DIRECT TESTIMONY OF
SUSIE E. SIDES
SAN DIEGO GAS & ELECTRIC COMPANY

I. Introduction

The purpose of my testimony is to describe the demand response programs and the assumptions concerning these programs that are the basis for input into the San Diego Gas & Electric (SDG&E) long-term resource plan. This testimony also responds to the Commission's direction to the utilities to "…consider all cost-effective investment in demand response that meets their procurement needs."[1] In addition, the testimony incorporates various elements that the Commission has emphasized in its Rulemaking addressing Advanced Metering, Dynamic Pricing, and Demand Response Programs.[2] Specifically, the Commission has requested that the utilities reflect certain demand response goals in their resource plans. Specific documentation regarding these targets is also provided herewith, or will be presented in supplemental testimony or filings as might be necessary.

II. Background

SDG&E has been a strong advocate for demand response, demonstrating its leadership by offering customers pricing options to reduce energy costs. SDG&E was an early supporter of Time-of-Use (TOU) pricing, instituting TOU in 1981 for customers with demands over 500kW. Beginning in 1987, SDG&E transitioned customers with demands over 20kW to TOU pricing. Today, of the more than 16,200

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1 D.02-10-062, at p. 28.
2 R.02-06-001.

commercial/industrial customers with demands greater than 20kW, nearly 15,000 (92%) are on TOU pricing.

To support its pricing options and provide customers with more flexibility to manage energy costs, SDG&E established in 2000 its Real-Time Electric Metering (RTEM) initiative. This initiative sought to install interval metering and telecommunications to allow customers more frequent access to energy usage data than just monthly, allowing them to respond more quickly to variable energy prices. Subsequently, the California Legislature passed Assembly Bill X29 (AB29X) in 2001, which approved funding for the installation of interval metering, telecommunications and daily access to energy usage data.

Recognizing the ongoing significance to efficient and effective management of the electric system, the Commission approved in 2001 the design, development and implementation of several additional demand response programs.[3] The types of programs approved in 2001 are referred to as "reliability-based" programs, triggered when capacity shortages are imminent. Programs are typically initiated when the CAISO declares an Alert, Warning or Stage emergency. Customers pledge fixed amounts of load reduction in return for incentives and/or rate discounts. Some programs are voluntary and others have severe penalties for non-compliance. In 2002, the Commission approved modifications and program extensions through the utilities' next General Rate Case.[4]

Demand Response Programs (DRPs) offer an alternative to maintaining system reliability through capacity additions by providing customers opportunities to participate

[3] D.01-04-006.
[4] D.02-04-060.

in demand-side management while seeking to limit the impact on their operations. Since 2001, SDG&E has designed, implemented and managed as many as eight demand response programs. Currently, SDG&E manages seven reliability-based programs.

In the current rulemaking, R. 02-06-001, proposals for "price-based" demand response programs have been submitted for Commission consideration. Time differentiated price-based optional rates alert customers of the time sensitive value of energy and permit customers to manage their energy use and bills voluntarily in response to those price signals. For these price-response rates, individual electric customers reduce or shift usage during high priced time periods. The emerging price demand response programs offer further refinement of the well-established TOU pricing tariffs and hold much promise for further reducing peak loads. But, a precise and predictable level of demand reduction as a result of price changes has yet to be quantified for SDG&E customers.

While SDG&E has clearly demonstrated its desire to aggressively pursue the demand response potential of its customers, it should be recognized that demand response results are uncertain. Most reliability-based demand response programs, approved in 2001 and modified in 2002, are largely untested. New pricing proposals are yet to be fully developed and implemented. Consequently, the forecasted estimates provided are an assessment of the potential and should not be considered absolute. For these reasons, this testimony includes both the estimated potential, or pledged load reduction[5] for demand response and the expected level[6] to be achieved during an event. Due to the

[5] Pledged load reduction is the amount of load customers pledge to reduce during an event.
[6] Expected load reduction is the amount of load expected to be reduced during an event.

actual number of customers who participate during an event, each customer's specific operational situation at the time of the event, weather conditions and the nature of the programs (voluntary versus mandatory), the expected load reduction will necessarily vary from the pledged amount of load reduction. Nevertheless, SDG&E has included a total of 100MW in potential load reduction with an expected load reduction level of 47MW from reliability-based programs and 170MW in potential load reduction with 121MW in expected reduction from pricing tariffs by 2007.[7]

The following sections describe SDG&E's assumptions about the demand response programs that underlie the demand response levels provided in its resource plan.

III. Major Assumptions

A. Reliability Programs

Over the past two years, SDG&E has been actively promoting reliability-based demand response programs. These efforts have resulted in 100MW of pledged load reduction from over 140 accounts. SDG&E's expected load reduction is estimated to be 47MW. In its estimate for reduction levels related to demand response, SDG&E assumes the following for reliability-based DRPs:

- Only programs with historical customer participation are included.[8]

[7] Load reduction levels from reliability and price programs are not cumulative. Because programs are triggered at different times, customers have the opportunity to pledge the same load reduction in both reliability and price demand response programs.

[8] SDG&E has customers participating in four of its seven reliability-based programs. Currently, SDG&E does not have customers participating in three programs: SLRP, BIP and OBMC.

- Levels used in the resource plan represent the expected load reduction.
- Expected load reduction levels remain stable throughout the 20-year plan.[9]

The table below lists SDG&E's currently active reliability-based programs and estimated pledged and expected MW reduction levels by program:

Program	Pledged (MW)	Expected (MW)
Smart Thermostat	3.30	1.20
DBP	5.10	5.00
AL-TOU-CP	21.10	5.25
RBRP	70.50	35.00
Total:	100.00	46.45

Table 1

Following is a description of SDG&E's reliability based programs:

1. Smart Thermostat Program

The Smart Thermostat Program is available to residential customers who consume over 600kWh per month. Participating customers are provided a free digital thermostat and up to $100 per year ($300 maximum for annual participation through 2004) in exchange for allowing SDG&E to remotely control their thermostat during a CAISO declared Stage 2 emergency. Participants have the ability to override the system, at a cost of $2 per override. The program is limited to six (6) hours per day and no more than 20 events per year.

Over 3,600 residential customers are signed up on the Smart Thermostat program, representing an estimated 3.3 MW in potential load reduction. According to a draft study conducted by Kema-Xenergy for SDG&E, expected average load reduction from the

[9] SDG&E aggressively promoted reliability-based DRPs in 2001 and 2002 and believes it may be approaching its saturation level.

Smart Thermostat program can be calculated using .33 kW per customer.[10] Based on this draft study, SDG&E estimates 1.2 MW is available from Smart Thermostat participants during any given event.

2. Demand Bidding Program

The Demand Bidding Program (DBP) is a voluntary demand response program available to non-residential customers. To participate, customers must have the ability to reduce electric usage by a minimum of 10% or 100kW, whichever is greater. A CA ISO Alert, Warning or Notice triggers the DBP, either on a Day-Ahead or Day-Of basis. Participants receive $0.35 per kWh for the amount of load reduced below their 10-day average baseline.

SDG&E currently has eight customers representing 16 metered accounts participating in the program. Load reduction from the DBP is estimated at 5.1 MW. Since its inception in 2001, the DBP has not been triggered. Therefore, SDG&E has no experience with the expected level of participation derived from this program. However, in discussions with DBP participants, they have pledged the minimum level of load reduction required for the program. As a result, SDG&E estimates nearly 100% participation during a DBP event.

3. AL-TOU-CP

AL-TOU-CP is a time-of-use pricing rate that provides customers with a commodity discount in exchange for reducing load during CAISO Stage 2 emergencies

[10] Kema-Xenergy, 2002 Smart Thermostat Program Impact Evaluation, Revised Draft, p. X-3, February 25, 2003.

or when SDG&E initiates a Signaled Period 1G.[11] Customers are billed a higher price ($1.80 per kWh) for energy consumed during these "critical-peak" periods. Critical peak periods under AL-TOU-CP are limited to no more than six hours per day, four days per week, 40 hours per month and 120 hours per year.

SDG&E has 21 customers representing 63 sites on AL-TOU-CP. Estimated potential load reduction from this rate is 21.1MW. Based on customer site-specific information about expected load reduction, SDG&E estimates 25% of the total available load reduction will be available during an AL-TOU-CP event.

4. Rolling Blackout Reduction Program

The Rolling Blackout Reduction Program (RBRP) is unique to San Diego. This pioneering program allows qualifying customers to operate their back-up generators during CAISO Stage 3 emergencies. To qualify, customers must have the ability to shift a minimum of 15% or 100kW, whichever is greater, to their back-up generator. RBRP participants receive $0.20 per kWh for the amount of load reduced below their 10-day baseline.

The RBRP is SDG&E's most popular demand response program. Thirty-three customers representing 64 sites are currently participating in the RBRP. A total of 70.1MW in load reduction is available. The amount of load reduction for a particular RBRP event will depend in part on the customer's cost of running the generator, including the price of fuel and generator operation schedule. For this reason, SDG&E estimates the load reduction available during an RBRP event is 50% of the total amount pledged.

[11] As defined in SDG&E's Rule 1 – Signaled Period 1G.

B. Pricing Programs

SDG&E is an active participant in the Advanced Metering, Dynamic Pricing and Demand Response Rulemaking (R.02-06-001). This interagency proceeding includes three working groups (WG) that focus on: 1) overall policy guidance (WG1); 2) large customer demand response programs (>200kW) (WG2); and 3) small customer (residential and small commercial) programs (<200kW) (WG3).

WG1 established a goal of achieving 5% of peak demand by 2007 from price-responsive programs.[12] In this testimony, SDG&E is using the following annual targets for achieving the 5% goal:

Year	Target	MW (Est.)
2003	30 MW	30
2004	80 MW	80
2005	3% of the annual peak demand for bundled service load	102
2006	4% of the annual peak demand for bundled service load	136
2007 and Beyond	5% of the annual peak demand for bundled service load	170

Table 2

While SDG&E readily accepts these aggressive annual targets, pricing programs are largely untested and customer acceptance is largely unknown. And, comments from customer groups participating in R.02-06-001 have been less than enthusiastic:

> "CMTA members have relatively little interest in the specific proposals contained in the Working Group reports. The joint utility critical peak pricing is clearly aimed at the office building sector. Industrial customers have expressed the view that the incentive built into the joint utility Demand Bidding Program is inadequate to generate much enthusiasm."[13]

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12 ALJ Ruling; Item 2: California Demand Response: A Vision for the Future (2007); October 29, 2002.

13 Comments of the California Manufacturers & Technology Association on Working Group 2 Reports on Dynamic Tariff and Program Proposals, Implementation and Addendum Modifying Previous Proposals, p. 6, January 24, 2003.

> "BOMA members and tenants face significant obstacles to further reducing peak demand usage, and this [CPP] proposal in no way begins to address these obstacles…participating in this tariff could well be seriously unattractive to many BOMA members."[14]

Despite these obstacles, SDG&E will strive to attain these targets and has reflected them in the resource plan.

In order to achieve these targets, SDG&E makes the following assumptions related to price-triggered demand response programs:

- Price-responsive programs are available to SDG&E business customers with demands greater than 20kW.
- Transitional incentives[15] are available through December 31, 2005.
- Program stability and significant customer education will result in customer acceptance over time and subsequently increase participation through 2007.
- Additional pricing programs not yet established and not necessarily managed by SDG&E, will contribute to the annual load reduction targets.

[14] Comments of the Building Owners and Managers Association of California on the Working Group 2 Reports on Dynamic Tariff and Program Proposals, p. 7, January 27, 2003.

[15] R.02-06-001; Fourth Report of WG2, pp. 12-20, March 11, 2003.

- Expected load reductions are included in the procurement plan.[16]

SDG&E proposed in R. 02-06-001 to reduce the threshold for participation in demand response to 20 kW in order to expand the universe of potential participants and improve our ability to achieve desired peak load reductions. SDG&E believes the expansion is warranted given the customer mix in the San Diego service area. The number of electric bundled-service accounts with demands greater than 200 kW is just below 1,480. But, the number of electric bundled-service accounts with demands between 20-200kW is over 14,500.

Customer representatives participating in WG2 workshops made it clear that potential savings from dynamic rates alone would not achieve the levels of customer participation needed to achieve load reduction levels. Customer facilities must have the technical equipment necessary to make it easy to participate in DRP. As a result, consensus from the WG2 meetings led to a recommendation to offer technology incentives to spark customer acceptance and participation in demand response. Without incentives for technical equipment, the Commission's annual target will be even more difficult to achieve. With the opportunity to promote price-responsive tariffs to customers with demands greater than 20kW, customer financial incentives to help defray the costs for demand response infrastructure and controls, and comprehensive customer education and program stability, SDG&E is hopeful that customer participation in demand response will increase over the years.

[16] SDG&E expects that customers will respond at varying price levels. Therefore, the procurement plan estimates conservatively the level of load reduction during any given time period.

In R.02-06-001, WG2's Fourth Report dated March 11, 2003 provides estimates for potential load reduction from the various programs proposed. SDG&E provides those estimates in this testimony and incorporates them in its long-term resource planning analysis. The following describes each of the proposed programs applicable to SDG&E, as well as the estimated load reduction for each program:

1. Critical Peak Pricing

In R.02-06-001, PG&E, SCE and SDG&E proposed a statewide Critical Peak Pricing (CPP) tariff that provides participating customers with an electric commodity discount in exchange for being billed higher prices during "critical peak" periods. CPP events are limited to the summer season with a minimum of five and a maximum of 15 event days. Participating customers are notified the day before that the following day is a CPP day. SDG&E has proposed to make CPP available to business customers with demands greater than 20kW.

SDG&E estimates up to 50MW of potential load reduction may be available as a result of the CPP tariff by 2007.

2. Hourly Pricing Option

In. R.02-06-001, SDG&E has proposed to expand its Hourly Pricing Option (HPO) from a pilot program to a full-production tariff, available to business customers with demands greater than 20kW. Participating customers are provided with hourly energy prices on a day-ahead basis. With this information, customers have the opportunity to reduce their energy costs by limiting usage during higher-priced periods or shifting usage to lower-priced periods.

SDG&E estimates up to 38MW in potential load reduction from HPO by 2007.

3. Modified Demand Bidding Program

In R.02-06-001, SDG&E (along with PG&E and SCE) has proposed to modify the existing reliability-based Demand Bidding Program (DBP) to include a price-trigger element. The modified DBP offers flexibility to both the utility and the customer. The utility can elect to initiate the price-triggered DBP if spot prices exceed the DBP price trigger. The pending draft decision (mailed on April 8, 2003) in R.02-06-001 sets the DBP price trigger at $0.15 per kWh. As a voluntary program, participants can elect to participate in the event and receive the posted price for their load reduction or decline to participate without penalty. DBP participants must declare that they have the ability to reduce a minimum of 10% of average annual demand, or 100kW, whichever is greater.

SDG&E estimates the incremental increase in potential load reduction from the modified DBP could grow to 47MW by 2007.

4. Additional Price-Triggered Demand Response Programs

Additional price-triggered demand response programs, not necessarily sponsored or managed by the utilities, have been proposed in R.02-06-001. SDG&E has included a placeholder for these and potentially other programs in its resource plan estimate as the programs are adopted by the Commission and implementation details are finalized.

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To summarize, SDG&E has included the following load reduction levels (in MW) from price-triggered demand response in its resource plan.

	2003	2004	2005	2006	2007 and Beyond
CPP	9	22	34	32	50
HPO	2	11	22	26	38
DBP	3	12	22	35	47
Additional DRP	16	35	24	43	35
Total Potential	30	80	102	136	170
Total Expected	18.75	51.5	70.5	93.5	121.0

Table 3

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Qualifications

My name is Susie E. Sides. My business address is 8306 Century Park Court, Suite 42K, San Diego, California, 92123-1569. I am employed by San Diego Gas & Electric Company ("SDG&E") as the Demand Response Programs Manager in the Commercial and Industrial Markets Department. In my current position, I am responsible for the development, implementation and management of demand response programs.

I graduated from San Diego State University with a Bachelor of Science degree in Business Management in 1993. I received a Master of Arts degree in Organizational Management from the University of Phoenix in 1997. Initially, I was hired by SDG&E in February 1986 and held several positions of increasing responsibility until February 2000. Between March 2000 and February 2001, I was employed by the San Diego Regional Energy Office as Assistant Director of Energy Programs. I returned to SDG&E in February 2001. Since then, I have managed the Demand Response Programs.

I have not previously testified before the Commission.

TABLE OF CONTENTS

Rulemaking No: R.01-10-024
Exhibit No.:
Witness: Susie E. Sides

Order Instituting Rulemaking to Establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development.	)	R.01-10-024

DIRECT TESTIMONY

OF

SUSIE E. SIDES

SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA
April 15, 2003