

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Enhance the Role of  
Demand Response in Meeting the State's Resource  
Planning Needs and Operational Requirements

R.13-09-011  
(Filed September 19, 2013)

**REBUTTAL TESTIMONY OF SAN DIEGO GAS & ELECTRIC COMPANY (U 902 E)  
PURSUANT TO JOINT ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW  
JUDGE RULING**

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May 22, 2014

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JUDGE RULING**

San Diego Gas & Electric Company (“SDG&E”) hereby submits its rebuttal testimony pursuant to the Joint Assigned Commissioner and Administrative Law Judge Ruling And Revised Scoping Memo Defining Scope and Schedule For Phase Three, Revising Schedule For Phase Two, and Providing Guidance For Testimony and Hearings (“Joint Ruling”), issued April 2, 2014. The attached testimony consists of the following:

- Chapter 2 (Rebuttal) - Prepared Rebuttal Testimony of Liying Wang
- Chapter 3 (Rebuttal) – Prepared Rebuttal Testimony of Victor Krueger
- Chapter 4 (Rebuttal) – Prepared Rebuttal Testimony of George Katsufrakis
- Chapter 5 (Rebuttal) – Prepared Rebuttal Testimony of Athena Besa
- Chapter 6 (Rebuttal) – Prepared Rebuttal Testimony of David T. Barker
- Chapter 7 (Rebuttal) – Prepared Rebuttal Testimony of Cynthia Fang

SDG&E appreciates the opportunity to submit rebuttal testimony herein.

Dated this 22<sup>nd</sup> of May, 2014

Respectfully submitted

By */s/ Thomas R. Brill*

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Rulemaking No: R.13-09-011  
Exhibit No:  
Witness: Liying Wang

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**PREPARED REBUTTAL TESTIMONY OF**  
**LIYING WANG**  
**CHAPTER II**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**May 22, 2014**



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1   **PREPARED REBUTTAL TESTIMONY OF**

2   **LIYING WANG**

3   **CHAPTER II**

4   **GOALS FOR DEMAND RESPONSE**

5                 The purpose of my testimony is to respond to the prepared direct testimony submitted by  
6 various intervening parties in Rulemaking 13-09-011, *Joint Assigned Commissioner and*  
7 *Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for*  
8 *Phase Three, Revising Schedule for Phase Two, and Providing Guidance for Testimony and*  
9 *Hearings*, dated April 2, 2014.

10                 Specifically, I respond to issues raised by the following parties:

- 11                  Sierra Club witness Ronald J. Binz
- 12                  The Utility Reform Network witness Kevin Woodruff
- 13                  Joint Demand Response Parties: Witness Mona Tierney-Lloyd, Colin Meehan, and
- 14                 Bruce E. Campbell

15                 **I.         Five Percent of Peak Load is Not an Appropriate Target for SDG&E Price-**

16                 **responsive DR**

17                 A number of parties agreed with the Commission's long-standing price-responsive DR  
18 goals of 5% of peak load, and the Commission-proposed DR goals of 5 percent of peak system  
19 load in the DRAM proposal, but in each case the party provides compelling reasons not to adopt  
20 any target or goal within the same testimony.

21                 First, Sierra Club witness Ronald J. Binz states at page 7 lines 5-8,

22                 In Appendix B, the Commission proffered a series of annual goals for price  
23 responsive DR, beginning at 2.5% in 2014 and growing to 5.0% of peak load in  
24 2020. As a first approximation of the economic levels of DR, these goals are  
25 probably sufficient, if conservative.

26

1           However, just prior in the same testimony Mr. Binz states,

2           The economic literature is replete with studies that show the benefits of  
3           dynamic pricing: shaping consumer behavior through dynamic pricing improves  
4           the efficiency of the electric grid by conveying the cost of the grid at various  
5           times of the day and seasons of the year. The result is lower overall costs and, if  
6           environmental externalities are carried in the price signal, improved  
7           environmental outcomes.

8           To state the obvious, when customers respond to prices by modifying  
9           their demand (in the short run and the long run) supply and demand are  
10          integrated. This means there is much less need to employ external measures (like  
11          DR “programs”) to provide economic levels of DR. (Binz, page 5, lines 5-13)

12          In the longer run, we should expect energy supply and demand to be  
13          integrated in a way that will not require the same sort of intervention that  
14          characterizes today’s DR “programs”. Maturation of the Smart Grid will enable  
15          “prices to devices” enabling customers of all sizes to develop risk profiles that  
16          allow a response from their devices that can track the price of grid power in real  
17          time. On this time horizon, we will likely not use the term “demand response” in  
18          the same way it is used today, any more than we use the term when discussing  
19          demand for gasoline or lemons or other consumer goods. (Binz, page 6, line 17-  
20          page 7 line 2)

21          If the better way to integrate customers into the supply and demand of electricity is  
22          through accurate price signals and “prices to devices” enabling technology, why should there be  
23          targets or goals for DR? In particular, Commission resources should be devoted to moving as  
24          quickly as possible to implementing load-modifying DR through accurate prices reflected in  
25          rates instead of arbitrary targets for a sub-optimal, interim approach.

26          Mr. Binz supports the 5 percent target by citing that 14% of system peak load is  
27          emergency DR in PJM (Binz, page 7, lines 11-14). However, the 5% goal here is for price-  
28          responsive DR and would exclude emergency DR. In addition, the emergency DR in PJM  
29          includes back-up generation that the DRAM target would not include. Therefore, contrary to  
30          Mr. Binz’ opinion, the PJM data is not instructive.

1 Further, Mr. Binz states, “it is difficult to know whether the DR capacity goals are  
2 reasonable” since the goal has no analysis of the cost-effectiveness of supply-side price-  
3 responsive DR target (Binz, page 7, lines 15-17). The CPUC should not adopt a target that is  
4 beyond the level of all cost effective supply-side price-responsive DR, particularly in the absence  
5 of this kind of analysis by the Commission.

6 TURN witness Kevin Woodruff also states “the five percent is an acceptable goal” in  
7 response to the question regarding the DRAM target of 5 percent of system peak by 2020.

8 Q. Do you have any comments on the DRAM Proposal’s goal that PDR meet  
9 five percent of system peak by 2020?

10 A. Yes. The five percent goal is an acceptable goal, *but only for the time being*.  
11 (Woodruff, page 13, 20-22, emphasis in original)

12 Mr. Woodruff’s reasoning is that “the Commission has been pursuing this goal for  
13 several years since it was adopted in the Energy Action Plan.” (Woodruff, page 13, 25-26)  
14 However, D.03-06-032 clearly included Real-time Pricing, Critical Peak Pricing, and other load  
15 modifying DR rates as price responsive DR.<sup>1</sup> Up to the present, the forecasts of load reductions  
16 from load-modifying DR have been included as price responsive DR. Bifurcation should not be  
17 interpreted as eliminating load-modifying DR rate programs as price responsive DR.

18 Later in his testimony, Mr. Woodruff goes on to explain why the 5 percent is not an  
19 appropriate goal for supply-side price-responsive DR. The goal is inappropriate if “meeting the  
20 goal is not cost-effective” (Woodruff, page 14, lines 10-11). The goal is not appropriate for  
21 flexible DR capacity (Woodruff, page 14, lines 20-23). The technical potential for DR bid in  
22 through PDR is unknown (Woodruff, page 14, lines 27-28).

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23  
<sup>1</sup> D.03-06-032, pages 12-16.



1 By contrast, TURN witness Marcel Hawiger opines that the five percent is an “arbitrary  
2 goal”...“that could significantly increase costs.” (Hawiger, page 12, lines 8-12). According to  
3 Mr. Hawiger, a proper goal should be based on “some technical analysis of a) technical potential,  
4 b) cost effectiveness, and c) electric system needs.” (Hawiger, page 12, lines 19-21).

5 The Joint Demand Response Parties witnesses state the Commission should “Develop  
6 achievable DR goals based on 5% of peak, local, and flexible demand, and require IOUs to  
7 demonstrate progress toward those targets.” (Joint DR Parties, page 3, lines 9-10). But when the  
8 goal is developing supply-side price-responsive DR, the Joint DR parties paint a much different  
9 picture.

10 **“Specific goals for DR integration, however, may be premature at this time.**

11 DR integration is, at this time, an experimental process. There are a lot of  
12 moving parts. In order for DR integration to work, the Commission and the  
13 CAISO are going to have to resolve many outstanding issues in a relatively short  
14 period of time. Definition of the resource requirements for DR resources to  
15 qualify for RA, the development and implementation of an auction mechanism,  
16 and the identification and resolution of several “barriers” to DR participation in  
17 the wholesale market, as discussed earlier in this testimony, will all be need to be  
18 resolved first. Initial integration experience will also inform the Commission, the  
19 CAISO and the parties as to what is working and what is not working. That  
20 information will necessitate further processes and the implementation of  
21 refinements. The goal should be to learn from the experience of integrating DR  
22 resources into the wholesale market. **In short, setting goals at this point may**  
23 **create unrealistic expectations.”** (Joint DR Parties, page 52, lines 13-26, and  
24 emphasis added)

25 Since supply-side price responsive DR must, by definition, be integrated into CAISO  
26 markets, the Joint DR parties are arguing for no goals or targets for supply-side price-responsive  
27 DR.

28 A material issue of dispute is whether the Commission can set a goal for price responsive  
29 DR for SDG&E without further defining any such goals to determine if a goal is appropriate,  
30 achievable and delivering the stated objective. None of the parties defined a clear objective or a

1 specific definition of such a goal. For instance, does the 5% refer to the total MWs only enrolled  
2 or the average annual attained MWs or other arbitrary definition? Furthermore it is still not clear  
3 that the Commission can set any goal without it being arbitrary while lacking of an analysis of  
4 grid needs for use-limited resources like DR, without any analysis of the feasibility potential for  
5 price-responsive DR in the SDG&E service area that takes Direct Access numbers into account,  
6 and with no analysis of the cost effectiveness of price-responsive DR in the SDG&E service  
7 area. While SDG&E agrees that preferred resources can be prioritized, cost effectiveness must  
8 be analyzed in relationship to overall objectives and goals. Nothing in the opening testimony of  
9 parties provides support for a clearly defined objective and long-term goal for price responsive  
10 DR for SDG&E of 5 percent of system peak.

## 11 **II. SDG&E Works Well With Third Party Aggregators**

12 In questioning why the current DR goal has not been achieved, the DR Joint Parties state:

13 “There exist some cultural barriers within the utility in accepting third party DR  
14 providers, especially where there is direct customer contact. Some of the customer  
15 account representatives...are suspicious or resentful of the insertion of a third party into  
16 what had been an exclusive relationship with the customer.” (Joint DR Parties, page 10,  
17 lines 7-12)

18 The Joint Parties have not presented any factual evidence in support of this allegation  
19 with respect to SDG&E, and SDG&E is unaware that EnerNOC, Johnson Controls or Comverge  
20 currently offer any DR programs in SD territory where account representatives would be  
21 involved.

22 SDG&E has long history of successful working relationship with DR Aggregators. For  
23 example, Comverge offers an aggregated service in San Diego (SDG&E’s Summer Saver  
24 Program for AC cycling). In the Prepared Direct Testimony in SDG&E’s Application for  
25 Approval of Demand Response Programs and Budgets for the Years 2009 through 2011, Mr.

1 Mark Gaines pointed out multiple efforts that SDG&E worked with “the DR aggregators who are  
2 becoming more active and more numerous in SDG&E’s service territory. SDG&E is working  
3 cooperatively with them to make their customers bases as comprehensive as possible.”<sup>2</sup>  
4 Currently SDG&E continues to provide enhanced incentives to customers or aggregators that  
5 install automated controls and participate in a DR program or rate through its Energy Assessment  
6 & Solutions /Technical Incentive (EAS/TI) Program. The Capacity Bidding Program (CBP) is an  
7 Aggregator driven program where outside companies sign up non-residential customers to bid  
8 load reduction on a monthly basis. SDG&E’s request to eliminate the minimum load requirement  
9 for participating CBP has just been approved by the Commission. The change is intended to  
10 encourage and enable Aggregators to enroll small non-residential customers to participate CBP.  
11 SDG&E has been and will continue to work with customers and Aggregators to provide cost-  
12 effective DR to serve the needs.

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<sup>2</sup> See Amended Testimony of Mark Gaines in A.08-06-002, pages 4 – 9

Rulemaking No: R.13-09-011  
Exhibit No:  
Witness: Victor Kruger

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**PREPARED REBUTTAL TESTIMONY OF**  
**VICTOR KRUGER**  
**CHAPTER III**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION**  
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**May 22, 2014**



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1                                   **PREPARED DIRECT TESTIMONY OF**

2   **VICTOR KRUGER**

3   **CHAPTER III**

4                                   **RESOURCE ADEQUACY CONCERNS**

5   **AND**

6                                   **CAISO MARKET INTEGRATION COSTS**

7           The purpose of my testimony is to respond the prepared direct testimony submitted by  
8 various intervening parties in Rulemaking 13-09-011, *Joint Assigned Commissioner and*  
9 *Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for*  
10 *Phase Three, Revising Schedule for Phase Two, and Providing Guidance for Testimony and*  
11 *Hearings*, dated April 2, 2014. Specifically, I respond to issues raised by the following parties:

- 12            California Independent System Operator (CAISO): Witnesses John Goodin  
13            Office of Ratepayer Advocates (ORA): Witness Sudheer Gokhale

14           **I.       Determining the RA Value of Load Modifying DR**

15           As SDG&E noted in its Opening Testimony, beyond a general observation that load  
16 modifying DR will “reduce the load forecast” – and therefore presumably lower overall RA  
17 obligations – it is unclear exactly how that process will unfold. Importantly, it is not clear if load  
18 modifying DR will immediately impact the load forecast, or if impacts will be based on historical  
19 performance of programs over time.

20           In its opening testimony, the CAISO argues for the historical approach, an approach that  
21 potentially significantly discounts the value of DR relative to the existing framework. The  
22 CAISO argues “[t]he resource adequacy benefits from load modifying demand response arise  
23 when load modifications occur that alter the net load curve in ways that reduce peak demand and  
24 ramping needs. These reduced needs, if consistent and persistent over time, will result in lower

1 generic, local and flexible capacity requirements in follow-on resource adequacy compliance  
2 years.” ... “If, however, load modifying demand response does not occur coincident with system  
3 needs, and does not help reduce peak demands or ramps, then it has less or even no resource  
4 adequacy benefit.” [CAISO Goodin p.6]

5 SDG&E submits that this historical approach has several potential drawbacks. One, it  
6 would initially ascribe zero RA value to new DR rates or programs that have no historical  
7 performance data. Until historical performance is reflected in subsequent forecasts, this lost RA  
8 value would need to be replaced by conventional RA capacity at additional cost to ratepayers.  
9 Two, it seemingly holds DR to a higher standard than conventional RA resources by requiring it  
10 to *always* reduce peak demand to qualify for RA value, even in mild years without significant  
11 temperature peaks. This is a rigorous standard, particularly when fossil generation has planned  
12 and forced outages as well as start failures. Three, DR utilized for distribution reliability  
13 purposes may use much of its availability for times other than peak demand or maximum ramp,  
14 but still be available for real system peaks that occur only in one of ten years.

15 Instead of looking at historical performance to derive RA value for load modifying DR  
16 value, SDG&E believes the CEC should adjust the forecast used by the CAISO to set RA  
17 requirements by the expected or anticipated impact of load-modifying DR programs. This  
18 approach will properly value the RA contribution of load modifying DR in the initial transition  
19 years until historical performance data is reflected in the forecast.

## 20 **II. Integrating Supply DR into the CAISO**

21 ORA argues for creating a larger error band to measure the performance of DR resources  
22 integrating into the CAISO markets via the CAISO’s Proxy Demand Resource (PDR)  
23 mechanism [ORA Sudheer Gokhale p.6]. SDG&E believes the CAISO should have the

1 necessary tools to assess how DR resources are performing in the market. That said, SDG&E  
2 agrees with ORA that a one-size-fits-all error band is perhaps inappropriate for PDR, and  
3 suggests the CPUC and the CAISO should work together and craft appropriate revisions.



Rulemaking No: R.13-09-011  
Exhibit No:  
Witness: George Katsufraakis

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**PREPARED REBUTTAL TESTIMONY OF**  
**GEORGE KATSUFRAKIS**  
**CHAPTER IV**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

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2                                   **GEORGE KATSUFRAKIS**  
3                                   **CHAPTER IV**  
4                                   **SUPPLY RESOURCES ISSUES AND LOAD MODIFYING RESOURCES ISSUES**  
5                                   **AND BACK-UP GENERATORS**

6           The purpose of my testimony is to respond to the prepared direct testimony submitted by  
7 various intervening parties in Rulemaking 13-09-011, *Joint Assigned Commissioner and*  
8 *Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for*  
9 *Phase Three, Revising Schedule for Phase Two, and Providing Guidance for Testimony and*  
10 *Hearings*, dated April 2, 2014. Specifically, I respond to testimony submitted by the IOUs and  
11 other parties presenting different definitions for Supply Resource that would lead to different  
12 classifications of their DR programs, and point to the need for much more market experience  
13 before complete migration of DR programs into the wholesale market.

14           **I.       While the three IOUs have different definitions for Supply Resource, leading to**  
15           **different classifications of their DR programs, they all agree that much more**  
16           **market experience is needed before complete migration of programs into the**  
17           **wholesale markets.**

18           SDG&E has adopted the commission definition for supply resource: “resources that are  
19 integrated into the California Independent System Operators energy markets.”<sup>1</sup> PG&E classifies  
20 DR as a Supply Resource if: (1) it provides a product that the CAISO directly procures (e.g.,  
21 ancillary services); or (2) the incremental benefits of bidding DR as a Supply Resource exceed  
22 the associated incremental costs.<sup>2</sup> SCE’s criteria for a DR program to qualify as a Supply  
23 Resource is: (1) IT must be capable of being dispatched within the CAISO’s market rules, and

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<sup>1</sup> Decision 14-03-026 of Rulemaking 13-09-011 at p. 28.

<sup>2</sup> Direct Testimony of Pacific Gas & Electric at p. 4-1

1 (2) the DR program's incentive must be below the CAISO's maximum price for energy bids.<sup>3</sup>  
2 PG&E believes that none of its DR programs currently qualify as Supply Resource DR but SCE  
3 finds that many of its DR programs currently qualify as Supply Resource DR. SDG&E believes  
4 that Capacity Bidding and Base Interruptible programs can be a supply resource if some program  
5 modifications are made. Different definitions and classifications should not discount that, all  
6 three IOUs indicate that much more experience is needed to determine how much DR can  
7 actually be bid as supply and that efforts need to be made to reduce the complexity and cost of  
8 bidding as Supply before full scale bidding may be feasible.

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<sup>3</sup> Direct Testimony of Southern California Edison at p. 13

Rulemaking No: R.13-09-011  
Exhibit No:  
Witness: Athena Besa

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**PREPARED REBUTTAL TESTIMONY OF**  
**ATHENA BESA**  
**CHAPTER V**  
**SAN DIEGO GAS & ELECTRIC COMPANY**

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2   **ATHENA BESA**

3   **CHAPTER V**

4   **PROGRAM BUDGET APPLICATION PROCESS AND**

5   **PHASE TWO REMAINING ISSUES AND QUESTIONS COST RECOVERY**

6           The purpose of my testimony is to respond to the prepared direct testimony of Sue Mara  
7 representing Direct Access Customer Coalition and Alliance for Retail Energy Markets  
8 (DACC/AReM) prepared in response to the *Joint Assigned Commissioner and Administrative*  
9 *Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for Phase Three,*  
10 *Revising Schedule for Phase Two, and Providing Guidance for Testimony and Hearings,* dated  
11 April 2, 2014.

12           **I.       DACC/AReM Erroneously Believes the Vast Majority of Demand Response**  
13   **(DR) Authorized Expenditures for the Investor-Owned Utilities Have Been**  
14   **Recovered.**

15           On page 11, lines 2-4, Witness Mara states: “In summary, the Commission has authorized  
16 DR program expenditures for the IOUs totaling more than \$1 billion since 2009, the vast  
17 majority of which I believe has been recovered through distribution rates.”

18           Unlike Southern California Edison Company (SCE) and the Pacific Gas and Electric (PG&E)  
19 Company, SDG&E has a different cost recovery mechanism for its DR program costs. As stated  
20 in my opening testimony in this proceeding (page AB-4), SDG&E only recovers its actual DR  
21 program expenditures and then not to exceed the authorized budget. SDG&E presents for  
22 Commission approval proposed DR program budgets in its DR program and budget application  
23 process. Once authorized by the CPUC, the program budgets create a maximum authorized total  
24 budget, or in essence, a cap. However, SDG&E records only its actual DR program expenditures  
25 in its Advanced Metering and Demand Response Memorandum Accounts (“AMDRMA”). The

1 AMDRMA balances are then transferred to SDG&E's Rewards and Penalties Balancing Account  
 2 on an annual basis and the costs are collected via electric distribution rates over 12 months  
 3 effective January 1st of each year consistent with SDG&E's adopted tariffs. The distinction is  
 4 that only the actual expenditures are collected in rates, up to the authorized budget cap and not  
 5 the authorized budget amounts as is the case with PG&E and SCE. The authorization for this  
 6 mechanism can be found in D. 09-08-027 at page 218; and in later decisions such as D.12-04-  
 7 045 and D. 13-04-017.

8 As an illustration of that cost recovery mechanism that is unique to SDG&E, I provide below  
 9 a table which shows the authorized budget caps in the Decisions for cycles 2009-2011 and 2012-  
 10 2014 (for a clean comparison without the fund shifting and revisions) and the actual amounts  
 11 SDG&E expended which were collected in rates related to only those authorized amounts.  
 12 Generally, the amounts collected in rates are considerably lower than what is authorized, as  
 13 demonstrated in the amounts for 2009 through 2013.

	D.09-08-027		D.12-04-045	
	<u>Authorized</u>	<u>Spent</u>	<u>Authorized</u>	<u>Spent</u>
2009	\$ 17,202.06	\$ 8,370.41		
2010	\$ 16,990.46	\$ 8,332.69		
2011	\$ 16,877.84	\$ 9,612.37		
2012			\$ 29,869.55	\$ 11,579.72
2013			\$ 21,217.13	\$ 6,944.23
	<u>\$ 51,070.35</u>	<u>\$ 26,315.47</u>	<u>\$ 51,086.67</u>	<u>\$ 18,523.95</u>

\*in 1000s

14  
15



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**PREPARED REUBTTAL TESTIMONY OF**  
**DAVID BARKER**  
**CHAPTER VI**  
**SAN DIEGO GAS & ELECTRIC COMPANY**

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1 **PREPARED RUBUTTAL TESTIMONY**

2 **OF DAVID T. BARKER**

3 **CHAPTER VI**

4 **PROPOSED DEMAND RESPONSE AUCTION**

5 **MECHANISM INITIAL TARGET AND**

6 **EXPECTATIONS ABOUT INTEGRATING DR INTO PROCUREMENT PLANNING**

7 The purpose of my testimony is to respond to the prepared direct testimony submitted by  
8 various intervening parties in Rulemaking 13-09-011, *Joint Assigned Commissioner and*  
9 *Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for*  
10 *Phase Three, Revising Schedule for Phase Two, and Providing Guidance for Testimony and*  
11 *Hearings, dated April 2, 2014*. I rebut parties' statements suggesting existing supply-side price-  
12 responsive Demand Response (DR) is 2.5 percent of peak load for SDG&E. In addition, I rebut  
13 the position that the reason SDG&E demand response has lagged is because DR has not been  
14 integrated into procurement planning. Lastly, I rebut the position that DR providers must depend  
15 on utilities for a capacity payment.

16 Specifically, I respond to issues raised by the following parties:

- 17  Office of Ratepayer Advocates (ORA): Witness Sudheer Gokhale
- 18  Joint Demand Response Parties (Joint DR Parties): Witnesses Mona Tierney-Lloyd,  
19 Colin Meehan, and Bruce E. Campbell

20  
21 **I. 2.5 Percent of Peak Load is Not The Current Amount of Supply-Side Price-**  
22 **Responsive DR Capacity For SDG&E**

23 The DRAM proposal would have SDG&E start with a target of 2.5 percent of utility  
24 system maximum demand based on a material fact that is in error. The error is based on two  
25 separate factual errors: (1) that Price-responsive DR is 2.5 percent for SDG&E in 2014; and, (2)  
26 that all SDG&E price-responsive DR can become supply-side price-responsive DR. These errors

1 in the Energy Division DRAM proposal were addressed in my direct testimony. Several parties  
2 repeated this error of fact and base opinions on the error. For example, ORA witness Sudheer  
3 Gokhale states “Keeping the goal for price responsive programs at 5% of system peak appears  
4 reasonable for now as the current level of price responsive demand response is only about 2.5% of  
5 system peak.” (Gokhale, page 3, lines 33-35) But for SDG&E the amount of supply-side DR is  
6 likely in the range of 0.4 to 0.7% based on the current levels of price responsive DR in the  
7 SDG&E service area and the assumption that load-modifying DR through rates will not migrate  
8 to supply-side DR. (Barker direct, page DTB-17, lines 20-23). The Gokhale conclusion that five  
9 percent goal “appears reasonable” is based on the unreasonable assumption that supply-side price  
10 responsive DR is currently 2.5 percent for SDG&E.

11 There is no data or analysis to indicate the current level of price-responsive DR is 2.5  
12 percent for SDG&E and no data or analysis to indicate that customers on dynamic pricing DR  
13 programs will or should migrate to supply-side price-responsive DR.

14 **II. Demand Response Being Integrated in the Procurement Process Should Not be**  
15 **Expected to Have a Major Impact on the Level of Supply-Side DR for SDG&E**

16 The Joint DR parties state that increases in demand response have not been realized in the  
17 past because “DR has not been integrated into procurement planning and has been separately  
18 procured until the recent Commission Decisions in the Track 1 (D.13-02-015) and 4 (D.14-02-  
19 033) in the 2012 Long Term Procurement Proceeding (LTPP). DR has been treated as a resource  
20 separate from all other resource procurement.”

21 This statement by the Joint DR Parties is in error for SDG&E. SDG&E has tried  
22 numerous times to integrate DR into all-source procurement. In 2004, in D.04-06-011, the  
23 Commission approved five procurement proposals to meet SDG&E’s short-term and long-term  
24 grid reliability needs, one of which was an aggregator-provided demand response program,

1 “Summer Saver.” The approved aggregator contract was to manage customer end-use equipment  
2 (central air conditioning units, electric water heaters, and pump motors) during summer months  
3 beginning in 2005. The Commission-approved contract targeted commercial customers with  
4 maximum demands no greater than 100 kW, irrigation customers with demands less than 200 kW,  
5 and residential customers. The procurement contract has been subsequently renewed and is set  
6 next to expire in 2016. It is expected to provide 16 MW of load reduction in 2014.

7 In 2007, SDG&E again issued a request for offer (RFO) for supply resources that included  
8 demand response in addition to peaking generation capacity. SDG&E again selected a DR  
9 aggregator contract to provide dispatchable load reduction, the “DemandSmart” program. In  
10 2009, the Commission approved the DR Aggregator contract in D.09-09-015 to provide 40 MW  
11 of DR that could be dispatched up to 50 hours per year by 2012. On May 11, 2011, the DR  
12 Aggregator contract was mutually terminated due to lack of performance. Roughly two-thirds of  
13 the enrolled load simply migrated from existing DR programs to DemandSmart, with very limited  
14 incremental DR added.

15 In 2009, SDG&E issued an RFO for supply resources and demand response to support  
16 reliability in the SDG&E service area. SDG&E received three bids from DR aggregators that  
17 were cost effective on their own, but each targeted the same medium to large industrial customer  
18 class. Based on the experience of DemandSmart, SDG&E was concerned about the ability of DR  
19 aggregators to deliver their committed loads<sup>1</sup> and ultimately discontinued negotiations in 2012.

20 Instituting a new DR procurement mechanism, the DRAM, as part of procurement of  
21 supply-side resources should not be expected by itself to significantly increase the total amount of  
22 DR available in the SDG&E service area based on past experience.

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<sup>1</sup> See Amended Testimony of Mark Gaines in A.11-03-002, pages MFG-9 – MFG-10.

1     **III. DR Providers do not Need to Rely Upon SDG&E for a Capacity Payment**

2             The Joint DR Parties state “[W]ithout a centrally-administered capacity market, DR  
3 providers must rely, primarily, upon utilities for a capacity payment.” (Joint DR Parties, page 18,  
4 lines 14-16) This statement is factually incorrect in that it ignores other load serving entities  
5 (LSEs) in the SDG&E service area that are available to procure DR RA capacity. As stated in my  
6 direct testimony, seventeen percent of load in the SDG&E service area is served by other LSEs  
7 and over fifty percent of SDG&E’s industrial load is served by other LSEs. (Barker direct, page  
8 DTB-18, lines 10-14). Further, almost two-thirds of currently enrolled MWs in DR programs  
9 likely to become supply-side price-responsive DR are procurement customers of other LSEs.  
10 These LSEs also have obligations to acquire RA and generally have business models where they  
11 do not make long-term contracts for supply resources, making them ideal candidates to acquire  
12 DR RA capacity. It is factually incorrect to suggest any structure to acquire DR RA capacity  
13 need be utility-centric.

Rulemaking No: R.13-09-011  
Exhibit No:  
Witness: Cynthia S. Fang

Order Instituting Rulemaking to Enhance the Role of  
Demand Response in Meeting the State's Resource  
Planning Needs and Operational Requirements

R.13-09-011  
(Filed September 19, 2013)

**PREPARED REBUTTAL TESTIMONY OF**  
**CYNTHIA FANG**  
**CHAPTER VII**  
**ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

May 22, 2014



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1                                   **PREPARED RUBUTTAL TESTIMONY OF**

2   **CYNTHIA FANG**

3   **CHAPTER VII**

4   **COST ALLOCATION ISSUES**

5           The purpose of my testimony is to respond to the prepared direct testimony submitted by  
6 various intervening parties in Rulemaking 13-09-011, *Joint Assigned Commissioner and*  
7 *Administrative Law Judge Ruling and Revised Scoping Memo Defining Scope and Schedule for*  
8 *Phase Three, Revising Schedule for Phase Two, and Providing Guidance for Testimony and*  
9 *Hearings*, dated April 2, 2014. Specifically, I respond to issues raised by the following parties:

- 10        Direct Access Customer Coalition and Alliance for Retail Energy Markets  
11       (DACC/AReM): Witness Sue Mara
- 12
- 13        Marin Clean Energy (MCE): Witness Jeremy Waen

14           The material issues of fact are whether load-modifying Demand Response (DR)  
15 programs benefit all customers and the conditions under which supply-side DR benefits all  
16 customers.

17       **I. Costs for all Load Modifying Demand Response Should Continue to be Collected**  
18       **Through Delivery Rates**

19           DACC/AReM witness Mara states, “Procurement by the IOUs of DR capacity and  
20 energy consumption reduction services through their DR programs substitutes for procurement  
21 of capacity and energy from a generating plant, which the IOUs own or contract with for the  
22 output.” (Mara, page 12, lines 4-6) Ms. Mara concludes cross-subsidies occur “when direct  
23 access customers are forced to pay a portion of the IOUs’ generation-related costs in their  
24 distribution rates.” (Mara, page 12, lines 2-4) This erroneous conclusion is based on the  
25 incorrect statement that the avoided procurement is from an investor-owned utility (IOU)-owned

1 or contracted generation plant. On the contrary, load modifying DR reduces the system peak and  
2 therefore reduces the Resource Adequacy (RA) requirements of all Load Serving Entities  
3 (LSEs). Load-modifying DR does indeed lower procurement from generation, but it lowers it for  
4 all entities with RA obligations, both IOUs and other LSEs.

5 In addition, load modifying DR lowers energy prices for all entities in the relevant  
6 market. As stated in Federal Energy Regulatory Commission (FERC) Order 745, it is just and  
7 reasonable to allocate demand response costs proportionally to all LSEs that benefit— all entities  
8 that purchase energy from the relevant market.

9 We therefore find just and reasonable the requirement that each RTO and ISO  
10 allocate the costs associated with demand response compensation proportionally  
11 to all entities that purchase from the relevant energy market in the area(s) where  
12 the demand response reduces the market price for energy at the time when the  
13 demand response resource is committed or dispatched. (FERC Order 745, page  
14 78)

15 It does not matter whether a direct access (DA) customer participates or not in load-  
16 modifying DR program, or whether DA customers form the bulk of participants in a DR  
17 program. The fact that load-modifying DR reduces the system peak for all customers and  
18 reduces energy market prices for all customers, is the reason all customers should provide  
19 proportional support for the load-modifying DR through delivery rates (also known as Utility  
20 Distribution Company (UDC) rates).

## 21 **II. Cost Allocation for Supply-Side Demand Response is Complicated**

22 Ms. Mara’s comments have more relevance for supply-side DR where the DR is a  
23 supply-side resource and does provide a replacement for generation for the purchaser of the DR  
24 capacity and/or energy. She states that supply-side DR resources “are designed to ‘look and act  
25 like generators’ in the CAISO’s wholesale markets, Thus, their costs should be allocated the  
26 same way that generator costs are allocated – through generation rates.” (Mara, page 16, lines 8-

1 11) If supply-side DR is simply a replacement of a RA purchase from a generator, the cost of the  
2 supply-side DR should be in generation rates for which ever LSE procures the supply-side DR.  
3 Supply-side DR with this characteristic would only be cost effective if the price of supply-side  
4 DR was equal to or less than other supply resources. If the supply-side DR is competing with  
5 existing generation capacity and is being paid prices similar to prices in the bilateral RA market,  
6 the costs should be recorded in the Energy Resource Recovery Account (ERRA) balancing  
7 account and recovered through generation rates. In the case where the cost-effectiveness of DR  
8 capacity is measured by the cost of alternate resources in RA markets, the procuring LSE should  
9 incorporate the cost in generation rates.

10 However, DR has been treated in the cost effectiveness protocols in the past as deferring  
11 or avoiding new generation capacity that would be needed for reliability. If supply-side DR  
12 going forward uses cost effectiveness based on avoiding new generation capacity and the  
13 California Public Utilities Commission (Commission) requires the IOU to procure DR supply  
14 resources to provide reliability for all customers in its service area that would have been  
15 provided by new generation, then it is benefitting all customers, not just bundled customers. If  
16 the new supply resource is required by the Commission for reliability, the Commission orders  
17 the IOU to procure it and all benefitting customers to pay for it.

18 In this case, there are several options for implementing cost allocation. First, all supply-  
19 side DR capacity costs could be recovered in delivery rates and the acquired RA could be  
20 assigned proportionally to each LSE's allocation of costs, similar to today. Second, as proposed  
21 in the opening testimony of San Diego Gas & Electric Company (SDG&E) witness David Barker  
22 (page DTB-9, line 25 – page DTB-10, line 18), LSEs could all participate in the Demand  
23 Response Auction Mechanism (DRAM) to acquire DR capacity. Third, the Commission could

1 determine a market cost for capacity based on the existing bilateral RA market or the future  
2 California Independent System Operator (CAISO) voluntary/backstop RA market, have the IOU  
3 keep the DR RA and pay the market cost, and assign any above market costs of DR capacity to  
4 all customers proportionally through delivery rates.

5 A fourth approach is the “application of the Cost Allocation Mechanism (CAM)” as  
6 articulated in the testimony of MEA witness Waen. (Waen, page 5 lines 3-4). Waen states,  
7 “restructuring of the DR framework may potentially present new openings for DR-based RA to  
8 be assigned CAM cost recovery.” (Waen, page 5, lines 5-6) Treating supply-side DR as other  
9 supply-side resources acquired for reliability is another option.

10 Waen states the DRAM should not be treated as CAM-eligible capacity,

11 The DRAM is designed to solicit capacity-only DR offerings so the DR procured  
12 through this mechanism will be purely to meet transmission-level reliability  
13 needs, via the RA obligation, and not to provide any direct distribution level  
14 reliability functionality. As such, any capacity contracted through the DRAM, be  
15 it system, local, and/or flexible capacity, is equitable to the capacity products that  
16 all LSEs are obligated to procure through RA. There will be no additional  
17 distribution-grid reliability attributes with these solicitations to justify special cost  
18 recovery treatment, thus all capacity contracted through the DRAM should be  
19 deemed CAM-eligible ineligible. (Waen, page 9, lines 8-15)

20 The Commission has also used a CAM-like mechanism for procurement of preferred  
21 resources that meet State goals like DR as indicated in Ordering Paragraph 5 of Decision (D.)  
22 10-12-035,

23 Pacific Gas and Electric Company, San Diego Gas & Electric Company, and  
24 Southern California Edison Company shall procure combined heat and power  
25 resources on behalf of electric service providers (ESPs) and community choice  
26 aggregators (CCAs) and shall allocate the resource adequacy benefits and net  
27 capacity costs associated with this procurement to the ESPs and CCAs”.(D.10-12-  
28 035, pages 68-69).  
29

1           SDG&E’s preference for supply-side DR is for the Commission to treat all LSEs equally  
2 and put the same procurement opportunities and obligations on all LSEs similar to RA  
3 requirements or energy storage targets. But the DACC/AReM and MCE witnesses make it  
4 abundantly clear that the Commission has no authority to require them to acquire supply-side DR  
5 or participate in the DRAM absent legislation. (Mara, page 27, lines 8-15; Waen, page 8, line 21  
6 to page 9, line 6) Absent the ability to require all LSEs to procure a proportionate share of  
7 supply-side DR, the Commission should allocate the resource adequacy benefits and net capacity  
8 costs associated with this procurement to the energy service providers (ESPs) and community  
9 choice aggregators (CCAs) through UDC rates to ensure that all benefitting customers pay.

1     **III. Witness Qualifications**

2             My name is Cynthia S. Fang and my business address is 8330 Century Park Court, San  
3 Diego, California 92123. I am the Electric Rates Manager in the General Rate Case and  
4 Revenue Requirements Department of San Diego Gas and Electric (SDG&E). My primary  
5 responsibilities include the development of cost-of-service studies, determination of revenue  
6 allocation and electric rate design methods, analysis of ratemaking theories, and preparation of  
7 various regulatory filings. I began work at SDG&E in May 2006 as a Regulatory Economic  
8 Advisor and have held positions of increasing responsibility in the Electric Rate Design group.  
9 Prior to joining SDG&E, I was employed by the Minnesota Department of Commerce, Energy  
10 Division, as a Public Utilities Rates Analyst from 2003 through May 2006.

11             In 1993, I graduated from the University of California at Berkeley with a Bachelor of  
12 Science in Political Economics of Natural Resources. I also attended the University of  
13 Minnesota where I completed all coursework required for a Ph.D. in Applied Economics.

14             I have previously submitted testimony before the Federal Energy Regulatory Commission  
15 and have submitted testimony and testified before the California Public Utilities Commission  
16 regarding SDG&E's electric rate design and other regulatory proceedings. In addition, I have  
17 previously submitted testimony and testified before the Minnesota Public Utilities Commission  
18 on numerous rate and policy issues applicable to the electric and natural gas utilities.