

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.

Rulemaking 13-09-011  
(Filed September 19, 2013)

REBUTTAL TESTIMONY OF KEVIN WOODRUFF  
ON BEHALF OF THE UTILITY REFORM NETWORK REGARDING  
PROPOSED DEMAND RESPONSE AUCTION MECHANISM

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May 22, 2014

1 INTRODUCTION

2

3 Q. Please introduce yourself.

4 A. I am Kevin Woodruff, Principal of the consulting firm of Woodruff Expert Services. I  
5 filed Prepared Testimony in this docket May 6 on behalf of The Utility Reform Network  
6 (TURN) regarding the Energy Division's (ED's) proposed Demand Response Auction  
7 Mechanism (DRAM Proposal).<sup>1</sup> I provided my resume as Attachment 1 to that  
8 testimony.

9

10 Q. What is the purpose of this Rebuttal Testimony?

11 A. In this Rebuttal Testimony, I am responding to certain other parties' testimony on  
12 selected issues, as summarized below.

13

14 SUMMARY AND RECOMMENDATIONS

15

16 Q. Please identify the issues you address in this Rebuttal Testimony.

17 A. I am addressing three specific issues in this Rebuttal Testimony:

- 18 • The potential for other competitive procurement mechanisms to meet or supplement  
19 DRAM's goals more effectively, though possibly less transparently.  
20 • The benefits of the DRAM Proposal's cost cap.  
21 • The importance of critically evaluating the benefits of changes to the California  
22 Independent System Operator (CAISO) energy market, including the integration of  
23 Demand Response (DR).

24

25 Q. Do you believe that there may be approaches besides the DRAM for procuring DR  
26 competitively?

27 A. Yes. In this docket, I am encouraging the Commission to take new steps to pursue one of  
28 its key principles in maintaining and expanding DR programs and policies: ensuring, to

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<sup>1</sup> I also addressed goals for Price Responsive Demand Response in my Prepared Testimony,

1 the extent possible, that ratepayer expenditures on DR are reasonably cost-effective. I  
2 see the DRAM Proposal as a key step forward in this process, despite the supportive  
3 criticisms I made in my Prepared Testimony.<sup>2</sup>  
4

5 However, some parties' testimony questioned whether the DRAM would yield the most  
6 valuable mix of DR resources. I agree with these parties that it is possible that more  
7 complex procurement processes that recognize the variations and differences among DR  
8 resources could also achieve the goal of ensuring DR cost-effectiveness. I could also  
9 support expansion of such alternative procurement processes – such as the use of utility  
10 Requests for Proposals (RFPs) that are open to a variety of DR products – as an  
11 alternative or supplement to the DRAM. The results and supporting documentation of  
12 the Local Capacity Requirements Request for Offers (LCR RFO) Southern California  
13 Edison (SCE) is now managing may be especially instructive on these matters. But I note  
14 that such procurements would likely be more costly to implement and would also likely  
15 not be as transparent as the DRAM could be.  
16

17 My recommendation on the form of the competitive DR procurement that the  
18 Commission should favor is thus contingent upon the Commission's weighting of key  
19 factors, in particular, whether the likely lower administrative costs and/or greater  
20 transparency of the DRAM outweigh the potentially higher quantities and value of DR  
21 that could be obtained from procurement that more fully considers the benefits of the  
22 various flavors of DR. In my Prepared Testimony, I endorsed the DRAM Proposal in  
23 concept based on my perception that the Commission would have a strong interest in the  
24 transparency of the DR procurement process.  
25

26 Q. What is your position on the cost cap in the DRAM Proposal?

27 A. I also believe the DRAM Proposal's cost cap should be retained, with the improvements  
28 to its computation and use I suggested in my Prepared Testimony.<sup>3</sup>

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<sup>2</sup> Prepared Testimony of Kevin Woodruff..., 2:3-20, 10:4-9, 12, fn. 18, and 16:7-25.

1 Q. What is your concern about the integration of DR into the CAISO’s energy market?

2 A. I strongly support exposing DR programs and proposals to competition to ensure  
3 customers are receiving the best value from such programs and proposals. However, it is  
4 important that claims about the efficiency benefits of electricity markets – or specific  
5 design features of such markets – be scrutinized before acting on such claims. I respond  
6 in particular to the testimony of CAISO witnesses in discussing these issues.

7

8 OTHER APPROACHES FOR COMPETITIVE PROCUREMENT OF DEMAND RESPONSE

9

10 Q. Did other parties criticize the DRAM Proposal and urge the Commission not to adopt it,  
11 or at least change it significantly before adoption?

12 A. Yes. I will not list all these parties or their criticisms.<sup>4</sup> However, I will respond to the  
13 testimony of two parties to address some of these criticisms and analyze other means of  
14 procuring DR: the Pacific Gas & Electric Company (PG&E) and the Joint Demand  
15 Response Parties (JDRP).

16

17 Q. Which statements of PG&E and the JDRP will you respond to in this Rebuttal  
18 Testimony?

19 A. The JDRP offered detailed criticisms of the DRAM,<sup>5</sup> including the observation that the  
20 cost cap could limit the procurement of cost-effective DR. The JDRP also said  
21 “...achieving a hierarchy of DR capacity value, along a spectrum, based upon the value  
22 of the services provided, would be an important outcome of this proceeding”.<sup>6</sup>

23

24 PG&E offered similar criticisms and suggested a procurement mechanism for obtaining  
25 additional value from DR resources when it said:

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<sup>3</sup> *Id.*, 3:12-18, 8:1-10:9 and 16:16-19.

<sup>4</sup> I should note that I also suggested several important changes be made to the DRAM Proposal before it is implemented. See footnote 2 above.

<sup>5</sup> See Joint DR Parties’ Opening Prepared Testimony, 41:12-52:7.

<sup>6</sup> *Id.*, 14:19-21.

1 “...RFPs can unlock additional valuable DR resources that may not show up under the  
2 Commission’s Demand Response Auction Mechanism (DRAM) proposal...the RFP  
3 approach provides much more flexibility for the IOUs to work with DR providers on  
4 agreements that bring the maximum amount of DR to the state. While standard product  
5 definitions and contract terms could help make DRAM an efficient vehicle for procuring  
6 some types of DR, PG&E’s experience with DR RFPs has shown that some flexibility in  
7 these areas (e.g., settlement structure) is needed to fully leverage third parties’ ability to  
8 bring valuable DR resources to market.”<sup>7</sup>  
9

10 Q. Do you agree with PG&E’s suggestion that RFPs could yield more DR resources – and  
11 possibly more valuable DR resources – than the DRAM?

12 A. Yes. PG&E is correct that a utility RFP could procure more cost-effective DR compared  
13 to the “plain vanilla” approach the DRAM would take.<sup>8</sup> Such an RFP might procure  
14 more valuable and more cost-effective DR in “\$/kW” cost terms. For example, the  
15 DRAM as structured would ensure that all products meet the Proxy Demand Response or  
16 Reliability Demand Response Resource eligibility requirements, existing system and  
17 local Resource Adequacy (RA) requirements, and any future flexible RA requirements.  
18 A utility RFP could consider other product characteristics not specified in these rules.  
19 Such an approach might thus be a good alternative or supplement to the DRAM.  
20

21 Q. If you agree that alternate procurement approaches could yield more beneficial DR, do  
22 you continue to support the DRAM?

23 A. Yes. As general context, I strongly support the Commission’s effort to implement  
24 competitive procurement of DR based on consistent and transparent evaluation criteria. I  
25 thus continue to support the DRAM as a means to this important end.  
26

27 Moreover, utility procurement of a broader menu of DR options via an RFP would likely  
28 require greater effort and expense to manage than a DRAM, given the added need to  
29 assess the value of disparate proposals and possibly negotiate and manage less

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<sup>7</sup> PG&E Opening Testimony, Volume I, page 1-9, lines 5-16.

<sup>8</sup> I am not commenting on the JDRP’s citations to the DR procurement mechanisms operated by the PJM Interconnection and the Electric Reliability Council of Texas (ERCOT) because the Commission has said it will not implement such “centralized” markets in California. (See Rulemaking 14-02-001, pp. 4-5.)

1 standardized contracts.<sup>9</sup> Further, the results of such procurement would likely be less  
2 transparent than the simple, cost-driven results of the DRAM.

3  
4 Q. Could the DRAM be improved to address some of these concerns that it will not procure  
5 the most valuable mix of DR resources?

6 A. Yes. The DRAM Proposal bases selection solely as a function of bid price, the cost cap  
7 and DR program goals. I argued in my Prepared Testimony that selection could be  
8 improved by considering the relative value of System, Local and Flexible DR products in  
9 bid selection.<sup>10</sup> This change alone could improve the mix of resources the DRAM yields.  
10 But the Commission could also make additional changes to consider DR proposals across  
11 a broad range of parameters, such as the energy bid price, and number of hours the  
12 resource is available, and the timing of such hours. SCE's LCR RFO might provide  
13 information to guide such changes.<sup>11</sup>

14  
15 Q. What is your recommendation to the Commission based on these aspects of PG&E's and  
16 the JDRP's testimony?

17 A. The Commission should decide which attributes of a Commission-managed DR  
18 procurement process are more important: the likely higher transparency and/or lower  
19 administrative cost of the DRAM or the potential acquisition of more cost-effective DR  
20 from utility-sponsored RFPs. A Commission finding on this specific issue at or between  
21 either end of this spectrum, and corollary DR procurement policies, could be  
22 reasonable.<sup>12</sup>

23  

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<sup>9</sup> DR Providers would also likely incur greater transaction costs, which they would wish to recover from customers.

<sup>10</sup> Prepared Testimony of Kevin Woodruff..., 10:11-12:22.

<sup>11</sup> I would be open to delaying the implementation of the DRAM to consider SCE's LCR RFO results, as SCE recommended in its Direct Testimony at 33:8-35:6.

<sup>12</sup> The overall reasonableness of such actions would also depend on other aspects of the Commission's decision.

1 THE COST CAP SHOULD BE RETAINED, WITH IMPROVEMENTS ALREADY  
2 SUGGESTED

3

4 Q. Did other parties' criticize the cost cap contained in the DRAM Proposal?

5 A. Yes. For example, PG&E said the cost cap should not be used if DRAM is adopted, but  
6 that the cost-effectiveness test should be fixed and used instead of the cost cap.<sup>13</sup> The  
7 JDRP also criticized the cost cap.<sup>14</sup>

8

9 Q. Do you agree with PG&E's and the JDRP's testimonies on this issue?

10 A. No. PG&E and the JDRP raised some of the same criticisms I did in my Prepared  
11 Testimony regarding the cost cap, that is, its potential to be manipulated and its exclusion  
12 of potentially cost-effective DR. But I proposed amendments to the cost cap proposal  
13 that I believe will address these issues. Given such amendments, I continue to believe the  
14 cost cap could be a valuable aspect of the DRAM.<sup>15</sup> As I explained in my Prepared  
15 Testimony, a cost cap provides for market discipline and limits the potential for parties to  
16 target their prices toward a calculable cost-effectiveness benchmark.

17

18 Q. Would a cost cap be a useful part of other approaches to DR procurement, such as the  
19 utility RFPs you described above?

20 A. Possibly not. Cost caps make the most sense when the product being procured is  
21 reasonably homogenous. It is quite possible that responses to a utility RFP seeking DR  
22 products with varying attributes might offer widely varying prices based on the widely  
23 varying costs of providing such different products. In such cases, a cost cap – and in  
24 particular procurement limits based solely on such a cap – would more likely limit  
25 procurement of valuable DR products.

26

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<sup>13</sup> PG&E Opening Testimony, Volume I, pp. 4-6, line 32 to page 4-7, line 25, and page 4-11, lines 13-24.

<sup>14</sup> Joint DR Parties' Opening Testimony, 5:27-28, 42:31-43:2, 44:3-4 and 49:7-15

<sup>15</sup> I am not taking any position on PG&E's recommendations regarding the Commission's DR cost-effectiveness protocols.

1 THE COMMISSION SHOULD SCRUTINIZE CLAIMS THAT CHANGES TO SPECIFIC  
2 ASPECTS OF ELECTRICITY MARKETS WILL PROVIDE BENEFITS

3

4 Q. Did the CAISO make any statements about the value supply-side DR resources would  
5 provide when participating in its energy markets?

6 A. Yes. Both CAISO witnesses made statements about how DR could provide value by  
7 participating in its energy markets.<sup>16</sup> For example, CAISO witness Goodin said, in  
8 comparing supply-side DR to load modifying DR:

9

10 “Supply-side demand response resources are bid and settled in the ISO markets...like  
11 other participating supply resources. It is the submission of bids, along with the modeled  
12 resource attributes, that allows the ISO to consider all other available resources and  
13 dispatch those supply-side resources that produce the overall least-cost solution while  
14 observing system and reliability constraints. Load modifying resources are not evaluated  
15 in this way...”<sup>17</sup>

16

17 Q. What is your response to this statement of Mr. Goodin?

18 A. I agree with Mr. Goodin’s statement to the extent that requiring DR to be bid into the  
19 CAISO energy market could and should yield benefits. I am concerned, however, that  
20 the benefits of such DR bidding may be overstated. First, if DR is only dispatched in a  
21 limited number of hours per year, the energy benefits may be relatively small.<sup>18</sup> Second,

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<sup>16</sup> Testimony of John Goodin on Behalf of the California Independent System Operator Corporation (Goodin Testimony), May 6, 2014, 8:1-6, and Testimony of Neil Millar on Behalf of the California Independent System Operator Corporation (Millar Testimony), May 6, 2014, 7:11-9:18.

<sup>17</sup> Goodin Testimony, 8:9-14. In D.14-03-026, the Commission determined it would classify DR as either “load modifying” DR that is incorporated into load forecasts or “supply-side” DR that must be bid into the CAISO energy market

<sup>18</sup>The DRAM Proposal noted at page 3 “[t]he primary benefit to ratepayers and the electric system of demand response resources is avoided generation capacity”. PG&E’s witness Papalexopoulos made this same point, at least with regard to current DR (PG&E Volume II, p. A-21, lines 7-10). Though Environmental Defense Fund (EDF) witness Moss said in his Opening Testimony that DR has potential to reduce wholesale prices significantly (9:1-4), he appears to rely on a 2001 study that most likely utilized data from the era when almost all energy was purchased on the now-defunct Power Exchange spot market. Customer energy purchases are today heavily hedged, so even if demand response had the price-reducing potential cited in the EDF testimony, it would not likely have nearly the same impact on customers’ costs. Today’s CAISO energy markets are also better monitored and mitigated than the PX market was. Perhaps most importantly, the current CAISO system enjoys a substantial capacity surplus



1 even when DR bids are accepted and the load reduction is scheduled into the CAISO  
2 energy market, such dispatch of DR may produce only a trivially better reduction in  
3 customers' costs. I raised one aspect of this issue in my Prepared Testimony when I  
4 expressed concern that DRAM could accept DR resources with unknown bid prices.<sup>19</sup> It  
5 is important that DR's potential energy benefits not be overstated in assessing the value  
6 of requiring DR to be bid into the CAISO energy market.

7  
8 Q. Did CAISO witness Millar make any statements about the role of DR in CAISO energy  
9 markets?

10 A. Yes. Mr. Millar praised the control CAISO operators would have over supply-side DR  
11 resources, claiming that "a manual notification process is completely untenable in today's  
12 operating environment".<sup>20</sup> He also said the CAISO's "enhanced contingency modeling  
13 initiative" would "put even greater emphasis on the need for all resources to be fully  
14 integrated into the market".<sup>21</sup>

15  
16 Q. What is your response to Mr. Millar's statements?

17 A. First, I generally agree that additional automation of the CAISO energy market should be  
18 beneficial, particularly as its operating environment gets more complex. But the notion  
19 that manual procedures are "completely untenable" seems an overstatement. For  
20 example, the CAISO apparently successful requests to the utilities to invoke their demand  
21 response resources on February 6, 2014 in response to gas supply constraints in Southern  
22 California were made "manually" and outside the CAISO's market.<sup>22</sup>

23  

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that serves to mitigate energy prices, and given the Commission's Long-Term Procurement Plan process,  
I anticipate that adequate to surplus conditions will persist in the future.

<sup>19</sup> Prepared Testimony of Kevin Woodruff..., 6:8-26.

<sup>20</sup> Millar Testimony, 7:11-8:11; quoted text from 8:8-9.

<sup>21</sup> *Id.*, 8:11-9:18; quoted text from 8:13-15.

<sup>22</sup> See page 16 of the CAISO's *Technical Bulletin, Gas Events and Market Results of February 6, 2014*,  
published May 19, 2014, available at  
[http://www.caiso.com/Documents/TechnicalBulletinGasEvents\\_MarketResults\\_Feb6\\_2014.pdf](http://www.caiso.com/Documents/TechnicalBulletinGasEvents_MarketResults_Feb6_2014.pdf).

1 Further, Mr. Millar’s seeming digression about the “enhanced contingency modeling  
2 initiative” is not persuasive as to the value of integrating DR into CAISO markets. I first  
3 refer to the concerns I expressed above that dispatch of DR may not necessarily provide  
4 significant benefits for customers. In addition, as a general rule, adding “constraints” to a  
5 modeling system will generally increase its costs.<sup>23</sup> Commission staff filed detailed  
6 comments with the CAISO suggesting the initiative might raise costs.<sup>24</sup>  
7

8 Q. Are you suggesting that supply-side DR should *not* be bid into the CAISO energy  
9 market?

10 A. No. I am not disputing that requiring some DR programs to participate in the CAISO  
11 energy market could yield some of the types of benefits Messrs. Millar and Goodin  
12 describe in their testimony. But the Commission should not assume uncritically that any  
13 particular change to an electricity market will necessarily provide significant net benefits  
14 to customers. Rather, detailed analysis is warranted before relying on such assumptions  
15 to change procurement policy.  
16

17 Q. Are you taking any position on the Commission’s “bifurcation” policy adopted in D.14-  
18 03-026, which classifies DR as either “load modifying” DR that is incorporated into load  
19 forecasts or “supply-side” DR that must be bid into the CAISO energy market?

20 A. No. For purposes of this testimony, I am accepting the adopted bifurcation policy as a  
21 given.  
22

23 Q. Does this conclude your testimony?

24 A. Yes.

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<sup>23</sup> Millar Testimony, 8:21-23. It is possible such higher costs may be offset by other benefits.

<sup>24</sup> See pp. 1-2 of the comments filed by the California Public Utilities Commission regarding Contingency Model Expansion, Second Revised Draft Proposal, March 13, 2014, available at <http://www.caiso.com/Documents/CPUCStaffComments-ContingencyModelingEnhancements-SecondRevisedStrawProposal.pdf>.