CHAPTER 5
AMI MARKETING AND CUSTOMER PROGRAMS

JULY 14, 2006 AMENDMENT

Prepared Supplemental, Consolidating, Superseding and Replacement Testimony of

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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

JULY 14, 2006

Material changes to this testimony can be found on pages: 1, 9, 10, 11, 12, 14, 15, 17, 18, 25 and 26
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I. INTRODUCTION

The purpose of this amended testimony is to update my March 28, 2006 testimony to include material information which will impact my (Chapter 5) testimony in which I describe the following SDG&E customer-related AMI issues: (1) Customer Communication and Assistance Plan (CCAP), (2) proposed Demand Response (DR) rate and program options, (3) expected customer participation levels in the DR rate and program options, (4) benefits from avoided DR program costs, and (5) costs and benefits that are anticipated to accrue in SDG&E’s Load Research area. New to my testimony is the inclusion of enabling technologies to the small and medium commercial sector and the impact in demand response in section II C and in addition a revision to the rate options available to C&I customers. This testimony consolidates, supersedes, and replaces all previous direct and supplemental testimony filed by me or by any other SDG&E witness testifying in this docket, on the topics covered herein.

II. SDG&E’s AMI CUSTOMER COMMUNICATION AND ASSISTANCE PLAN

A. Objectives

SDG&E’s AMI Customer Communication and Assistance Plan (CCAP) is designed to achieve two primary objectives: (1) to ensure customer awareness and satisfaction with the meter and rate change process, and (2) to facilitate customer participation in DR programs and rates.

B. Customer Impact and Value Assessment

Prior to designing the CCAP, SDG&E first identified the “touch points” with the customer that would need to be addressed in the plan.
The key AMI-related touch points identified include:

1. Scheduling appointments to install the new AMI meter (as necessary).
2. Installation of the meter.
3. Information on the purpose/function of the meter.
4. Information on DR program and rate options.
5. Receiving the new bill and/or online usage information.
6. Notification of DR events.

The activities and costs associated with the first two touch points listed above are addressed in the testimony of SDG&E’s witness Carranza in Chapter 12. The remaining four touch points are discussed further in my testimony as part of the CCAP.

SDG&E also conducted research to determine likely success factors in implementing DR programs. This research included studies which identified lessons learned at other utilities implementing similar DR programs for residential, small commercial, and medium to large commercial/industrial (C&I) customers. In addition, SDG&E conducted focus groups to assess drivers for customer reaction, feedback and acceptance of and participation in dynamic pricing programs in the residential and small C&I market segments. Not surprisingly, the results from the “lessons learned” search and the focus groups were fairly consistent.

The key customer preferences identified through SDG&E’s research included:

1. **No Mandates.** Customers have expressed their preference that their available rate alternatives be optional rather than mandated.

2. **Simple Pricing Structure.** Customers prefer simple rate structures which contribute to an ease of understanding and participation in the rate.

3. **Fairness of Rates.** Customers believe that rate structures that contain penalty provisions should have at least equal, or greater, opportunities to save if they modify their energy consumption behavior in response to the rate structure.

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1 DSR Consumer Surveys Subgroup-Summary of Member Contributions, September 30, 2004.
4. **Community Effort.** The opportunity for all customers to participate, and the perception that everyone should contribute for the benefit of the community, improves customer acceptance of DR programs.

5. **Convenience.** Customers have indicated their preference for the availability of technology assistance, or some other form of flexibility, to help them understand and enable them to perform within the DR programs and available optional rate structures.

6. **Minimize “Thinking About Energy”.** Customers have expressed a preference to minimize the time and effort needed to manage their energy use.

7. **Broad Range of Price Responsiveness.** Data indicates that price elasticity varies greatly among classes of customers, and among customers within a segment, with small commercial customers being less responsive than residential customers.

8. **Feedback on Performance.** Customers indicate that it is very important that they receive feedback with respect to their performance under dynamic pricing, in order to gauge their success in managing their energy consumption and costs.

9. **Significant Savings.** Customers tend to lose interest in programs that do not provide sufficient reward for their behavioral changes.

SDG&E has utilized these findings in the design of the AMI CCAP, as well as in the design of new dynamic pricing structures.

C. **Plan Description**

SDG&E intends to use a two-phase approach to communications related to AMI. The first phase is to educate and prepare its customers in advance of the AMI deployment and the transition to dynamic pricing with ample notice and information. The second phase relates to DR event day notification.

1. **Phase 1—AMI Deployment**

In the first phase, by working with customers, SDG&E will provide information on the potential benefits of AMI, gather and review customer feedback, preview dynamic pricing and program options, provide solutions for
energy management, and lay a foundation for future enhancements. This first phase will also provide a means for customers to enroll in DR programs and available rate options, and to sign-up for DR event-day notifications through SDG&E’s Web site or by returning a post card designating their preferred electronic notification method. SDG&E’s AMI CCAP consists of a number of components, each intended to address the customer touch points and customer expectations identified above.

**a. Message Summary.**

The message will provide information on what changes customers can expect to see through the deployment of AMI. These changes include the new look of the AMI meter, the energy consumption information that will be presented to customers, the energy management tools that will be available, and the new dynamic pricing options that customers can choose. Embedded within that message will be a discussion of the value to the individual customer, as well as the community value that can be achieved through AMI, dynamic pricing and demand response. Emphasis will be placed on such key elements as controlling energy costs by managing energy consumption and the value of more efficient (in terms of time and price) use of energy and the related energy infrastructure. Another component of the education messaging will be the DR event-day notification process, e.g., how it will work and how customers will be able to sign-up for notifications.

**b. General AMI Awareness Campaign.**

Achieving customer awareness and acceptance depends on the saturation of the message points, often through multiple and overlapping sources and points of communication. In order to achieve a high level of customer awareness, SDG&E’s AMI communication and assistance plan consists of the following specific elements:

- **Bill Inserts.** Two inserts in customer bills will be utilized to inform customers about AMI deployment and the transition to
dynamic pricing. The first bill insert will occur prior to AMI installation, informing customers about what to expect during the meter installation process, dynamic pricing, tools and information that will be available to help them manage and control their energy consumption and costs, instructions on how to sign up for electronic notification of DR events, as well as to help direct customers to additional sources of information, and more targeted or specialized communications. The second bill insert will be planned to occur just prior to the implementation of the dynamic rates/DR programs applicable to their segment (residential, small C&I). This insert will announce the implementation of the specific DR rate or programs available to them and will repeat the energy management assistance information and instructions on how to sign up for electronic notification of DR events.

ii. **Direct Mail.** Two direct mail pieces will be sent to each customer in advance of their specific AMI meter installation. The first direct mail piece will be sent near the time of their meter installation. The second will be sent just prior to the implementation of the dynamic rates or DR programs applicable to that customer. These letters will provide a point of direct contact to help customers become aware of AMI, dynamic pricing, and the tools and information that will be available to them. The content will be the same as described for the bill inserts above.

iii. **CBO Outreach.** SDG&E plans to work closely with Community-Based Organizations (CBOs) to help in the communication of information to segmented groups of customers as the AMI installation activity moves into their sphere of influence. Often, CBOs reach smaller, more targeted groups of customers, such as residential or commercial and industrial, or subgroups within those classes, offering a greater degree of success, through their grassroots community involvement and activities than through mass media or other
communication efforts. CBOs can also provide a forum to enhance communications with customers who might not have seen or read SDG&E’s bill inserts and direct mail material. SDG&E anticipates working closely with these CBOs during the AMI installation process and transition to new rate structures.

iv. Special Event Outreach. SDG&E will also utilize such activities as trade association meetings and conferences, street fairs, public meetings and rallies, and other similar activities to make information on AMI and dynamic pricing available, which will provide an additional forum for targeted, specialized customer interactions.

v. Mass Media. Use of mass media, both print and electronic, has proven to be an effective way for SDG&E to provide information to customers. Although limited in the scope of the message that can be delivered, mass media generates customer interest and encourages or facilitates follow-up activities and inquiries. Ongoing messages are expected to be placed in print and broadcast media that will be designed and intended to reinforce with customers the value of AMI by saving on their energy costs during critical events. This general message effort will be more concentrated during the AMI roll-out period and is expected to decrease as customer awareness increases over time.

vi. Customer Call Center Services. Through its Customer Call Center, SDG&E has a readily-accessible resource available to customers to provide information, answer questions and allow for customer-specific and focused feedback and education. SDG&E expects to rely heavily on these resources to provide a link in responding to direct customer inquiries and requests for additional information.

SDG&E’s Customer Call Center is the primary point of contact with SDG&E for the vast majority of customers, essentially all customers who do not have assigned Account Executives (AE).
Call Center typically receives and responds to an average of 10,000 customer calls each weekday, covering a wide range of topics, such as service initiation, transfer or disconnection, rate and billing inquiries, and a host of other issues.

It is anticipated that the Call Center will respond to customer inquiries of a general nature related to AMI, questions relating to specific AMI meter installations, and questions related to customer information and related rate and billing issues generated by AMI and dynamic pricing and DR programs. The expected impacts of these calls include an increase in customer call volume and new types of customer inquiries related to:

1. **AMI Installation**

Incremental Call Center costs related to the installation of AMI meters are based on additional training requirements for Call Center personnel, covering the AMI installation process, and the proper procedures to handle customer calls related to installation. Incremental Call Center costs also include the additional customer calls and incremental average call time related to these calls.

SDG&E expects one hour of additional training for customer contact personnel related to AMI deployment and installation of AMI meters. SDG&E estimates that 10% of its customers in the first year of installation will contact the Call Center with miscellaneous inquiries or concerns regarding the AMI installation process. SDG&E assumes that these calls will average two minutes. SDG&E anticipates the percentage of customer calls to decrease to 5% of customers in subsequent years throughout the installation process. These estimates are based on professional judgment and experience with customer calls regarding rescheduling, complaints, requests for general information and higher bills in the month following a meter change.
2. **AMI Rates/Programs**

The incremental costs associated with continuing operation and maintenance of AMI include one hour of additional training for Call Center personnel on the billing, dynamic rate and optional rate structures and DR programs. In addition, incremental costs have been included for anticipated additional talk time associated with the new dynamic rate structures, and additional calls related to customers electing an optional rate or program.

SDG&E anticipates receiving a call from approximately 10% of its small commercial customers during the year they change to the new dynamic rate structures, and expects that these calls will average 250 seconds in length. This time estimate is related to SDG&E’s prior experience and call durations for similar types of calls.

**vii. Direct Outreach Customers.** SDG&E’s larger, assigned-account customers will continue to receive their communications through their Account Executives (AEs). AEs will provide information regarding AMI meter installation and education on the dynamic rates that will affect their customers’ businesses. Among other communication or notification avenues, such as Interactive Voice Response (IVR) or a centralized communications / messaging system, AEs will notify their customers when a DR program or dynamic pricing event is called.

During the AMI meter deployment phase, SDG&E expects to add resources to facilitate meter installations at the largest and most critical assigned account customer facilities. SDG&E will coordinate between the installation vendor (see Mr. Carranza’s testimony (Chapter 12)) and the customer in cases where access to the customer premise is restricted or where the meter installation must be scheduled at specific times.

SDG&E also expects to add support staff to assist the AEs with additional rate analysis and response to increased billing and other AMI-related questions from assigned account customers. The majority of these
staff additions would take place during the AMI installation phase, as customers are transitioned to new rate/program options.

Commercial customers below 20 kW will be experiencing time-differentiated rates for the first time with the deployment of AMI. C&I accounts above 20 kW are already operating under time differentiated rates but the CPP rates proposed for AMI customers are anticipated to generate questions on both program requirements and bill impacts. These customers will receive bill inserts and direct mail material discussed in Section II.C.1.b.i & ii, above. In addition, these rate changes are expected to generate increased call center questions from unassigned accounts. The resource requirements for this effort are discussed in Section II.C.1.b.vi, Customer Call Center Services, above.

viii. Technology Assessment and Assistance. The Statewide Pricing Pilot, as well as DR programs in other states, indicates that utilization of enabling technology, for instance programmable/controllable thermostats (PCT), to automatically implement DR at customer sites increases the level of demand response from customers. SDG&E has an ongoing DR Technical Assistance (TA) and Technology Incentives (TI) program for C&I customers to help identify and capture these benefits. SDG&E also has an air conditioner cycling program for residential and small commercial customers that automatically cycles central air conditioning units during DR events. While these specific programs are projected to continue into the future, the recently published evaluative data from the SPP has prompted SDG&E to also propose a new PCT program targeting small and medium C&I customers. Through a broader deployment of PCT’s to these customers, the data indicates a significantly greater degree of demand response will be enabled and achieved.


See SDG&E’s A. 05-06-017, dated June 1, 2005, Appendix B, pages 44-51.
a. **PCT Program Description**

   The PCT Program is designed to promote the use of PCTs within a targeted subset of C&I customers with demands below 200 kW. The specific subset of C&I customers that will be targeted are all customers with peak demands between 20 and 200 kW and a subset of customers with peak demands below 20 kW, specifically those with annual energy use greater than 20,000 kWh. This targeting of high users among the below 20 kW segment is necessary because the magnitude of demand-response generated by the smallest customers is not large enough to offset the cost of the PCTs.

   These customers will be offered PCTs free of charge and with free installation through a variety of outreach efforts described in the next section. Incentives will also be provided to direct installers for sales and installation of the PCTs.

   This program provides the customers with a no-cost, no-hassle, automated demand response solution that enables savings under SDG&E’s proposed time dependent rates and programs.

b. **PCT Marketing and Awareness**

   SDG&E has incorporated an estimated marketing and awareness budget for the PCT program in its cost estimates associated with achieving enhanced demand response through the PCT enabling technology. Highlights of the PCT marketing and awareness effort include:

   - Integration of both customer and contractor incentives to maximize customer access and program acceptance.
   - Enabling customers to control their PCT remotely through the SDG&E website.
   - Implementing a focused direct marketing effort on high potential industry-specific segments, such as fast food restaurants, mini markets, laundromats, nail salons and similar businesses.
Distribution of specific marketing materials and messaging to ensure customer awareness and adoption of the PCT enabling technology. Additional focus will be placed on customer education and awareness as an ongoing reminder to the identified target market.

The costs to implement the marketing and awareness campaign is assumed to total $150/customer for large C/I customers and $50/customer for small C/I customers. In addition there will a $5/customer annual maintenance effort to ensure long-term participation and finally approximately $100,000 per year for program management.

c. **PCT Program Participation Rates**

SDG&E estimates that approximately one-third of the target group of small C&I customers (those with demands below 20 kW but with annual energy use greater than 20,000 kWh) and one-third of the medium C&I customers (20 to 200 kW) will accept the installation of a PCT. These estimates are based on the SPP results for C&I customers less than 200 kW. The SPP evaluation showed that approximately 33% of the participants with peak demands less than 20kW accepted the free smart thermostat technology and approximately 60% of those with peak demands greater than 20kW did so. SDG&E has incorporated the lower, more conservative assumption of 33% acceptance for both customer groups. An additional incentive will be offered to program contractors if a direct install is implemented, ensuring that this group of customers is actively pursued. With these estimated acceptance rates, over a five-year period, the PCT Program will reach approximately 11,000 small C&I customers (under 20 kW and greater than 20,000 kWh) and approximately 5,600 medium C&I customers (20 to 200 kW).

In addition, SDG&E anticipates that the proposed new Title 24 building standards, if ultimately adopted and implemented in October 2008, will increase the penetration of PCTs by requiring their inclusion in
all new buildings. This significantly increases the penetration among the
20 to 200 kW segment, where projected customer growth rates are higher
than among the below 20 kW segment.

2. Phase 2—DR Event Notification

The second phase of communications will be DR event day notification. The success of customer participation in SDG&E’s DR program portfolio depends not only on customer enrollment in various programs, and use of enabling technologies, but also on timely and accurate communications with customers about the operation of the programs and, specifically, the notification of the activation of a DR event.

Virtually all DR program events are activated during the summer months. Over the past several years SDG&E has utilized a variety of methods to educate and prepare customers for the bill impacts due to higher energy consumption during summer months, and higher energy prices during peak and critical peak periods, and to inform them of the need for energy conservation and load reduction during DR event periods.

Among the methods used have been mass media advertising, direct mail and bill inserts for education, and working with local news outlets, pagers and telephone calls for event notifications. With the advent of AMI and a more broadly-applicable dynamic pricing structure, similar summer awareness campaigns will be necessary to notify customers of DR events.

To reach the maximum number of customers possible during event notification, SDG&E proposes to use a variety of communications channels simultaneously. SDG&E will utilize advertising on broadcast media, local news outlets and electronic notifications via pager and text messages to announce Day-Ahead and Day-Of of events to customers.

a. Broadcast Media

Based on initial media evaluations conducted by an SDG&E advertising agency, radio advertising can be used to provide a day-ahead notice and reach approximately 70 percent of adults in the area two to
three times. The exact media schedule would depend on the number of
radio stations that could “clear” time to run the ads.

In addition, SDG&E would purchase Traffic Reports (the 15 second
announcements adjacent to the radio traffic reports). On non-event days,
these messages would support general AMI message and the availability
of information on its web site. On event days, these messages would be
changed to provide an alert of the event.

b. Electronic Notification

Customers will also be given the option of receiving notification of
DR events through email, text messaging, paging or automated phone
calls. Participation in these notification channels is estimated based on
previous program results.

When an initial offer of on-line enrollment for notification of
blackouts was made in 2001 to businesses and medical baseline customers
(approximately 65,000 customers), slightly over 2,500 customers, or 3.8%
of those notified, signed up for the service. (Note that the 65,000 figure
represents the number of people, rather than the number of meters, which
is slightly over 120,000.) This level of enrollment was achieved without
mass media promotion of the availability of the service.

More recently, an offer of on-line billing was made to residential
customers that resulted in enrollment of over 100,000 customers, or almost
10%. A projected level of participation is between the 3.8% achieved with
the blackout message and the 10% resulting from on-line billing.
Assuming 5% to 7%, SDG&E would reach between 50,000 and 70,000
customers with electronic notifications.

c. News Coverage

It is anticipated that both the importance and the rarity of the DR
events will cause general news programs to publicize the message as well.
Experience with rolling blackout and other emergency type messages
suggest that the DR notification message would be carried by the news
media.
News coverage would provide the potential exposure to the message an additional two to three times. Through the combination of these news and advertising efforts, it is projected SDG&E will reach a minimum of 70% of adults living in the region with the message a minimum of 3 times.

3. DR Program Results Notification

Equally as important as awareness campaigns and event notification is the communication and feedback to customers of program performance and results following a DR event. The “how are we doing” messages are important for both the individual customers as well as the entire SDG&E community.

SDG&E plans to make information available on the customer’s monthly bill to explain their DR program results and impacts. In addition, customer-specific information reflecting the prior day’s energy consumption history will be available on the internet through the AMI network. SDG&E will also work with local news media to make this information available for follow-up reports after events. Finally, exemplary customer and community DR results will be incorporated in SDG&E’s ongoing general media message to recognize significant contributors and to reinforce the sense of community involvement for the success of demand response.

III. DEMAND RESPONSE RATE REVIEW AND PROGRAM PARTICIPATION ESTIMATES

A. Background

SDG&E is proposing three types of dynamic pricing structures for customers equipped with AMI meters. The first is the Peak Time Rebate (PTR) for residential and small C&I customers (< 20 kW). The second is Time of Use (TOU) rates for small C&I customers (< 20 kW) and the third is Critical Peak Pricing (CPP) with an optional Capacity Reservation Charge (CRC) for medium and large C&I customers (20 kW and larger). The PTR program is explained in my testimony while the CPP rates are explained in detail in the testimony of SDG&E’s witness Hansen, in Chapter 14.
B. PTR Program Description

The PTR program is designed to be compatible with AB1X restrictions limiting rate changes, simple for customers to participate in, easy to administer and available to all segments of the residential and small C&I (< 20kW) population. Key provisions of the PTR are listed below:

1. All residential, as well as all small C&I customers, with a peak demand of less than 20 kW are eligible to participate without the need for a contract or special enrollment.

2. Customers receive a rebate or bill credit of $.65/kWh for every kWh that they reduce their electricity usage below their ‘PTR baseline’ usage during a DR event. (As noted below, the $0.65/kWh PTR credit may change over time).

3. There are no penalties for non-participation. That is, the customer is billed just as they otherwise would have been billed if the customer did not reduce usage below their PTR baseline.

4. Customers will receive notice of an impending PTR or CPP event through TV and radio and can also receive notice through an electronic channel of their choice (pager, text message, email, or telephone).

5. PTR rebates will be included in customer’s next bills as line item credits.

PTR is proposed for residential and small C&I customers because of the simplicity of the program, the absence of penalties associated with participation in the program and the ability for all customers in the segment to benefit if they change their energy consumption behavior during DR events. Each of these attributes closely matches the customer expectations identified in SDG&E’s focus groups and in the lessons learned from other utilities.

The simplicity of the program will allow SDG&E to easily explain the benefits of the program to our customers through mass media information channels and to easily remind customers of their opportunity to save money each time a DR event is announced. Further, the simplicity of a $.65/kWh bill credit

\[5\] Prior to implementation, SDG&E will investigate methods for estimating baseline usage and will select an approach that strikes an appropriate balance between practicality, accuracy and achieving an incentive payment sufficient to maintain customer interest in providing demand reductions.

\[5\] The customer’s PTR baseline is calculated as their on-peak average usage during the previous 5 non-event weekdays. On an event day, the PTR period runs from 11:00 am until 6:00 pm.
for the reduction in electricity usage during an event period makes the result of program participation very visible and measurable for customers. Through its measurement and evaluation of the PTR program, SDG&E will evaluate the need to raise or lower the $.65/kWh incentive rebate amount or to adjust the baseline estimation method in order to manage customer participation and the level of demand response achieved through the PTR program.

The absence of penalties encourages all customers to participate and earn their rebate regardless of their energy usage profile, their economic status or their location in the service territory. Also, with broad potential to participate, the program may capitalize on a sense of community spirit and support where everyone helps during periods of critical energy shortages to prevent blackouts within the community. There are other options that SDG&E will explore with the PTR rate to further enhance its value to the community, including allowing customers to designate their rebates to their local school, church or other charities. Alternatively, SDG&E will explore translating the rebate dollars into “rewards” type programs similar to those offered by credit card companies and airlines. The purpose of these efforts, if deemed feasible, would be to encourage higher PTR participation rates than currently estimated in SDG&E’s demand response impact analysis (see Dr. George’s testimony (Chapter 6)).

Finally, PTR does not conflict with AB1X restrictions, so all customers can participate immediately and automatically. Marketing and implementation costs are minimized, since specific target marketing is not required. Overall, the program minimizes implementation costs while maximizing participation opportunities.

1. CPP Rate and Description

For C&I customers with demands greater than 200 kW demand, SDG&E proposes that the “preferred approach” outlined in Assistant Chief Administrative Law Judge Michelle L. Cooke’s Proposed Decision issued March 23, 2006, in Application 05-01-016 et al, be implemented after an

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6 SDG&E has not quantified or included in its AMI Business Case analysis any anticipated costs or corresponding benefits associated with the concept of these kinds of potential program enhancements.

7 As modified, however, as specified in SDG&E’s pending comments on that Proposed Decision.
initial 2-year transition period to allow customers to become more familiar with the rate options and to learn how to achieve savings under a CPP rate structure. Following that 2-year transition period, SDG&E proposes that the Proposed Decision’s “preferred approach” be implemented for all of these customers.

SDG&E’s small commercial customers with demands below 20 kW will be placed on a default TOU rate schedule along with the PTR program. SDG&E’s medium and large C&I customers greater than 20 kW will be defaulted on to a CPP rate. The CPP rate is the default rate and customers will have the option to choose other comparable time differentiated rates. For example, the customers will have the option under the CPP rate to protect a portion of their load from the CPP rate by paying a capacity reservation charge (CRC). The CRC enables customers to reserve and pay for capacity costs on a monthly basis when they have loads that cannot be curtailed during a CPP event. The CRC benefits customers by spreading out CPP payments over the entire year resulting in a more predictable bill.

C. PTR and CPP Participation Estimates

As discussed above, SDG&E assumes that all residential and small commercial customers will be eligible for the PTR program benefits once their AMI meters are installed. Therefore, the usual notion of a participation rate as the number of customers who choose to sign up or remain on a rate or program does not apply (all customers with meters installed will be ‘participants’). However, in order for demand reduction to occur customers must be notified that a PTR event has been called for a particular day.

As described previously, SDG&E expects to reach 70% of customers with the message of PTR events delivered multiple times, using a combination of paid radio advertising, news media coverage and on-line notifications. The communications will be triggered day ahead and run through event start time. The level of customer reach achieved is dependant upon how many radio stations can run the ads in the time frame between the event being initiated and the event start time. Because there can be some variation in the number of customers...
reached with the alert message, SDG&E has included a range of participation rates in its analysis. Table MG 5-1 shows the minimum, expected and maximum percentage of customers reached for its residential customers (averaging 70%).

Under SDG&E’s new proposal all of the small commercial demand response benefits are provided solely by small commercial customers with PCTs. The PCTs will automatically receive a signal to setback the thermostat on CPP days, so small commercial customers will not need to be aware of the PTR alerts for demand response to occur. Therefore the small commercial demand response benefits are not discounted by an estimated awareness level.

Beginning in 2011 for medium C&I and in 2009 for large C&I, customers will be defaulted onto a CPP rate with the option of reserving capacity through a capacity reservation charge. As explained in Steve George’s Testimony (Chapter 6), both the CPP rate and the CRC payment provide the customer equal economic incentives to provide demand response. Therefore the participation rate for medium and large commercial customers is assumed to be 100%. In 2009 and 2010 medium C&I customers will still have the option of opting out to a TOU rate. The participation used for these years is 69% which is the average of the number of customers who would save money on the rate without demand response and the number of customers who would save money on the rate with demand response.

Other comparable time differentiated or dynamic rate options could emerge by 2009, SDG&E is not precluding such options such as 2-part Real Time Pricing (RTP), hourly pricing (single part RTP), TOU with interruptible firm service levels, etc.
These participation rates are utilized in the demand response calculations discussed in the testimony of Dr. George in Chapter 6.

IV. AVOIDED DEMAND RESPONSE PROGRAM COSTS

A. Background

Prior to 2006, the vast majority of SDG&E’s DR program authorization and funding has been determined by the Commission on an annual basis. Commission Decision (D.) 05-01-056, issued on January 27, 2005, approved SDG&E’s 2005 portfolio of programs, and an associated budget of approximately $20 million. These costs are not reflected in SDG&E’s currently authorized rates, but are recorded in SDG&E’s Advanced Metering and Demand Response Memorandum Account (AMDRMA) and ultimately are recovered through SDG&E’s Rewards and Penalties Balancing Account on an annual basis, and only to the level of actual expenditures, not to exceed the authorized funding levels.

In issuing D. 05-01-056, the Commission approved programs and budgets for only one year, 2005, and directed SDG&E to file an application on June 1, 2005, proposing programs and budgets for the period 2006 – 2008. SDG&E filed A.05-06-017 on June 1, 2005, proposing its three year demand response programs portfolio and associated budgets. Subsequently, on December 2, 2005, SDG&E, along with Southern California Edison, Pacific Gas and Electric Company and several other Joint Parties, filed a proposed Settlement Agreement which would establish the portfolio of programs and budgets for the three year cycle of 2006 – 2008. Subsequently, on March 15, 2006, the Commission issued D. 06-03-024 adopting the Settlement Agreement. SDG&E’s proposed portfolio of DR

Table MG 5-1
Awareness / Participation Rates Used to Define the Probability Distributions for each Class

<table>
<thead>
<tr>
<th>Rate Options (%)</th>
<th>Parameter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum</td>
</tr>
<tr>
<td>Residential PTR</td>
<td>50</td>
</tr>
</tbody>
</table>
programs is based on maintaining an array of voluntary programs available to customers, whose participation helps them manage and control their energy consumption and costs, while at the same time, during periods of critical need, contribute load reductions which help mitigate periods of high energy prices, tight energy supplies, or other electric system emergencies or constraints.

SDG&E’s portfolio of DR programs is designed to achieve a predetermined annual target of load reductions as adopted by the Commission. These annual load reductions are intended to be a component of utility resource planning and to help assure electric system reliability while helping to minimize the costs of additional resources needed to meet peak and critical peak period demands. With the establishment of these annual goals and with the current portfolio of voluntary programs, there is a need for aggressive and ongoing customer education and awareness in order to maintain customer contact and program participation from one year to the next. Without this ongoing activity, SDG&E has found customer interest in program participation to wane.

Additionally, while several of SDG&E’s existing DR programs are available to customers with demands as low as 20 kW, the majority of the programs, and the current outreach efforts, have focused on the larger C&I customers—those with demands greater than 200kW.

B. Anticipated Reduction in Demand Response Program Costs

With the recent pattern of authorized programs and funding spanning from annually to only a few years at a time, the short history of DR programs, and with the dynamics of program participation and program changes resulting in inconsistent customer participation, it is difficult at this time to anticipate just which specific DR programs and related costs will be in place during the period of initial AMI deployment and beyond. Nonetheless, SDG&E has examined its proposed 2008 DR program portfolio and budget to identify those components which may be reduced or eliminated with the deployment of AMI and the associated introduction of dynamic pricing. SDG&E believes that, with the deployment of AMI, a certain portion of its then-existing 2008 DR program

MFG-20
portfolio will be eliminated, or at least scaled back in some fashion, thus resulting in the estimated cost reductions set forth in Table MG 5-2.

SDG&E’s planned AMI CCAP is expected to result in an increased customer awareness of and participation in dynamic pricing and other DR programs due to the system-wide AMI deployment and establishment of dynamic pricing structures. It is expected that this will result in a diminished need for separate demand response program outreach and administration activities. Further, customer participation in dynamic pricing reduces the customer base from which DR program participation can be obtained. Of course, the level of DR program cost reduction depends on the success of the AMI CCAP.

SDG&E has assumed that with the deployment of AMI beginning in mid 2008 and rate / program roll-out beginning in 2009, all C&I customers with demands over 20 kW will participate in some form of dynamic pricing, with day-ahead notification provisions to activate peak and critical peak pricing provisions as meter roll out permits. As a result, SDG&E believes that the need for its existing portfolio of pricing-based Day-Ahead DR programs will be reduced beginning in 2009. SDG&E expects that its portfolio of existing Day-Of, or reliability-based programs, will continue although the precise mix of programs and costs has not been determined. Additionally, with the elimination of the Day-Ahead portfolio, and the anticipated success of the AMI CCAP, a portion of the DR programs’ customer education, awareness and outreach budget is assumed to be eliminated, as are two specific programs within that category (Community Outreach and Circuit Savers). With the anticipated success of SDG&E’s Technology Assistance and Technology Incentives (TA/TI) programs during the 2006 – 2008 program cycle, SDG&E believes that a portion of the TA/TI budget also can be reduced beginning in 2009. And finally, with the completion of the AMI deployment by the end of 2010, and the assumed full transition to dynamic pricing by 2011, the need for certain other activities associated with the evaluation of existing DR programs can be eliminated. Because the full transition to dynamic pricing will not occur until 2011, SDG&E has not reflected the
expected elimination of this relatively small category of other DR program costs until 2012.

All of these anticipated DR program cost reductions, beginning in 2009, are reflected in Table MG 5-2.

V. AMI IMPACT ON SDG&E’S LOAD RESEARCH FUNCTION

A. Background

SDG&E’s load research function shows significant incremental benefits associated with the AMI project due to avoided load research metering and communication requirements. The avoided metering and communication benefits are, however, somewhat offset by an expected incremental increase in labor associated with the additional load research analysis that will be associated with the significant increase and availability of interval data as a result of AMI. By the end of 2010, all SDG&E customers will have interval load data available for load research and analysis. Many requests to analyze particular customer segments and geographic areas are made to load research. Many of these requests cannot be fulfilled because of current sampling restrictions. This limitation will nearly be eliminated once AMI is implemented and the value of the benefit of having the information to analyze will be realized.

B. Base Assumptions

SDG&E assumes load research benefits will begin in 2009; during the roll-out years, however, the benefits are phased in to be consistent with the expected portion of the AMI roll-out to be completed in each of those years. All of the load research sample sites require the replacement of the standard electro-mechanical meters or standard Time-of-Use meter with a 15 minute interval data recorder (IDR meters). Depending on the type of Load Research sample the meters may or may not require communications.

1. Avoided Load Research Metering Projects/Avoided Costs Due to AMI

These avoided metering projects/load research benefits are categorized into five groups:
a. Load Research/Tariff Sample

The largest sample load research sample is associated with the creation of load studies. This required\(^9\) sample supports SDG&Es rate design proceedings. The assumptions around the benefit associated with this sample include over 1,000 non-communicating meters that SDG&E would not need to field every third year beginning in 2009 (note that this benefit in 2009 is scaled to include only \(\sim 60\%\) of the benefit in future iterations due to roll out progress assumptions). Avoided meter and labor installation costs are also included in these benefits.

b. Dynamic Load Profile (DLP) Sample

The DLP sample requires approximately 575 communicating IDR meters. This sample also requires fielding every third year, with the first avoided sample beginning in 2009. Benefits in 2009 are about \(60\%\) of those expected during later iterations due to the scaling issue mentioned above.

c. Title 20 California Code of Regulations Section 1344

Title 20 requires medium and large utilities to provide annual hourly California Energy Commission defined sector estimates. This sample requires approximately 300 non communicating interval data meters in addition to the tariff class sample. This sample requires fielding every third year with the first avoided sample beginning in 2009. Benefits in 2009 are about \(60\%\) of those expected during later iterations due to the scaling issue mentioned above.

d. Special Projects Measurement and Evaluation (M&E)

These special project samples vary in size. Currently SDG&E estimates that it will require up to 400 IDR sample sites every three years. In the past, load research has been called upon to create sampling plans, and coordinate installations of, and verify data collected for, special measurement and evaluation (M&E) projects. These projects include

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\(^9\) One of the by products of the Public Utility Regulatory Policies Act of 1978 (PURPA) is that it requires utilities to produce statistically valid class load estimates for its tariff classes that are used to support cost allocation in rate design.
requests for sample design and metering in connection with Measurement and Evaluation for Energy Efficiency, Demand Response, Distribution Planning, new technologies and other areas within SDG&E. These projects typically have an analytical focus that includes the requirement of understanding customer consumption/demand behavior at the 15 minute interval level. SDG&E assumes slightly less than one half of these meters require communications.

In addition to M&E and Special projects, SDG&E expects to analyze customer usage behavior for various end-uses and technologies. These smaller samples are assumed to range from 100 to 400 IDR meters. These samples are required for anticipated projects for which an understanding of customer consumption behavior at the end-use level or an interval level is necessary. These samples require fielding every third year with the first avoided sample being in 2009.

e. Avoided Communications Costs

As mentioned above, many of the meters required for the above samples are communicating meters. In the absence of AMI, an expensive communications approach is necessary, such as a landline to each meter or a digital cellular device for each meter. With AMI, these communications costs would be avoided.

2. Additional Load Research Labor (Incremental costs due to AMI within the Load Research area)

Because AMI will result in increased volume of interval data available to SDG&E, it is anticipated that the Load Research function will require three additional analysts to process and analyze this information. Table MG 5-2 shows present value costs (in 2006 dollars) for O&M that is associated with Load Research, Mass Markets, and CCC. These costs are more than offset by the estimated benefits associated with avoided load research capital projects, future CCC and DR program O&M costs.
C. Operation and Maintenance Costs (O&M)

SDG&E has estimated costs associated with its CCAP and Load Research functions to support the deployment of AMI and dynamic pricing. Table MG 5-2 presents a summary of the costs.

1. O&M Costs—Customer Call Center

SDG&E has estimated costs of $195,000 to provide communications and other information to its customers through its Customer Call Center as described above. A breakdown of these costs is presented in table MG 5-2.

2. O&M Costs—Load Research

SDG&E has estimated costs of $5.771 million for additional personnel and activities to perform the Load Research functions as described above. A breakdown of these costs is presented in table MG 5-2.

3. O&M Costs—Mass Markets

SDG&E has estimated costs of $37.8 million for additional personnel and activities to perform the Mass Market functions as described above. A breakdown of these costs is presented in table MG 5-2.

4. O&M Costs—Programmable, Communicating Thermostats (PCTs)

SDG&E has estimated costs of $7.187 million associated with the PCT program described herein. A breakdown of these costs is presented in table MG 5-2.
Table MG 5-2
Marketing Load Research, Demand Response Programs, CCC
Direct Dollars (Dollars in Thousands)

<table>
<thead>
<tr>
<th>Costs</th>
<th>Total 2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total CCC O&amp;M Costs</td>
<td>195</td>
<td>0</td>
<td>34.0</td>
<td>25.0</td>
<td>25.0</td>
</tr>
<tr>
<td>Total Load Research O&amp;M</td>
<td>5,771</td>
<td>0</td>
<td>64.8</td>
<td>129.7</td>
<td>129.7</td>
</tr>
<tr>
<td>Total Mass Mrkt O&amp;M Costs</td>
<td>37,772</td>
<td>0</td>
<td>1,045.2</td>
<td>2,764.4</td>
<td>2,730.4</td>
</tr>
<tr>
<td>Total PCT O&amp;M Costs</td>
<td>2,187</td>
<td>0</td>
<td>0</td>
<td>222.8</td>
<td>440.7</td>
</tr>
<tr>
<td>Total O&amp;M Costs</td>
<td>43,967</td>
<td>0</td>
<td>1,194</td>
<td>2,955</td>
<td>2,921.1</td>
</tr>
<tr>
<td>Average Annual O&amp;M Costs</td>
<td>50,925</td>
<td>0</td>
<td>1,144</td>
<td>314.2</td>
<td>332.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Total 2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011-2038</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Avoided LR Capital Benefits</td>
<td>16,813</td>
<td>0</td>
<td>0</td>
<td>883.7</td>
<td>295.2</td>
</tr>
<tr>
<td>Total Capital Benefits</td>
<td>16,813</td>
<td>0</td>
<td>0</td>
<td>883.7</td>
<td>295.2</td>
</tr>
<tr>
<td>Total O&amp;M Benefits</td>
<td>7,107</td>
<td>0</td>
<td>0</td>
<td>147.1</td>
<td>240</td>
</tr>
<tr>
<td>Total CCC O&amp;M Benefits</td>
<td>2,156</td>
<td>0</td>
<td>14</td>
<td>38</td>
<td>63.2</td>
</tr>
<tr>
<td>Total DR Programs O&amp;M</td>
<td>210,520</td>
<td>0</td>
<td>0</td>
<td>6,776.5</td>
<td>6,776.5</td>
</tr>
<tr>
<td>Total O&amp;M Benefits</td>
<td>219,783</td>
<td>0</td>
<td>14</td>
<td>6,961.5</td>
<td>7,034.5</td>
</tr>
</tbody>
</table>

VI. AMI PROJECT RISK AND SDG&E MITIGATION

There are three risks to highlight in this chapter. First and most importantly, AMI could negatively impact SDG&E’s overall customer satisfaction – particularly during the installation and hardware replacement years. To safely install the advanced metering infrastructure, SDG&E will need safe access to every customer premise. Service outages, more aggressive revenue protection activities, and rates that require more customer education will impact customer satisfaction. SDG&E believes that in the long-run, AMI will improve customer satisfaction by improving system reliability, increasing demand response into our energy portfolio, and decreasing long-term rates. SDG&E’s customer contact cost estimates reflect an increase in CSRs and Account Executives during the deployment period to manage customer service.

The second risk is related to the avoided Demand Response Programs benefit. Given the anticipated demand response of AMI as well as existing demand response...
programs, SDG&E believes that the current MW target reductions are achievable. However, if SDG&E is unable to meet the target MW reductions for demand response established by the CPUC and Energy Action Plan, SDG&E may not be able to avoid as many costs related to these programs. Finally, the third risk is related to costs required in developing customer systems and processes for demand response events. In order for customers to participate in demand response, customers must be notified a day ahead of the demand response event. Advertising costs could increase in the future due to increased cost to advertise on the radio, new advertisement methods, or costs to notify individual customers for events; however, these costs are just as likely to decrease due to technological innovations. This concludes my prepared testimony.
VII. QUALIFICATIONS OF MARK GAINES

My name is Mark F. Gaines. My business address is 8330 Century Park Court, San Diego, California, 92123.

I am employed by San Diego Gas & Electric Company as Director Customer Programs. My responsibilities include Energy Efficiency and Demand Response program development and implementation for the Sempra Energy Utilities. I have been employed by the Sempre Energy Utilities since 1983.

I have a BS in Civil and Environmental Engineering, a Masters in Business Administration and am a registered professional engineer in Mechanical Engineering in California.

I have previously testified before this Commission.
These participation rates were used as mid-points of the participation range. The maximum participation rate represents the percentage of customers who will experience no more than a 0.5% increase in their annual bill.

Table MG 5-1 shows the ranges for the residential and small commercial customers that were reached multiple times with alert messages. Table MG 5-1 also presents participation ranges for the medium and large C&I classes.

<table>
<thead>
<tr>
<th>Class</th>
<th>PTR</th>
<th>CPP (20-200 kW)</th>
<th>CPP (&gt;200 kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small C&amp;I</td>
<td>50</td>
<td>70</td>
<td>85</td>
</tr>
<tr>
<td>Medium C&amp;I (20-200 kW)</td>
<td>62</td>
<td>74</td>
<td>79</td>
</tr>
<tr>
<td>Large C&amp;I (&gt;200 kW)</td>
<td>59</td>
<td>81</td>
<td>85</td>
</tr>
</tbody>
</table>