



BEFORE THE PUBLIC UTILITIES COMMISSION OF THE **FILED**

STATE OF CALIFORNIA

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Order Instituting Rulemaking to Integrate and)
Refine Procurement Policies and Consider Long-)
Term Procurement Plans.)

R.12-03-014
(Filed March 22, 2012)

MOTION OF SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) TO STRIKE
PORTIONS OF THE REPLY TESTIMONY OF CALIFORNIA COGENERATION
COUNCIL AND VOTE SOLAR INITIATIVE

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Dated: **July 31, 2012**

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Pursuant to Rule 11.1 of the California Public Utilities Commission’s (“Commission”) Rules of Practice and Procedure, Southern California Edison Company (“SCE”) hereby files an expedited motion to strike a portion of the prepared written reply testimonies of R. Thomas Beach on behalf of The California Cogeneration Council ("CCC") and Eric Gimon on behalf of the Vote Solar Initiative ("VSI") on the grounds that (1) CCC and VSI inappropriately introduce, for the first time in this proceeding, a new Preferred Resources LCR Mechanism ("PRLM") proposal in their reply testimonies, and (2) the PRLM is not responsive to any parties' opening testimony or the Assigned Commissioner's Ruling, dated March 22, 2012 ("ACR"). In addition, CCC's proposal to increase the location bonus for Combined Heat and Power ("CHP") has been thoroughly litigated in Rulemaking (R.) 08-06-024 and is therefore outside the scope of this proceeding.

In the alternative, if the Commission does not grant SCE's motion to strike CCC's reply testimony and VSI's reply testimony as identified in Attachment A, SCE requests that it be allowed to serve a sur-rebuttal to the reply testimony of CCC and VSI by August 7, 2012.

I.

THE COMMISSION SHOULD STRIKE CCC'S AND VSI'S REPLY TESTIMONY BECAUSE IT DOES NOT RESPOND TO ANY PARTIES' OPENING TESTIMONY.

As Administrative Law Judge David Gamson ("ALJ Gamson") stated at the July 9, 2012 prehearing conference in this proceeding, "the purpose of reply testimony is to take what other parties have said in their testimony and to respond to it. It is not generally to put forth new information."¹

Despite ALJ Gamson's clear instructions, both CCC and VSI put forth new information in their reply testimonies that go beyond responding to other parties' opening testimony. For the first time in this proceeding, CCC and VSI propose that the Commission consider the PRLM as an alternative to an all source RFO.²

VSI presents this proposal in response to TURN's opening testimony that "request for offers (RFOs) 'should also solicit non-fossil alternatives...'"³ However, the PRLM does not respond to TURN's opening testimony. TURN's opening testimony simply states that the RFO should include non-fossil alternatives. VSI dedicates over two pages of testimony on why an all source RFO is not the proper mechanism for LCR procurement.⁴ Those two pages of testimony are responsive to TURN's opening testimony. However, the PRLM proposal following those two pages of testimony goes beyond the scope of TURN's opening testimony by presenting a completely new proposal that no party has previously discussed in its opening testimony.

CCC states that its reply testimony responds to the opening testimony of a number of other parties, including SCE.⁵ However, CCC does not identify which party's testimony the PRLM is responsive to.

¹ July 9, 2012 Prehearing Conference Transcript, p. 165.

² CCC's Reply Testimony, p. 7-16; VSI's Reply Testimony, p. 4-10.

³ VSI's Reply Testimony, p. 2.

⁴ VSI's Reply Testimony, pp. 2-4.

⁵ CCC's Reply Testimony, p. 1.

SCE would be prejudiced if the Commission permits VSI and CCC to introduce the new PRLM proposal in their reply testimonies. SCE did not have an opportunity to analyze the PRLM proposal prior to CCC and VSI serving their reply testimonies and does not presently have the opportunity to provide rebuttal testimony to the PRLM proposal. Further, both VSI and CCC acknowledge that developing a mechanism that accurately compares all resources is an *ambitious goal* for the accelerated schedule in Track I of this proceeding.⁶ Therefore, even if SCE is granted an opportunity to present a sur-rebuttal, SCE will still be prejudiced by having less time to analyze and prepare a sur-rebuttal to an ambitious proposal of this nature.

For the foregoing reasons, SCE respectfully requests that the Commission strike the following portions of CCC's reply testimony and VSI's reply testimony as not properly responding to other parties' opening testimony and inappropriately introducing new evidence for the first time in their reply testimonies:

1. VSI's Reply Testimony, page 4, line 26 through page 10, line 25 and
2. CCC's Reply Testimony, page 7, line 1 through page 16, line 21, as both are identified in Attachment A.

II.

THE COMMISSION SHOULD STRIKE CCC'S REPLY TESTIMONY AND VSI'S TESTIMONY BECAUSE IT DOES NOT PROPERLY RESPOND TO THE ACR.

CCC's and VSI's PRLM proposal also goes beyond the scope of topics identified in the ACR. The ACR provides that "[t]o the extent that [the issues identified in the ACR] can be addressed by responding to parties' Opening Testimony through Reply Testimony, please do so

⁶ CCC's Reply Testimony, p. 6; and VSI's Reply Testimony, p. 5.

to the extent possible."⁷ The ACR does not grant the parties the ability to introduce new proposals in their reply testimony.⁸

Both CCC and VSI propose the PRLM in response to topic #3 of the ACR.⁹ Topic # 3 of the ACR states:

In the past, the Commission has allowed all source Request for Offers (RFOs) for incremental resources in which any type of resource could compete to fill an identified need. What barriers may currently exist to ensuring effective all source RFOs? What specific performance characteristics should be accounted for in this RFO to effectively enable the participation of non-traditional resources like energy storage, demand response and distributed generation? Would the Commission need to be specific about the characteristics of the resources needed to meet the need (e.g., minimum hours of availability required to meet local reliability needs)? If so, what characteristics should the Commission require?

However, the PRLM does not directly answer any of the questions presented in topic #3 of the ACR, which relates to the effectiveness of an all source RFO. The PRLM does not explain the barriers to an effective RFO nor does it advise the Commission how to improve the RFO to incorporate non-traditional resources. Instead, the PRLM is a completely new alternative proposal to the RFO. Therefore, the PRLM proposal goes beyond the scope of topic #3 of the ACR.

Moreover, as stated above, SCE did not have an opportunity to analyze the accuracy of the PRLM proposal prior to CCC and VSI serving their reply testimonies and does not have a fair opportunity to provide reply testimony to the PRLM proposal. As a result, it is prejudicial to SCE to allow CCC and VSI to introduce the PRLM proposal for the first time in their reply testimonies because SCE does not have a fair opportunity to respond.

⁷ ACR, p. 2.

⁸ Also, in the description column of the ACR found on the Commission's online Docket Card for this proceeding, the Commission instructed, "To the extent the issues delineated in this Ruling were addressed in Opening Testimony by parties other than the ISO, parties (including ISO) shall provide further detail and recommendations on these issues in their witnesses' July 23, 2012 Reply Testimony. Parties' witnesses shall be prepared to answer questions from the bench on these topics during hearings."

⁹ CCC's Reply Testimony, pp. 2 and 5-6; VSI's Reply Testimony, pp. 2 and 4-5

As a result, SCE respectfully requests that the Commission strike the following portions of CCC's reply testimony and VSI's reply testimony as not properly responding to other parties' opening testimony and inappropriately introduces new evidence for the first time in their reply testimonies:

1. VSI's Reply Testimony, page 4, line 26 through page 10, line 25; and
2. CCC's Reply Testimony, page 7, line 1 through page 16, line 21, as both are identified in Attachment A.

III.

THE COMMISSION SHOULD STRIKE CCC'S PROPOSAL TO INCREASE THE LOCATION BONUS FOR CHP RESOURCES AS BEING OUTSIDE THE SCOPE OF THIS PROCEEDING.

The Order Instituting Rulemaking No. 12-03-014, dated March 22, 2012 ("OIR") the Commission recognized that the LTPP as an "umbrella proceeding, may attract 'forum shopping' proposals from parties that have had their ideas rejected, or have yet to be considered, in other proceedings." (OIR, pp. 10-11.) As a result, the Commission adopted a scoping standard defining the issues that are "legitimately in the scope of this proceeding." (OIR, p. 11.)

In its reply testimony, CCC proposes that the Commission increase the location bonus for CHP projects from 10% to 15% in the L.A. Basin and 20% in the western L.A. Basin.¹⁰ The issue of locational bonuses for CHP projects has been thoroughly litigated in the AB 1613 proceeding (R.08-06-024). In R.08-06-024, the Commission authorized the 10% location bonus for qualifying CHP projects in D.09-12-042 and reaffirmed the 10% location bonus in D.11-04-033. CCC was a party to that proceeding. R.08-06-024 has since closed and the time to file a petition for modification has elapsed. CCC cannot now attempt to circumvent Commission rules and re-litigate the location bonus for CHP projects in this proceeding. CCC is attempting to do

¹⁰ CCC's Reply Testimony, p. 31.

exactly what the Commission intended to prevent in this proceeding, re-litigating an issue that has already been litigated in another proceeding.

Therefore, SCE respectfully requests that the Commission strike the following portions of CCC's reply testimony as not properly within the scope of this proceeding: Page 14, line 6 through page 16, line 21, as identified in Attachment A.

IV.

CONCLUSION

For the reasons set forth above, SCE requests that the Commission strike CCC's reply testimony and VSI's reply testimony as identified in Attachment A. In the alternative, should the Commission choose not to strike CCC's reply testimony and VSI's reply testimony as identified in Attachment A, the Commission should grant SCE the opportunity to serve sur-rebuttal testimony by August 7, 2012.

Respectfully submitted,

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July 31, 2012

Attachment A

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

Order Instituting Rulemaking to Integrate
and Refine Procurement Policies and
Consider Long-Term Procurement Plans.

Rulemaking 12-03-014
(Filed March 22, 2012)

Reply Testimony Of
R. Thomas Beach
On Behalf Of
The California Cogeneration Council

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On behalf of
CALIFORNIA COGENERATION COUNCIL

July 23, 2012

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

Order Instituting Rulemaking to Integrate
and Refine Procurement Policies and
Consider Long-Term Procurement Plans.

Rulemaking 12-03-014
(Filed March 22, 2012)

**REPLY TESTIMONY OF R. THOMAS BEACH
ON BEHALF OF THE CALIFORNIA COGENERATION COUNCIL**

1 I. INTRODUCTION

2

3

4 **Q: Please state for the record your name, position, and business address.**

5 A: My name is R. Thomas Beach. I am principal consultant of the consulting firm
6 Crossborder Energy. My business address is 2560 Ninth Street, Suite 213A,
7 Berkeley, California 94710.

8

9 **Q: Have you previously submitted testimony in this case?**

10 A: Yes, I have. On June 25, 2012, I served direct testimony in this case on behalf of
11 the California Cogeneration Council (CCC). My experience and qualifications
12 are described in the *curriculum vitae* which is **Attachment RTB-1** to that direct
13 testimony and which includes a list of the previous testimony that I have
14 sponsored before this Commission and regulatory commissions in other states.

15

16 **Q: What is the purpose of this reply testimony?**

17 A: I will respond on behalf of the CCC to the opening testimony of a number of other
18 parties, including Southern California Edison (SCE). In addition, I also address
19 the Ruling in this case that Assigned Commissioner Michel Florio issued on July
20 13, 2012 (Florio Ruling). Commissioner Florio asked parties to focus their reply
21 testimony on the following questions:

22

- 1 1) To the extent that the Commission determines that Southern California Edison
2 Company (SCE) and/or other Load-Serving Entities in the Los Angeles basin and
3 the Big Creek/Ventura local area must procure capacity to meet long-term local
4 capacity needs, how should the Commission direct these entities to meet that need
5 on behalf of the system?
6
7 2) If the Commission wishes to allow SCE to meet some or all of the identified need
8 through "cost plus" contracts outside of a competitive solicitation, how should
9 that work? Does AB 1576 provide clear guidance on the options available to SCE
10 or does the Commission need to interpret the bill's meaning in this context?
11
12 3) In the past, the Commission has allowed all source Request for Offers (RFOs) for
13 incremental resources in which any type of resource could compete to fill an
14 identified need. What barriers may currently exist to ensuring effective all source
15 RFOs? What specific performance characteristics should be accounted for in this
16 RFO to effectively enable the participation of non-traditional resources like
17 energy storage, demand response and distributed generation? Would the
18 Commission need to be specific about the characteristics of the resources needed
19 to meet the need (e.g., minimum hours of availability required to meet local
20 reliability needs)? If so, what characteristics should the Commission require?
21

22
23 II. INCENTING PREFERRED RESOURCES TO FILL SCE'S LCR NEED

24
25 **Q: To what portions of the Florio Ruling do you wish to respond?**

26 **A:** This reply testimony responds to Questions 1 and 3 of the Florio Ruling, and
27 focuses on how resources other than conventional fossil generation – including
28 combined heat and power (CHP), renewable distributed generation (DG), demand
29 response (DR), and energy efficiency (EE) (collectively “Preferred Resources”) –
30 can respond to the long-term local capacity reliability (LCR) needs in the Los
31 Angeles Basin and the Big Creek/Ventura local resource areas (LRAs). In
32 particular, in response to Question 3 of the Florio Ruling, I do not believe that the
33 use of an all source RFO is the best means to meet these local area needs while
34 respecting the state’s loading order favoring the procurement of these Preferred
35 Resources.

36
37 **Q: Why do you believe that an all source RFO is not the preferable means to**
38 **procure these local area needs?**

1 A: There are several reasons.

2

3 First, each type of preferred resource has distinct and different characteristics and
4 requirements for effective procurement. The Commission has established
5 competitive RFO procedures directly specifically at some of these resources – the
6 CHP RFOs approved in the QF/CHP settlement as well as the RAM and SPVP
7 mechanisms for renewable DG. For smaller projects, the Commission has
8 established the AB 1613 (CHP under 20 MW) and SB 32 (renewable DG sized 3
9 MW or smaller) feed-in tariff mechanisms, with the latter including a market-
10 based price adjustment mechanism. These established processes are already in
11 place, and each is tailored to the procurement of specific types and sizes of
12 Preferred Resources. Indeed, the Commission has developed these specific
13 procurement mechanisms for Preferred Resources in part because all source RFOs
14 have not been effective at procuring such resources. It would be far preferable to
15 use these existing processes rather than attempting the herculean, time-consuming
16 task of developing a generic all-source RFO that would place all of the Preferred
17 Resources, as well as conventional fossil generation, on a level playing field. If
18 the Commission were to attempt to develop an all source RFO for all of these
19 resources, it would end up having to re-litigate many of the issues that have been
20 resolved in the development of these established processes. Rather than seeking
21 to reinvent the wheel, the use of existing Commission procurement programs will
22 allow the procurement of Preferred Resources in the affected areas to begin
23 immediately.

24

25 Second, the Preferred Resources at the top of California's loading order have
26 advantages that are difficult to monetize or otherwise capture in an all-source
27 RFO. These advantages include, but are not limited to:

28

29

30

31

- Preferred Resources are “modular” and therefore can be deployed in smaller MW increments and over shorter periods of time than conventional fossil resources. This modularity reduces the risk to ratepayers of over- or under-procurement, and leaves “space” to procure

1 resources that benefit from future advances in technology or changes in
2 resource costs. In comparison, an all-source RFO would require a
3 commitment to the specific time frame of the 7-10 years necessary to build
4 large conventional fossil projects in a timely manner. Such lengthy time
5 and resource commitments should be limited only to the procurement of
6 those fossil resources that are absolutely necessary. Forcing Preferred
7 Resources into this longer time frame would eliminate their value as
8 small-scale, shorter-lead-time resources.

- 9 • Utility debt equivalence costs can be reduced by Preferred Resources that
10 are supported wholly or in part by service to on-site loads, such as CHP
11 that serves on-site industrial loads or DG located behind-the-meter.
- 12 • Preferred Resources impose fewer environmental costs on the surrounding
13 communities.
- 14 • Preferred Resources can be sited on many smaller sites. For example,
15 CHP units are installed at existing industrial or commercial sites, and
16 require comparatively little space. The resources needed to fulfill SCE's
17 LCR needs must be located in the designated LRAs in SCE's territory.
18 These areas are densely populated and are located on near the coast, where
19 real estate is expensive and scarce. Realistically, under these
20 circumstances, large conventional resources will be limited to siting at
21 existing power plants using once-through-cooling (OTC). The footprint
22 needed by large-scale renewable energy projects is beyond what is cost
23 effective or even feasible in the LRAs. Smaller scale Preferred Resources
24 are the only resources that can leverage new siting opportunities
25 throughout the LRAs.

26
27 Third, the nature of the CAISO's modeling tends to support the acquisition of
28 conventional resources. The CAISO has provided the Commission with very
29 coarse LCR need outputs. Specifically, the CAISO has provided a range of
30 generation necessary to meet LCR needs in the Big Creek/Ventura, L.A. Basin
31 and San Diego local areas and sub-areas, along with a list of generation

1 effectiveness factors at very specific sites. This output offers the Commission no
2 granularity as to the likelihood, frequency and duration of contingency events, or,
3 with the exception of RPS and load sensitivities, how a different mix of resources
4 with different generation and load-mitigation profiles could effectively fill actual
5 LCR needs. This lack of granularity favors the analysis of larger-scale,
6 conventional generation sited at existing once-through-cooling (OTC) power
7 plants to meet LCR needs. Moreover, the CAISO is already identifying the
8 locations of incumbent OTC fossil units as “preferred.”¹ Accordingly, the
9 limitations in CAISO modeling coupled with assumptions regarding a locational
10 preference for existing OTC sites result in a significant and unmerited advantage
11 for conventional resources.

12
13 Fourth, concern has been expressed that the owners of the existing OTC units may
14 have market power in the Ellis, Moorpark, and the western L.A. sub-areas as a
15 result of their control of the limited number of sites for major power plants.² A
16 concerted effort from SCE to develop CHP, DG, DR, and EE resources in the
17 western L.A. area presents a viable alternative that could displace much of the
18 need for OTC replacement generation in this area. If SCE were to demonstrate
19 over the next several years that this is a feasible option, this would help to
20 alleviate these market power concerns.

21
22 Finally, the utilities have conducted a number of all source RFOs in the past. To
23 my knowledge, these processes have not resulted in the procurement of CHP
24 resources. Most if not all purchases through all source RFOs have been
25 conventional fossil generation.

26
27 **Q: An all source RFO could allow for a direct comparison of the relative value**
28 **of various types of resources, both conventional and preferred. Are there**
29 **other ways to accomplish such a comparison?**

¹ For example, in Table 3.3-17 on page 233 of the CAISO 2011-12 Transmission Report, the CAISO lists effectiveness factors only for incumbent conventional fossil resources.

² See the June 24, 2012 Track 1 testimony in this docket of the Utility Reform Network, at 20-21.

1 A: Yes. I recognize and appreciate Commissioner Florio's interest in an all source
2 RFO framework that allows for head-to-head, level playing field competition
3 between all resources. Nevertheless, to attempt to develop such an RFO would
4 move away from the existing Commission procurement programs designed
5 specifically for various types of Preferred Resources. The effort required to build
6 a robust, transparent, and viable all source RFO also seems too ambitious for the
7 accelerated schedule for Track 1 of this LTPP. A more appropriate forum in
8 which to compare the costs of a wide range of resource options would be Track 2
9 of this LTPP or a subsequent LTPP. That effort could be an open and transparent
10 process that benefits from the input of a wide range of parties, and the results
11 could be used to adjust the mix of resources procured in subsequent LTPP cycles
12 to meet LCR or system needs. This could include the mix between conventional
13 fossil and Preferred Resources. In contrast, even if an all source RFO could be
14 designed, the ultimate comparison across resources would be made by the utility
15 procurement staffs evaluating RFO bids – a process that is not likely to be
16 transparent except to the Procurement Review Group and Commission staff.
17 Developing such comparisons across resources in the LTPP would be a far more
18 public and transparent approach than, and thus preferable to, a conventional,
19 utility-driven RFO.

20
21 **Q: Absent such a comparison across resources in this LTPP, does it still make**
22 **sense to begin immediately to procure Preferred Resources to meet SCE's**
23 **LCR needs?**

24 A: Yes. As I have noted, SCE already has established programs to procure Preferred
25 Resources. What is needed is a program to focus that procurement on acquiring
26 such resources in the portions of SCE's territory where there is an LCR need, as
27 shown in the CAISO's modeling. That modeling shows that Preferred Resources,
28 in the right areas, can reduce LCR needs, and thus avoid or defer the need for
29 conventional resources.

30

1 **Q: In the absence of an all source RFO at this juncture, what mechanism would**
2 **you propose?**

3 **A:** I propose a Preferred Resources LCR Mechanism (PRLM), an approach that is
4 also presented in the reply testimony of the Vote Solar Initiative. I also
5 understand that the Sierra Club and the Solar Energy Industries Association are
6 generally supportive of the concept. The PRLM will fairly and transparently
7 capture the value of the Preferred Resources (including CHP) in local areas,
8 ensure that resources are procured pursuant to the state's loading order, mitigate
9 the possible market power of existing OTC units, utilize existing Commission
10 RFO and procurement processes, employ the CAISO modeling results, and be
11 implemented quickly and efficiently.

12
13 **Q: Please describe the PRLM.**

14 **A:** The purpose of the PRLM is to encourage SCE to procure, and the market to site,
15 Preferred Resources in the appropriate SCE LRAs where capacity is needed.
16 Under the PRLM, these Preferred Resources will avoid costs that the utility would
17 have spent on procuring conventional fossil resources to meet LCRs. As a result,
18 the PRLM recognizes that the utility should be willing to use a portion of these
19 avoided costs, as necessary given the market for Preferred Resources, to ensure
20 that these resources are sited where needed. Ratepayers and the utility should be
21 indifferent to the use of these avoided costs for this purpose, because those costs
22 would have been spent regardless of the existence of the PRLM. The PRLM
23 simply provides a way to redirect LCR procurement, using market
24 encouragement, from conventional fossil to Preferred Resources. It also provides
25 a means to stimulate the procurement of Preferred Resources in areas where they
26 will help to meet LCR needs. With proper accounting in place, the PRLM will
27 prevent acquisition of excess LCR resources by tracking the incremental impact
28 of new Preferred Resources on lowering overall demand, and therefore overall
29 LCR need.
30

1 The avoided MW and the avoided cost benefits of the PRLM are developed using
2 a differential analysis of two Track 1 cases modeled by the CAISO. The first case
3 (Case A) is based on the 2011-2021 CAISO Transmission Plan, high net-load
4 trajectory assumptions, and is the basis for CAISO's procurement
5 recommendations for filling OTC LCR needs in Track 1 of this proceeding.³ The
6 second case (Case B) is based on the "sensitivity analysis" performed by the
7 CAISO using the mid net-load, environmentally constrained case, which I called
8 the Sensitivity Analysis in my June 25 testimony.⁴ The CAISO recommends
9 against using Case B for determining LCR in Track 1 of this proceeding because
10 the CAISO believes that it is too risky to assume that the incremental,
11 "uncommitted" amounts of Preferred Resources embedded in Case B will
12 materialize.⁵ The PRLM is designed to mitigate that risk.

13
14 I use the differential between Case A and Case B to set the maximum amount of
15 avoided costs to be used to fund the PRLM. This is reasonable because, of all the
16 scenarios modeled in the CAISO 2011-2012 Transmission Plan, Case B is the
17 most efficient in using Preferred Resources to mitigate LCR generation needs, and
18 because the resource differences between the two cases provide a reasonable basis
19 for developing procurement targets for encouraging the incremental Case B
20 Preferred Resources to site in the appropriate SCE LRAs. Essentially, under the
21 CAISO's preferred Case A scenario, the CAISO recommends replacing the
22 amount of incremental, "uncommitted" Case B Preferred Resources, including
23 223 MW of CHP, with conventional resources. It is my recommendation to use
24 the PRLM to ensure that these Preferred Resources actually materialize where
25 needed on the SCE grid.

26
27 **Q: What does the differential between Case A and Case B represent?**

³ *Testimony of Robert Sparks on Behalf of the California Independent System Operator Corporation*, at p. 17 of 17, lines 4-5.

⁴ *Supplemental Testimony of Robert Sparks on Behalf of the California Independent System Operator Corporation*, at p. 2 of 8, lines 12-24.

⁵ *Ibid.* at pp. 4-7 of 8, lines 1-2.

1 **A:** The difference between Case A and Case B represents in MW the incremental
2 Preferred Resources included in Case B, but excluded from Case A. In terms of
3 costs, the reduction in the costs of conventional generation in Case B are the costs
4 which the additional Preferred Resources in Case B avoid.

5
6 **Q: What are the magnitudes of these avoided MW and avoided costs?**

7 **A:** In his original direct testimony the CAISO's witness Robert Sparks recommends
8 procuring about 2,400 MW in Case A for western L.A. (225 MW of which covers
9 its Ellis sub-area). In his supplemental direct testimony, Mr. Sparks identifies an
10 OTC replacement need in the Case B scenario of 1,042 MW at the most
11 "effective" sites, with no further need in the Ellis sub-area. This leads to avoided
12 procurement in Case B of about 1,400 MW of conventional generation. Using the
13 CAISO's Mr. Rothleder's recommended split between combined cycle gas
14 turbines (CCGTs) and combustion turbines (CTs), Case B results in avoiding the
15 construction of one 500 MW CCGT and nine 100 MW CTs.⁶

16
17 In terms of avoided costs, the CAISO *2011 Annual Report on Market Issues and*
18 *Performance (2011 CAISO Annual Report)* calculates that the cost of a new 500
19 MW CCGT, less the revenues that can be recovered in the market, is \$126.6 per
20 kW-year.⁷ The corresponding above-market cost for a new 100 MW CT unit is
21 \$153.5 per kW-year.⁸ Thus, the annual savings from the 1,400 MW of reduced
22 local area requirements in Case B are \$200 million per year (an average of \$143.9
23 per kW-year), or a 20-year net present value of \$2.0 billion (\$1,413 per kW) at an
24 8% discount rate.

⁶ In *Testimony of Mark Rothleder on Behalf of the California Independent System Operator Corporation*, at p 3 of 9 lines 27-28, Mark Rothleder indicated that the CAISO modeled 2,800 MW of new generation with two 500 MW CCGTs and eighteen CTs. I used exactly half of these to derive 1,400 MW of avoided costs.

⁷ *2011 CAISO Annual Report*, at 45-46, Tables 1.7 and 1.8, and Figure 1.20. I use the CAISO's calculated five-year average for the market revenues for this unit. The calculation is $\$190.7 - \$64.1 = \$126.6$ per kW-yr.

⁸ *Ibid.*, at 47-48, Tables 1.9 and 1.10, and Figure 1.21. Again, this assumes the CAISO's calculated five-year average for the market revenues for this unit. The calculation is $\$211.7 - \$58.2 = \$153.5$ per kW-yr.

1 **Q: Do you recommend that all of these avoided costs should be applied through**
2 **the PRLM to the procurement of Preferred Resources to fill SCE's LCR**
3 **needs?**

4 A: No, I do not. First, I strongly doubt that the full \$2 billion will be needed. The
5 purpose of the PRLM avoided cost "pool" is simply to cover any incremental
6 costs to procure Preferred Resources in locations where they can meet the LCR
7 needs, above the comparable costs for similar Preferred Resources developed
8 elsewhere in SCE's service territory. It is possible that there could be enough
9 competition in, for example, the western L.A. sub-area to allow SCE to procure
10 Preferred Resources through RFOs without a significant premium. For feed-in
11 tariff programs such as AB 1613 CHP program, the initial premium could be set
12 at a level well below what would be justified by the full pool of avoided costs,
13 then adjusted over time based on market response. I provide examples of such
14 possible premiums for CHP below.

15
16 Second, the core purposes of the PRLM are to encourage the use of Preferred
17 Resources to fill the LCR need and at the same to prevent the unnecessary
18 procurement of conventional fossil resources. For this reason, and to provide
19 extra insurance that ratepayers are realizing the full benefit of the Preferred
20 Resource procurement, I propose to allocate no more than 75% of the \$2.0 billion
21 (i.e. \$1.5 billion) to the PRLM. I chose 75% because it is a significant discount
22 that still leaves sufficient funds to encourage Preferred Resources to site in the
23 appropriate SCE LCAs. Assuming that Preferred Resources are developed
24 steadily over the next eight years, through four two-year LTRP cycles, the
25 maximum PRLM funding would be \$370 million in each two-year LTRP cycle
26 over the next eight years.

27
28 **Q: How would the PRLM funding be utilized in the first two-year LTRP cycle?**

29 A: For the L.A. Basin, I have calculated approximately \$370 million in PRLM
30 funding for the first iteration of the PRLM. I recommend that the Commission
31 hold workshops to set the way in which PLRM funds should be allocated to

1 various types of Preferred Resources, how they should be used and accounted for
2 in the procurement of Preferred Resources that meet LCR needs, and to develop
3 any other policy that might be necessary to implement the PRLM. As the
4 owner/operator of the modeling, the CAISO would provide invaluable assistance
5 in the workshops. I discuss below some ideas for how the PRLM could be
6 applied specifically to CHP resources.

7
8 **Q: What are the advantages of the PRLM over an all source RFO?**

9 **A:** The advantages of the PRLM over an all source RFO include but are not limited
10 to the following:

11
12 1) The PRLM makes use of a sensitivity already modeled by the CAISO, thereby
13 providing a good guide for the initial two-year LTPP cycle. At each iteration,
14 the Commission can evaluate whether the needed Preferred Resources in
15 specific LRAs are on track, how conditions on the ground may have changed,
16 and incorporate improvements to the CAISO modeling. Thus, the PRLM
17 makes good use of current CAISO analysis and provides needed nimbleness
18 to adapt to new or improved future analysis. This open-endedness allows for
19 an on-going dialog between the Commission, the CAISO and stakeholders on
20 the best ways to refine future LCR analysis. Furthermore, by not allocating
21 the entire LCR need to conventional resources, the PRLM opens the way for
22 more competition between different types and locations of resources to meet
23 LCR needs, and can help to mitigate possible market power concerns based on
24 the limited number of feasible sites for conventional OTC replacement
25 generation.

26
27 2) The PRLM is inherently modular. By operating on two-year LTPP cycles, the
28 PRLM takes advantage of the shorter development times of Preferred
29 Resources. By adjusting the buckets for each preferred resource as needed
30 during LTPP cycles, the PRLM takes advantage of the granularity offered by
31 the smaller increments of Preferred Resources.

1
2 3) Management of the allocation of Preferred Resource among resource types
3 can be informed by existing Commission programs, thus leveraging work
4 already performed, using established RFOs and procurement processes, and
5 minimizing incremental regulatory effort.
6

7 **Q: Does the PRLM completely obviate the need for an RFO for conventional**
8 **generation?**

9 **A:** To the extent that the Commission also finds that there is a need to procure
10 conventional fossil resources, this process would occur in parallel to the PRLM.
11 The PRLM effort will provide a valuable alternative source of LCR generation
12 and an "insurance policy" that conventional replacement OTC power plants will
13 prove difficult to site. SCE's opening testimony, for example, discusses the
14 difficulty of obtaining air emission offsets in the L.A. Basin.⁹
15

16 **Q: Is the PRLM a subsidy to Preferred Resources?**

17 **A:** No, the PRLM is not a subsidy. As discussed above, the PRLM funds used to
18 encourage Preferred Resources to site in the appropriate LRAs are funds that
19 would otherwise have been spent on conventional fossil resources. Appropriate
20 PRLM accounting, such as memo accounts or other similar mechanisms, would
21 ensure accurate tracking and could be considered in the CAISO modeling during
22 each subsequent LTPP cycle. Such tracking also could be used to allocate PRLM
23 costs for recovery, as determined by the Commission, on a "system" basis instead
24 of just from SCE's bundled ratepayers.
25

26 **Q: Does the PRLM have a sunset date?**

27 **A:** Absent changed circumstances, the PRLM should end in 2020. By that year, all
28 OTC-related LCR needs should be addressed in a resource and cost efficient
29 manner, consistent with the state's preferred loading order. The iterative nature of

⁹ Testimony of Southern California Edison Company on Local Capacity Requirements at pp 13-14.

1 the PRLM will have enabled the Commission and the CAISO to hone in on the
2 best ways to analyze how LCR needs can be covered by the widest range of
3 Preferred Resources in an integrated fashion. OTC retirements will have been
4 mitigated, and insights from the PRLM will be incorporated into ongoing
5 reliability assessments.

6
7 **Q: Could Preferred Resources procured under the PRLM also displace the need**
8 **for LCR generation in the Moorpark sub-area of the Big Creek/Ventura**
9 **LRA?**

10 **A:** Yes. Unfortunately, Case B appears to cover only the L.A. Basin LRA, leaving
11 me without data on the Moorpark – Big Creek/Ventura LRA and thus without an
12 ability to calculate the related avoided costs. However, while all of the RPS
13 sensitivities in the CAISO modeling describe 430 MW of LCR need in Moorpark
14 under high net-load conditions, it is quite possible that under mid net-load
15 conditions this need no longer exists. Moreover, SCE recommends that the
16 Commission should defer an authorization of LCR generation in the Ventura/Big
17 Creek Area until the 2014 LTPP Cycle.¹⁰ I do not oppose this recommendation,
18 and further recommend that the Commission request a Case B analysis from the
19 CAISO for the 2014 LTPP planning cycle, for all applicable LRAs, for use in
20 determining the avoided costs for the PRLM.

21
22 **Q: How would the PRLM address issues of flexibility brought up by the CAISO**
23 **in its testimony?**

24 **A:** It is premature to address flexibility needs in Track 1 of this proceeding. Further,
25 as discussed in my June 24 testimony, I anticipate that the reduced demands that
26 result from larger amounts of Preferred Resources in Case B will free up existing
27 flexible generation to meet integration needs, as demonstrated in the 2010 LTPP
28 modeling. Further, if Preferred Resources are deployed according to the PRLM,
29 transmission capacity will become more available in constrained pockets and thus

¹⁰ Testimony of Southern California Edison Company on Local Capacity Requirements at p 10, lines 12-13.

1 flexibility needs can be met on a system-wide basis, further eliminating market
2 power concerns that might arise from a need to contract for such flexibility in a
3 specific and limited set of locations.
4
5

6 III. APPLICATION OF THE PRLM TO CHP RESOURCES
7

8 **Q: How would SCE apply the PRLM to the procurement of CHP resources in**
9 **the L.A. Basin?**

10 **A:** SCE should begin, in 2013, to incorporate the PRLM into the CHP RFOs that it
11 will conduct under the QF/CHP Settlement. SCE's CHP target under the First
12 Program Period of the QF Settlement (through late 2015) is 1,402 MW.¹¹ SCE
13 should be authorized and encouraged to exceed this target through the
14 procurement of additional CHP resources in the L.A. Basin, with particular
15 emphasis on the western L.A. sub-area. To the extent that this incremental CHP
16 procurement to meet LCR needs, above the first Program Period target, comes at
17 a cost that is higher on a \$ per kW basis than cost of the CHP resources required
18 to meet the First Program Period target, these added costs would be considered
19 attributable to, and recoverable through, the PRLM. These additional CHP
20 resources would also contribute to meeting SCE's greenhouse gas reduction goals
21 for CHP in the Second Program Period under the QF/CHP Settlement.¹²
22

23 SCE also should extend increased incentives for small, under-20-MW CHP
24 projects qualifying for the AB 1613 feed-in tariff that are located in the L.A.
25 Basin or western L.A. sub-area. For example, AB 1613 projects now receive a
26 10% locational bonus if they are located in a CAISO LRA. This bonus could be
27 raised to 15% in the L.A. Basin and to 20% in the western L.A. sub-area, with the
28 added 5% or 10% locational bonus attributed to the PRLM.
29

¹¹ See Section 5 of the Term Sheet for the QF / CHP Settlement Agreement filed October 8, 2010 in R. 04-003 *et al.*, and adopted in D. 10-12-035.

¹² See Section 6 of the Term Sheet for the QF / CHP Settlement Agreement

1 For example, the initial premiums for CHP could be as shown in the table below:

2
3 **Table 1: Exemplary Premiums for PRLM CHP Resources**

Resource	Premium	NPV	Notes:
Existing Large CHP	\$30 / kW-yr	\$155 / kW	7-year contract
New Large CHP	\$50 / kW-yr	\$375 / kW	12-yr contract
AB 1613 Small CHP	\$0.0056 / kWh	\$460 / kW	20-yr contract, 80% capacity factor, 10% additional location bonus

4 *Note: 8% discount rate is assumed.*

5
6 The premiums in Table 1 would be reasonable considering the following factors:

- 7
- 8 • The \$1,413 per kW cost of fossil generation displaced by these
 - 9 resources;
 - 10 • The 25% reduction in these avoided costs “off the top” to provide
 - 11 ratepayer benefits under the PRLM;
 - 12 • The fact that the CAISO modeling indicates that at least 3 MW of
 - 13 Preferred Resources may be required to displace 2 MW of fossil
 - 14 generation at the most effective sites; and
 - 15 • The likely NQCs and capacity factors of the CHP resources
 - 16 compared to conventional fossil generation.

17
18 In other words, the premiums in Table 1 are reasonable even if one

19 discounts the \$1,413 per kW avoided costs by factors of 0.75 for ratepayer

20 benefits, 0.67 for effectiveness at meeting LCR needs, and 0.80 for CHP NQCs

21 relative to the NQCs of conventional resources.

22
23 The Commission may want to conduct a workshop to further refine the

24 calculation of and the accounting for these premiums for Preferred

25 Resources. I emphasize that the premiums shown in Table 1 for large CHP

26 might not be necessary if the existing CHP RFO process can procure the

27 needed CHP in the L.A. Basin without a premium above the costs of other

28 CHP resources that are not so strategically located.

29
30 **Q: Please clarify whether and why the PRLM mechanism should apply to**

31 **existing CHP located in the affected LRAs.**

1 A: As noted in the CCC's opening testimony, there are significant existing
2 CHP resources located in the western L.A. Basin sub-area and in the
3 broader L.A. Basin and Big Creek / Ventura local areas. Clearly, as the
4 existing contracts for these resources expire, it is important to keep them
5 on-line in order to reduce the need to replace them with more expensive
6 new generation in these areas. Even if SCE must pay a small premium to
7 retain these resources, compared to existing CHP resources elsewhere on
8 the SCE system, it would be cost-effective to do so (and for SCE to recover
9 such premiums through the PRLM), given the higher costs of new
10 resources which could be avoided in these LRAs. SCE now has targets
11 under the QF / CHP Settlement designed to encourage re-contracting with
12 existing CHP, including the strategically-located existing CHP resources in
13 these areas.

14
15 Further, the CCC recommends that SCE's reporting requirements related to
16 its CHP program targets should be expanded to include whether a re-
17 contracted CHP project is located in one of these affected LRAs. I am
18 familiar with the reporting template that CPUC Energy Division has
19 developed to track CHP contracting and GHG savings under the QF / CHP
20 Settlement, and believe that it can be readily modified to track the
21 contribution of CHP to meeting SCE's important LCR needs.

22
23 **Q: Does this conclude your reply testimony?**

24 A: Yes, it does.

Order Instituting Rulemaking to Integrate
and Refine Procurement Policies and
Consider Long-Term Procurement Plans.

Rulemaking No.: 12-03-014
Exhibit No.:
Witness: Eric Gimon
Judge: David M. Gamson

**TRACK 1
PREPARED REPLY TESTIMONY OF
ERIC GIMON ON BEHALF OF
THE VOTE SOLAR INITIATIVE**

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

July 23, 2012

1 **Q. What is your name and who do you represent?**

2 **A.** My name is Eric Gimon and I represent The Vote Solar Initiative (Vote Solar), a non-profit
3 organization based in San Francisco which works at the state, federal and local level to
4 implement programs and policies that allow strong solar markets to grow — and pave the way
5 for a transition to a renewable energy economy.

6 **Q. What is your educational and professional background?**

7 **A.** I am a Technical Consultant for Vote Solar, advising them on technical and policy issues.
8 Before that I was an AAAS Fellow acting as a scientific advisor with the Office of Electricity
9 Delivery and Energy Reliability (OE) at the US Department of Energy (DOE). In that capacity, I
10 advised staff at OE as they developed and implemented a Recovery Act effort to enhance
11 interconnection-wide planning in WECC, the Eastern Interconnection and Texas (ERCOT). I
12 interacted with ISO's and monitored other stakeholder groups. Relevant to California, I
13 monitored and reported on multiple meetings of WECC-wide groups such as the Transmission
14 Expansion Planning Policy Committee (TEPPC), the Scenario Planning Steering Group (SPSG)
15 and the Committee on Regional Electric Power Cooperation (CREPC). I was an active observer
16 and referee on a DOE financed study to model very high penetrations of renewables (40-90%) in
17 the continental US by 2050, with results just recently published by the National Renewable
18 Energy Laboratory (NREL) in their Renewable Energy Futures report this June. My other
19 function at the DOE was to act as an advisor to the Under-Secretary for Energy on R&D
20 investments for the national grid. I hold a double B.S. with honors in Mathematics and Physics
21 along with an M.S. in Mathematics from Stanford University. I also hold a Ph.D. in physics
22 from the University of California at Santa Barbara and spent more than ten years as a
23 professional research physicist with 25 published papers and over 1,600 citations.

24 **Q. What is the purpose of this testimony?**

25 **A.** The purpose of my testimony is to reply to the prepared direct testimony served on June 25,
26 2012, by other parties in this proceeding.

27 **Q. Do you have a response to the July 13, 2012 Assigned Commissioner's Ruling (ACR)**
28 **issued in this proceeding?**

1 A. Yes, I have reviewed the ACR and will respond to Questions 1 and 3, particularly as they
2 relate to my reply to the direct testimony submitted on behalf of The Utility Reform Network
3 (TURN). I disagree with TURN's conclusion that requests for offers (RFOs) "should also solicit
4 non-fossil alternatives..."¹ Specifically, I am referring to a subset of "non-fossil alternatives,"
5 namely Renewable Distributed Generation (DG), Combined Heat and Power (CHP), Demand
6 Response (DR) and Energy Efficiency (EE).

7 This is not to say that such resources should be specifically excluded from conventional
8 generation RFOs *per se*, but instead that under the current circumstances and as I will discuss
9 below, I think there are other options that are, at this juncture, more efficient and effective.
10 Thus, to answer Question 1 of the ACR, I recommend that to "the extent that the Commission
11 determines that Southern California Edison Company (SCE) and/or other Load-Serving Entities
12 in the Los Angeles basin and the Big Creek/Ventura local area must procure capacity to meet
13 long-term local capacity needs," the needs should be met consistent with the Commission's
14 Preferred Loading Order. However, contrary to the inquiry in Question 3 of the ACR and, in
15 part contrary to the conclusion of TURN, for the time being I believe that an all source RFO
16 cannot reasonably embody the directives of the Preferred Loading Order, and therefore an
17 alternative approach must be adopted.

18

19 **Q. Why do you believe that an all source RFO cannot reasonably embody the directives of**
20 **the Preferred Loading Order?**

21 A. The resources at the top of the Preferred Loading Order – DG, CHP, DR and EE (collectively
22 "Preferred Resources") – are endowed with advantages that are difficult to monetize or otherwise
23 reflect or capture in an all source RFO. These advantages include, but are not limited to:

- 24 1. Preferred Resources are "modular" and therefore can be deployed in smaller MW
25 increments and over shorter periods of time than conventional fossil resources (CFR).
26 This modularity greatly reduces or even completely eliminates risk to rate payers of over
27 or under procurement, and leaves "space" to procure resources that benefit from future

¹ Prepared Testimony of Kevin Woodruff on Behalf of The Utility Reform Network Regarding Track 1 – Local Reliability at p. 3 of 24, lines 11-12.

1 advances in technology, such as storage. Similarly, utility debt equivalence is potentially
2 greatly reduced or eliminated due to the underlying structure of the procurement
3 agreements. For example, behind the meter DG, because it does not involve a power
4 purchase contract, should not have any impact on debt equivalence. Also, because the
5 capital costs for the same installations are paid for by the owner, they present zero
6 stranded cost risk to the utility and the utility ratepayers.

7 2. Preferred Resources have far less impact on our environment and surrounding
8 communities than CFR.

9 3. Preferred Resources can be sited on many "mini-sites." The resources needed to fulfill
10 Local Capacity Requirements (LCR) must be located in the designated SCE Local
11 Reliability Areas (LRAs). These areas are densely populated and located on and near the
12 coast, where real estate is expensive and scarce. Realistically, under these circumstances,
13 large CFR will be limited to siting on existing Once Through Cooling (OTC) sites. The
14 footprint needed by large scale renewable energy projects is beyond what is cost effective
15 or even feasible in the LRAs. Preferred Resources are the only resources that can
16 leverage siting opportunities throughout the LRAs.

17 4. DG, EE and DR have capacity and energy values in excess of CFR due to avoided CFR
18 capacity losses in hot weather, avoided risk of planned and unplanned generator outages
19 which require back-up contingency resources, avoided risk of loss of transmission or
20 distribution line capacity, and avoided transmission & distribution line losses.

21
22 **Q. Are there other reasons that you do not support an all source RFO?**

23 A. Yes, I have the following additional reasons:

24 1) The underlying market that an all source RFO would address gives rise to market power
25 mitigation issues while the CAISO has provided the Commission with very coarse LCR
26 need outputs. Specifically, the CAISO has provided a range of generation necessary to
27 meet LCR needs in Big Creek/Ventura, LA Basin and San Diego local areas and sub-
28 areas, along with a list of generation effectiveness factors at very specific sites. This
29 output offers the Commission no granularity as to the likelihood, frequency and duration
30 of contingency events, or, with the exception of RPS and load sensitivities, how a

1 different mix of resources with different generation and load-mitigation profiles could
2 effectively fill actual LCR needs. This lack of granularity improperly favors CFR due to
3 its broader generation profile. Moreover, the CAISO is already identifying the locations
4 of incumbent OTC CFR as “preferred.”² Accordingly, the shortcomings in CAISO
5 modeling coupled with assumptions regarding locational preference in OTC sites result in
6 a significant and unmerited market power advantage for CFR.

7 2) An all-source RFO requires commitment to the specific time frame of the 7-10 years
8 necessary to build (or re-build) large CFR projects in a timely manner. Such sweeping
9 and irreversible time and resource commitments should be limited to the absolutely
10 necessary procurement of CFR. Casting this onerous time frame net over Preferred
11 Resources obviates much of the modularity value.

12 3) Each class of Preferred Resources has distinct and different characteristics and
13 procurement needs. Considerable resources have been expended to create unique
14 programs establishing procurement procedures and protocols for each of the Preferred
15 Resources. An all source RFO would need to conform all of these different elements.
16 This would be a highly cumbersome and time and resource intensive undertaking. Rather
17 than seek to reinvent the wheel, it would be far more efficient to build off existing
18 Commission programs.

19 4) Contrary to the assertions of Mr. Rothleder in his prepared direct testimony,³ and
20 consistent with the prepared direct testimony of Mr. Beach,⁴ at least in large part, LCRs
21 do not need to be filled with the “flexible” resources described by Mr. Rothleder. On its
22 face, this is not a problem with an all source RFO, but this is a problem if the all source
23 RFO improperly values CFR offering “flexibility” characteristics over Preferred
24 Resources.

25
26 ~~Q. In the absence of an all source RFO at this juncture, what mechanism would you~~
27 ~~propose?~~

² For example, in Table 3.3-17 on page 233 of the CAISO 2011-12 *Transmission Plan* (March 23, 2012), the CAISO lists effectiveness factors for incumbent CFRs only that would mitigate LCR needs in the Western LA Basin sub-area. The excerpt is found at Attachment B.

³ *Testimony of Mark Rothleder on Behalf of the California Independent System Operator Corporation*, at pp.7-9 of 9, lines 4-9.

⁴ *Testimony of R. Thomas Beach on Behalf of The California Cogeneration Council*, at pp.11-2, lines 24-13.

1 A. I propose a Preferred Resources LCR Mechanism (PRLM, or pronounced "pree-lim"). The
2 PRLM fairly and transparently captures the value of the Preferred Resources, ensures that CFR
3 are not over or under procured, addresses CFR market power, utilizes existing Commission
4 programs and CAISO modeling, and can be implemented quickly and efficiently.

5
6 **Q. At what point do you believe an all source RFO would be feasible?**

7 A. I recognize the appeal of developing an all source RFO framework that allows for head-to-
8 head, level playing field competition between all resources. Nevertheless, to attempt to segue to
9 this type of approach ignores the tremendous resources already, and in many cases, recently,
10 invested in existing Commission programs designed specifically for various types of Preferred
11 Resources. Furthermore, attempting to build a robust and sustainable all source RFO policy
12 which addresses the mismatch in development time scales and the load-offset profiles of each
13 source is well beyond the scope of Track 1 of this LTPP. A more appropriate forum would be
14 Track 2 of this or a subsequent LTPP. Indeed, working *within* the LTPP process to realize the
15 goal of collectively comparing all resources is a far more public and transparent approach than,
16 and thus preferable to, a conventional, utility driven RFO.

17
18 **Q. Please describe the PRLM?**

19 A. The purpose of the PRLM is to encourage the market to site Preferred Resources in the
20 appropriate SCE LRAs. When this occurs, additional payment is made to those Preferred
21 Resources that reflects the avoided costs that the utility would have spent on procuring CFR to
22 meet LCRs. Ratepayers and the utility should be indifferent to the payment because it would
23 have been made regardless of the existence of the PRLM – the PRLM simply provides a way to
24 redirect procurement, using market encouragement, from CFR to Preferred Resources. With
25 proper accounting in place, the PRLM will prevent acquisition of excess LCR resources by
26 tracking the incremental impact of new Preferred Resources on lowering overall demand, and
27 therefore overall LCR need.

1 The PRLM is developed using a differential analysis of two Track 1 cases modeled by the
2 CAISO. The first case is based on the 2011-2021 CAISO Transmission Plan, high net-load
3 trajectory assumptions, and forms the basis for CAISO's procurement recommendations for
4 filling OTC LCR needs⁵ (Case A) in Track 1 of this proceeding. The second case is based on the
5 "sensitivity analysis" performed by the CAISO using the mid net-load, environmentally
6 constrained case⁶ (Case B). The CAISO recommends against using Case B for determining LCR
7 in Track 1 of this proceeding because the CAISO believes that assuming the incremental,
8 "uncommitted" amounts of Preferred Resources embedded in Case B will materialize is too
9 risky, and thus jeopardizes grid reliability.⁷

10 I utilize the differential between Case A and Case B because of all the scenarios modeled
11 in the CAISO 2011-2012 Transmission Plan, Case B is the most efficient in using Preferred
12 Resources to mitigate LCR generation needs, and because the differential between the two
13 provides a reasonable basis for developing funding targets for encouraging the incremental Case
14 B Preferred Resources to site in the appropriate SCE LRAs. Essentially, under the CAISO's
15 preferred Case A scenario, the CAISO recommends filling the amount of incremental,
16 "uncommitted" Case B Preferred Resources with CFR. I, on the other hand, am proposing,
17 consistent with the Preferred Loading Order, the PRLM, which redirects this CAISO proposed
18 "chunk" of CFR procurement to Preferred Resource procurement.

19
20 **Q. By using the Case A and Case B differential as the basis for the PRLM, are you**
21 **endorsing the CAISO's modeling?**

22 **A.** No, I am not endorsing the CAISO's modeling. As described in my direct testimony and the
23 direct testimony of many other parties, the CAISO's modeling is problematic in a variety of
24 ways. Nevertheless, presumably due to resource constraints, no other modeling has been
25 presented and/or vetted as thoroughly as the CAISO modeling. Furthermore, I am not aware of

⁵ *Testimony of Robert Sparks on Behalf of the California Independent System Operator Corporation*, at p. 17 of 17, lines 4-5.

⁶ *Supplemental Testimony of Robert Sparks on Behalf of the California Independent System Operator Corporation*, at p. 2 of 8, lines 12-24.

⁷ *Ibid.* at pp. 4-7 of 8, lines 1-2.

1 anything suggesting that the CAISO's modeling will not be utilized, at least in some fashion, in
2 deciding the disposition of Track 1 of this proceeding.

3 Thus, my use of the CAISO modeling as the building block for the PRLM is driven by
4 practicality and necessity, and should not be construed, whatsoever, as my agreement with the
5 CAISO's Track 1 procurement recommendations. I continue to support everything contained in
6 my direct testimony. The PRLM is not a retraction of that testimony, but is instead a proposal to
7 ensure that if the Commission does authorize procurement in Track 1, that the procurement
8 properly reflects the Preferred Loading Order.

9

10 **Q. What do you do with the differential between Case A and Case B?**

11 A. As previously stated, the difference between Case A and Case B represents in MW the
12 incremental Preferred Resources included in Case B, but excluded from Case A. I then re-
13 characterize the MW differential between Case A and Case B as avoided costs. A core purpose
14 of the PRLM is to encourage the use of Preferred Resources to fill the LCR need and thereby
15 avoid unnecessary procurement of the CFR. To provide extra insurance that ratepayers are
16 getting the full benefit of the Preferred Resource procurement, I discount the avoided costs by
17 25%. I chose 25% because it is a robust discount and leaves sufficient funds to encourage
18 Preferred Resources to site in the appropriate SCE LCAs.

19 After calculating the discounted avoided cost (DAC), to determine the value over time, I
20 then calculate the net present value of the DAC using a 20 year net present value calculation.
21 Because I am recommending that the PRLM be iterated and reviewed on the 2 year LTPP
22 planning cycle, this amount is divided by four to represent the four LTPP cycles between now
23 and the year 2020. I will refer to this final amount as the Per Cycle Funding (PCF).

24 Consistent with the ratios of Preferred Resources embedded in Case B, I would then
25 allocate the PCF to the various Preferred Resources, such that each class of Preferred Resource
26 would have a separate "bucket" of PRLM funding. The funding would be utilized consistent
27 with existing Commission programs applicable to each Preferred Resource, and to new programs
28 as, or if, they are developed.

2 **Q. What are the advantages of the PRLM over an all-source RFO?**

3 **A.** The advantages of the PRLM over an all source RFO include but are not limited to:

4 1) The PRLM makes use of a sensitivity already modeled by the CAISO, thereby
5 providing a good guide for the initial cycle. At each iteration, the Commission can
6 evaluate whether incremental preferred resources are on track, how conditions on the
7 ground may have changed, and incorporate improvements to the CAISO modeling.

8 Thus, the PRLM makes good use of current CAISO analysis and provides needed
9 nimbleness to adapt to new or improved future analysis. This open-endedness allow
10 for an on-going dialog between the Commission, the CAISO and stakeholders on the
11 best ways to refine future LCR analysis. Furthermore, by requiring a much smaller
12 number of MW coming from CFR, the PRLM opens the way for more competition
13 between types and locations of CFR and mitigates market power issues.

14 2) The PRLM is inherently modular. By operating on two-year LTPP cycles, the PRLM
15 takes advantage of the shorter development times of Preferred Resources. By
16 adjusting the buckets for each Preferred Resource as needed during LTPP cycles, the
17 PRLM takes advantage of the granularity offered by the smaller increments of
18 Preferred Resources.

19 3) Management of the Preferred Resource buckets can be informed by existing
20 Commission programs, leveraging work already performed and minimizing
21 incremental resource needs.
22

23 **Q. Does the PRLM completely obviate the need for a CFR RFO?**

24 **A.** Without conceding a need for new or replacement CFR, to the extent that the Commission
25 finds the need to procure CFR, this would need to occur in an effort parallel to the PRLM.

26 Based on my previously discussed analysis of the scarcity of real estate in the SCE LRAs and the
27 related market power issues, such an effort may ultimately be best addressed through a bilateral
28 negotiation between incumbent CFR and the utility.

1

2 **Q. Is the PRLM a subsidy to Preferred Resources?**

3 A. No, the PRLM is not a subsidy. As discussed above, funds used to encourage Preferred
4 Resources to site in the appropriate LRAs are funds that would otherwise be spent on CFR.
5 Appropriate PRLM accounting, such as memo accounts or other similar mechanisms, would
6 ensure accurate tracking and would be trued up and reflected in the CAISO modeling during
7 each subsequent LTPP cycle.

8

9 **Q. Does the PRLM have a sunset date?**

10 A. Absent changed circumstances, the PRLM should end in 2020. By 2020, all OTC related
11 LCR needs should be addressed in a resource and cost efficient manner, and completely
12 consistent with the Preferred Loading Order. The iterative nature of the PRLM will have
13 enabled the Commission and the CAISO to hone in on the best ways to analyze how LCR needs
14 can be covered by the widest range of Preferred Resources (including new ones like storage) in
15 an integrated fashion. OTC retirements will have been mitigated, and PRLM-learned insights
16 will be incorporated into ongoing reliability assessments.

17

18 **Q. Can you calculate the PCF that would be utilized in the first iteration of the PRLM?**

19 A. For the LA Basin, I have calculated approximately \$370mm of PCF for the first iteration of
20 the PRLM. My calculations are found at Attachment A to my testimony. I cannot, however,
21 due to lack of transparency in the CAISO modeling and/or lack of resources, provide
22 approximate bucket allocations. For this reason as well as others, I recommend that the
23 Commission hold workshops to set the PCF, allocate the PCF to the various Preferred Resource
24 buckets, and develop any other policy that might be necessary to implement the PRLM. As the
25 owner/operator of the modeling, the CAISO would provide invaluable assistance in the
26 workshops.

27

1 **Q. Can you calculate the PCF that would be utilized in the first iteration of the PRLM for**
2 **the Moorpark sub-area of the Big Creek/Ventura LRA?**

3 A. Unfortunately, Case B covers only the LA Basin LCA, leaving me without data on the
4 Moorpark–Big Creek/Ventura LRA and thus without an ability to calculate the related PCF.
5 However, while all of the RPS sensitivities in the CAISO 2011-12 Transmission Plan describe
6 430MW of LCR need under high net-load conditions, it is quite possible that under mid net-load
7 (or low net-load) conditions this need no longer exists. Moreover, SCE recommends that the
8 “Commission Should Defer Authorizing LCR Generation in the Ventura/Big Creek Area Until
9 the 2014 LTPP Cycle.”⁸ We endorse this recommendation, and further recommend that the
10 Commission request an analysis from the CAISO responsive to stakeholder input, and perhaps
11 similar in style to Case B for the 2014 LTPP planning cycle, for all applicable LRAs, for use in
12 calculating the PCF of the PRLM.

13
14 **Q. How would the PRLM address issues of flexibility brought up by the CAISO in its**
15 **testimony?**

16 A. I continue to affirm that it is premature to address flexibility needs in Track 1 of this
17 proceeding. I will point out that if Preferred Resources are deployed according to the PRLM,
18 transmission capacity will become more available in constrained pockets and thus flexibility
19 needs can be met on a system-wide basis, further eliminating market power distortions that might
20 arise from contracting for such flexibility in a specific set of locations.

21
22 **Q. Have you discussed the PRLM proposal with other parties to the LTPP?**

23 A. Yes, I have. In fact, on behalf of the California Cogeneration Council, I understand that Tom
24 Beach will be co-sponsoring the PRLM proposal. I also understand that the Sierra Club and the
25 Solar Energy Industries Association are generally supportive of the concept.

26 **Q. Does this conclude your testimony?**

⁸ *Testimony of Southern California Edison Company on Local Capacity Requirements* at p.10, lines 12-13.

1 A. Yes, it does.

ATTACHMENT A

TRACK 1

PREPARED REPLY TESTIMONY OF ERIC GIMON ON BEHALF OF THE VOTE SOLAR INITIATIVE

Calculation of the PCF for the first iteration of the PRLM

- (1) In his original direct testimony Robert Sparks recommends procuring about 2,400MW from a Case A 1,870-2,884MW-estimated range of OTC replacement need for Western LA (225MW of which covers its Ellis sub-area). In his supplemental direct testimony, Mr. Sparks identifies an OTC replacement need in the Case B scenario 1,042 MW (+ SONGS) at the most "effective" sites, with no further need in the Ellis or Moorpark sub-areas. This leads to avoided procurement of 2400MW – 1042M \approx 1,400MW of conventional generation at the most "effective" sites. The use of an assumed 1,400 MW of avoided generation, and the CAISO's recommended split between combined cycle gas turbines (CCGTs) and combustion turbines (CTs), results in avoiding the construction of one 500MW CCGT and nine 100MW CTs.¹
- (2) The CAISO 2011 Annual Report on Market Issues and Performance calculates that the cost of a new 500 MW CCGT, less the revenues that can be recovered in the market, is \$126.6 per kW-year.² The corresponding above-market cost for a new 100 MW CT unit is \$153.5 per kW-year.³ Thus, the annual savings from the reduced local area requirements in Case B are approximately \$200 Million

¹ In *Testimony of Mark Rothleder on Behalf of the California Independent System Operator Corporation*, at p 3 of 9 lines 27-28, Mark Rothleder indicated that CAISO modeled 2,800 MW of new generation with two 500 MW CCGTs and eighteen CTs. I used exactly half of these to model 1,400 MW of avoided costs.

² Taken from the CAISO 2011 Annual Report on Market Issues & Performance (April 2012), at pp.45-46, Tables 1.7 and 1.8, and Figure 1.20. I use the CAISO's calculated five-year average for the market revenues for this unit. The excerpt is found at Attachment B.

³ *Ibid.*, at pp. 47-48, Tables 1.9 and 1.10, and Figure 1.21. Again, this assumes the CAISO's calculated five-year average for the market revenues for this unit.

Per Year (an average of \$143.9 per kW-year), or a 20-year net present value of \$2.0 billion (\$1,413 per kW) at an 8% discount rate. I then multiply the \$2.0 billion by 75% to reflect the discount (\$1.5mm), and then divide by 4 to represent the LTPP cycles between now and the year 2020 (\$370mm).

ATTACHMENT B

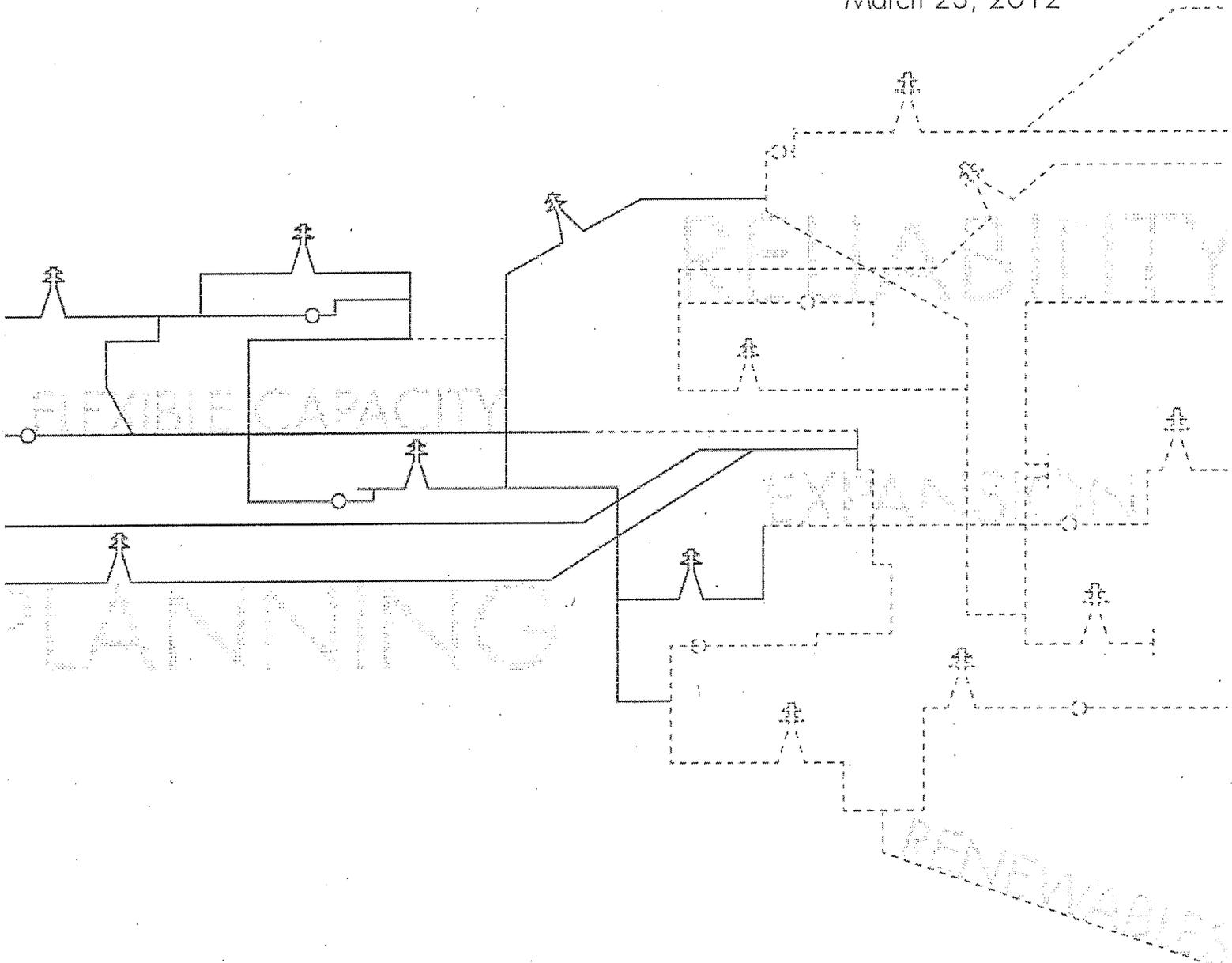
TRACK 1

**PREPARED REPLY TESTIMONY OF
ERIC GIMON ON BEHALF OF
THE VOTE SOLAR INITIATIVE**

CITATIONS

2011-2012 TRANSMISSION PLAN

March 23, 2012



California ISO
Shaping a Renewed Future

Prepared by: Infrastructure Development
Approved by ISO Board of Governors

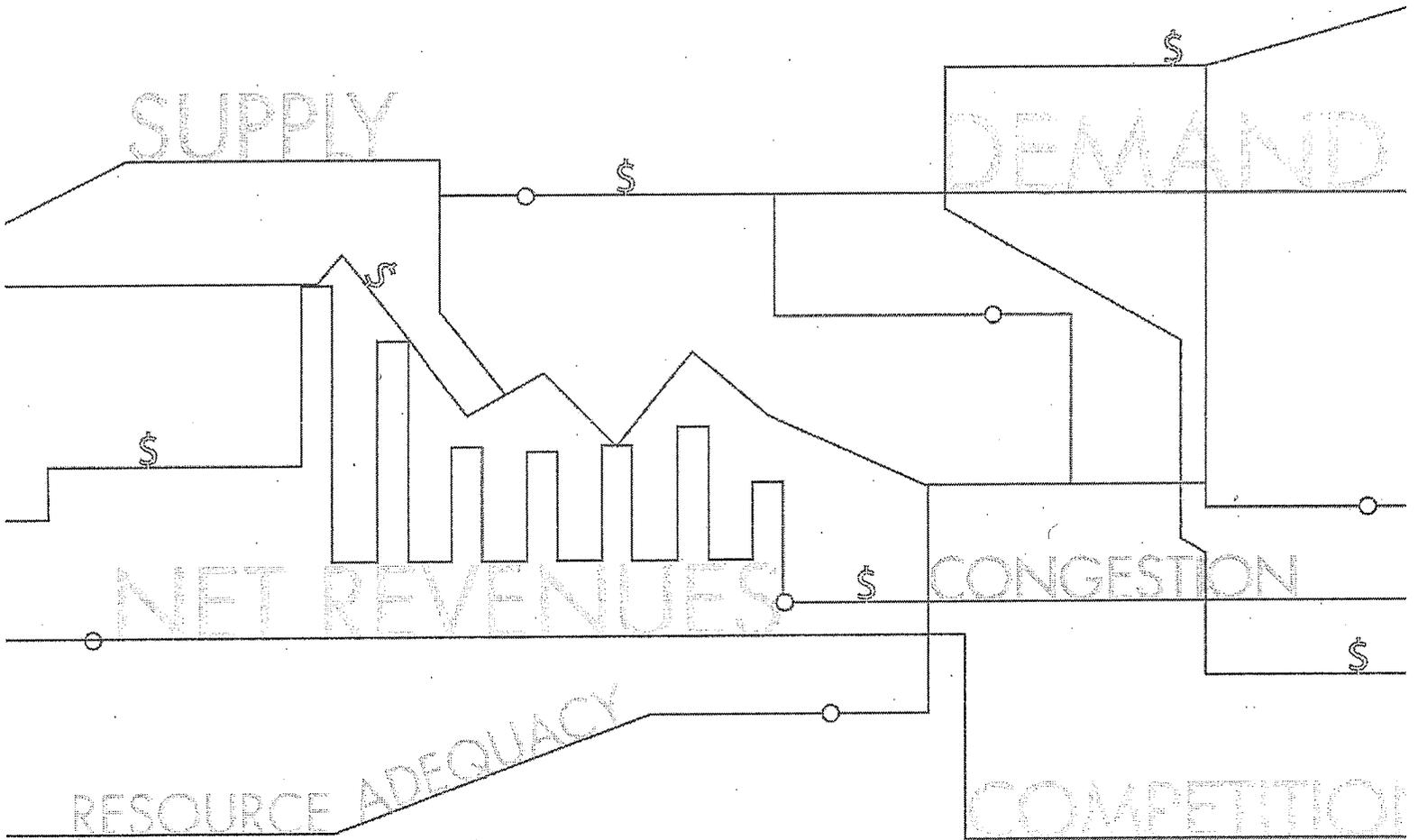
Table 3.3-17: Units with at least 5% effectiveness on Serrano-Villa Park 230 kV line constraint for Western LA Basin

<u>Generator</u>	<u>Eff. Factor (%)</u>
BARPKGEN 13.8 #1	32
BARRE 66.0 #11	32
BARRE 66.0 #10	32
ANAHEIMG 13.8 #1	32
ALAMT5 G 20.0 #5	24
ALAMT6 G 20.0 #6	24
ALAMT3 G 18.0 #3	24
ALAMT4 G 18.0 #4	24
ALAMT1 G 18.0 #1	23
ALAMT2 G 18.0 #2	23
ALMITOSW 66.0 #D3	23
ALMITOSW 66.0 #D2	23
ALMITOSW 66.0 #D1	23
ALAMT7 G 16.0 #R7	23
HUNT1 G 13.8 #1	23
HUNT2 G 13.8 #2	23
ORCOGEN 13.8 #1	23
ELLIS 66.0 #12	23
ELLIS 66.0 #11	23
ELLIS 66.0 #10	23
SANTIAGO 66.0 #1	17
COYGEN 13.8 #1	17
LITEHIPE 66.0 #10	16
BRIGEN 13.8 #1	16
LBEACH5G 13.8 #R5	16
LBEACH6G 13.8 #R6	16
LBEACH7G 13.8 #R7	16
HARBOR 230.0 #F1	16
HARBOR G. 13.8 #1	15
HARBOR G 13.8 #HP	15
HINSON 66.0 #D8	15
HINSON 66.0 #D7	15
HINSON 66.0 #D6	15

2011

ANNUAL REPORT ON MARKET ISSUES & PERFORMANCE

Department of Market Monitoring



California ISO

Shaping a Renewed Future

1.3 Net market revenues of new gas-fired generation

Every wholesale electric market must have an adequate market and regulatory framework for facilitating investment in needed levels of new capacity. The CPUC's long-term procurement process and resource adequacy program is currently the primary mechanism to ensure investment in new capacity when and where it is needed. Given this regulatory framework, annual fixed costs for existing and new units critical for meeting reliability needs should be recoverable through a combination of long-term bilateral contracts and spot market revenues.

Each year, DMM examines the extent to which revenues from the spot markets would contribute to the annualized fixed cost of typical new gas-fired generating resources. This represents an important market metric tracked by all ISOs. Costs used in the analysis are based on a 2009 (most recent) report by the California Energy Commission.²⁹

Hypothetical combined cycle unit

Key assumptions used in this analysis for a typical new combined cycle unit are shown in Table 1.7. The increase in new generation costs from 2009 are primarily attributable to increases in capital and financing costs and taxes, according to the California Energy Commission report used in this analysis.

Table 1.7 Assumptions for typical new combined cycle unit³⁰

Technical Parameters	
Maximum Capacity	500 MW
Minimum Operating Level	150 MW
Startup Gas Consumption	1,850 MMBtu/start
Heat Rates	
Maximum Capacity	7,100 MBtu/MWh
Minimum Operating Level	7,700 MBtu/MWh
Financial Parameters	
Financing Costs	\$134.4 /kW-yr
Insurance	\$7.2 kW-yr
Ad Valorem	\$9.4 kW-yr
Fixed Annual O&M	\$10.1 /kW-yr
Taxes	\$29.6 kW-yr
Total Fixed Cost Revenue Requirement	\$190.7/kW-yr
Variable O&M	\$3.7/MWh

Results for a typical new combined cycle unit are shown in Table 1.8 and Figure 1.15. The 2011 net revenue results show a decrease in net revenues compared to 2010. The 2011 net revenue estimates

²⁹ A more detailed description of the methodology and results of the analysis presented in this section are provided in Appendix A.1 of DMM's 2009 Annual Report on Market Issues & Performance, April 2010, which can be found at <http://www.caiso.com/2777/27778a322d0f0.pdf>.

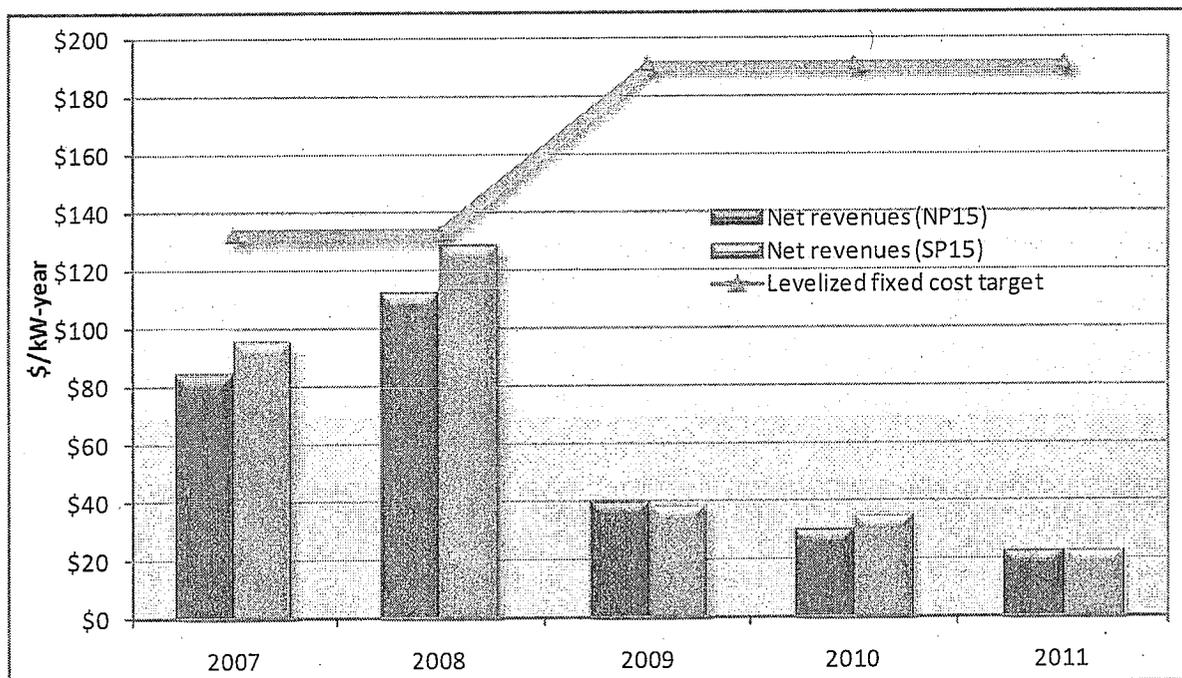
³⁰ The financing costs, insurance, ad valorem, fixed annual O&M and tax costs for a typical unit in this table were derived directly from the data presented in the CEC's 2009 Comparative Costs of California Central Station Electricity Generation Technologies report which can be found at: <http://www.energy.ca.gov/2009publications/CEC-200-2009-017/CEC-200-2009-017-SF.PDF>.

for a hypothetical combined cycle unit in NP15 and SP15 both fall substantially below the \$191/kW-year estimate of annualized fixed costs provided in the CEC report.

Table 1.8 Financial analysis of new combined cycle unit (2007–2011)

Components	2007		2008		2009		2010		2011	
	NP15	SP15								
Capacity Factor	69%	76%	74%	81%	57%	57%	67%	74%	53%	66%
DA Energy Revenue (\$/kW - yr)	\$369.59	\$389.41	\$489.17	\$505.42	\$172.67	\$169.61	\$137.95	\$142.65	\$101.62	\$94.27
RT Energy Revenue (\$/kW - yr)	\$36.20	\$41.98	\$47.41	\$51.98	\$21.27	\$15.50	\$34.89	\$37.31	\$28.62	\$30.84
A/S Revenue (\$/kW - yr)	\$0.37	\$0.42	\$0.41	\$0.42	\$0.76	\$0.85	\$1.01	\$1.25	\$1.71	\$2.29
Operating Cost (\$/kW - yr)	\$321.86	\$337.82	\$425.16	\$428.39	\$154.57	\$147.48	\$143.25	\$145.69	\$108.65	\$104.41
Net Revenue (\$/kW - yr)	\$84.30	\$95.23	\$111.82	\$128.25	\$40.14	\$38.48	\$30.60	\$35.52	\$23.30	\$22.99
5-yr Average (\$/kW - yr)	\$58.03	\$64.10								

Figure 1.20 Estimated net revenue of hypothetical combined cycle unit



Hypothetical combustion turbine unit

Key assumptions used in this analysis for a typical new combustion turbine are shown in Table 1.9. Table 1.10 and Figure 1.16 show estimated net revenues that a hypothetical combustion turbine unit would have earned by participating in the real-time energy and non-spinning reserve markets. These results show a decrease in the net revenues in 2011. Estimated net revenues for a hypothetical combustion turbine also fell well short of the \$212/kW-year estimate of annualized fixed costs in the CEC report.

These findings continue to underscore the critical importance of long-term contracting as the primary means for facilitating new generation investment. Local requirements for new generation investment should be addressed through long-term bilateral contracting under the CPUC resource adequacy and long-term procurement framework. Under California's current market design, these programs can provide additional revenue for new generation and cover the gap between annualized capital cost and the simulated net spot market revenues provided in the previous section.

Table 1.9 Assumptions for typical new combustion turbine³¹

Technical Parameters	
Maximum Capacity	100 MW
Minimum Operating Level	40 MW
Startup Gas Consumption	180 MMBtu/start
Heat Rates	
Maximum Capacity	9,300 MBtu/MWh
Minimum Operating Level	9,700 MBtu/MWh
Financial Parameters	
Financing Costs	\$146.6 /kW-yr
Insurance	\$7.9 kW-yr
Ad Valorem	\$10.4 kW-yr
Fixed Annual O&M	\$20.3 /kW-yr
Taxes	\$26.5 kW-yr
Total Fixed Cost Revenue Requirement	\$211.7/kW-yr
Variable O&M	\$5.1/MWh

³¹ The financing costs, insurance, ad valorem, fixed annual O&M and tax costs for a typical unit in this table were derived directly from the data presented in the CEC's *2009 Comparative Costs of California Central Station Electricity Generation Technologies* report which can be found at: <http://www.energy.ca.gov/2009publications/CEC-200-2009-017/CEC-200-2009-017-SF.PDF>.

Table 1.10 Financial analysis of new combustion turbine (2007-2011)

Components	2007		2008		2009		2010		2011	
	NP15	SP15	NP15	SP15	NP15	SP15	NP15	SP15	NP15	SP15
Capacity Factor	8%	9%	11%	12%	6%	6%	7%	10%	6%	7%
Energy Revenue (\$/kW - yr)	\$97.54	\$104.99	\$155.58	\$158.98	\$70.50	\$84.62	\$64.97	\$95.94	\$57.60	\$69.57
A/S Revenue (\$/kW - yr)	\$13.30	\$12.83	\$5.50	\$5.53	\$8.64	\$8.37	\$3.36	\$2.97	\$6.06	\$5.98
Operating Cost (\$/kW - yr)	\$59.18	\$64.63	\$100.12	\$104.09	\$25.85	\$27.70	\$24.80	\$35.60	\$23.23	\$26.88
Net Revenue (\$/kW - yr)	\$51.66	\$53.19	\$60.96	\$60.43	\$53.29	\$65.29	\$43.54	\$63.32	\$40.43	\$48.67
5-yr Average (\$/kW - yr)	\$49.98	\$58.18								

Figure 1.21 Estimated net revenues of new combustion turbine

