

Rulemaking 12-03-014 (LTPP Local Reliability Track I)

Exhibit No. \_\_\_\_\_

Witnesses James H. Caldwell, Jr.

Commissioner Michel P. Florio

ALJ David R. Gamson

**CENTER FOR ENERGY EFFICIENCY AND  
RENEWABLE TECHNOLOGIES**

**LOCAL RELIABILITY TRACK I  
PREPARED TESTIMONY**

Rulemaking 12-03-014  
Long Term Procurement Plans (LTPP)  
Track 1 (Local Reliability)

*June 25, 2012*

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES  
PREPARED TESTIMONY  
RULEMAKING (R) 12-03-014:  
LONG TERM PROCUREMENT PLANS (LTPP) TRACK 1 (LOCAL RELIABILITY)

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1 CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES  
2 PREPARED TESTIMONY  
3 RULEMAKING (R) 12-03-014:  
4 LONG TERM PROCUREMENT PLANS (LTPP): LOCAL RELIABILITY TRACK I  
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7 I.

8 **INTRODUCTION**

9 On May 17, 2012, the Commission issued a Scoping Memo and Ruling of  
10 Assigned Commissioner and Administrative Law Judge (“Scoping Memo”) in this Long  
11 Term Procurement Plan (LTPP) Rulemaking (R.12-03-014). Among other things, the  
12 Scoping Memo identified “three major tracks in this proceeding,” beginning with Track 1,  
13 the “Local Reliability Track.”<sup>1</sup> The Scoping Memo identified 11 issues as being within  
14 the scope of Track 1, focused primarily on determining whether “additional capacity is  
15 required to meet local reliability needs in the Los Angeles Basin and Big Creek/Ventura  
16 area between 2014 and 2021” and the types and operating characteristics of resources  
17 required to meet that need.

18 Pursuant to the schedule adopted for Track 1, on May 23, 2012, the California  
19 Independent System Operator (CAISO) served Prepared Testimony of Mr. Robert  
20 Sparks and Mr. Mark Rothleder addressing local capacity requirements and related  
21 CAISO studies on once-through-cooling (OTC) and renewable integration. A Workshop  
22 was then held on June 4 at which the CAISO presented more details of its studies  
23 referenced in its May 23 Testimony.<sup>2</sup>

24 The Local Reliability Track I Prepared Testimony of the Center for Energy  
25 Efficiency and Renewable Technologies (CEERT) provided herein is timely served in  
26 response to the Scoping Memo’s schedule for party testimony in Track 1 (to be served  
27 on June 25, 2012). The purpose of CEERT’s testimony is to respond to the CAISO’s  
28 May 23 testimony and to several of the issues included within the scope of Track 1.

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<sup>1</sup> Scoping Memo, at pp. 2 -3.

<sup>2</sup> The CAISO’s presentation on June 4 can be found at: <http://www.cpuc.ca.gov/NR/rdonlyres/32D2572E-7B0B-4DAD-8D99-AB13CBA1470F/0/201206OpFlexMeetingpresentationPDF.pdf>. It is hereafter referred to as CAISO June 4 Presentation.

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II.

CAISO STUDIES

**Q. 1. Have you read and reviewed the Testimony of Robert Sparks and the Testimony of Mark Rothleder served by the California Independent System Operator (CAISO) in Local Reliability Track 1 on May 23, 2012?**

**A. 1.** Yes.

**Q.2. Did you also attend the Commission Workshop held on the CAISO's renewable integration studies on June 4, 2012?**

**A.2.** Yes.

**Q.3. What is the purpose of your testimony today?**

**A. 3.** On behalf of CEERT, I am offering two recommendations in response to the CAISO Prepared Testimony served on May 23 and addressing several of the issues identified by the Scoping Memo for Track 1.

**Q.4. Could you please summarize your recommendations in response to the CAISO testimony?**

**A. 4.** Yes. Those recommendations are as follows:

(1) The Commission should accept Mr. Sparks' recommendation of a definitive need for multi-year local capacity in the Los Angeles Basin, Big Creek/Ventura and San Diego areas with the generic electrical characteristics and specific location(s) as outlined in Mr. Spark's testimony at page 17. Mr. Rothleder's testimony (at page 4) concurs and states that this constitutes a total of 3,173 MW of local resources as the local area needs. As recommended by Mr. Sparks and Mr. Rothleder, this capacity should be solicited in the next procurement cycle with an in-service date prior to the retirement/repowering of existing gas fired resources as specified in the latest compliance schedule of the State Water Resources Control Board (SWRCB) Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling, i.e. 2017. Further to this recommendation, the Commission should also allow "non-traditional resources" to submit bids in this solicitation. Non-traditional resources are those other than conventional central station natural gas fired generation resources

1 that meet the required location and electrical characteristics identified in Mr. Spark's  
2 testimony. Specific examples of such non-traditional resources include: transmission  
3 upgrades; quasi-transmission devices that function as voltage support such as  
4 synchronous condensers; distributed resources, whether renewable or gas-fired;  
5 dispatchable demand response programs; or storage devices that meet the location and  
6 electrical characteristics outlined in Mr. Spark's testimony.

7 (2) The additional 1200 MW of proposed need for "flexible" system resources  
8 outlined in Mr. Rothleder's testimony should be deferred pending the outcome of  
9 additional probabilistic renewable resource integration studies outlined in Mr.  
10 Rothleder's testimony on page 4. It is expected that these studies will not be complete  
11 until Spring of 2013, and therefore not in time for next year's procurement cycle.  
12 However, that deferral of this second determination of additional need should be  
13 conditioned upon the requirement that the resources procured under the first  
14 determination of need outlined above also qualify as "flexible capacity" as defined in Mr.  
15 Rothleder's testimony.

16  
17 **Q.5. What are the bases for your recommendations?**

18  
19 **A.5.** First, there is an urgent need to ensure grid reliability by procuring enough quasi-  
20 generation resources to replace a portion of the 12,000+ MW of existing gas fired  
21 resources scheduled to be retired/repowered in Southern California under the SWRCB's  
22 once through cooling (OTC) compliance order in 2017. The testimony of Mr. Robert  
23 Sparks fairly quantifies and defines this need, but it is certainly not true that  
24 conventional gas fired resources are the only technology capable of satisfying this need.  
25 Mr. Sparks' reasonably concludes that procurement of new/repowered resources to  
26 meet this need must begin as soon as possible to avoid a collision between the need to  
27 have a reliable electric supply and the need to fulfill the environmental objectives of the  
28 SWRCB's OTC policy in a timely manner.

29 Second, Mr. Rothleder has not provided sufficient support for his claim that 1200  
30 MW of additional "flexible" system resource need exists over and above the specific  
31 local capacity needs identified by Mr. Sparks. The purpose of this additional flexible  
32 system capacity is purported to be to effectively integrate the plausible range of

1 renewable resources required to meet the legislative mandate of 33% RPS by 2020.  
2 However, Mr. Rothleder’s own testimony contradicts this assertion. None of the four  
3 scenarios Mr. Rothleder explored that meet the State resource goals of all cost effective  
4 energy conservation and 33% RPS by 2020 show ANY additional system need for  
5 “flexible system resources.” In fact, this “additional system need” comes from a scenario  
6 that looks at a very high load growth case coupled with sub-optimal energy efficiency  
7 and demand response performance.<sup>3</sup> Mr. Rothleder does state that his conclusions are  
8 preliminary and that he recommends further studies using different modeling constructs  
9 and different input data sources to definitively establish such a “system” need.  
10 However, because the location constraints and the specific electrical characteristics  
11 identified in Mr. Sparks testimony would be relaxed, a much broader range of resources  
12 are available to fulfill this purported additional “need,” and ample time exists to complete  
13 the definitive studies before rushing to procure additional fossil resources based on  
14 what appears to be Mr. Rothleder’s “hunch” that the State legislatively mandated  
15 resource goals for 2020 either will not, or should not be met.

16

17 **Q.4. Can you elaborate further?**

18

19 **A.4.** Yes. First, it is important to step back and reflect on how far California has come  
20 in its efforts to overhaul the State’s electricity infrastructure to reduce dependence on  
21 volatile fossil fuels, significantly reduce emissions of greenhouse gases and criteria  
22 pollutants in our most sensitive urban areas, and achieve other environmental goals  
23 such as ending the destructive practice of using huge volumes of ocean water for OTC.  
24 A few short years ago, there was significant debate as to whether it was even physically  
25 possible, much less economically rational, to have a reliable grid that depended on  
26 renewable resources for the largest share of energy production, and the SWRCB was  
27 frustrated in its goal of ending the practice of OTC by those who claimed that the grid  
28 would collapse without the 18,000 MW of obsolete coastal infrastructure that utilize this  
29 cooling scheme. Today, in this proceeding, the state appears to be on target to meet its  
30 Renewable Portfolio Standard (RPS) Program goal of 33% RPS by 2020 and has a plan  
31 to end OTC in a timely manner. In its testimony, the CAISO agrees that grid reliability

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<sup>3</sup> CAISO June 4 Presentation, at Slide 18.  
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*CEERT Prepared Testimony*

1 will be maintained and these goals achieved while, on a net basis, permanently retiring  
2 over 13,000 MW of that 18,000 MW of fifty-year old Korean War era relics. But the topic  
3 before us now is whether replacement resources for the remaining less than 5000 MW  
4 of pending fossil retirements should be exclusively conventional fossil or whether the  
5 successful strategy of meeting this need with a robust mix of energy efficiency,  
6 renewable and distributed resources, and just a dollop of new clean, efficient, flexible  
7 natural gas fired resources should continue.

8 In his testimony, Mr. Sparks makes a compelling case for replacing roughly 25%  
9 of the retiring OTC plants in the Los Angeles Basin and Big Creek/Ventura regions with  
10 a set of resources at locations and with electrical characteristics that can be  
11 represented by 3055 MW<sup>4</sup> of conventional, dispatchable gas fired plants. He also states  
12 that there is no reliability need to replace in kind retiring OTC resources in other regions  
13 of the state other than a small amount of residual need in the San Diego area.<sup>5</sup>

14 In his testimony, Mr. Rothleder further defines this local reliability need in the Los  
15 Angeles Basin, Big Creek/Ventura, and San Diego areas by stating that the  
16 replacement resources should be “flexible” to also allow integration of the flood of new  
17 variable renewable resources by 2020. Here, he describes “flexible” as having the  
18 characteristics of dispatchability, quick start, low minimum load, and fast ramping ability.  
19 He suggests a mix of roughly half new flexible combined cycle plants with the other half  
20 being simple cycle peaking or quasi-peaking plants. Having satisfied the local reliability  
21 needs identified by Mr. Sparks with a total of 3,136 MW of replacement local capacity  
22 resources, Mr. Rothleder then tests a range of six scenarios for statewide 2020  
23 load/resource mix for additional “system” need. These results were presented in some  
24 detail at the June 4, 2012, Commission Workshop. Four of those six scenarios meet the  
25 State goals of 33% RPS and all cost-effective energy efficiency. None of those four  
26 scenarios show any need for new fossil resources in addition to local reliability needs.<sup>6</sup>  
27 Additional need is shown only in an “All Gas” case that freezes renewable penetration at  
28 2009 levels and meets remaining 2020 load with natural gas, and in a “High Load” case

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<sup>4</sup> May 23 CAISO Testimony (Sparks), at p. 17. Note that this quantity would increase if replacement generation is located at other than existing retiring OTC generation.

<sup>5</sup> Id.

<sup>6</sup> CAISO June 4 Presentation, at Slide 18.

1 which assumes failure of new energy efficiency programs and thus 10% higher energy  
2 loads statewide in 2020, again met with natural gas. Mr. Rothleder concludes with the  
3 recommendation that an additional 1200 MW of conventional gas fired resources be  
4 procured – presumably to guard against failure to achieve either the State’s RPS or  
5 energy efficiency goals.

6 Furthermore, Mr. Rothleder’s results conclusively show that this purported  
7 additional “system need” is not required for additional “flexibility” to integrate renewable  
8 resources. The recommended new combined cycle plants in all six of the scenarios are  
9 running at baseload or near baseload capacity factors<sup>7</sup> to supply energy to the system  
10 and thus have no “headroom” available for flexibility to supply load following and  
11 regulation ramps supposedly caused by the addition of solar and wind on the 2020  
12 system. While the need for “flexibility” to follow load and integrate variable renewables is  
13 a reasonable proposition, Mr. Rothleder’s own results make it clear that the system has  
14 enough inherent flexibility to meet these needs *without* significant additional new  
15 “flexible” gas resources. Instead, the additional new fossil plants are being run to supply  
16 around the clock system energy needs that could and should be filled with energy  
17 efficiency, demand response and renewable resources.

18 Because Mr. Rothleder’s results are “preliminary,” further modeling using  
19 stochastic rather than deterministic modeling constructs is warranted to more clearly  
20 define precise future resource needs. The proposal to engage E3 Energy in this  
21 additional modeling effort over the next year is reasonable, along with the scheduled  
22 workshops in August and September to discuss details of this modeling effort. In the  
23 meanwhile, there is no evidence on the record in this case that would support the  
24 immediate procurement of additional “system” resources over and above the local  
25 reliability needs identified in Mr. Spark’s testimony.

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<sup>7</sup> May 23 CAISO Testimony (Rothleder), at p.5. Also shown in CAISO June 4 Presentation, at Slide 62.  
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CEERT Prepared Testimony



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III.

**OTHER LOCAL RELIABILITY ISSUES**

**Q. 1. Have you also reviewed the Track 1 issues identified in the Scoping Memo at pages 5 through 6?**

**A. 1.** Yes.

**Q. 2. Do you have an opinion or recommendation regarding any of those issues and, if so, which ones?**

**A. 2.** Yes. On behalf of CEERT, I have recommendations on the first six issues listed on pages 5 and 6 of the Scoping Memo.

**Q.3 Issue 1 asks whether additional capacity is required to meet local reliability needs in the Los Angeles Basin and Big Creek/Ventura area between 2014 and 2021, and, if so, how much?**

**A.3** The local capacity need in these areas should not be characterized as “additional” since over 12,000 MW of existing local capacity will be retired by 2017. The testimony of Mr. Sparks demonstrates need to replace approximately 25% of that capacity or 3,173 MW.

**Q.4 Issue 2 asks whether flexible capacity attributes should be incorporated into a decision regarding additional capacity required to meet local reliability needs between 2014 and 2021 and, if so, how?**

**A.4** Yes. “Flexibility,” as described in Mr. Rothleder’s testimony as dispatchability, quick start, low minimum load, and fast ramping capability, should be essential attributes of any replacement resource procured to fulfill the local capacity need. Specific minimum values for these attributes should not be made as requirements for bidding into any solicitation, but each of these attributes should be quantified and the entire procurement be evaluated as a portfolio that supplies the required flexibility. “Baseload only” inflexible resources should not be included in this portfolio.

1 **Q.5 Issue 3 asks how any relevant decisions in the Commission’s RA docket**  
2 **R.11-10-023 regarding flexible capacity should be incorporated into a**  
3 **decision on procurement of additional local capacity?**  
4

5 **A.5** Again, the word “replacement” should be substituted for the word “additional” in  
6 the question, but I strongly believe that the two dockets must be consistent and  
7 complementary. In particular, the RA process must allow for multi-year procurement and  
8 flexible capacity attributes must be quantified and identically described in both dockets.

9  
10 **Q.6 Issue 4 asks what assumptions concerning retirements of OTC plants**  
11 **should be made for the purpose of determining future local reliability**  
12 **needs?**  
13

14 **A.6** The latest compliance schedule of the SWRCB<sup>8</sup> should be used for this purpose  
15 and “repowering” to achieve compliance should be considered a new “replacement”  
16 resource eligible to bid in a procurement solicitation for local reliability and/or RA  
17 requirements. However, no presumption of an existing entitlement to either RA  
18 payments or transmission capacity to ensure deliverability should be granted to these  
19 replacement resources.

20  
21 **Q.7 Issue 5 asks whether the ISO local capacity requirements and OTC studies**  
22 **should be adopted by the Commission as the basis for procurement of**  
23 **additional local capacity, and, if not, what should form the basis of a**  
24 **Commission decision?**  
25

26 **A.7** Yes, with the following provisions:

27 1.) This is not “additional” capacity but replacement capacity for retiring plants  
28 that now provide RA and flexibility attributes to the grid,

29 2.) “Non traditional “ resources that meet the location and electrical attributes for  
30 local reliability need plus flexibility attributes discussed above be allowed to bid in any  
31 solicitation, and

32 3.) Only the local capacity needs identified in Mr. Spark’s testimony be  
33 recognized as needed by the Commission and that the “additional” system capacity

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<sup>8</sup> Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling adopted May 4, 2010 as last Amended on July 19, 2011. California State Water Resources Control Board, Sacramento CA.

1 recommended by Mr. Rothleder (here, use of the word “additional” is appropriate) be  
2 indefinitely deferred pending a record which demonstrates need for such resources.

3  
4 **Q.8 Issue 6 asks how resources aside from conventional generation, such as**  
5 **uncommitted energy efficiency, demand response, energy storage and**  
6 **distributed generation resources should be considered in determining**  
7 **future local reliability needs?**

8  
9 **A.8** As long as the resource possesses the required attributes of location,  
10 dispatchability, quick start, low minimum load, and fast ramping capability, it should be  
11 eligible to fill the need for local reliability. Many “non-traditional” resources such as  
12 those listed in the question are capable of meeting these requirements, many are not.  
13 Allow the attributes to speak for themselves, do not presume that conventional gas fired  
14 resources provide the only possible answer. This determination should be made on a  
15 portfolio basis rather than establishing minimum values for each of these attributes for  
16 each individual resource.

17  
18 **Q.9 Does this conclude your testimony?**

19  
20 **A.9** Yes

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**APPENDIX A**

**STATEMENT OF QUALIFICATIONS**

*R12-03-014 (LTPP Local Reliability Track 1)  
CEERT Prepared Testimony  
Statement of Qualifications*

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES

**STATEMENT OF QUALIFICATIONS OF JAMES H. CALDWELL, JR.**

**Q.1 Please state your name and business address.**

A.1 My name is James H. Caldwell, Jr., and my business address is 1650 E Napa Street, Sonoma CA 95476. CEERT's offices are located at 1100 11<sup>th</sup> Street, Suite 311, Sacramento, CA 95814.

**Q.2 Briefly describe your present employment.**

A.2 I am an independent consultant who specializes in renewable resources and transmission policy. My current clients include CEERT and several renewable developers interested in the California market.

**Q.3 Please summarize your professional background.**

A.3 My academic and professional background includes over fifty years of experience in the energy industry. For the past thirty years, I have specialized in renewable technology and project development including photovoltaic solar, concentrating solar thermal power, wind, biomass, and geothermal. I have been employed in technical and executive positions in the oil industry (Atlantic Richfield), the CA utility industry (Los Angeles Department of Water and Power), the US Department of Energy, renewable trade associations, and several large and small renewable resource developers. I have a BS degree in Chemical Engineering from Stanford University and an MBA from California State University at Long Beach.

**Q.4 Have you previously testified at a hearing before the California Public Utilities Commission?**

A.4 Yes. I testified on behalf of CEERT in the Biennial Resource Plan Update proceedings held in the 1990's.

**Q.5 What is the purpose of your testimony?**

A.5 The purpose of my testimony is to sponsor the Prepared Testimony of the Center for Energy Efficiency and Renewable Technologies in the Local Reliability Track I Phase of R.12-03-014 (LTPP).

**Q.6 Does this conclude your statement of qualifications?**

A.6 Yes, it does.