Application # _____
Exhibit # _____
Witness: Tam Hunt, J.D.

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

Rulemaking 12-03-014

COMMUNITY ENVIRONMENTAL COUNCIL
REPLY TESTIMONY ON TRACK 1 ISSUES

July 23, 2012

I. Testimony

Track 1 of the current LTPP cycle concerns Local Capacity Requirements for the Los Angeles Basin (which includes the San Onofre nuclear plant, shut down since January) and the Big Creek/Ventura area, as well as OTC replacement. The Community Environmental Council ("Council") is located in the Big Creek/Ventura Local Capacity Area, served by SCE, which also serves much of the Los Angeles Basin. As such, the Council has a strong interest in ensuring that our incumbent utility, SCE, pursues optimal procurement policies locally and territory-wide.

The purpose of my testimony is to urge the Commission to respect the state's loading order; to require full review of non-fossil alternatives for LCR and OTC replacement; to urge the Commission to create a robust "Solar and Energy Storage Local Capacity Reliability Feed-in Tariff" as a key tool for meeting LCR in the LA Basin and elsewhere, as appropriate; and to urge the Commission to fold SONGS issues and solutions into this phase of the proceeding in a way that will avoid ad hoc solutions that bypass public review. The Council also fully supports the various parties, including EnerNoc, who have highlighted the ability of Demand Response (DR) to meet LCR. We do not, however, have particular expertise in DR so we limit our testimony to renewable energy issues.

a. Determining Local Capacity Requirements

SCE agrees with CAISO's determinations of Local Capacity Requirements (LCR), totaling "up to 2,370 megawatts (MW) of existing generation to remain in service or be replaced with similarly located generation," and "up to 3,741 MW of new LCR generation … if the new generation cannot be located at or near to existing LCR generation that retires." (SCE opening testimony, p. 1). But SCE proposes that "the Commission authorize SCE to procure new LCR generation needed in the LA Basin area on behalf of all system customers." (SCE opening testimony, p. 2). SCE also urges

the Commission to finalize CAISO's conclusion that between 2,370 and 3,741 MW of LCR procurement is necessary by 2020 (SCE opening testimony, p. 25) and authorize SCE to procure this capacity on behalf of all LA Basin entities.

The Council doesn't at this time challenge CAISO's or SCE's determination with respect to need, though the Council reserves the right to bring future challenges based on changing conditions. SCE itself notes (SCE opening testimony, p. 7) that CAISO's figures may change and that actual LCR and OTC needs may vary greatly based on changed conditions in the future.

b. Tools for meeting LCR

Alternatives to fossil generation for meeting LCR

As many parties have previously noted, California has a well-established loading order that prioritizes energy resources as follows, which the Commission recently re-affirmed in D.12-01-033 (pp. 18-21):

- Energy efficiency and demand response
- Renewable energy
- Clean and efficient fossil fuel generation

SCE does not state, but does imply, that it will look to traditional fossil fuel generation to meet its LCR, and makes no mention of non-fossil resources for meeting LCR. SCE discusses the need for "flexible" resources to meet LCR, which is commonly understand to mean natural gas power plants. This focus clearly contravenes the loading order and other state policies, if reasonable and cost-effective alternatives to fossil generation can be found. The Council believes that a substantial part of SCE's LCR can be met with non-fossil resources.

SCE states accurately that the future is not entirely certain with respect to actual LCR needs (SCE opening testimony, p. 7):

> A detailed analysis of the CAISO's entire study shows that some LCR need results are significantly lower than even the 1,870 MW to 3,896 MW range of LCR requirements. This occurs when assumptions include much higher levels of uncommitted energy efficiency (EE) and demand response (DR) programs. Additionally, higher levels of localized generation development in the future may lead to lower load levels. Alternatively, higher than anticipated load growth, lower than expected levels of EE, or higher penetration of electro-technologies could increase the amount of LCR need even above this range. These factors reinforce the need for flexibility in contracting for new LCR resources.

We agree that actual LCR needs may be higher or lower than the CAISO projections, though very likely substantially lower. However, we urge the Commission to vigorously implement the full array of non-fossil alternatives to meet LCR and thereby ensure that the fossil generation needed for LCR is far lower in each area than CAISO currently projects. As SCE points out, CAISO failed to recognize the potential for increased DG or increased local generation more generally (id.) in its analysis. This is a major oversight and we urge CAISO to re-run its analysis, when feasible, to include these alternatives.

SCE also sheds some light on how CAISO performs its modeling, and suggests that CAISO's modeling could be improved to show LCR calculations perhaps significantly less than the figures currently calculated by CAISO. This is the case because CAISO, according to SCE's testimony, does not model optimal siting of potential LCR; rather, it models potential replacements at existing generation sites only. (SCE opening testimony, p. 8). This is clearly contrary to how the future will actually unfold, given the new trend toward WDG and resources other than traditional central station generation, and it seems that this limitation in CAISO's modeling may have resulted in a substantial over-estimate of LCR. We highly recommend that the Commission work with CAISO to improve this important aspect of its modeling.

Similarly, CAISO did not, according to SCE, include in its modeling consideration of new transmission to mitigate LCR (SCE opening comments, p. 9). While we are not a supporter of new transmission as a general matter, we do agree that all options should be assessed and it may be a "lesser evil" to accept some new transmission if substantial amounts of new LCR generation could be avoided. New transmission would allow areas with LCR to tap into the large surplus generation that exists around the state and probably enhance state-wide grid reliability. Moreover, if such transmission upgrades consist of upgrades to existing lines on existing rights-of-way this could be a relatively low-impact solution. Accordingly, we urge the Commission to work with CAISO and other parties to fully assess all of the options and not simply leave relevant options out of the analysis. We flesh out this recommendation further below.

Ventura/Big Creek LCR

SCE argues that LCR in the Ventura/Big Creek Local Capacity Area should be deferred until the 2014 cycle (SCE opening testimony, p. 10). We agree. We are also optimistic that much of the LCR in our Local Capacity Area (we are located in Santa Barbara, part of the Ventura/Big Creek Local Capacity Area) can be met with renewables of various sorts rather than fossil generation.

SCE also argues that LCR resources should have flexible attributes, which implies natural gas facilities (pp. 11-12). We agree that flexibility is one criterion that should be considered in procuring LCR resources – but it is not the only criterion. Other criteria include: cost-effectiveness; environmental attributes; location; ability to use existing grid infrastructure, etc. Many renewable energy technologies or energy efficiency/demand response mechanisms can cost-effectively meet LCR, at least partially, in each area and these resources should be on the table. SCE mentions in its discussion of Resource Adequacy (SCE opening testimony, p. 22, emphasis added) that "LSEs can procure RA … from <u>any qualified resource</u>, subject to certain import and Path 26 delivery constraints." Renewables are qualified resources and solar PV is ideally

suited for meeting, at least in part, LCR in an area like the LA Basin because of its ability to provide power during peak demand, and because of its ability to cost-effectively provide peak power, as discussed further below.

Alternative procurement methods for LCR

SCE discusses the difficulties in siting LCR facilities in the Western LA Basin, citing the urbanized nature of this region, the difficulty in building new transmission lines, and SCAQMD air quality requirements (pp. 12-13). SCE fails to even mention, however, the potential for non-fossil generation to meet LCR. This is a major omission and alternatives to fossil generation should be discussed fully in this proceeding.

SCE discusses the need for increased certainty in procurement of LCR resources (pp. 18-21), noting that debates have been vigorous in the past about how IOUs should procure these resources. SCE requests authority to conduct bilateral negotiations or to offer RFOs for new LCR resources We agree that increased certainty is desirable and we suggest that an LCR feed-in tariff, as an additional procurement method, would provide a high level of certainty if designed well. The key market segment for meeting LCR needs without fossil generation, particularly in the LA Basin is very likely rooftop solar, probably alongside enhanced DR programs. There is a tremendous potential for rooftop (and parking lot) solar in this area due to its urbanization and the high number of warehouses and industrial buildings, almost all of which have large flat roofs in an area with very good insolation. It is, from our point of view, a travesty that when one flies into Los Angeles there is nary a solar roof in sight, among the myriad of large industrial rooftops.

The LA Business Council recently calculated in a major report released in 2010 that SCE territory in Los Angeles County contained over 12,000 MW of rooftop solar potential (p. 42 of the report, see Figure 1). This does not include parking lot solar potential, which would substantially increase this figure. County-wide, the solar rooftop potential

exceeds 19,000 MW, which is relevant because SCE is seeking to procure LCR on behalf of all LSEs in the LA Basin. There is apparently enough solar potential to meet a substantial part of the LA Basin's LCR, particularly if energy storage is also included.

Figure 1. *Los Angeles Business Council report estimate of rooftop solar potential in Los Angeles County (2010).*

Table 12: County of Los Angeles: Megawatts of Physical Rooftop Solar Potential by Utility

Utility	SoCal Edison	LA Dept of Water & Power	Vernon Light & Power	Glendale Water & Power	Burbank Water & Power	Pasadena Water & Power	Cerritos Electric Utility	Azusa Light & Power	Total
Megawatts	12,278	5,536	307	278	245	197	169	104	19,113
Parcels ≥ 1 kW	939,260	464,326	1,044	23,125	19,431	16,341	12,462	5,825	1,481,814

SCE requests permission from the Commission to engage in bilateral contract negotiations to procure LCR, as well as possible RFOs. We recommend, as an additional consideration, that the Commission consider in this proceeding the creation of a "Solar and Energy Storage Local Capacity Requirements Feed-in Tariff." A Solar/ES LCR FIT would meet numerous needs identified by SCE, the Commission and other parties, including meeting peak demand (solar and ES) and flexibility needs (ES).

A major benefit is that a Solar/ES LCR FIT could be implemented over time in a phased manner and new tranches could be offered as required. This would meet SCE's stated desire to proceed cautiously and incrementally in meeting the projected LCR need. CAISO and SCE could model the results of each annual FIT tranche and offer new tranches as required. We recommend an initial tranche of 500 MW. This is big enough to attract existing and new market entrants, and to represent a substantial step in meeting LCR; but it is not so big that any problems that arise couldn't be mitigated. If the first tranche is successful, additional tranches should be issued.

There would be minimal to no conflict with SCE's existing solar programs. The CREST program has been largely ineffective in bringing new solar on-line, with only 4.5 MW of new solar in the four years that SCE has had this program, with many problems facing

the existing queue. SCE's solar PV program, designed for 1-2 MW roof-mounted projects, has been slow in starting up and SCE successfully requested that the remaining years of this five-year program be subsumed under the RAM Program, which is for projects up to 20 MW, for all renewable energy technologies, leaving plenty of space for rooftop solar in LA County to meet the proposed Solar/ES LCR FIT. This conclusion is amplified when we consider the 19,000 MW potential for rooftop solar found by the LA Business Council.

A Solar/ES LCR FIT would likely be highly efficient as a procurement method for meeting LCR in that a FIT, by definition, is a pre-approved contract for projects meeting the relevant criteria. If a Solar/ES LCR FIT were created, developers would then supply the market with the desired product at a pace that could be controlled closely, through targeted and phased tranches, by SCE and the Commission, allowing for great flexibility in meeting LCR needs as they change in the coming eight years.

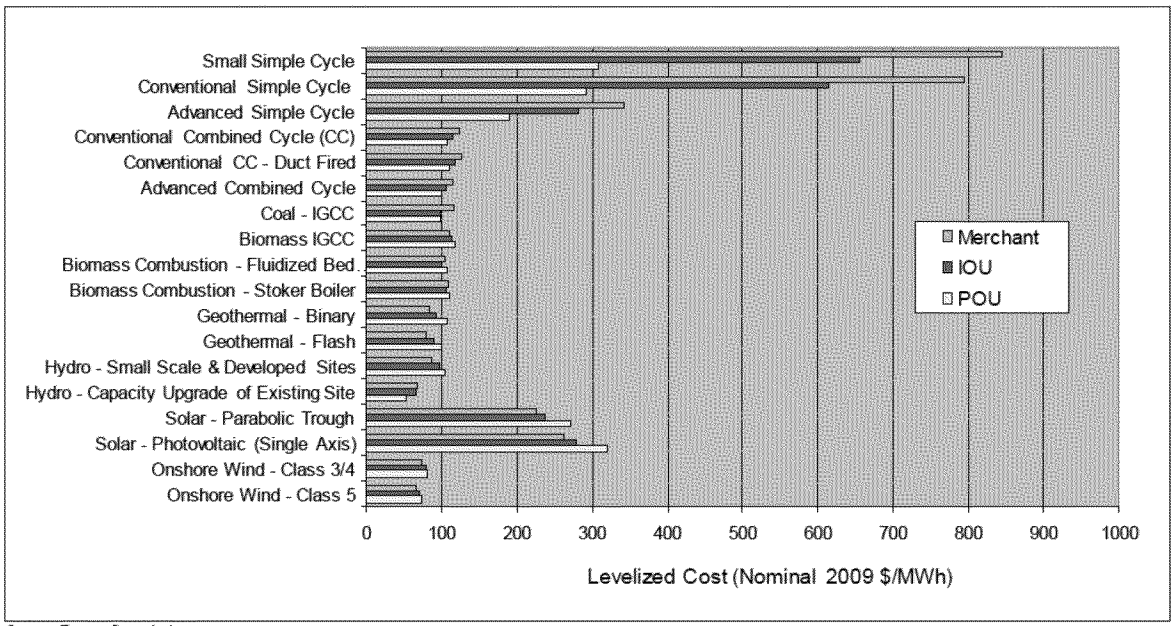
Another major benefit of this Solar/ES LCR FIT approach relates to interconnection. As SCE and many other parties acknowledge, interconnection of generation facilities is a major issue in California at this time, with multi-year delays unfortunately quite common, for a variety of reasons. However, interconnection of rooftop and parking lot solar resources can be expedited under the new Rule 21 (pending a decision implementing the Phase 1 Settlement in R.11-09-011) in a way that should be substantially faster than interconnection for traditional fossil generation.

Similarly, permitting of rooftop solar and parking lot solar facilities can be far faster than traditional fossil generation because no CEQA review is required.

With respect to cost, rooftop and parking lot solar can be highly cost-effective in relation to traditional fossil generation for meeting peak needs. The California Energy Commission's levelized cost of central station generation report has consistently shown, with each iteration, that solar is cheaper than power from natural gas peaker plants. The

most recent version (2010) shows that merchant costs for "small simple cycle" and "conventional simple cycle" plants are more than twice as much as solar PV (with single axis trackers) (p. 4):

Figure 1: Summary of Average Levelized Costs—In-Service in 2009



Source: Energy Commission

However, natural gas costs and solar PV costs have come down dramatically in the last two years, but it's likely that the ratio has improved with respect to the cost of solar because the majority of costs for peaker plants is not natural gas (it's equipment and financing) because they don't run very often, whereas the dramatic reductions in capital costs for solar in the last two years (over 40%) have a direct and proportionate impact on the cost of power from solar facilities.

Costs for Energy Storage are not as well-established because this is a far newer technology than solar or natural gas plants. However, the data available to the Council suggests that ES will be more cost-effective than peaker natural gas plants.

As a more general cost-effectiveness point, CAISO informed parties at the June 4

meeting in this proceeding that the Environmentally-Constrained scenario, which relies heavily on distributed solar, was the most cost-effective for meeting projected demand by 2020 (slide 22).

John Farrell, with the Institute for Local Self-Reliance, recently produced a helpful comparison of the costs of solar in various states and in Germany under the applicable FITs, showing that the myth of the expensive German solar FIT is just that: a myth. Germany's average solar FIT price, when all relevant factors are considered, is 15.7 c/kWh. Germany has brought almost 30 MW of solar online under this FIT in the last decade, constituting by far the world's largest solar market and playing a large role in bringing global solar production to scale. This has, in turn, brought solar costs down for the entire globe. Accordingly, the "expensive failure" myth of FITs, an attitude often heard among key policymakers in California, is wrong on both counts because solar has been extremely successful in Germany and elsewhere and has not been overly expensive.

Fig. _. *ISLR comparison of cost of solar under various US FITs and in Germany.*

Summary of CLEAN Programs in the United States

Locality	Date Launched	Program Size	Installed Capacity	Solar Contract Price*
California AB 1969 MPR	2008	500 MW	23 MW	9.6¢
Farmers Elec. Coop. (IA)	2008	n/a	n/a	**10.2¢**
Consumers Energy (MI)	2009	5 MW	2.0 MW	**16.9¢**
Gainesville (FL)	2009	32 MW	10 MW	**24.0¢**
Maine	2009	50 MW	4.5 MW	10.0¢
Oregon	2009	25 MW	n/a	**42.0¢**
Sacramento (CA)	2009	100 MW	66 MW	12.0¢
Vermont	2009	50 MW	5.3 MW	**23.0¢**
Hawaii	2010	80 MW	11 MW	**28.6¢**
Indianapolis Power & Light (IN)	2010	125 MW	2.2 MW	17.0¢
San Antonio (TX)	2010	10 MW	n/a	**27.6¢**
Tennessee Valley Authority	2010	100 MW	4.6 MW	5.5¢
NIPSCO (IN)	2011	30 MW	3.0 MW	**21.0¢**
Rhode Island	2011	40 MW	n/a	22.0¢
Long Island Power Authority (NY)	2012	50 MW	n/a	19.9¢
Los Angeles (CA)	2012	10 MW	n/a	n/a
Palo Alto (CA)	2012	4 MW	0 MW	14.0¢
U.S. TOTAL		**1,211 MW**	**132 MW**	
Germany	1990	n/a	53,000 MW	**15.7¢**

**Prices in bold are for residential sized systems, if available. U.S. prices reflect the external use of federal tax incentives (and would otherwise be much higher). Germany's price is comprehensive.*

SDG&E raises the issue of reliability with respect to solar meeting LCR needs (SDG&E Opening Testimony, p. 11):

> Although many new programs are being proposed for DG, none of the programs require that every DG installation obtain full deliverability. Thus, DG should be considered in determining local reliability needs only where there exists a very high degree of confidence that DG will be present and fully deliverable.

Full deliverability should not, however, be a requirement for solar DG to meet LCR. Rather, full deliverability should be considered an added bonus, but the direct impact of solar DG on reducing LCR determinations should be recognized regardless of the characteristic of full deliverability for each solar installation. Moreover, some parties

(Clean Coalition, in particular) have argued in various proceedings that WDG should be "deemed eligible for Resource Adequacy," and thus considered fully deliverable if the facility constitutes less than the minimum coincident load on the sub-station at issue. Physically, this means that all power produced will stay on the local circuit, which is functionally the same as being fully deliverable.

A number of parties' opening testimony raised issues concerning California's official loading order, vis a vis LCR issues, and urged the Commission to respect the loading order. SCE is seeking authority to procure LCR through bilateral contracts and RFOs. We are proposing, in direct response[1] to SCE and other parties' opening testimony, an additional means of procuring LCR. As such, our proposal is fully within the scope of this proceeding. Moreover, the May 17 Scoping Memo states (p. 5) that the following issue is in scope for Track 1 of this proceeding:

> How resources aside from conventional generation, such as uncommitted energy efficiency, demand response, energy storage and distributed generation resources should be considered in determining future local reliability needs

The Council does not oppose SCE's request for bilateral and RFO authority, but we do urge the Commission to consider the ability of a Solar/ES LCR FIT to meet, at least in part, projected LCR in the LA Basin. If the parties' and the Commission's responses to our proposal are positive, we will be happy to provide far more detail about wise design principles for the Solar/ES LCR FIT.

c. OTC replacement

Similarly, we urge the Commission to fully consider the ability of non-fossil generation to meet any OTC replacement needs, including expansion of existing non-fossil programs like the IOU PV programs, CHP programs, DR programs, etc. As with LCR

[1] SCE has informed the Council, in private communication, that SCE will move to strike our Solar LCR FIT proposal as out of scope.

needs, expansion of existing non-fossil programs or a new program similar to the proposed Solar/ES LCR FIT may be able to meet a substantial part of any OTC replacement requirements, tailored appropriately for the system needs that OTC plants have previously supplied.

d. SONGS issues

The Council appreciates SCE's statement that it will include in its scenario planning an analysis of a permanent SONGS shutdown after 2022 (SCE opening testimony, p. 3). We urge the Commission, however, to work with the utilities and CAISO in conducting a more expedited study of how California can best cope with SONGS being shut down permanently from 2012 forward. It is too early to state with any certainty whether SONGS should or will be shut down permanently at this time, but it has suffered unfortunate damage subsequent to its 2010 steam generator replacements, at the cost of $670 million in ratepayer funds, and it is far from clear whether the cost of replacing these generators or components thereof, again, will make sense for ratepayers. Regardless of what happens to SONGS in the near-term it is entirely clear that California should engage in rigorous planning in the short-term for how to cope with a continued SONGS shutdown, at least through the summer of 2013.

The Commission is already assessing this issue, with CAISO and many other entities, at this time. We strongly urge the Commission to include the SONGS shutdown issue as a high priority Track 1 issue in this proceeding, rather than to continue with ad hoc measures outside of formal proceedings. A decision is already scoped for the end of the year in this proceeding and, due to the importance of the SONGS issue, it seems reasonable to expect that a plan regarding dealing with SONGS shutdown issues re summer of 2013 could be included in this decision and in time to make a difference by summer of 2013.

The "backup plan" for the SONGS outage is to coordinate OTC shutdowns in the

SONGS area as required to keep pace with preferred solutions like EE/DR and Wholesale Distributed Generation, as they come online.

II. Conclusion

In conclusion, the Council recommends that the Commission and other parties fully consider the ability of non-fossil generation to meet LCR needs and OTC replacement needs; to study system needs under a possibly permanent SONGS shutdown from 2012 forward; to study system needs under a state-wide nuclear shutdown; and to create a solar LCR FIT to quickly and effectively meet, in whole or in part, LCR and SONGS shutdown capacity needs.

Witness Qualifications

My name is Tam Hunt. My business address is 124 W. Alamar Ave. #3, Santa Barbara CA 93105.

I am employed by Community Renewable Solutions LLC, where I focus on renewable energy law and policy and climate change law and policy. I represent the Community Environmental Council in CPUC matters. I have been active in state and national policy discussions for the last ten years and have been active in various proceedings at the Commission since 2005. I participated frequently in R.08-02-007, the 2008 cycle of the LTPP, with a particular focus on non-transmission-dependent means for meeting power needs.

Prior to working for Community Renewable Solutions, I was the Energy Program Director and Attorney for the Community Environmental Council (2005-2009) and an attorney with Hatch & Parent (2001-2003), both in Santa Barbara.

I hold a Juris Doctor degree from the UCLA School of Law and a B.S. in evolutionary biology from UC San Diego. I am Bar-certified in California (218673).

I have not previously testified before this Commission, though I have submitted countless comments and briefs in various proceedings since 2005.