

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

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 DIRECT 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 6, 2014



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1 PREPARED DIRECT TESTIMONY OF

2 LIYING WANG

3 CHAPTER II

4 PHASE THREE ISSUES AND QUESTIONS

5 GOALS FOR DEMAND RESPONSE

6 The purpose of my testimony is to respond to questions posed in Attachment A of the
7 *Joint Assigned Commissioner and Administrative Law Judge Ruling and Revised Scoping Memo*
8 *Defining Scope and Schedule for Phase Three, Revising Schedule for Phase Two, and Providing*
9 *Guidance for Testimony and Hearings*, dated April 2, 2014. I am employed by SDG&E and
10 hold the position of Demand Response Manger. My business address is 8335 Century Park
11 Court, San Diego, CA 92123. My full statement of Witness Qualifications is set forth as part of
12 my Prepared Direct Testimony.

13 **I. GOALS FOR DEMAND RESPONSE**

14 **Question 1:** Parties should provide what they consider to be past and current goals for demand
15 response so that this proceeding has a complete and accurate history of the goals.

16
17 **Response 1:** Since 2001, SDG&E has been designing and implementing numerous demand
18 response programs under the direction of the Commission. In Decision (“D.”) 03-06-032, the
19 Commission summarized its goals as follows:

20 “...the interagency vision for advancing statewide demand response goals
21 links the task of meeting those goals with utility procurement requirements
22 and adopts an initial set of voluntary tariffs and programs for large
23 customers whose electricity use exceeds 200 kW per month. The decision
24 also sets annual megawatt MW targets to be met through demand response
25 and included in investor-owned utility IOU procurement plans.”¹
26

27 D.03-06-032 adopted a series of annual target goals for DR programs establishing aggressive
28 load reduction targets. For SDG&E, the adopted goals were 30 MW for 2003 80 MW for 2004

¹ D. 03-06-032 at pg. 2

1 and 3% of annual system peak demand for 2005 growing to 4% in 2006 and 5% in 2007 and
2 beyond. A fundamental component, yet continuing challenge for SDG&E in designing its
3 portfolio of DR programs, has been the annually-increasing program goals.

4 On November 18, 2005, the Commission issued D.05-11-09 which noted that significant
5 progress has been made in the development of DR programs, and identified several key issues
6 for further development. Subsequently, the Commission opened a new Rulemaking (R.) 07-01-
7 041, on January 25, 2007, to address various issues, including the reassessment of the annual DR
8 program targets and the integration of DR programs into the California Independent System
9 Operator's Market Redesign and Technology Upgrade (MRTU) process.

10 On March 15, 2006, the Commission issued D.06-03-024 which adopted the first full
11 multi-year cycle of 2006-2008 DR programs portfolio and budgets for SDG&E. Later, the
12 Commission issued D.06-11-049, dated November 30, 2006, in which a large number of
13 SDG&E's program augmentation proposals for 2007-2008 were adopted.

14 On January 25 of 2007, the Commission initiated R.07-01-041, Order Instituting
15 Rulemaking Regarding Policies and Protocols for Demand Response Load Impact Estimates,
16 Cost-Effectiveness Methodologies, Megawatt Goals and Alignment with California Independent
17 System Operator Market Design Protocols. The purpose of the rulemaking was to develop
18 effective demand response programs for investor-owned utilities. One of the four primary goals
19 of R.07-01-041 was to set DR goals for 2008 and beyond, and develop rules on goal attainment.

20 Load impact and cost effectiveness protocols were initially set forth in D.08-04-050,
21 subsequently modified in D.10-04-006, and finalized in D.10-12-024. The load impact protocols
22 along with the cost-effectiveness methodologies represent a collaborative effort that identified
23 the quantitative framework in which to identify MW load reductions attributed to Demand

1 Response programs and activities. Subsequently, the focus of SDG&E's demand response has
2 been based on cost effectiveness and not on maximizing MW quantities irrespective of the costs
3 to get those MWs.

4 Prior to 2008, MWs were reported as the amount of load that was "signed up" for a
5 program. This led to highly inflated MW goals (5% of system load) and encouraged the IOUs to
6 enroll large numbers of customers into demand response programs. When demand response
7 events were called, many of the customers did not reduce their loads. This problem led to the
8 removal of the arbitrary MW load impact goals in 2008. Instead, the focus became more about
9 cost effective demand response, and not a MW goal. Additionally, the ability for a utility to
10 achieve cost effective demand response and get credit for resource adequacy is a strong incentive
11 for the utilities to maximize its cost effective DR. If the correct market mechanisms are in place,
12 the utility will make the most efficient and effective use of its demand response resources.

13 In R.13-09-011, the Commission proposes to bifurcate DR programs into load
14 modifying resources and supply resources in order to prioritize demand response as a resource
15 competitively bid into the CAISO wholesale electricity market. SDG&E's DR strategy, on the
16 other hand, is two pronged: 1) to enable the delivery of fast response and reliable DR into
17 CAISO markets cost effectively, and 2) to promote DR through price signals, enabling
18 technologies, and enhanced customer education. The framework of the DR strategy and expected
19 timelines are illustrated in the attached Exhibit.

20 As shown in the Exhibit, SDG&E is trying to align DR vision with developments in other
21 enterprise wide strategies, proceedings, and technology deployment:

- 1 1. Grid is balanced via Smart Grid Investment, Long Term Procurement Plan
2 (LTPP) and its compliance with California’s Renewable Portfolio Standards
3 (RPS);
- 4 2. Residential Rate Reform OIR (R.12-06-013), in which the Commission identified
5 ten principles for evaluating Optimal Rate Design which included that rates
6 should: encourage conservation and energy efficiency (Principle 4); encourage
7 reduction of both coincident and non-coincident peak demand (Principle 5); be
8 based on marginal cost (Principle 2); and be based on cost-causation principles
9 (Principle 3);² and
- 10 3. Technology development and deployment: Provide market signals that encourage
11 technology development and deployment in ways that empower customers with
12 choices that allow them to better respond to price signals and use energy at times
13 that minimize costs and emissions.

14 **Question 2:** Parties should provide recommendations for increasing individual demand response
15 program load impacts and overall participation in demand response programs. If parties consider
16 the current demand response participation level to be appropriate, please explain why.

17
18 **Response 2:** While SDG&E continues to refine, develop and implement rates and programs to
19 grow DR capacity, the evaluation of the overall participation in demand response programs has
20 to be individual program specific. For example, Critical Peak Pricing is a default rate that is
21 available to large Commercial and Industrial (C&I) customers in SDG&E’s service territory and
22 is considered adequate to bring large C&I customers on board. However, this program could
23 benefit from DR marketing funds for customer education and outreach not only for expanding
24 customer base, also encouraging existing customers’ continuous participation.

² See, R. 12-06-013, Scoping Memo and Ruling of Assigned Commissioner, issued November 26, 2012.

1 **Question 3:** Parties should provide recommendations for developing the goals of demand
2 response load (MW) and demand response participation, how those goals should be measured
3 (load impact protocol based on ex post or ex ante, or others), and how often they should be
4 measured to ensure goal achievement (monthly, seasonally, or annually).
5

6 **Response 3:** SDG&E believes that the goal should be to encourage all cost effective DR and that
7 there should be no specific MW targets. The customer base of each IOU is different as reflected
8 in the historical participation and performance. And the range of unknowns for CAISO market
9 participation will impact the amount of cost effective DR participation as supply resources.

10 SDG&E recommends that there be no DR MW targets, as there are several venues where DR is
11 going to be implemented in the future. Additionally, previous MW targets failed because the
12 MW goals failed to recognize the significant amount of C&I Direct Access load that SDG&E
13 has. SDG&E is unable to enroll any of this load into its dynamic rates. The medium C&I load
14 which is forecasted to bring 15 additional MWs is scheduled to be defaulted onto CPP in 2015.
15 SDG&E's small commercial and residential classes are also scheduled to be defaulted onto Time
16 of Use (TOU) rates and both classes have optional CPP rates available in 2015. The Commission
17 in D.14-03-004 authorizes SDG&E to procure between 500 MWs and 800 MWs by 2022 where
18 at least 175 of those MWs are local capacity from preferred resources consistent with the
19 Loading Order of the Energy Action Plan.³ DR is included as counting toward this current goal.

20 SDG&E recommends that program participation, load impacts, and program performance
21 and comparison between ex-ante and ex-post be conducted on each individual program annually.

³ See, D.14-03-004, OP 2.b.

1 **Question 4:** Parties should provide recommendations for programs or activities to ensure
2 equality for load modifying resources and supply resources. Parties should suggest a definition
3 for equality.
4

5 **Response 4:** SDG&E recommends that the load modifying resources be continued to be
6 evaluated by the Commission's cost effectiveness protocols with modifications proposed in the
7 testimony of David Barker.⁴ The preferred resources benefits of DR, like avoided Greenhouse
8 Gas costs and Renewable Portfolio Standard procurement of renewables, should be included as
9 well as avoided capacity cost to maintain system and local reliability. For supply resources, the
10 value of DR is correlated with the cost of the generation resources they are competing against.
11 SDG&E recommends the Commission consider the costs of generation capacity that can be
12 avoided through demand response for load modifying resources even if they receive no RA
13 credit by continuing to quantify the capacity value of load modifying DR in cost effectiveness
14 protocols for as proposed in the testimony of David Barker.⁵ Demand response programs will
15 have to be operated very efficiently to provide a cost effective alternative to generation.
16

⁴ See, Barker's testimony, pages 19-26.

⁵ See, Barker's testimony, Response 22, page 21.

1 **II. WITNESS QUALIFICATIONS**

2 My name is Liying Wang. My business address is 8335 Century Park Court, San Diego,
3 California 92123. I am employed by San Diego Gas & Electric Company as the Demand
4 Response Manager in the Programs Operations Department since September 2013. In this
5 position, my responsibilities include the management of the goals and budget of the Demand
6 Response portfolio and operations; the development and implementation of DR strategy; and the
7 participation in the regulatory proceedings.

8 Before joining SDG&E, I had worked in the Mid Continent Independent Transmission
9 System Operator for 12 years, holding various positions of increasing responsibility including
10 engineering and management positions in operations, energy management system, load and wind
11 generation forecasting, and renewable resources.

12 I attended the Huazhong University of Science and Technology (HUST) in Wuhan,
13 China. I graduated with a Bachelor of Science degree in 1994 and a Master of Science degree in
14 1997, both in Electric Power Engineering. I also attended the University of North Dakota and
15 graduated with a Master of Science degree in Electrical Engineering in 2000.

16 I have not previously testified before this Commission.

EXHIBIT

Framework for Determining Demand Response Strategy

