

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)

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

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1 INTRODUCTION

2

3 Q. Please introduce yourself.

4 A. I am Kevin Woodruff. I am the Principal of the consulting firm of Woodruff Expert
5 Services. I have testified before this Commission on many occasions regarding electric
6 utility resource planning, procurement and project valuation issues. My resume is
7 appended hereto as Attachment 1.

8

9 Q. On whose behalf are you testifying?

10 A. I am providing this testimony on behalf of The Utility Reform Network (TURN), an
11 organization that has long represented the interests of smaller consumers before this
12 Commission.

13

14 Q. What are TURN's concerns in this case?

15 A. TURN's general concerns with Demand Response (DR) programs and policies and the
16 specific issues being considered in these phases of this docket are summarized in the
17 testimony of Marcel Hawiger, which is being filed concurrently with my testimony.

18

19 Q. What issues are you addressing in your testimony?

20 A. My testimony mainly addresses the Energy Division's (ED's) Demand Response Auction
21 Mechanism Proposal (DRAM Proposal), which was provided as Attachment B of the
22 Ruling issued April 2.¹ I also address appropriate goals for procurement of Price-
23 Responsive Demand Response (PRDR).²

24

¹ Specifically, 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*, dated April 2, 2014, herein cited as the Ruling. My testimony implicitly addresses several of the questions regarding the DRAM Proposal asked at pages 2-4 of Attachment A to the Ruling.

² My testimony also addresses in part the third question under "Goals for Demand Response" asked on page 1 of Attachment A to the Ruling.

1 SUMMARY AND RECOMMENDATIONS

2

3 Q. What are your key findings and recommendations regarding the DRAM Proposal?

4 A. Briefly, I believe the DRAM Proposal is a good concept and that a well-designed and
5 implemented DR auction mechanism could offer the possible benefits of:

- 6 • Enabling utilities to procure additional DR on a competitive basis,
7 • Providing consistent, routine evaluation of the cost-effectiveness of other DR not now
8 subject to the DRAM,
9 • Enabling the Commission to manage DR procurement and programs as a means of
10 meeting the state’s reliability and environmental goals based on such cost-
11 effectiveness evaluation, and
12 • Increasing the transparency of DR programs and their costs and benefits to policy-
13 makers and the public.

14

15 Given the above benefits, I believe that, ideally, all DR programs and procurement should
16 be subject to procurement using the DRAM, or at least to evaluation using the pricing
17 data the DRAM would provide.

18

19 However, there are several issues I believe must be clarified or modified before I can
20 support the implementation of DRAM. I identify and discuss several such issues below.³

21

22 Q. What is the first issue you believe must be clarified or modified before you could support
23 implementation?

24 A. The first issue requiring clarification is “Product Definition,” that is, which of two broad
25 DR products the DRAM is intended to procure. I describe these two products as:

- 26 • “Capacity Only”: This product would provide the purchasing utility the right to count
27 the purchased DR capacity to meet Resource Adequacy (RA) compliance

³ It is also possible that other parties will address additional issues that need clarification or resolution before implementation of DRAM.

1 requirements, but would not provide the utility the energy revenues the DR resource
2 would earn if and when the California Independent System Operator (CAISO)
3 dispatches it, or

- 4 • “Capacity + Energy”: This product would provide the purchasing utility both RA
5 capacity as described above *and* energy revenues the DR resource would earn if and
6 when the CAISO dispatches such DR.

7
8 Both above approaches have potential advantages and disadvantages, some of which I
9 discuss below. But this conceptual issue has major implications for the conduct of the
10 DRAM and must be resolved before implementation.

11
12 Q. What is the second issue you believe must be clarified or modified before you could
13 support implementation?

14 A. The second issue of concern is the computation and application of the cost cap. I fully
15 support ED’s efforts to limit market power, but am concerned that the cost cap could,
16 depending on its interpretation, limit procurement of cost-effective DR. I am further
17 concerned that the cost cap might itself be “game-able.” I recommend clarifications of
18 this issue below.

19
20 Q. What is the third issue you believe must be clarified or modified before you could
21 support implementation?

22 A. The third issue of concern is bid selection, that is, the requirement that the utilities select
23 bids based solely on bid price, regardless of the specific type of DR product being
24 procured. Assuming the DRAM selects “Capacity Only” products, as defined above, this
25 approach might lead the utilities to pick an inferior portfolio of DR bids, as discussed
26 below. I offer an alternative approach to bid solicitation and selection below.

27
28 Q. What is the fourth issue you believe must be clarified or modified before you could
29 support implementation?

1 A. The fourth issue of concern is how the benefits and costs of resources selected by the
2 DRAM would be allocated among customers. Briefly, if the utilities procure DR
3 capacity pursuant to state policy goals or other criteria that are not related to their
4 obligations to procure capacity and energy for their bundled customers cost-effectively,
5 some means must be implemented to allocate the benefits and costs of such procurement
6 among all customers. I offer two alternatives below.

7
8 Q. What is your position on the percentage goals for price responsive demand response
9 (PRDR) in the DRAM Proposal?

10 A. I support the DRAM Proposal's interim goals, but only as interim goals. Ultimately,
11 PRDR goals should be based on a more thorough review and balancing of the pricing
12 data the DRAM provides, cost-effectiveness measures, changes in system needs and the
13 technical potential of DR.

14
15 Q. Are you taking positions on any other aspects of the DRAM Proposal or any other issues
16 in this docket in this testimony?

17 A. I suggest below the DRAM include some provisions to (a) test the viability of DR bids
18 and (b) require bid deposits from bidders. Otherwise, I am not testifying on any other
19 aspect of the DRAM Proposal at this time.

20
21 THE DRAM IS A GOOD PROPOSAL, IN CONCEPT

22
23 Q. Do you believe that the DRAM is a good proposal in concept?

24 A. Yes. The DRAM is a good conceptual proposal. If enacted the DRAM could enable the
25 utilities to procure DR on a competitive basis. The data the DRAM develops could be
26 used to assess other DR programs that are not subject to the DRAM.⁴ The Commission
27 would be better able to manage the procurement of DR to meet the state's reliability and

⁴ I understand current programs may also be required to bid into the DRAM after bridge funding expires in 2016. But even if they are not, the DRAM should yield data that will facilitate the analysis of such programs' cost-effectiveness.

1 operational goals. And the benefits and costs of DR would be more apparent to policy-
2 makers and the public.

3
4 Q. Why do you qualify your endorsement of the DRAM with the adjective “conceptual”?

5 A. The DRAM may be a good idea, but has not yet been implemented successfully. There
6 are several aspects of the DRAM Proposal that should be clarified or modified before it
7 can be implemented successfully. I introduced four of those issues above; I will provide
8 additional analysis of these issues immediately below.

9
10 PRODUCT DEFINITION

11
12 Q. Please describe further the issue of “Production Definition.”

13 A. It is critical that before implementation, the DRAM Proposal be clarified to define
14 specifically which DR product the utilities would procure using the DRAM. Per my
15 memory, the two alternatives described above were discussed at the April 28 workshop,
16 that is, the “Capacity Only” option and the “Capacity + Energy” option, without a clear
17 statement as to which would be procured. The DRAM Proposal itself is not explicit on
18 this issue, but appears to envision the “Capacity Only” alternative because it would
19 require bidders to offer “capacity” prices but makes no provision for bidders to offer
20 “energy” prices.⁵ Further, the DRAM Proposal would rank bids solely on “lowest
21 capacity price,” not any measure of bids’ energy benefits.⁶

22
23 Q. Do you have a preference for either type of DR product over the other?

24 A. No. Each type of DR has different positive attributes. But it is important that the
25 Commission choose one option or the other because the choice will have significant
26 impacts on the design and administration of the DRAM.

27

⁵ DRAM Proposal, pp. 11-12.

⁶ DRAM Proposal, pp. 5 and 13.

1 Q. Can you identify some of the key attributes of these two types of DR product?

2 A. Yes. Procuring “Capacity + Energy” DR products might enable utilities to obtain energy
3 value from DR dispatch that could reduce customers’ costs. However, procuring
4 “Capacity Only” DR would facilitate a simple and transparent auction process. However,
5 one aspect of procuring “Capacity Only” products in the DRAM concerns me and should
6 be addressed before the Commission adopts this alternative.

7

8 Q. What is your major concern with the DRAM’s current approach to procuring “Capacity
9 Only” DR products?

10 A. My concern arises from my understanding that “Capacity Only” products would
11 apparently be considered without regard to the prices they would bid for “energy” or
12 “load reduction” into the CAISO energy market. Such energy bid prices could have an
13 impact on the value of DR that is procured. Yet the DRAM, which bases the choice of
14 DR proposals strictly on capacity price, would apparently not consider the impacts of
15 potentially varying energy bid prices in valuing DR proposals.

16

17 Q. Why should a utility or its customers care about the energy bid price of a “Capacity
18 Only” product?

19 A. It is arguable that utilities and customers, as long as they receive the benefit of the DR
20 product’s RA capacity, should not care about the DR product’s energy bid price,
21 particularly because DR primarily provides capacity value due to the relatively low
22 number of possible dispatch hours. But I am nonetheless concerned that the DRAM
23 could yield substantial amounts of DR with high energy bid prices – perhaps at or near
24 the CAISO’s energy bid price cap – and limited amounts of DR with lower energy bid
25 prices that might provide operational and price benefits by being dispatched more
26 frequently in accordance with CAISO economic dispatch rules.

27

1 Q. How can the Commission address this concern about the potential for procuring
2 substantial amounts of DR products with high energy bid prices, such as those that may
3 be at or near the CAISO energy bid price cap?

4 A. The Commission could address these concerns by requiring the utilities to employ a
5 variety of means in selecting “Capacity Only” DR products in the DRAM, including:
6 • Adjusting the bid ranking of “Capacity Only” DR products by the energy bid price
7 the project will submit to the CAISO,
8 • Specifying a maximum energy bid price, and/or
9 • Limiting the amounts of capacity with high energy bid prices a utility can buy.

10

11 Q. Are there existing policies that might mitigate your concerns above?

12 A. Yes. The DRAM Proposal states “[d]emand response resources that bid into the CAISO
13 wholesale electricity markets are also required to meet wholesale cost-effectiveness
14 standards,” which I understand to be a reference to the “Net Benefits Test” DR suppliers
15 must meet in order to be paid full market price.⁷ This requirement may mitigate my
16 above concerns in whole or in part.

17

18 Q. Do you believe the utilities could procure both “Capacity Only” and “Capacity + Energy”
19 contracts in DRAM auctions?

20 A. Yes, it would be possible to conduct a DRAM that allowed parties to submit bids on
21 either or both types of DR products and allowed utilities to purchase either or both.
22 Though this approach might yield a broad array of useful DR products, I believe this
23 approach would stray further from the Commission’s goals and complicate the process
24 further.

25

26

⁷ DRAM Proposal, p. 6.

1 COST CAP

2

3 Q. Do you support the proposed cost cap based on an average of bid prices?

4 A. Yes. I fully support the apparent intent of the cost cap to mitigate potential market
5 power. The purchasing utility will not be obligated to purchase DR that has a price
6 higher than the cost cap.⁸ That is, the utility would only be obligated to procure a DR
7 offer if its capacity bid price is less than the average of all capacity bid prices. This cost
8 cap would have the beneficial impact of forcing DR bidders to consider their immediate
9 competition when pricing their bids for a DRAM auction. This cost cap could also be
10 useful in analyzing potential market manipulation.⁹

11

12 Q. Do you have any concerns with the proposed cost cap?

13 A. I think the cost cap could be interpreted to limit the procurement of cost-effective DR.
14 Further, the cost cap itself might be “game-able,” that is, prone to manipulation.

15

16 Q. Why do you state that the cost cap might be interpreted to limit procurement of cost-
17 effective DR?

18 A. As I read the cost cap, the utilities would apparently be able to procure DR offers above
19 and beyond their procurement obligations and the cost cap if such offers were cost-
20 effective. However, I do not believe this apparent authority is clearly stated in the
21 DRAM Proposal. I thus think the DRAM Proposal should be clarified as to the utilities’
22 *optional* authority to procure DR capacity at prices higher than the cost cap and/or in
23 quantities greater than their obligation – but if and only if such DR capacity offers are
24 cost-effective.¹⁰

⁸ DRAM Proposal, pp. 5 and 13.

⁹ DRAM Proposal, pp. 5-6.

¹⁰ Similarly, if the Commission instead *prevents* the utilities from procuring DR capacity in quantities greater than the lesser of their procurement obligation or prices below the cost cap, they should clarify this prohibition before adopting the DRAM. Such a policy would limit the procurement of cost-effective DR if the cost cap is lower than the cost-effectiveness threshold. If the Commission adopts this policy, I

1 Q. How do you recommend the Commission implement this clarification of the cost cap for
2 the DRAM auction?

3 A. I believe the Commission should also direct the utilities to compute an additional cost-
4 effectiveness threshold based on the Commission-adopted DR cost-effectiveness
5 protocols.¹¹ The DRAM Proposal appears to anticipate computing this measure when it
6 says “[t]he demand response cost-effectiveness protocols will be used as a benchmark for
7 an additional measuring point for the reasonableness of DRAM bids and contracts”.¹²
8

9 Q. Are you referencing the Commission’s adopted DR cost-effectiveness protocols when
10 you use term “cost-effective”?

11 A. Yes. These protocols generally value DR capacity based on the “annualized fixed cost of
12 a new combustion turbine, less the net revenues...that the CT could earn in operating in
13 the real-time energy and ancillary services markets”.¹³ I am not herein offering an
14 opinion on the appropriateness of the current cost-effectiveness protocols. However, I
15 will observe that an alternative perspective on cost-effectiveness could be reference to the
16 current or recent market prices of RA capacity, data which the ED can routinely obtain.¹⁴
17

18 Q. Do you have any other concerns about the cost cap, as proposed?

19 A. Yes. I am concerned that the cost cap itself could be game-able, in the sense that parties
20 could enter bids for purposes of raising the cost cap to increase the amount of capacity a
21 utility would procure. The proposal does address these concerns in part by eliminating
22 “disproportionately high bids” from the computation.¹⁵ But the DRAM should also
23 explicitly require utilities to assess whether some bids that are not “disproportionate”

recommend it allow procurement of DR capacity up to the lesser of utility’s procurement obligation or capacity priced at (the lesser of the cost cap or the cost-effectiveness threshold).

¹¹ See Decision (D.) 10-12-024, Attachment 1.

¹² DRAM Proposal, p. 7.

¹³ D.10-12-024, Table 3 (p. 21).

¹⁴ See, for example, pp. 21-29 of ED’s *2012 Resource Adequacy Report*, available at <http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/>.

¹⁵ DRAM Proposal, p. 6. The DRAM Proposal also suggests at p. 5 that “bids at artificial and unreasonable prices” might be evidence of market manipulation.

1 might still be serving to skew the cost cap. A check on the viability of DR bids and the
2 requirement for a bid deposit, both discussed below, may also mitigate this concern.

3
4 Q. Do you have any other recommendations about the cost cap?

5 A. Yes. I also recommend that, after accounting for potential gaming, the cost cap be
6 computed on a “MW-weighted” basis, that is, by weighting each offer’s price by the
7 number of its MW. The major alternative of a “simple average,” in which all offer prices
8 are averaged regardless of their contractual MW, would not give the best assessment of
9 bid prices and might facilitate gaming.

10
11 BID SELECTION

12
13 Q. What is your concern over the DRAM Proposal’s bid selection method?

14 A. By limiting utilities to choosing only projects in ascending price order until program
15 goals or the cost cap is reached regardless of whether the DR bid is for the System, Local
16 or Flexible product,¹⁶ the DRAM might yield a less operationally effective portfolio of
17 DR resources.

18
19 Q. Do you object to the procurement of DR bids on the basis of least cost?

20 A. No! I fully support the basic principle this aspect of the DRAM Proposal is trying to
21 pursue. My concern is with one aspect of the DRAM Proposal’s proposed bid selection
22 process.

23
24 Q. What is your specific concern with the bid selection component of the DRAM Proposal?

25 A. I am concerned that the strict approach to choosing bids in ascending price order without
26 regard to product type could lead to utility selection of a lesser portfolio of DR resources.

27

¹⁶ DRAM Proposal, pp. 5 and 13.

1 Q. Why do you think the selection of bids strictly in ascending price order, without regard to
2 product type, could lead to an inferior outcome?

3 A. Bidders into a DRAM auction could offer three types of DR: System, Local and
4 Flexible.¹⁷ The costs of providing each type of DR may be different, and thus capacity
5 bid prices for each type of DR could also differ. I would expect the more restrictive
6 Local and Flexible categories to be more expensive to provide, and thus generally to be
7 bid at higher capacity prices.

8
9 Further, the value of each type of DR could vary in each utility service territory and by
10 Local Capacity Areas (LCAs) within each territory. DR meeting local criteria should be
11 at least as valuable as System capacity, and possibly much more valuable, depending on
12 the LCA. Flexible capacity should also be at least as valuable as System capacity, and
13 also possibly much more valuable. The relation of the values of Local and Flexible
14 capacity to each could vary, again depending on the LCA.

15
16 This potential difference in the relative value of the three types of DR – and possibly in
17 various parts of a utility’s service territory – suggests that customers would be better
18 served by a selection process that recognizes such potential differences in value. The
19 value of such discrimination would increase further if the DR products that are the least
20 valuable are also offered at the lowest capacity bid prices.

21
22 Q. How can the Commission address this issue if it adopts the DRAM Proposal and still
23 maintain some element of transparency?

24 A. If the Commission allows only for “Capacity Only” DR products to be chosen in the
25 DRAM, the Commission should direct the utilities to, if appropriate, provide procurement
26 targets for Local capacity (by specific LCA) and Flexible capacity in addition to their

¹⁷ DRAM Proposal, pp. 11 and 13.

1 overall System capacity goal. The Commission should also direct the utilities to procure
2 each type of capacity consistent with these targets, pursuant to the limits of the cost cap.¹⁸
3

4 If the Commission allows for “Capacity + Energy” DR products to be chosen in the
5 DRAM, the Commission should allow the utility to manage these concerns by analyzing
6 the value of bids based on their different locational and flexibility attributes. However,
7 such a valuation process would make the DRAM much less transparent.
8

9 Q. Do you have any other specific concerns with the implementation of this aspect of the
10 DRAM Proposal?

11 A. Yes. One related aspect of the DRAM Proposal meriting Commission attention is its
12 recognition of only three specific types of DR product. But as I understand the potential
13 combinations of possible DR products, there could instead be *four* types:

- 14 • System (which meets the basic criteria to be counted as RA capacity),
- 15 • Local (which is a System-eligible resource located within a specific LCA),
- 16 • Flexible (which is a System-eligible resource that also meets additional flexible
17 criteria), and
- 18 • Local + Flexible (which is a System-eligible resource that meets *both* local and
19 flexible attributes).¹⁹
20

21 The DRAM also needs to accommodate resources that meet the most restrictive “Local /
22 Flexible” category.
23
24 |

¹⁸ If the Commission adopts this recommendation, it may also be necessary or desirable to compute cost caps for each product type and for the utilities to use such type-specific cost caps to guide their procurement. It is not clear to me, however, if equivalent cost-effectiveness measures could be estimated from the current cost-effectiveness protocols and thus how such figures could be estimated to justify procurement of DR capacity above the cost cap.

¹⁹ I am unaware of any limitation on a resource that provides local capacity from also providing flexible capacity.

1 BENEFIT AND COST ALLOCATION

2

3 Q. What is your concern over the allocation of the benefits and costs of DR products
4 procured via the DRAM?

5 A. As it has with regard to other types of resources, the Commission is placing the utilities
6 in the role of procuring DR resources in pursuit of the state's energy policy goals. If the
7 utilities are not procuring DR for their bundled customers on a "least-cost, best-fit" basis
8 but instead procuring to meet some broader need, some allocation of the benefits and
9 costs of such procurement to customers of other Load-Serving Entities (LSEs) is
10 necessary. Such DR procurement may be directed to meet the state's environmental
11 goals or reliability needs. One approach to ensuring all customers share equally the
12 benefits and costs of such efforts would be the use of a mechanism like the Cost
13 Allocation Mechanism (CAM) to allocate the benefits and costs of DRAM-procured DR
14 among LSEs that serve all customers. Another option is to impose equivalent
15 procurement requirements on LSEs that serve unbundled customers to procure similar
16 amounts of DR, as was implemented for storage resources.²⁰

17

18 DRAM PROGRAM GOALS

19

20 Q. Do you have any comments on the DRAM Proposal's goal that PDR meet five percent of
21 system peak by 2020?²¹

22 A. Yes. The five percent goal is an acceptable goal, *but only for the time being*.

23

24 Q. Why do you believe the five percent goal is "acceptable" for the time being?

25 A. The Commission has been pursuing this goal for the several years since it was adopted in
26 the Energy Action Plan.²² My sense is that the target was then and continues to be

²⁰ D.13-10-040, Section 4.8.3 (pp. 46-48).

²¹ DRAM Proposal, pp. 2 and 7.

²² DRAM Proposal, p. 2. See also D.03-06-032, pp. 8-10.

1 aggressive, but still worth pursuing as part of efforts to meet California’s environmental
2 policy goals.

3
4 Q. Why do you qualify your statement that the five percent goal is acceptable with the
5 phrase “but only for the time being”?

6 A. It is not clear that the percent goal is the “right” target for the long-term. I hope that
7 further experience with the DRAM and other DR programs and other information will
8 make it apparent if the goal should be changed.

9 Q. Under what conditions might the Commission want to change the five percent goal?

10 A. The Commission may want to alter this goal if DRAM bids show that meeting the goal is
11 not cost-effective. In such a case, I would generally recommend lowering the goal.
12 Conversely, if bids are low enough to expand DR beyond five percent at or below the
13 cost-effectiveness threshold, I would expect DR to expand beyond the five percent goal.
14 Or, DR could be procured *only* on the basis of its cost-effectiveness and not based on a
15 fixed percentage. The market guidance the DRAM would offer as to the cost-
16 effectiveness of DR is a key positive feature of the DRAM Proposal.

17
18 Q. Are there other factors the Commission should consider in deciding whether to change
19 the five percent goal?

20 A. Yes. The current five percent goal is based on system peak. However, as variable
21 resources increase, flexible capacity may become more important than peak-focused
22 capacity. It is possible that a different percentage, based, for example, on meeting some
23 portion of a maximum ramp may be a better target for DR procurement.

24
25 Q. Are there other factors the Commission should consider in decided whether to change the
26 five percent goal?

27 A. Yes. The technical potential of DR technologies should also be a factor in setting future
28 targets for DR procurement.

1 Q. Do you have any comments on the goal of meeting two percent of annual peak with
2 Emergency-Triggered Demand Response?

3 A. No. As noted in the DRAM Proposal, that target was established by a Settlement to
4 which TURN agreed.²³

5

6 OTHER ISSUES

7

8 Q. Are there other aspects of the DRAM Proposal that you wish to address?

9 A. Yes. There are three other aspects of the DRAM Proposal worth mentioning at this time,
10 one related to the duration of contracts and the other two related to ensuring the viability
11 and security of bids.

12

13 Q. What issue surrounding the DRAM Proposal's proposed contract length do you wish to
14 address?

15 A. The DRAM allows for DR contracts of one, two or three years.²⁴ Means should be
16 considered to accommodate DR contracts or programs with somewhat longer durations –
17 such as five years, or possibly more – that may be necessary to allow potential suppliers
18 to amortize capital investments or other costs needed to be able to provide DR.

19

20 Q. What is your concern about the handling of bid viability in the DRAM Proposal bidding
21 and selection process?

22 A. Though the Ruling cited the law that DR needs to be “reliable and feasible”,²⁵ I did not
23 find any test for DR bid viability in the DRAM Proposal. Such a screen should be
24 included in the DRAM procurement protocols.

25

26 Q. What is your concern about bid security in the DRAM Proposal?

²³ DRAM Proposal, pp. 9-10.

²⁴ DRAM Proposal, pp. 12 and 14.

²⁵ DRAM Proposal, p. 6.

1 A. The DRAM Proposal does not clearly require bidders to provide security deposit when
2 submitting bids. Bidders should be required to provide some sort of financial security to
3 show that they are in earnest.
4

5 CONCLUSION
6

7 Q. Please reiterate your findings and conclusions.

8 A. The DRAM Proposal offers an approach to DR selection, evaluation and contracting of
9 potentially great merit. However, several key matters need to be clarified or modified
10 before the DRAM should be implemented. In particular, the Commission should take the
11 actions below to amend the DRAM Proposal:
12

- 13 • Product Definition: Clarify whether the DRAM will procure “Capacity Only” or
14 “Capacity + Energy” products, and if the former, address how the issue of DR
15 projects’ potentially varying energy bid prices will be addressed in bid selection.
- 16 • Cost Cap: Clarify that discretionary procurement of DR projects beyond the utility’s
17 obligation and/or priced above the cost cap is allowable only *if such DR is cost-*
18 *effective*, and make the other changes to the computation of the cost cap that I suggest
19 above.
- 20 • Bid Selection: Direct utilities to specify procurement targets from among the three
21 types of DR capacity and to choose from among these product types consistent with
22 their procurement obligations and the cost cap, and also allow consideration of
23 combined “Local / Flexible” DR bids.
- 24 • Benefit and Cost Allocation: Adopt methods for ensuring that all customers share
25 equally in the costs of DR programs that serve to meet reliability needs and the state’s
26 broader energy goals.
- 27 • PRDR Goals: Continue pursuing the goal of meeting five percent of system peak
28 using PRDR in the initial implementation of DRAM, but only for the time being. But
29 upon receipt of the cost data to be developed by the DRAM and other DR cost-

1 effectiveness and system need data, this goal should be reevaluated. Future goals
2 should be based on other factors such as cost-effectiveness, changing system needs
3 and DR's technical potential.

4

5 Except as stated explicitly in the testimony above, I am not taking positions on any other
6 issues in this docket at this time.

7

8 Q. Does this conclude your testimony?

9 A. Yes.

ATTACHMENT 1

to Direct Testimony of Kevin Woodruff on behalf of The Utility Reform Network
in CPUC Rulemaking 13-09-011, May 6, 2014

Resume of Kevin Woodruff

RESUME

Kevin Woodruff

Principal, Woodruff Expert Services

EXPERIENCE

WOODRUFF EXPERT SERVICES 1100 K Street, Suite 204 Sacramento, California 95814 916-442-4877 (voice) 916-442-2029 (fax) kdw@woodruff-expert-services.com November 2002 –	PRINCIPAL Analyze complex policy and business issues faced by electric utilities, generators, customers, and other industry players. Communicate to clients analytic findings and corollary recommendations for action. Help clients communicate findings and recommendations to other parties, including preparing expert testimony for and supporting litigation efforts.
HENWOOD ENERGY SERVICES, INC. (aka Ventyx and acquired by ABB May 2010, previously aka Global Energy Decisions) April 1988 – November 2002	PRINCIPAL CONSULTANT (as of July 1992) Helped manage Henwood's transition into leading supplier of electric power system and market analytic software by managing complex software development and implementation projects and managing the development, marketing, and sales of software products. Helped develop Henwood's power market analysis consulting practice into national leader by managing individual projects, managing and developing other staff to provide such services, identifying and developing new and enhanced services, and marketing and selling services to new and existing clients. Provided variety of consulting services to clients with interests in energy utility industry, including preparing expert testimony and supporting litigation efforts, analyzing, modeling, and forecasting operations of power systems, power markets, and individual generating units, forecasting utility and project revenues, costs, and rates, and analyzing and consummating business transactions.
CALIFORNIA STATE UNIV, SACRAMENTO September 1994 – May 1995 (part-time)	LECTURER IN MANAGEMENT Taught upper division courses in Finance.
SIERRA ENERGY AND RISK ASSESSMENT May 1986 – April 1988 November 1985 – May 1986 (part-time)	STAFF CONSULTANT Provided clients analysis of gas and electricity project economics and utility revenues, costs, and rates.
PRIOR EXPERIENCE	Five years with private legislative reporting firm; California state economic development, regulatory, and tax agencies and Legislature; and labor organization.

EDUCATION

A.B., Economics, University of California, Berkeley, 1976

M.B.A, California State University, Sacramento, 1990

ADDENDUM 1
to Resume of Kevin Woodruff
EXPERIENCE WITH WOODRUFF EXPERT SERVICES

CLIENT	PROJECTS
<p>THE UTILITY REFORM NETWORK 115 Sansome Street, Suite 900 San Francisco, CA 94104 415-929-8876</p> <p>Mr. Bob Finkelstein, Legal Director Mr. Matt Freedman, Staff Attorney</p>	<p>ANALYZE IOUs’ PROPOSALS TO DEVELOP OR ACQUIRE POWER PLANTS. Sep 03 – present. Review, analyze, comment, and testify on California Investor-Owned Utilities’ (IOUs’) various plans to purchase output from and/or take ownership of specific power plants, both conventional and renewable.</p> <p>MONITOR CALIFORNIA IOUs’ SHORT- AND MID-TERM ELECTRIC PROCUREMENT. Aug 03 – present. Review, analyze, and comment on California IOUs’ short- and mid-term electric power procurement and related activities by participating in their confidential Procurement Review Groups.</p> <p>ANALYZE ELECTRIC RESOURCE PLANNING AND ADEQUACY POLICIES. May 03 – present. Review, analyze, comment and testify on California electric resource planning issues, including Resource Adequacy policies, the development of new power plants, the integration of renewable resources and transmission planning.</p>
<p>OFFICE OF THE ARKANSAS ATTORNEY GENERAL, CONSUMER UTILITIES RATE ADVOCACY DIVISION 323 Center Street, Suite 200 Little Rock, AR 72201 501-682-1321</p> <p>Mr. M. Shawn McMurray, Senior Assistant Attorney General Mr. Emon Mahony, Assistant Attorney General</p>	<p>ANALYZING UTILITY PROPOSAL TO ALLOCATE “WHOLESALE BASELOAD” RESOURCES TO CUSTOMERS. Jul 12 – Apr 13. Analyzing Entergy Arkansas, Inc. (EAI) proposal to allocate certain nuclear and coal resources now allocated to EAI’s wholesale portfolio back to EAI jurisdictional customers. (APSC Docket No. 12-038-U)</p> <p>ANALYZING PROPOSAL TO INSTALL ENVIRONMENTAL CONTROLS ON COAL POWER PLANT. Mar 12 – Jul 13. Analyzing proposal of Southwestern Electric Power Company and other owner to install environmental controls at the coal-fired Flint Creek Power Plant. (APSC Docket No. 12-008-U)</p> <p>ANALYZING ENTERGY ARKANSAS, INC. FUTURE SYSTEM PLANNING AND OPERATION OPTIONS. Jun 10 – Oct 12. Analyzing alternatives for EAI to plan and operate its electric generation and transmission systems upon its withdrawal from the Entergy System Agreement. (APSC Docket No. 10-011-U)</p> <p>ANALYZED TRANSMISSION PLANNING ISSUES. Feb 09 – Aug 09. Analyzed proposals to restructure Entergy’s transmission planning processes. (APSC Docket No. 08-136-U)</p> <p>ANALYZED TRANSMISSION COST RECOVERY ISSUES. Mar 10 – Apr 10. Analyzed utility proposals to expedite recovery of transmission and related costs. (APSC Docket Nos. 09-074-U and 09-084-U)</p>

CLIENT	PROJECTS
<p>ARKANSAS ATTORNEY GENERAL (continued)</p>	<p>ANALYZED PROPOSAL TO INSTALL ENVIRONMENTAL CONTROLS ON COAL POWER PLANT. Mar 09 – Dec 09. Analyzed proposal of EAI and other owners to install scrubbers and low NOx burners at the coal-fired White Bluff Steam Electric Station. (APSC Docket No. 09-024-U)</p> <p>ANALYZED UTILITY PROPOSAL TO PURCHASE POWER PLANT. Nov 07 – Jun 08. Analyzed EAI proposal to purchase Ouachita (combined cycle power) Plant and related wholesale resale, cost allocation and ratemaking issues. (APSC Docket No. 06-152-U)</p>
<p>ATTORNEY GENERAL OF WASHINGTON, PUBLIC COUNSEL SECTION 800 5th Street, Suite 2000 Seattle, WA 98104-3188 206-389-3055</p> <p>Mr. Simon J. ffitch, Senior Assistant Attorney General, Section Chief</p>	<p>ANALYZING UTILITY CONTRACT FOR PURCHASE OF “COAL TRANSITION POWER”. Sep 12 – Mar 13. Analyzing Puget Sound Energy (PSE) proposal for “Coal Transition Power Purchase Agreement” (PPA) for output of TransAlta’s Centralia coal plant. (WUTC Docket No. 121373)</p> <p>ANALYZED UTILITY POWER SUPPLY COST FORECAST AND PROPOSED POWER CONTRACT. Feb 09 – Dec 09. Analyzed proposal of Avista to assign to Avista Utilities a PPA and related contracts related to the Lancaster (combined cycle) Generating Facility and other aspects of Avista’s forecast of its 2010 power supply costs. (WUTC Docket No. 090134)</p>
<p>DIVISION OF RATEPAYER ADVOCATES of the CALIFORNIA PUBLIC UTILITIES COMMISSION 505 Van Ness Avenue San Francisco, CA 94102 415-703-1418</p> <p>Mr. Scott Logan, Regulatory Analyst</p>	<p>ANALYZED COST-EFFECTIVENESS OF PROPOSED TRANSMISSION LINES. Dec 06 – Jan 09. Led team of consultants analyzing cost-effectiveness of San Diego Gas & Electric Company’s proposed Sunrise Powerlink transmission line.</p> <p>Aug 05 – Jan 07. Led team of consultants analyzing cost-effectiveness of Southern California Edison’s proposed Devers–Palo Verde No. 2 Transmission Line Project (DPV2).</p>
<p>MAINE PUBLIC ADVOCATE OFFICE 112 State House Station Augusta, ME 04333-0112 207-287-2445</p> <p>Mr. Richard Davies, Public Advocate Ms. Agnes Gormley, Senior Counsel</p>	<p>ANALYZED PROPOSED TRANSMISSION LINE. Aug 10 – Sep 10. Performed review of feasibility and cost-effectiveness of Algonquin Power Corporation’s proposed Northern Maine Interconnect.</p>
<p>MAINE PUBLIC UTILITIES COMMISSION 242 State Street, State House Station 18 Augusta, ME 04333 207-287-1394</p> <p>Mr. Chuck Cohen, Hearing Examiner</p>	<p>ANALYZED COST-EFFECTIVENESS OF PROPOSED TRANSMISSION LINE. Oct 08 – Jan 09. Initiated analysis of cost-effectiveness of Maine Public Service and Central Maine Power Company’s proposed Maine Power Connection.</p>

CLIENT	PROJECTS
<p>NEVADA OFFICE OF THE ATTORNEY GENERAL, BUREAU OF CONSUMER PROTECTION 555 E. Washington Avenue, Suite 3900 Las Vegas, NV 89101 702-486-3129</p> <p>Mr. Eric Witkoski, Chief Deputy Attorney General</p>	<p>ANALYZED COST-EFFECTIVENESS OF PROPOSED GENERATION AND TRANSMISSION RESOURCES.</p> <p>Jun 07 – Sep 07 and Jul 08 – Aug 08. Reviewed and analyzed resource plans and amendments filed by the Nevada Power Company and Sierra Pacific Power Company.</p> <p>Jun 06 – Nov 06. Led team of consultants analyzing proposals to build significant new generation and transmission resources made by the Nevada Power Company and Sierra Pacific Power Company in their 2006 Integrated Resource Plan filings.</p>
<p>TEXAS OFFICE OF PUBLIC UTILITY COUNSEL 1701 N. Congress Ave., Suite 9-180 Austin, TX 78701- 512-936-7500</p> <p>Mr. Clarence L. Johnson, Director, Regulatory Analysis (retired)</p>	<p>ANALYZED REASONABLENESS OF EL PASO ELECTRIC COMPANY'S POWER PURCHASES. Feb 05 – Mar 06. Reviewed and filed testimony regarding reasonableness of three contracts signed by El Paso Electric Company in 2001 for delivery of power in 2002.</p>
<p>UTILITY CONSUMERS' ACTION NETWORK 3100 5th Ave., Suite B San Diego, CA 92103 619-696-6966</p> <p>Mr. Michael Shames, Executive Director (former)</p>	<p>ANALYZED SAN DIEGO GAS & ELECTRIC PROPOSAL TO DEVELOP NEW POWER PLANTS. Sep 03 – Sep 06. Review, analyze, and testify on SDG&E's plan to purchase Palomar power plant, contract for power from Otay Mesa power plant, and make other transactions. <i>(Joint effort with TURN.)</i></p>
<p>PASADENA WATER AND POWER 150 S. Los Robles Ave., Suite 200 Pasadena, CA 91101</p> <p>Contact Woodruff for reference.</p>	<p>ESTIMATED HISTORIC GAS COSTS. Apr – May 03. Reviewed, analyzed, and provided testimony to Federal Energy Regulatory Commission regarding the gas costs facing Pasadena Water and Power during the period from October 2000 to June 2001.</p>
<p>NORTHERN CALIFORNIA POWER AGENCY 180 Cirby Way Roseville, CA 95678 916-781-3636</p> <p>Mr. Thomas S.W. Lee, Mgr, Portfolio Planning</p>	<p>CONFIDENTIAL PROJECT. Feb – Apr 03.</p>
<p>AVONDALE GLEN ELDER NEIGHBORHOOD ASSOCIATION (c/o LEGAL SERVICES OF NORTHERN CALIFORNIA) 515 – 12th Street Sacramento, CA 95814 916-551-2150</p> <p>Mr. Colin Bailey, Attorney Mr. Stephen Goldberg, Attorney</p>	<p>ANALYZED NEED FOR PROPOSED GAS STORAGE PROJECT. Dec 10 – Jan 11. Reviewed, analyzed and testified on need for proposed Sacramento Natural Gas Storage Project.</p>

ADDENDUM 2

to Resume of Kevin Woodruff

EXPERIENCE RELATED TO ELECTRIC RESOURCE PLANNING AND ASSET VALUATION

Woodruff Expert Services

Sacramento, California

November 2002 to present

- Analyze and provide expert testimony regarding cost-effectiveness of California Investor-Owned Utilities' (IOUs') specific proposals to contract for or acquire electric generating projects, both conventional and renewable.
- Analyzing alternatives for Entergy Arkansas, Inc. (EAI) to provide or procure electric system planning and operation services following its withdrawal from the Entergy System Agreement.
- Analyzing EAI proposal to allocate certain "wholesale baseload" resources to jurisdictional customers.
- Analyzing Puget Sound Energy proposal for "Coal Transition Power Purchase Agreement" (PPA) for output of TransAlta's Centralia coal plant.
- Analyzing proposal of Southwestern Electric Power Company and other owner to install environmental controls on coal-fired Flint Creek Power Plant.
- Analyzing California's electric Resource Adequacy Requirement and electric IOUs' long-term electric resource plans and short-term procurement and risk mitigation plans.
- Analyze and provide comments procurement and risk mitigation strategies as part of each California IOU's Procurement Review Group.
- Monitor development of estimates of renewable transmission and other integration costs in California.
- Analyzed proposals to restructure Entergy's transmission planning processes.
- Analyzed potential value of Algonquin Power Corporation's proposed Northern Maine Interconnect.
- Analyzed proposal of Avista to assign to Avista Utilities a PPA and related contracts related to the Lancaster (combined cycle) Generating Facility.
- Analyzed proposal of EAI and other owners to install scrubbers and low NOx burners at the coal-fired White Bluff Steam Electric Station.
- Led effort to assess value of San Diego Gas & Electric Company's proposed Sunrise Powerlink on behalf of Commission's Division of Ratepayer Advocates (DRA).
- Initiated analysis of cost-effectiveness of Maine Public Service and Central Maine Power Company's proposed Maine Power Connection transmission project.
- Analyzed proposal of EAI to purchase the Ouachita (combined cycle power) Plant.
- Led effort to assess value of Southern California Edison's proposed Devers-Palo Verde No. 2 Transmission Line Project (DPV2) on behalf of DRA.
- Led analysis of proposals to build significant new generation and transmission resources made by the Nevada Power Company and Sierra Pacific Power Company in their 2006 Resource Plan filings.
- Analyzed and provided analysis regarding California state agencies' initiatives to develop consistent process for planning for and evaluating new transmission projects.

Henwood Energy Services, Inc.

Sacramento, California

April 1988 to November 2002

- Modeled and analyzed long-term resource planning issues of California electric IOUs
- Modeled and analyzed short-term operations of California electric IOUs
- Prepared resource plan for municipal utility
- Managed and assisted public power entity's power supply Request for Proposal (RFP) processes
- Helped generation plant owners respond to California IOU and other RFPs for electric power
- Sold, conducted, and/or managed forecasts of power market operations and prices and related valuations of generating assets
- Prepared analyses of IOU and municipal utility revenue requirements, stranded costs, and rate design
- Managed projects to develop and implement software for electric plant and system operations, electric system forecasting and planning, risk quantification, and asset valuation
- Sold and managed projects to develop and implement maintenance planning software for vertically-integrated utilities
- Helped electric generators buy gas commodity and pipeline capacity rights
- Prepared and defended expert testimony on behalf of applicants and interveners in Commission proceedings in California and Montana

Sierra Energy and Risk Assessment

Sacramento / Roseville, California

May 1986 to April 1988 (full-time)

November 1985 to May 1986 (part-time)

- Assisted analysis for CPUC advocacy staff regarding SCE's proposed Devers-Palo Verde 2 transmission line.