Docket: **R.12-03-014**
Exhibit Number:
Commissioner: M. Florio
Admin. Law Judge: D. Gamson
Witness: Craig Lewis, Executive Director, Clean Coalition

REBUTTAL TESTIMONY OF THE CLEAN COALITION ON THE LOCAL RELIABILITY TRACK (TRACK 1) OF LONG TERM PLANNING PROCUREMENT (LTPP)

July 23rd, 2012

I. INTRODUCTION

Pursuant to the May 17th Scoping Ruling by Commissioner Florio and ALJ Gamson, the Clean Coalition respectfully submits the following rebuttal testimony of Craig Lewis, Executive Director of the Clean Coalition, into the record.

The Clean Coalition is a California-based nonprofit project of Natural Capitalism Solutions. The Clean Coalition's mission is to implement policies and programs that accelerate the transition to a decentralized energy system that delivers cost-effective renewable energy, strengthens local economies, minimizes environmental impacts, and enhances energy security.

The Clean Coalition drives policies to remove the top barriers to Wholesale Distributed Generation (WDG), which is defined as renewable energy systems connected to the distribution grid that sell all electricity produced to the local utility and serve only local load. Since local balancing of energy supply and demand is generally required when more than 20% of energy consumption is served by WDG, the Clean Coalition also advocates for policy innovations to support Intelligent Grid (IG) solutions, such as demand response and energy storage.

The Clean Coalition is active in proceedings at the California Public Utilities Commission, the California Energy Commission, the California Independent System Operator, the Federal Energy Regulatory Commission, and other agencies that shape energy policy in California and other states. In addition, the Clean Coalition designs and implements WDG and IG policies and programs at the state, local, and utility level across the country. The Clean Coalition sees this time in our state's history as an opportunity to move California forward in the interest of expanding renewables to meet and exceed California's RPS goals.

As stated in our Motion for Party Status and in our initial testimony, Long Term Procurement Planning (LTPP) has long been a policy platform of the Clean Coalition, with the specific goal of ensuring that LTPP reflects a long-term plan for the major deployment of WDG projects in addition to IOU capital expenditures for distribution grid upgrades being allocated to facilitate full deployment of WDG. We also remain committed to ensuring that the 33% renewable portfolio standards (RPS) goals for California are included in LTPP. Due to the large volume of testimonies submitted by parties, this testimony will address specific areas of concern to the

Clean Coalition, which includes reinforcing that the Commission and CAISO plans to meet and exceed California's RPS goals and the consideration of IG solutions as alternatives to conventional generation.

II. ALTERNATIVES TO FOSSIL GENERATION FOR MEETING LOCAL RELIABILITY

a. Utilities should consider non-fossil generation in procurement

The Clean Coalition advocates for the use of distributed generation and intelligent grid solutions as we move forward in the long-term planning process. In particular, we support the rigorous use of Distributed Generation(DG), Demand Response (DR), Energy Efficiency (EE) and Energy Storage (ES) as well as upgrades to the grid that support high penetrations of wholesale distributed generation, solutions that have been supported in opening testimony by other parties and the IOUs, to varying degrees. As our current infrastructure is replaced, we must continue to ensure that it is not simply being replaced with the same technologies, as the status quo fails to leverage the opportunities available today and those that we fully expect to become viable within the lifetime of today's infrastructure investments. In particular, we recommend planning for high penetrations of clean local energy (DG) and a highly responsive and adaptable Intelligent Grid (IG).

The utilities and the ISO clearly haven't recognized the ability of non-fossil generation to meet Local Capacity Requirements (LCR) and other generation needs. In addressing how the Commission should move forward regarding demand response (DR) and energy efficiency (EE), SDG&E stated that:

> *In the case of EE, for example, there is a high degree of uncertainty regarding how much uncommitted EE is incremental to the EE that is implicitly included in the load forecast. Uncommitted EE savings are highly uncertain since the assumptions used to develop these estimates depend on untested new technologies, the final adoption of future codes and standards, and strategies that are not fully developed or funded.*[1]

[1] Prepared Track 1 Testimony of SDG&E, pg 7

IOU procurement plans are, however, required to demonstrate that the utility "shall first meet its unmet resource needs through all available energy efficiency and demand reduction resources that are cost effective, reliable, and feasible"[2], and the Commission further recently confirmed that the "loading order applies to all utility procurement, even if pre-set targets for certain preferred resources have been achieved." [3] With respect to EE, the Commission and the IOUs jointly developed the California Long-Term Energy Efficiency Strategic Plan in 2008. The Plan was updated in 2011. It calls for 25 percent of existing homes to reach 70 percent reduction in energy usage by 2020, and 50 percent of existing commercial buildings to reach zero net energy by 2030. The Plan also calls for a 50 percent reduction in air conditioning loads by 2020. Governor Brown's April 25, 2012 Executive Order B-18-12 calls for 50 percent of California state government commercial buildings to reach zero net energy. Even before these more ambitious plans were developed, the CEC estimated that EE alone would result in a 5% absolute decline in annual demand between 2007 and 2016.[4] In the light of these goals, the failure to include any value for uncommitted EE in projections clearly overstates future demand requirements.

Achieving these targets for DG, DR, EE and ES will result in greatly reduced need for Local Capacity Requirements, generation and related services provided by retiring regional OTC plants, and possibly for meeting SONGS power production. Early implementation of uncommitted EE and other non-traditional resources may be sufficient to meet many of the regional operational requirements even in the event of SONGS remaining offline.

The Clean Coalition recognizes that with any assumption, there is always a margin of uncertainty. However, EE estimates include the highly predictable replacement of equipment such as air conditioning units for which adoption rates are well known. In addition, EE and DR programs are responsive to rapid changes in implementation when this is needed, allowing an unanticipated shortfall to be corrected much more quickly than generation facilities can be procured and deployed to meet the same need.

[2] Pub. Util. Code § 454.5(9).)

[3] Decision 12-01-033 at pp. 18–21.

[4] CEC, Achieving All Cost-Effective Energy Efficiency for California (Dec. 2007) p. 103

With this in mind, non-fossil alternatives should be fully considered – and they are not currently – in the LTPP procurement discussions.

Viability probabilities of planned capacity should be used for all segments employed to meet expected demand, in addition to the demand estimates themselves. Equally important is establishing clear guidance as to how shortfalls will be met if they occur, and the already established loading order and long term state goals provide valuable direction that should be incorporated in planning.

In the interest of moving California forward, IOUs must continue to meet and exceed California's RPS goals by using technology that supports high penetrations of renewables. We believe that the best possible way of ensuring this is to support, through market development, the best new and existing technologies instrumental to meeting California's long-term renewable future. DR and EE (among other outlined IG solutions) should be considered as long-term options, despite any uncertainty they have due to the fact that technology rapidly changes over a short period of time, as we have seen in the last twenty years. Similarly, LTPP should plan for likely DR and EE scenarios while also developing contingencies in the event that any portion of the portfolio fails to deliver as needed.

CEERT also supports the use of non-conventional generation as their testimony states

> *"Many "non-traditional" resources such as those listed in the question are capable of meeting these requirements, many are not. Allow the attributes to speak for themselves, do not presume that conventional gas fired resources provide the only possible answer."*[5]

In addition, Kevin Woodruff stated on behalf of TURN that "in addition to conventional generation, such RFPs should also solicit non-fossil alternatives for meeting specific area or sub-area needs, such as Demand Response." These positions asserted by CEERT and TURN are aligned with the testimony of the Clean Coalition, especially in light of the benefits that IG solutions can provide.

b. ADDRESSING SDG&E'S OBJECTIONS TO ENERGY STORAGE

[5] R.12-03-014 Prepared Testimony of Kevin Woodruff on Behalf of The Utility Reform Network Regarding Track I - Local Reliability, pg 3.

In discussing energy storage (ES), SDG&E claims that:

> *Inclusion of this resource for resource planning purposes is premature. There exists no reasonable basis to assume that storage will develop in advance of determining local need in this LTPP cycle. Moreover, to the extent energy storage does presently exist, it is intended to deal with intermittency issues. It is not storage that is being specifically designed to contribute to meeting the peak load that local reliability planning must address.*

The Clean Coalition respectfully disagrees with SDG&E in the case of ES. While we are realistic regarding ES's current potential, we remain optimistic that ES will prove to be instrumental in assisting with ensuring reliability in energy supply and the potential to fill any potential shortfalls in existing variable generation which could prove vital in the long-term. The potential benefits of ES should not be excluded as a resource for meeting LCR. ES is a zero emission solution that can increase reliability and capacity as well as meeting the varying needs facing specific regions in California. In addition, ES has a high cost effectiveness potential when compared to the marginal cost of alternatives, which should also be considered in planning assumptions.

Energy Storage provides a range of services in various applications. For example, 20 MW storage facilities are already in operation in multiple locations in the U.S. in support of variable generation. Storage can also effectively be employed for ramping. Aggregators can bring a variety of storage services to the grid today, and while initially small, the capacity of these is expected to increase substantially and predictably. For example, the electric vehicle (EV) charging company PlugShare is already able to provide fast responding incremental DR, both decreasing and increasing demand to support ramping when needed, using the storage already existing in EVs. Assuming a 30% availability (on line capacity factor), every 1000 EVs provides 650 kW of DR or ramp response. 100,000 EVs can provide 6.5 MW of flexibility within 15 seconds. Such capabilities could be available in coming years, depending on EV market share as this nascent market develops. EV and ES solutions require minimal new infrastructure, capital investment, and have the potential to be highly targeted by location.

In addition, CEERT's testimony supports the idea of using non-conventional generation resources such as DR, EE and ES "*as long as the resource possesses the required attributes of location, dispatchability, quick start, low minimum load, and fast ramping capability, it should*

be eligible to fill the need for local reliability."[6] While CEERT believes that this should be done on a portfolio basis, the Clean Coalition would like to see possible minimum values placed on these resources in the future.

Vote Solar also supports the use of IG solutions and DG by stating "*the Commission should view the LCR process as an opportunity to manifest leadership in implementing the preferred loading order, which places energy efficiency (EE),demand response (DR) and distributed generation (especially PV) ahead of new fossil capacity in managing local requirements for the grid*."[7] The Clean Coalition fully agrees and we will further discuss our position on loading order as it pertains to WDG later in this testimony.

III. DISTRIBUTED GENERATION AND DELIVERABILITY

As we stated in our initial testimony and in our introduction, the Clean Coalition's foremost priority as an organization and in this proceeding is the inclusion of DG (specifically WDG) in long-term planning standards such that the frequent cost advantages of local generation are realized by ratepayers.

In discussing DG and deliverability, SDG&E stated that

> *"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."*[8]

The Clean Coalition's feels that deliverability is an attribute that can be assigned based on physical infrastructure and load distribution in a manner that allows DG to be fully deliverable in many situations. The process of assigning deliverability is in transition, at CAISO and at the Commission. The new developments on assigning full deliverability are laudable because current

[6] Prepared Testimony of Center for Energy Efficiency and Renewable Technologies (CEERT) in Local Reliability Track 1 of R.12-03-014 (LTPP) pg 11.
[7] Track 1 Prepared Direct Testimony of Eric Gimon on Behalf of the Vote Solar Initiative, pg 3.
[8] Prepared Track 1 Testimony of SDG&E, pg 7

policies discourage DG sources from applying and fail to take advantage of DG's typically superior location close to loads. CAISO is already implementing a plan to allocate available deliverability to LRAs (including this Commission) for assignment to DG without unnecessary and costly individual studies. Such allocation is currently capped by scenario planning, not by actual deliverability. Under such circumstances, planned procurement of DG is limited due to its deliverability status, and its deliverability status is limited to the planned procurement in a self-fulfilling limitation cycle that should not be continued.

In terms of DG achieving deliverability status, any DG that is at or below coincident minimum load on the sub-station at issue is inherently physically deliverable to that load, unlike remotely-sited generation that requires the development of transmission infrastructure to reach customers for delivery (which, as other parties have stated, is a challenge facing Southern California). At the very least, DG should be assumed to be assigned deliverability where a medium level of confidence exists rather than a "very high" confidence level. Because DG represents many individual sources, the risk of some sources not being assigned deliverability does not represent a large risk related to the aggregate assignment. **If the probability of obtaining deliverability for any given DG facility were only 70%, then an aggregated 1000 MW of DG should be assumed to provide 700 MW with deliverability.**

IV. WHOLESALE DISTRIBUTED GENERATION AND LOADING ORDER

Vote Solar briefly discussed preferred loading order for IG solutions as well as solar PV (which was previously discussed and cited) which the Clean Coalition expands upon by including WDG into the preferred loading order. The Clean Coalition takes the position that "loading order" prioritization should be applied to granting deliverability as well as ensuring that available renewable energy can actually be used to serve load first. The assignment of deliverability should match the state's loading order, and uncommitted deliverability capacity should be allocated to existing or planned local generation whenever it becomes available. The Clean Coalition fully supports the reassignment of deliverability by this Commission to achieve these goals.

V. PLANNING ASSUMPTIONS, SOUTHERN CALIFORNIA LOCAL CAPACITY REQUIREMENTS AND SONGS

Planning Assumptions

As we previously noted in our initial testimony, and as noted by SDG&E, technology is rapidly changing, and therefore available information is changing as well. The ISO and the Commission should be prepared to change assumptions based on new information becoming available, and such preparation should include maintaining reasonable alternate assumptions that take advantage of anticipated but uncertain opportunities. It is our continuing position that this includes non-conventional DG and IG solutions such as WDG, DR, EE and ES.

Southern California Local Capacity Requirements

SCE noted that there is "the need for flexibility in procurement of new generation to meet forecast LCR needs."[9] The Clean Coalition supports SCE's admonition for flexibility – but the loading order must be respected. In terms of procurement options, we recommend the Commission and parties recognize the potential for cost effective rooftop and parking lot solar to meet LCR needs, possibly via a new feed-in tariff (also known as CLEAN programs) designed for this purpose. A 2010 study[10] by UCLA and supported by the Los Angeles Business Council demonstrated the availability of over 5,500 MW of capacity in the city of Los Angeles alone, and over 19,000 MW County-wide, and recommended an initial 600 MW procurement plan. LADWP has announced plans for 150 MW of such procurement starting in January 2013. This is a good start but not nearly enough given the need and the potential for rooftop solar in this region. Los Angeles' capacity is typical of urban areas in the region as is seen in other local studies.

Depending on the terms of the FIT/CLEAN, this solution could meet a substantial part of SCE's LCR, which is especially desirable in light of the fact that Southern California faces significant

[9] SCE Reply Testimony on Local Capacity Requirements, pg 5

[10] Bringing Solar Energy to Los Angeles: An Assessment of the Feasibility and Impacts of an In-basin Solar Feed-in Tariff Program. July 2010, Los Angeles Business Council Study in partnership with the UCLA Luskin Center for Innovation School of Public Affairs

challenges in building additional transmission lines, along with the permitting issues SCE identifies in its opening testimony. A FIT/CLEAN program also has the potential to meet various additional regional needs outlined by SCE, the ISO and this Commission. While this is purely an example of a possible solution to these LCR needs, we believe this to be a strong example of a feasible, timely, flexible and cost-effective solution to LCR needs facing Southern California overall.

SONGS

In addressing San Onofre Nuclear Generating Station (SONGS), TURN took the position that

> *"…the [SONGS] situation is quite fluid, any information presented today may no longer be relevant in a matter of weeks or months…it is inappropriate to make long-term decisions until the future availability of SONGS is more settled." (pg 17).*

As we stated in our initial testimony, the Clean Coalition believes that there should be several assumptions, and related modeling, developed regarding SONGS. One is that SONGS remains permanently offline and the other that SONGS returns. This will allow all parties involved to be able to plan to the best of their ability in the obvious need to ensure that there are no critical service shortfalls in Southern California.

VI. CONCLUSION AND RECOMMENDATIONS

Based upon this testimony as well as our initial testimony, the Clean Coalition recommends a higher reliance on IG/DG solutions in long term procurement planning, as it relates both to California overall and the Southern California region specifically, recognizing that these solutions can in many cases meet the requirements for Local Capacity more cost-effectively and reliably than the status quo fossil generation.

VII. SUMMARY OF QUALIFICATIONS FOR CRAIG LEWIS

Q1: What is your name and business address?

My name is Craig Lewis and my business address is as follows:

2 Palo Alto Square
3000 El Camino Real, Suite 500
Palo Alto, CA 94306

Q2: What is your job title?

Executive Director, Clean Coalition.

Q3: Please describe your educational background and professional experience.

I am a leading Smart Energy strategist and advocate with over 20 years of experience in the renewables, wireless, and semiconductor industries. I have been working since 2005 to achieve Smart Energy outcomes via legislation, regulation, and public funding. I also spearheaded energy policy development for Steve Westly's 2006 gubernatorial campaign in California and was VP of Government Relations for GreenVolts, a solar technology company before he founded the Clean Coalition in January 2009. I navigated the first successful solar project through California's Renewables Portfolio Standard (RPS) solicitation process and have been involved in more than two dozen RPS projects. I have held senior government relations, corporate development, and marketing positions at wireless, semiconductor, and banking companies including Qualcomm, Ericsson, and Barclays. I received a MBA and MSEE from the University of Southern California, and a BSEE from UC Berkeley.

Q4: Has the Clean Coalition been involved in any relevant intelligent grid projects?

The Clean Coalition's Distributed Generation + Intelligent Grid (DG+IG) Initiative is as follows: The Clean Coalition is working with five different utilities to plan DG deployments within a single substation such that the DG supplies at least 25% of the total annual demand on the substation; and to deploy Energy Storage and/or DR and Curtailment to a level that allows the grid reliability/performance to be at least as strong as without any of the DG. The Clean Coalition is using feature-rich tools from GRIDiant that facilitate comprehensive DG planning and simulation efforts; and facilitates real-time operation of this energy future as well -- a future that maximizes value for ratepayers, rather than following the 100-year old approach of central generation, and minimizes expenditures in transmission and the associated inefficiencies of

generating energy far from loads. The Clean Coalition is currently working with parties that have done intelligent grid deployments around the world.

Q5: Are you willing to be cross examined in evidentiary hearings?

Yes.