costs across integrated delivery channels. This section will address the identification of appropriate funding sources for each of the coordinated IDSM technologies, pilots, and programs.

SCE will draw from multiple authorized funding sources for the operational budgets for the IDSM programs identified in this Application. There are two categories of costs associated with the program proposals: (1) additional "stand alone" operational costs associated specifically with the DSM programs proposed in this Chapter, and (2) incremental marketing and incentive funding to be drawn from the existing energy efficiency, demand response, renewables, and other programs as identified to achieve the energy and demand savings goals of the programs proposed.

For each DSM program initiative or pilot program requested, there is a corresponding operational budget identified that is necessary to fund SCE's project management, third-party contractors, and other resources that are specific to the implementation of the program. Additionally, incremental incentives from other programs, such as Commercial, Industrial, Agricultural, New Construction, and Technology Assistance & Technology Incentives (TA&TI) will be added to the existing energy efficiency and demand response program budget requests and specifically set aside to fund the DSM initiatives. This specific and incremental funding source approach accomplishes three objectives: (1) provides the DSM programs with a specific operational focus by allocating specific funds for management and third parties to accomplish the goals of the programs; (2) associates incremental incentive funding from the individual energy efficiency, demand response, and renewable programs and other programs, which maintains individual program funding and goal accomplishment; and (3) provides for a "clean slate" financial tracking mechanism to identify and report incremental DSM program costs under separate accounting that are distinct from the energy efficiency and demand response program portfolio funding.

For shared costs among two or more DSM programs, costs will be allocated based on the size of the approved budgets.

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DSM offerings. Costs for this will be attributed to the applicable DSM program area.

C. **Funding Request**

Table I-1 **IDSM Programs** Forecast Expenses 2009-2011 2010-2012

SCE will also look for opportunities to leverage third-party contractors to coordinate

	Expense Type	Forecast (\$)	
Line No.		2009-2011 <u>2010-2012</u>	
		DR	EE
1.	Nonresidential New		
	Construction ⁷	831,674	\$49,245,000
2.	Residential New Construction ⁸	417,066	\$24,894,000
3.	Institutional & Government		
	Partnership Initiatives	327,003	\$45,914,000
4.	IDSM Pilot for Food Processing	291,628	\$694,000
5.	WE&T Connections		
	(EE)/SmartStudent (DR)	149,485	\$9,056,000
6.	IDEEA Programs		\$55,154,569
		543,492	<u>\$56,820,486</u>
7.	TRIO Program		\$1,200,000
		310,401	<u>\$1,285,000</u>
8.	Statewide IDSM Program	88,785	\$1,264,000
9.	Total	2,959,534	\$187,421,569

D. **Proposed and Enhanced Programs to Advance DSM Integration**

1. **Overview**

As part of its 2009-2011 2010-2012 Energy Efficiency and 2009-2011 Demand Response Applications, SCE proposes multiple initiatives designed to 1) pilot new integrated program concepts, and 2) integrate additional DSM options into existing program designs that have been successful as stand alone energy efficiency or demand response programs. All of the proposed programs are viewed as pilots because the expectation of increased efficacy is based

For energy efficiency, this includes Savings By Design.

For energy efficiency, this includes California Advanced Homes.

primarily on judgment. SCE selected markets and platforms for the pilots based on 1) its judgment that they have a high potential for end use consumer acceptance and/or adoption of recommended measures; 2) they provide reasonable opportunities to maximize the benefits of integration; and 3) they will serve as good platforms for expanding/modifying the range of integration to further evaluate the best methods and technologies to promote integration. It must be remembered that while SCE can promote the adoption of integrated measures, it is ultimately a customer choice to implement the recommendations in the absence of mandating regulations. Section 2 presents an overview of each new and enhanced program; for more program information, please see the detailed program implementation plans (PIPs) in Exhibits SCE-3, SCE-4, and SCE-5. As noted earlier, the pilots will be coordinated and assessed by the new proposed Statewide IDSM Task Force, which may also propose additional pilots.

2. <u>Program Proposals</u>

The primary objective of each proposed program is to deliver energy and demand benefits to ratepayers in the immediate and intermediate future. The second objective is to pursue long-term resource and general environmental benefits by supporting the Zero Net Energy and sustainability goals embraced collaboratively through the California Energy Efficiency Strategic Planning process. Consequently, each program is comprised of both proven and promising elements. While promising, some program elements may prove unsatisfactory; those that do will be augmented or replaced. Those that succeed will be enhanced or expanded.

In addition, with experience, additional ideas will arise. SCE intends to introduce new pilot efforts to continue to expand the understanding and benefits of integration, and coordinate these with the Statewide IDSM Task Force. SCE believes that its proposals regarding DSM integration and coordination comply with the direction and suggestions received from the Commission and its Staff.

a) Savings by Design (Non-residential New Construction) Integrated DSM
 Opportunities for energy efficiency measures for implementation in non-

residential new construction have been addressed for years under SCE's Savings by Design

program. This program has been very successful in achieving improvements in commercial building energy efficiency (EE) over the current California building standards. The guidelines and measures for improvements for saving energy over the life of the building are clearly defined and prescriptive for that customer market segment.

What may not be clear for SCE's larger commercial customers is how technologies for demand response and on-site generation can be integrated in new construction projects. Demand response (DR) is a short-term reduction in energy usage from the customer's typical operations, and experience from SCE's TA&TI shows that while retrofitting a building with demand response enabling technology can benefit existing customers, the integration of this technology as part of the design in a new construction approach, while challenging, is clearly more cost-effective than retrofitting an existing building.

The Savings by Design DSM Initiative is a new approach that SCE will use to leverage existing delivery channels for energy efficiency in the non-residential new construction market, and integrate energy efficiency, demand response, and renewable program components. This initiative seeks to create a path to "Zero Net Energy" (ZNE) projects that can be modified over time to incorporate more and/or different DSM measures to ultimately meet the policy goal of ZNE commercial buildings. The program will be integrated with current projects in the energy efficiency pipeline for "quick wins" early in the funding cycle.

This integrated approach for Savings by Design DSM will build capability within the design and construction community and encourage adoption of demand-response enabling technologies. This approach will also capture the lost opportunities that result when program implementers focus on energy efficiency to the exclusion of emerging technologies that provide for demand response. By expanding beyond the scope of enhanced energy efficiency, new buildings can increase their potential for saving energy on a dispatchable basis through a demand response program. Building systems to promote DR include enhanced energy management systems, dimmable and dispatchable ballasts, intelligent lighting and heating, ventilation and air conditioning (HVAC) controls, and automated building control systems.

These systems are capable of responding to web-based dynamic pricing signals (such as exemplified by the current auto demand response program).

The initiative will also assess the opportunities for the integration of delivering renewable generation to the non-residential new construction segment. Many of the same reasons that make EE and DR more cost effective in new construction than retrofit, also apply to on-site renewable generation. This is particularly true with building-integrated PV, which can offset some of the material costs associated with envelope materials. In addition, for developers or institutions with an interest in promoting the green attributes of their project, the visibility of renewable technologies such as PV or wind turbines can help sell the project in ways that "invisible" EE or DR elements cannot.

b) <u>California Advanced Homes (Residential New Construction) Integrated</u> <u>DSM</u>

The need for a residential integrated DSM program is driven by three interrelated market forces. First, southern California's population continues to grow, and this growth drives demand for new residential housing. Second, the new home market is in a historic economic decline and builders face the challenges of meeting new state energy code requirements, differentiating themselves from the competition, and keeping their prices competitive with the existing homes for sale. Third, new communities are often located in hotter climates or in areas with constrained electrical distribution services. As more developments with larger homes and larger heating and cooling systems are built in warmer regions, the need for both increased overall efficiency and effective responsiveness to future dynamic pricing for electricity is clear.

For SCE, California Advanced Homes Program (CAHP) has proven itself able to deliver energy efficient measures to this market in a cost-effective manner. California Advanced Homes Integrated DSM continues CAHP's track record in energy efficiency and expands it to incorporate demand response enabling technologies as well as renewable

generation measures. The goal is to integrate DR and SGIP with the new homes' efficiency measures to achieve more cost-effective delivery of the combined technologies.

California Advanced Homes Integrated DSM will leverage its existing marketing, outreach, and collaborative partnership relationships with the homebuilding industry. SCE intends to leverage these relationships to enhance demand response program participation, in addition to energy efficiency and renewable program elements. The CAHP also includes the Zero Net Energy Homes sub-program which will work with builders to construct ZNE demonstration projects, evaluate technologies in concert with ET, and create case studies and lessons learned for future projects. In 2010, as the Edison SmartConnectTM program will be rolled out to areas that may include new construction, the program will integrate enabling technologies such as programmable communicating thermostats that will be able to leverage the enhanced functionality of the SmartConnect meters.

California Advanced Homes Integrated DSM will build upon its relationship with the development community to deliver demand response technologies alongside energy efficiency. Examples of these technologies include controllable lighting systems, in-home displays, and any new and emerging energy efficiency, renewable, energy storage or peak demand management technologies that can add desirability for builders and future homeowners. CAHP will also assess the opportunities for the integration of enabling technologies associated with self-generation in this sector, which can range from wind and solar local generation, standby storage, and plug-in hybrid vehicles.

c) <u>Institutional & Government EE Partnerships Initiative</u>

Energy Efficiency partnership programs that leverage the institutional customer sector as an energy program delivery channel are an excellent example of a successful delivery channel for DSM programs. SCE has a number of these partnership programs in place, with varying levels of market penetration, partnership models, and bilateral agreement terms. A good example is the SCE Energy Leader Partnership model that creates energy partnerships with local governments to generate savings through municipal retrofits and community outreach.

Plans are already in place to integrate other DSM measures such as demand response education, outreach, and rebate incentives. While SCE's partnership model already coordinates both energy efficiency and demand response recommendations, they have been undertaken as separate activities. This proposal would target customers that would best benefit from integrated measures and then develop and promote adoption of integrated proposals that include a comprehensive range of DSM options. This emphasis is new to SCE's partnership program.

Rather than duplicate these efforts or interfere with the delivery process at the community level, SCE's demand response and energy efficiency groups have partnered to use the energy efficiency Institutional & Government Energy Efficiency Partnership delivery channel as a means to maximize comprehensive DSM opportunities. With an already established relationship with multiple federal, state, and local government agencies, the SCE's Energy Efficiency Division can enhance their program delivery to this "hard-to-reach" customer segment, providing an excellent opportunity for deploying integrated DSM programs, including demand response, energy storage, and renewable generation.

For the institutional customers, energy efficiency, demand response, and renewable power all have the same "look and feel" to them as an "energy" category. Though currently separated by regulatory definitions and organizational boundaries, the different DSM programs need to be integrated in both delivery and operation. At the very least, collaboration within the larger delivery channel will provide benefits such as a comprehensive message, a unified program, and coordinated incentives, which can reduce costs and increase customer satisfaction. In addition, since this market sector typically has multiple approval steps, stringent financial requirements, and longer construction lead times for the implementation of energy efficiency measures, it makes sense to work with the current delivery channel rather than to develop a parallel effort that may duplicate and possibly neutralize current partnerships.

d) <u>IDSM Pilot for Food Processing</u>

California has a very strong agricultural production and food processing industrial base. This customer sector represents an important opportunity for coordinated DSM

program integration. The IDSM Pilot for Food Processing is a new program that combines integrated auditing, resource efficiency labeling, and continuous improvement methods to maximize the operating efficiency of customer facilities and to minimize energy and demand resource requirements. Incentives are provided through existing program delivery channels, and the costs of the pilot are limited to administrative, technical support, and consulting services. Projects in this initiative will be site-specific and will be tailored to each facility to seek comprehensive resource efficiency improvements. Additional benefits will include behavioral improvements across energy utilization and waste management, and water usage.

The program's integrated approach combines traditional measures (energy efficiency retrofits and/or upgrades) along with strategies to help customers manage and/or reduce their energy demand during peak periods, especially during hot summer days. By combining these two approaches, this initiative provides the customer with a comprehensive solution to manage day-to-day energy costs and develop a demand response plan to enable the facility to respond to days of high energy use (peak periods) when energy demand is critical. While the primary program focus is energy efficiency, the development of measures emphasizes integrated solutions in proper sequence (energy efficiency first, then demand response) to support the most cost-effective and satisfactory energy and financial solutions for these stakeholders.

The IDSM Pilot for Food Processing will deliver an integrated solutions-driven approach specific for this customer segment, while leveraging the offerings of SCE's portfolio of energy efficiency and demand response incentive-based programs. Additionally, the long-term solutions will adopt the concepts of continuous improvement and best practices, capture emerging technologies that can maximize energy and demand savings, and optimize systems and technologies that will enable multiple DSM options.

e) <u>Technology Resource Incubator Outreach Program (TRIO):</u>

New technologies and methods are required to achieve the fullest use and benefit from Integrated DSM. This is not unique to integration; it is also true for every DSM

option. However, unlike the individual DSM options, there are very few existing integrated measures. Ultimately, integrated measures must be developed and promoted. TRIO is a new program designed to find, fund, and field-test the best of new technologies and technology delivery approaches from the university marketplace and to provide the opportunity to mainstream them into the overall SCE-managed energy efficiency portfolio of proven, successful, and reliable programs. TRIO places much more emphasis on innovation and promotion of promising technologies. These promising technologies will be nurtured and developed through workshops designed to teach the implementer how to do business with utilities. The workshops will guide the technology developer through work paper format and E3 calculator training. Once this training has been completed, a proposal will be submitted to several possible SCE-sponsored programs and will be scored using the current scoring criteria for the 2009-2011 2010-2012 program cycle. Integrated measures will be emphasized as a pilot effort in the inaugural years of the TRIO Program.

3. Other Coordinated Activities

As part of the solicitation activities, SCE will also look to third parties for ideas on how to integrate and coordinate with other offerings as part of the energy efficiency implementation and delivery. As with the pilots, these activities will be tracked and assessed by the Statewide IDSM Task Force to ensure effectiveness and integration. With respect to costs, SCE will use the same attribution rules discussed in Section B of this Chapter. Coordination activities in the 2009-2011 2010-2012 portfolio include:

(a) IDSM Third-Party Solicitation (IDEEA): The third party solicitations are designed to solicit program ideas centered on technologies and/or program designs that integrate energy efficiency with other demand-side offerings, such as demand response, self-generation, CSI, etc. The objective is to deliver persistent, innovative, and sustainable electric energy savings and to reduce utility administration costs.

- (b) WE&T Connections Program (energy efficiency)/Smart Student Program (Demand Response): this education program leverages the energy efficiency WE&T Connections Program to promote demand response programs, and is delivered through two proven coordinated program strategies Green Schools and Living Wise. SCE will modify the 2006-2008 energy efficiency portfolio's LivingWise® kit contents as well as the Green Schools Compact Fluorescent Lamp Exchange events to include information and incentives tied to enrollment and participation in demand response's Summer Discount Plan (SDP). Green Schools will also continue distributing SCE Residential Savings Guide to students in 2008 which includes demand response's SDP.
- (c) Online Buyer's Guide: Promotes incentives available through demand response and CSI programs.
- (d) Private Schools & Colleges sub-program: Provides referrals to demand response and information about distributed generation, as applicable.
- (e) Comprehensive Home Performance Program: Encourages and integrates demand response, CSI, self-generation and SmartConnectTM.
- (f) Energy Efficiency for Entertainment Centers: Encourages and assists enrollment in demand response programs.
- (g) Appliance Recycling Sub-Program: Energy efficiency's Appliance
 Recycling Program will coordinate with demand response's SDP by
 designing joint marketing messages that will increase participation in both
 energy efficiency and demand response programs.
- (h) Mobile Education Unit: The Mobile Education Unit is a converted recreational vehicle equipped with program literature, educational materials and technologies and displays that promotes SCE's DSM offerings including energy efficiency, demand response, and CSI.

(i) Edison SmartConnect™ is an Enabling Technology for Integrated DSM:

In Edison SmartConnectTM Phase III Application (A.07-07-026), SCE
has proposed to install 5.3 million state-of-the-art "smart" meters in
households and businesses under 200 kW throughout its service territory
beginning in 2008. These "smart" meters will be part of SCE's advanced
metering infrastructure (AMI), Edison SmartConnect. This system of 5.3
million meters and ubiquitous yet secure communication standards enables
powerful customer tools to manage energy consumption, enhances the
customer service efficiency, opens up new services with smart technology,
expands dynamic rate alternatives, and provides a flexible, robust platform
that can create additional future value for SCE's customers. As such,
Edison SmartConnect™ more than adequately supports federal and state
energy policy objectives.

Customer access to interval electricity information is one of the core tenants of AMI. Such data is currently only available to large customers with demands greater than 200kW. Edison SmartConnectTM will allow SCE to expand the availability of both historical and near-real time interval usage data to the masses. Both forms of data can be presented and analyzed through a variety of communication channels, including the Internet and customer-owned home area network (HAN) devices. The availability of these various forms of information is a critical component of SCE's IDSM efforts, which is focused on sustaining socially responsible changes in customer energy consumption through energy conservation, demand response, energy efficiency and other advanced technologies.

SCE expects customers to conserve energy from the combination of customer access to historical and near real time usage data provided by

the Edison SmartConnectTM meter. Whereas near real time information works like a speedometer – showing the current rate of energy consumption – the historical cumulative displays act like an odometer – showing total energy used to date. Experience to date indicates clearly that information feedback reduces total electricity consumption. In a Meta-study of over 100 demand response programs, electricity customers cut energy consumption by as much as 20 percent. The results indicate that information feedback provides a positive reinforcement from changes in customers' behavior. A clear and positive conservation effect is derived from providing customers historical and near real time usage information. The evolution of providing information feedback will eventually move from passive to proactive whereby customers will have notifications or automated responses to signals from the utility. By providing proactive communication in the style of "alerts" and notifications, SCE's customers will experience an even greater conservation effect. In the above automotive analogy, the alerts work like warning indicators – showing a condition that should be responded to. The Tier Alert program is a clear example of SCE's approach of leveraging the SmartConnectTM infrastructure to provide important customer feedback to encourage energy conservation.

In addition, Edison SmartConnect[™] will be instrumental in designing new demand response programs for managing peak consumption among millions of customers. The availability of interval usage information enables dynamic pricing options which provide incentives for customers to shift their usage, in part or whole, to off-peak hours, resulting in avoided capacity benefits. Edison SmartConnect[™] will also allow all residential and business customers to participate in

reliability and economically dispatched programs as part of a more comprehensive IDSM approach, in addition to current base load control and DR programs. The ability for the new meter to communicate and exchange data with other devices on the customers' premises serves as a critical component in the design of future DR programs. The added dimension of interval data provides SCE the opportunity to design advanced rates and programs to assist over five million customers better manage and understand their energy consumption.

Furthermore, as customers receive more informative data and analyses about the cost of their energy usage through Edison SmartConnectTM, it is expected that their interest will increase in EE programs that help them to more permanently reduce their energy consumption. For example, with Edison SmartConnectTM, a customer can view the bill impacts of installing an energy efficient appliance the day after it is installed using historical comparative analysis. In addition, SCE will be able to expand valuable energy analytic tools, which currently are only available to its large customers. These tools can help customers forecast bill reductions that result from investments in energy efficient products and services.

Finally, promising new technologies enabled by Edison

SmartConnect™ offer the potential to significantly broaden the field of stakeholders in the energy management arena of the future for IDSM programs, thereby promoting more effective use of capacity resources. In anticipation of future changes in technology and changes in regulatory policy objectives, SCE has designed flexibility into its Edison

SmartConnect™ system to accommodate the likelihood of IDSM programs (including plug-in hybrids), future building code changes, in-

home energy information displays, smart grid management, and distributed resources.

By expanding interval usage information to essentially all of SCE's customers, Edison SmartConnectTM is a critical component in facilitating the effective delivery of IDSM to over five million SCE customers. As the gateway into these customers' premises, Edison SmartConnectTM will serve as a critical component in the infrastructure required to support the entire portfolio of IDSM measure types. In short, Edison SmartConnectTM is that platform that will serve as the springboard to wide-scale adoption of IDSM programs in the future.

E. Coordinated DSM Marketing

The objective of SCE's marketing, education and outreach efforts from 2009 to 2011

2010 to 2012 is to maximize energy efficiency savings and move customers towards adopting an energy-efficient lifestyle. Marketing, education and outreach campaigns, and materials will be developed in a manner that leverages statewide branding, in order to maximize participation, market transformation, and adoption of long-term energy efficiency behaviors. SCE's marketing efforts are consistent with the Strategic Plan's objectives in that it leverages an integrated portfolio of DSM programs. These marketing efforts will be coordinated statewide per Commission directions to create a series of Statewide EE programs (see Exhibit SCE-3 for more detail's).

SCE will also continue to develop integrated marketing campaigns, which have been a key part of the utility's marketing efforts since 2002. The integrated marketing campaigns use customer segmentation research to better understand customers and provide them with a wide range of action-oriented solutions that will maximize energy savings. Segmentation will also enable SCE to customize the characteristics of its offerings, providing customers with solutions that are relevant to their needs.

In order to accomplish SCE's key objectives, marketing efforts will be designed to move consumers through a continuum from awareness, to attitude change, to long-term behavior change. Given the diversity of SCE's customer base, SCE will use multiple layers of integrated marketing to effectively reach customers and drive them to action.

Integration will be achieved by presenting IDSM as the complete energy management solution that can help customers save energy and manage their energy costs, while helping the environment. SCE will ensure customers clearly understand "energy management" as a whole with respect to how all of the components of the DSM portfolio work together.

Integrated marketing begins with understanding the customer and providing them with relevant solutions, which may include energy efficiency, demand response, Low Income Energy Efficiency (LIEE) EE, California Solar Initiative (CSI), and SmartConnectTM offerings.

Customer segmentation will enable SCE to target customers with integrated marketing solutions that are relevant. For example, SCE could use its segmentation to identify customers who are proactive savers and conservers and provide solutions including rates, demand response programs, and energy efficiency rebates. SCE could also send relevant messages to conservationists to help them lower their carbon footprint, providing solutions such as integrated energy efficiency/demand response audits, Summer Discount Plan, CSI, and energy efficiency measures. By providing customers with relevant solutions made up of programs and services from across SCE's DSM portfolio, customers will be able to more effectively take action that benefits them, the environment, and SCE's community

F. Attribution of Energy Savings

1. Background

a) <u>Foundational Issues</u>

One of the projected key benefits of integrating demand-side programs is enabling broader and deeper penetration of markets to reach the multiple program goals of energy savings, peak demand reductions, system-callable load management, and displacement of other energy sources with renewable energy sources.

Two critical principles for integrated programs are to assure that:

- All these benefits are accounted for, and
- They are each counted only once for the combined program effect.

In fact, satisfying these principles is actually more feasible for an integrated program than for programs that are not coordinated. When programs are not coordinated, the effects of one program on another are easily overlooked. Energy efficiency programs that reduce peak demand generally reduce the callable load reduction potential of demand response programs. A demand response program that provides addressable dimmable ballasts to enable load reduction when a demand response program is called, also provides a possible conservation option that may or may not be captured by the customer, and is certainly not counted.

b) Commission Guidance

The Joint ACR requires that the utilities' pilot programs should enable and include "the identification and testing of different energy savings attribution methodologies potentially feasible for use in IDSM pilot projects or programs." This should include testing the stepwise attribution approach outlined by Energy Division at the March 7 workshop.

2. Plan for Identification and Testing of Different Savings Attribution Methodologies

Initial identification of potential measurement approaches to be tested should be completed in 2009-2010. Evaluation, Measurement, and Verification (EM&V) staff at the utilities and the Commission and/or their assigned contractors will review the literature on attribution methods and identify and develop approaches that are most appropriate for IDSM programs. These approaches should be informally communicated to the other organizations. Utility EM&V staff will then schedule a workshop to discuss the options and the issues each one raises, and identify which options may work best with which programs. Utility EM&V staff will then work with the pilot program managers at their utility to assure that detailed program design and implementation procedures take into account the need to gather data necessary for the testing

of a the most appropriate approaches. These approaches will include the stepwise approach described by Energy Division.

As is the case with other EM&V plans, it is not feasible to develop strong impact evaluation plans before program and portfolio plans are completed.

There are numerous other important issues that could be illuminated by process and impact evaluations of the pilot programs. Among them are:

- The hypothesis that integrating or coordinating programs will reduce program marketing and administration costs;
- The hypothesis that integrated/coordinated programs will enable deeper and broader program penetration in the target population;
- The mix of individual program goal achievements;
- The role of integrated approaches in furthering progress towards ZNE goals;
- The effects of alternative cost allocation approaches; and
- The tradeoffs between customer choice and technology optimization.

G. IDSM Cost-Effectiveness

1. Background

Cost-effectiveness analysis of IDSM measures presents significant challenges because of the different characteristics and resource values associated with the different types of measures that could conceivably comprise IDSM programs. As directed in the Joint ACR, SCE has provided recommendations regarding methodologies to perform cost-effectiveness analysis of IDSM programs. However, SCE views its recommendations simply as a starting point for discussion. In its initial filing on this proceeding in July 2008, SCE recommended that a series of workshops be held to further examine and develop cost-effectiveness methodologies for IDSM programs. Ideally, these workshops would be conducted in conjunction with workshops to examine attribution (i.e., measurement and evaluation) protocols for IDSM programs. This is

still the case, but in addition, the Statewide Task Force will coordinate the assessment of costeffectivness methodologies.

a) Commission Guidance

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There is currently no Commission guidance regarding specific methodologies to perform cost-effectiveness analysis for IDSM programs. The Assigned Commissioner's and Administrative Law Judge's Ruling Regarding Cost-Effectiveness Metrics And Energy Efficiency Policy Manual, dated March 14, 2008 (March 14 Ruling), identified one-stop shop coordinated DSM delivery and statewide IDSM Marketing, Education and Outreach (ME&O) activities as specific strategies in the CEESP that may require alterations to the Energy Efficiency Policy Manual in order to affect their launch and full implementation in a timely fashion. In their comments to the March 14 Ruling, the Joint Utilities requested that the Commission ensure consistency of cost-effectiveness methodologies across the various DSM proceedings, including a consistent value for a carbon adder that can be used for demand-side and supply-side resources:

"In advance of the May 15 Strategic Plan and Portfolio Application filing, the Joint Utilities encourage the Commission to strive for consistency with cost effectiveness approaches developed for other demand-side resources when making modifications to current energy efficiency cost-effectiveness metrics and to the Energy Efficiency Policy Manual. In particular, See discussion infra Section II.B.3., recommending that the energy efficiency rulemaking leverage recent work in the demand response rulemaking (R.07-01-041) to ensure consistent methodologies for cost-effectiveness evaluation. Further, on the issue of the appropriate level for a carbon adder, multiple Commission proceedings are currently examining the value of a carbon adder to be used in resource valuation. These proceedings affect both demand-side and supply-side resources and include R.06-04-010, R.07-01-041, and R.06-02-012. It is important that a consistent value for a carbon adder be used across all of these proceedings so that all resources, demand-side and supply-side, are valued in a comparable manner." 10

Assigned Commission's and Administrative Law Judges' Ruling Regarding Cost-Effectiveness Metrics and Energy Efficiency Policy Manual, dated March 14, 2008, pp. 2-3.

Response of Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company to Assigned Commissioner's and Administrative Law Judge's Ruling Regarding Cost-Effectiveness Metrics and Energy Efficiency Policy Manual, dated April 1, 2008, pp. 15-16.

The Joint Utilities also provided multiple policy proposals for the Energy Efficiency Policy Manual to accommodate the DSM integration and coordination strategies in the CEESP in response to the March 14 Ruling. The Division of Ratepayer Advocates (DRA) also acknowledged the importance of cost-effectiveness guidelines for IDSM cost-effectiveness in their reply comments to the March 14 Ruling. Further, DRA recommended that the Commission establish a new Order Instituting Rulemaking to consider integration of DSM programs, including the adoption of common avoided costs and cost-effectiveness methodologies. However, there was no specific guidance regarding coordinated/integrated DSM in Revision 4.0 of the Energy Efficiency Policy Manual.

In the demand response OIR the utilities were directed to include information on proposals to coordinate energy efficiency and demand response that would also be filed in the energy efficiency 2009-2011 program application. However, no other guidance was provided in this rulemaking regarding how to perform cost-effectiveness analysis for IDSM programs. In their comments about Energy Division staff's draft demand response cost-effectiveness framework, DRA pointed out that the framework did not provide guidance regarding cost-effectiveness evaluation for IDSM programs. 14

The Joint ACR of April 11, 2008 directed utilities to include an outline of a plan to develop and test different cost-effectiveness approaches for proposed pilot project implementation pathways. The Joint ACR directed utilities to consider two approaches at a minimum: 15

Id, Attachment A, p. 10

The Division of Ratepayer Advocates Reply Comments On Assigned Commissioner's and Administrative Law Judge's March 14, 2008 Ruling Regarding Cost-Effectiveness Metrics And Energy Efficiency Policy Manual, dated April 1, 2008, p. 10.

Administrative Law Judge's Ruling Providing Guidance on Content and Format of 2009-2011 Demand Response Activity Applications, February 27, 2008, p. 6-8, 14.

Comments of the Division of Ratepayer Advocates, April 25, 2008, R.07-01-041, p. 11.

Joint Assigned Commissioner's Ruling Providing Guidance on Integrated Demand-Side Management in 2009-2011 Portfolio Applications, April 11, 2008, pp. 9-10.

 Use of an integrated cost-effectiveness test that assesses on a cumulative basis the combined cost-effectiveness of the entire IDSM pilot, program or set of measures.

SCE's recommendations to utilize these approaches for the costeffectiveness analysis of IDSM programs are provided in Sections G.3 and G.4 below.

b) Foundational Issues

The Joint Utilities identified cost-effectiveness as one of the "foundational issues" presented at the March 7, 2008 IDSM workshop, and provided general recommendations regarding how IDSM cost-effectiveness could be addressed for the 2009-2011 energy efficiency and demand response applications. These recommendations included development of an IDSM cost-effectiveness framework in conjunction with the IDSM pilot projects.

2. Plan for Identification and Testing of Different Cost-Effectiveness Methodologies

In providing recommendations for determining cost-effectiveness of IDSM programs SCE has attempted to balance theoretical purity, analytical rigor, and computational complexity. SCE's objective underlying these recommendations is to deliver accuracy levels adequate for program assessment and policy-making while avoiding methods that greatly increase computational complexity but provide little or unknown increases in accuracy. The proposed methodologies attempt to promote transparency where practical. This transparency combined with the use of feasible/workable methodologies will yield results and supporting analyses more readily understandable to stakeholders and will facilitate greater implementation of IDSM programs.

¹⁶ IDSM Foundational Issues, presented by SCE at the Integrated Demand-Side Management Workshop, March 7, 2008.

SCE recommends that evaluation of both of the proposed approaches be included as a fundamental element of the IDSM pilots. This evaluation would support the "learn by doing" objective of the IDSM pilots.

a) SCE's Proposed Cost-Effectiveness Approaches Use the Standard Practice Manual

Both of the IDSM cost-effectiveness approaches proposed by SCE would use the framework of the California Standard Practice Manual (SPM). The approaches differ only in that one applies the SPM to each DSM measure sequentially, the other applies it to the integrated (system) impacts of the IDSM programs.

b) <u>Separate Avoided Energy and Capacity Costs Are Required</u>

In the Joint Utilities' response to the March 14 Ruling, the Joint Utilities recommended that separate avoided energy and capacity costs be used to calculate energy efficiency cost-effectiveness, rather than the current approach that only implicitly considers avoided capacity value based on the 1998-2000 PX price shape. The current time differentiation should be retained.

In addition, avoided energy and capacity costs should be disaggregated. The use of disaggregated avoided energy and capacity costs will more fully capture the value of energy efficiency, especially during on-peak periods. Separating avoided energy and capacity costs is particularly critical for IDSM to reflect the specific characteristics of the various DSM measures within an IDSM program.

3. Sequential Analysis of the Cost-Effectiveness of a Combined IDSM Pilot or

Program Package, Starting with the Most Cost-Effective Measure

SCE has interpreted the direction in the Joint ACR regarding sequential analysis to be one that would align with the stepwise attribution approach for energy savings described in

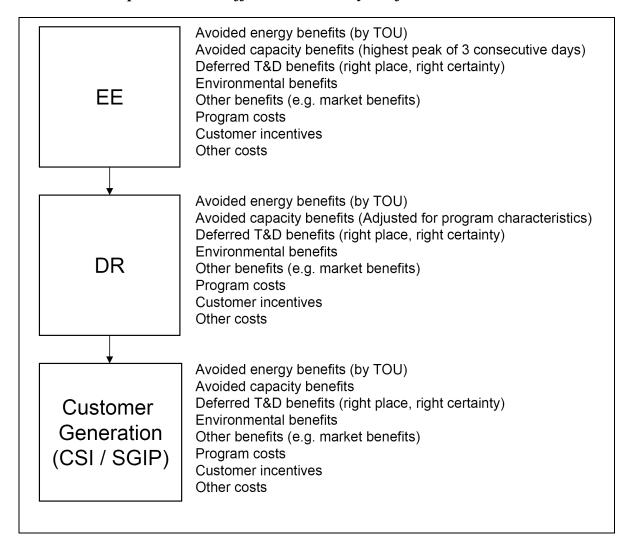
Response of Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Southern California Gas Company to Assigned Commissioner's and Administrative Law Judge's Ruling Regarding Cost-Effectiveness Metrics and Energy Efficiency Policy Manual, April 1, 2008, p. 9

Section F of this Exhibit SCE-6. Taken literally, the direction provided in the Joint ACR would require a sequential analysis with the most cost-effective DSM measure being evaluated first. This approach would assume a prior knowledge of the cost-effectiveness of each DSM measure in an IDSM program. In other words, one would have to know the cost-effectiveness of each measure to perform a cost-effectiveness analysis. Conceivably, a cost-effectiveness analysis could be performed for each DSM measure reflecting the full impact of each measure without regard for the interrelated impacts across measures. However, this approach would result in multiple (i.e., double, triple, or more) counting of the savings from the various measures, and therefore would not accurately reflect the integrated aspect of the measures.

To avoid this potential multiple counting problem, SCE has interpreted the sequential cost-effectiveness analysis to be based on the Energy Action Plan loading order, consistent with the stepwise attribution approach for energy savings. In SCE's sequential analysis, the cost-effectiveness of each demand response measure in an IDSM program would be evaluated independently based on the energy and demand savings of that measure when implemented according to the loading order. The energy and demand savings and resulting resource benefits for DSM measures would be reduced based on the measures that preceded them.

SCE's proposed sequential approach is shown in Figure I-1 below.

Figure I-1
Sequential Cost-Effectiveness Analysis of IDSM Measures



This sequential approach correctly reduces the benefits of measures as one moves down the loading order, and consequently, it is a conservative approach to valuation. However, this approach also has the greatest analytical complexity because of the multiple analyses that are required to evaluate each measure separately. The sequential approach also presents a real risk of sub-optimization, as measures further down the loading order may be found non-cost-effective when their impacts are measured in a stepwise manner and then valued. This sub-optimization may seriously undermine the ability of the Joint Utilities to cost-effectively implement IDSM programs.

of an IDSM program as a whole, rather than for each of its component measures. There is no straightforward way to combine the measure-level cost-effectiveness analyses to determine a program-level cost-effectiveness. Conceivably, a weighted-average Total Resource Cost (TRC) could be calculated for an IDSM program based on its component measures, but the appropriate weighting factor is not immediately obvious.

4. <u>Use of an Integrated Cost-Effectiveness Test That Assesses on a Cumulative</u>

<u>Basis the Combined Cost-Effectiveness of the Entire IDSM Pilot, Program or Set of Measures</u>

A sequential approach also presents challenges in assessing the cost-effectiveness

An integrated cost-effectiveness test of IDSM would look at the combined effects of all DSM measures on a system or holistic basis, rather than in isolation. An integrated cost-effectiveness approach would present significant challenges in the valuation of impacts because of the differences in the resource value that derive from the characteristics of the individual IDSM measures. For example, energy efficiency programs provide peak reduction impacts across many hours during the on-peak period over the course of a year. However, these impacts are not dispatchable. By comparison, demand response programs provide fewer hours of peak reduction, but these impacts are dispatchable at times of greatest need. These differences translate into different avoided capacity benefits per kW saved.

Measuring and valuing IDSM impacts on a holistic or system basis provides the best opportunity to reflect the synergies that result from integrating measures, rather than implementing them on a piecemeal basis. Consequently, it may be reasonable to trade-off some conservatism to more fully value the benefits of integrating multiple DSM measures into a single program. Analyzing IDSM cost-effectiveness on an integrated or system basis also avoids the risk of sub-optimization that potentially could occur with a sequential analysis. In addition, an integrated cost-effectiveness approach enables IDSM measures to be optimized based on customer needs, rather than being driven by the Energy Action Plan loading order, i.e., an integrated approach does not presuppose that the measures installed based on customers' needs

align exactly with the loading order. SCE's proposed integrated cost-effectiveness methodology is illustrated in Figure I-2 below.

Figure I-2 Integrated Cost-Effectiveness Analysis of IDSM Measures

IDSM

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- EE
- DR
- CSI/SGIP

Avoided energy benefits (by TOU)

Avoided capacity benefits

Deferred T&D benefits (right place, right certainty)

Environmental benefits

Other benefits (e.g. market benefits)

Program costs

Customer incentives

Other costs

H. Continued Coordinated DSM Activities

D.05-01-056 directed SCE to implement integrated energy efficiency and demand response programs targeted at all customer segments. During 2007, SCE tracked several integrated pilot program efforts to develop best practices for energy efficiency/demand response integration through the end of 2007.

The intent of the energy efficiency and demand response integration programs is to develop effective collaboration with the energy efficiency and demand response organizations to provide continuity of communication with customers, improve customer satisfaction, and enhance the delivery of energy efficiency and demand response programs in an integrated manner. This collaborative program design is intended to provide customers with simultaneous program information from individual energy efficiency and demand response programs, rather than isolating the energy efficiency and the demand response delivery, to avoid the need for multiple SCE representatives to meet with a customer on individual programs. This collaborative approach improves customer adoption of the programs, enhances customer satisfaction, reduces operating costs, and improves operational efficiencies between energy efficiency and demand response. This coordination also leverages opportunities to maximize

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energy savings for customers and count those savings towards achievement of energy efficiency goals, while also integrating opportunities for demand response program participation. The following are ongoing integrated activities that will be extended in 2009-2011 through 2012:

1. **Energy Efficiency And Demand Response Outreach Integration**

SCE's Demand Response Event Consortium and energy efficiency Partnership programs will jointly distribute energy efficiency and demand response information to customers at events and include both energy efficiency and demand response collateral in direct mail promotional materials to partnerships, with a goal of seamless delivery of information materials, reduced customer confusion, and reduced efforts and costs.

2. **Energy Efficiency And Demand Response Survey Integration**

Demand response will continue to leverage the Home Energy Efficiency Survey (HEES), by providing a comprehensive energy report including all energy efficiency and demand response measures and recommendations based upon responses to survey questions. By leveraging an existing energy efficiency survey tool, residential customers already expressing an interest in saving energy and money will receive additional information on Summer Discount Program. As standard practice in HEES, customers returning surveys who are not now participating in the Summer Discount Program (AC cycling) are referred to SDP for contact.

Energy Efficiency And Demand Response Integrated Audits 3.

The TA&TI Program (demand response) and the Nonresidential Audit subprogram of the Statewide Commercial Energy Efficiency Program will continue to conduct energy efficiency and demand response integrated field audits for medium to large nonresidential customers to encourage their participation in voluntary demand response programs and energy efficiency programs. SCE has also developed a central source for information related to identifying segment-specific recommendations for energy efficiency and demand response measures, and intends to further develop the design and delivery of energy efficiency and demand response integrated field audits, as well as training, marketing and other roll-out strategies.

4. Energy Efficiency And Demand Response Integrated Messaging

SCE will continue to identify and implement effective marketing strategies to integrate messages between energy efficiency and demand response programs, to avoid redundancy and enhance the customer offer. In the 2006-2008 cycle, energy efficiency and demand response worked together by integrating messaging between SDP and the AC Tune-Up Program; joint messaging will be extended to the Home Energy Efficiency Survey, Home Energy Efficiency Rebates, and the Appliance Recycling sub-programs of the Statewide Residential Energy Efficiency programs, as part of the overall integrated DSM marketing approach.

5. Other Energy Efficiency And Demand Response Integration Pilots

SCE will continue to seek other integration opportunities as feasible. For example, in the 2006-2008 cycle, the Summer Discount Plan (demand response) and the Appliance Recycling Program (Energy Efficiency) and the Palm Desert Demonstration Partnership integrated demand response into their marketing efforts, asking customers if they were interested in SDP and generated leads to the SDP recruitment office. As a result, of the 26,025 refrigerators picked up from customers in the Appliance Recycling Program, 8,027 customers (31 percent) asked to be contacted for SDP program enrollment. SDP personnel also included energy efficiency messaging during their customer contacts, and encouraged customers to participate in numerous SCE energy efficiency programs to maximize their energy savings and reduce their costs during the summer months.

I. Objective for 2009-2011 2010-2012

The results of the integration pilot program efforts from 2007 provided confirmation of the benefits for program integration through improved operations and optimization of coordinated marketing. The pilot efforts also developed informative learning precedents to both the energy efficiency and demand response organizations on the resource and budget constraints and the incremental impacts of integrating energy efficiency and demand response programs. Staff personnel found that it was technically feasible to coordinate marketing and enrollment

activities for programs, and the assumed benefits for customers for capturing lost opportunities became obvious as the integration activities progressed. However, the foundational barriers of funding sources, cost allocation, cost recovery, and attribution of energy and demand savings still pose a challenge to true IDSM deployment.

SCE proposes to focus on integrating energy efficiency and demand response program messaging, delivery, and technologies in a cohesive manner to capture downstream benefits that are the result of enhanced customer adoption of combined DSM measures. Improvements planned in 2009-2011 2010-2012 for energy efficiency/demand response integration are to increase statewide collaboration between energy efficiency and demand response programs, leverage existing program delivery channels from the enhanced energy efficiency programs for 2009, and combine program offerings in both the retrofit and new construction areas. Likewise, the proposed Statewide IDSM Task Force provides a clearinghouse comprising both the IOUs and the Energy Division that will help guide and enhance efforts.

The goals and objective for 2009-2011 2010-2012 are as follows:

- Enhance statewide coordination and management oversight of IDSM
- Provide customers one-stop shopping for products and services
- Develop efficient energy efficiency and demand response program collaboration that is simple to understand and can be implemented among employees and customers
- Provide continuity of customer communication
- Improve customer satisfaction through greater dual participation
- Generate more kW and kWh savings for customers
- Increase efficiencies of program delivery with better approaches and program offerings to attract customers
- Ensure cost-effectiveness in alignment with developing Commission criteria

J. Energy Efficiency and Low Income Energy Efficiency Coordination Efforts

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In addition to coordination between energy efficiency, demand response, and Self Generation offerings, Energy Efficiency and Low Income Energy Efficiency (LIEE) will coordinate efforts to reach a broader residential market containing low income segments and will use energy efficiency and DSM specific messages to create a bridge between the two. The following programs include energy efficiency/LIEE coordination:

- Home Energy Efficiency Rebate Program: will provide customers with information and marketing materials on SCE's LIEE programs
- Multifamily Energy Efficiency Rebate Program: offers property owners LIEE
 program materials and information and increased incentives for installing energy
 efficient measures in qualified low income tenant units; also provides energy efficient
 services and appliances to these qualified tenants.
- Comprehensive Mobile Home Program: provides customers with information and marketing materials on SCE's LIEE programs.
- Home Energy Efficiency Survey Program: provides information and marketing materials on SCE's LIEE programs. As customer surveys are returned, SCE will review customer account information and look for low income opportunities.
- Efficient Affordable Housing Program: offers property owners increased incentives for installing energy efficient measures in qualified low-income tenant units; also provides energy efficient services and appliances to these qualified tenants.
- WE&T Connections: provides information and marketing materials on SCE's LIEE Programs to students.
- Mobile Education Unit: will exhibit and demonstrate measures/products installed under the LIEE program, and include visits to economically disadvantaged communities.
- Community Language Efficiency Outreach Program: provides customers with inlanguage information and marketing materials on SCE's LIEE programs.

 Energy Leader Partnership Program: provides customers with information and marketing materials on SCE's LIEE programs at partnership events. Local community-based organizations will be encouraged to work with partnerships to coordinate outreach events to enroll eligible customers in low income programs.