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)

CLEAN COALITION INFORMAL COMMENTS IN RESPONSE TO ENERGY DIVISION WORKSHOP QUESTIONS

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Introduction

The Clean Coalition is a California-based nonprofit organization whose mission is to accelerate the transition to local energy systems through innovative policies and programs that deliver cost-effective renewable energy, strengthen local economies, foster environmental sustainability, and enhance energy security. To achieve this mission, the Clean Coalition promotes proven best practices, including the vigorous expansion of Wholesale Distributed Generation (WDG) connected to the distribution grid and serving local load. The Clean Coalition drives policy innovation to remove major barriers to the procurement, interconnection, and financing of WDG projects and supports complementary Intelligent Grid (IG) market solutions such as demand response, energy storage, forecasting, and communications.

The Clean Coalition is active in numerous proceedings before the California Public Utilities Commission and other state and federal agencies throughout the United States, in addition to work in the design and implementation of WDG and IG programs for local utilities and governments. The Clean Coalition has intervened before the Commission on many areas surrounding including SONGS OII (I. 12-10-013), Resource Adequacy (RA), Energy Storage (ES) and various Smart Grid proceedings. The Clean Coalition will comment on specific areas of interest of the discussion points presented to the parties of R. 12-03-014.

1. **What assumptions should be used for recently authorized resources in Southern California Edison's service area (D.13-02-015) and San Diego Gas & Electric's service area (D.13-03-029)?**

The Clean Coalition recommends that assumptions should be adopted to allow for the additional procurement of preferred resources. We understand that the assumptions D. 13-02-015 cannot be changed, but we wish to emphasize that this proceeding sets the standard for future procurement. D. 13-02-015 was a positive step in the right direction, especially in regards to the authorization of 50 MW of energy storage and additional procurement of DG. However, the assumptions adopted are simply not aggressive enough. If we are to meet and

exceed the Renewable Portfolio Standard, we need assumptions to reflect the ongoing trajectory towards this goal as well as the capabilities of DG+IG solutions. Technologies like Advanced Inverters, Energy Storage and Demand Response have vast untapped potential. Accurately planning for the long-term with the inclusion of these technologies is a vital component of meeting and exceeding the Renewable Portfolio Standard, as well as facilitating the transition away from a centralized energy system. D. 13-02-015 in particular included a stipulation that SCE could procure up to 1,200 MW of gas-fired resources, while given the ability to procure a minimum of 200 MW (up to 600 MW of preferred resources + Storage). Gas-fired resources are still being procured at a level higher than preferred resources in SCE territory. The 2014 LTPP should include higher procurement levels than 2012 LTPP, consistent with the rapid development of IG technologies.

Responses to Energy Division questions:

a. **Should the current assumption (900 MW CCGT, 100 MW GT, 50 MW storage in the LA Basin, 343 MW of GT in San Diego; up to 697 MW of additional resources[1] available to meet any residual flexibility need) be maintained or changed? If changed, what is the recommendation?**

The assumptions should, at a minimum, include all procurement ordered under the Decision in Track 1 regarding Local Capacity Requirements. That Decision includes 150 MW of preferred resources not mentioned in the above cited assumptions, and such resources can contribute to the quantity and characteristics required to address loads. Both the required and the full quantity of procurement already authorized should be considered in any scenario.

In our Opening Comments on Track III of this proceeding, the Clean Coalition also recommended that the Commission should incorporate into calculations of need and available flexible capacity any improved forecasting and scheduling, such as the 15 minute scheduling of WECC imports and exports, along with Intelligent Grid capabilities for monitoring and control of distributed supply and demand.[2] The Commission should ensure

[1] 1400-1800 MW were authorized for the LA Basin local capacity needs; 215-290 MW were authorized for Big Creek / Ventura local capacity needs; and 343 MW for San Diego local capacity needs.
[2] Clean Coalition Opening Comments on Track III Scoping at 5.

that residual flexibility needs are addressed through the use of preferred resources including extensive of DG+IG solutions.

The Clean Coalition is a strong advocate for the use of distributed generation (DG) combined with the use of Intelligent Grid (IG) solutions (DG+IG) as a preferred resource approach to meeting both capacity and flexibility requirements. The core DG+IG solutions are:

- distributed generation with advanced inverters and associated monitoring, communications & control (MC2) systems,
- demand response, including remote real time and programmable load shifting and demand reduction at the residential and commercial level,
- energy storage across all applicable scales and technologies, including electric vehicle (EV) grid support
- accurate forecasting and
- possible curtailment of some generators.

One particular capability not included in CAISO modeling was Demand Response (DR). DR has been successfully integrated in the PJM Independent System Operator, which describes DR as "an integral part of PJM's markets for energy, day-ahead scheduling reserve, capacity, synchronized reserve and regulation. Demand response can compete equally with generation in these markets."[3] As a technology that has a firm place in the preferred resources Loading Order in California's Energy Action Plan, DR should be included in planning assumptions and modeling, not just for Southern California, but for the entire state. The Decision on Local Capacity Requirements made important progress in consideration of DR and this should be expanded and reflected in assumptions moving forward.

The Clean Coalition recommends that the Base Case scenario reflect information currently available on actual capacity trends. This is significant, as the Base Case is typically used not only as the comparison case for other scenarios, but as the planning assumption case. The current Base Case diverges from observed development and substantially under counts DG capacity. Current projects, in addition to readily deliverable projects should be taken into

[3] http://www.pjm.com/markets-and-operations/demand-response.aspx

account as part of the Base Case in order to accurately capture reality for the purposes of accurate long-term planning.

Lastly, we recommend supplementing the Base Case scenario with due consideration of a Base Case minus SONGS alternative with synchronous condensors as this single facility change is a significantly probable and consequential scenario.

b. What influence [on] the modeling results would the proposed change have? For example, adding baseload resources may increase over-generation in non-summer months.

The proposed recommendations of inclusion of DG+IG (especially DR) by the Clean Coalition can reduce CCGT as well as GT needs. In addition, the use of Advanced Inverters (AI) for DG planning as authorized in local capacity requirements (LCR) will allow for greater flexibility, including reduced congestion, loss, and reactive power generation requirements on the transmission system, increasing its efficiency and reducing total capacity requirements. While additional DG has the potential to increase the total ramp, it also has the potential to support ramping, reducing the slope and net three hour requirements.

Distributed generation reduces critical infrastructure risks. The loss of multiple generators within a distributed system will have negligible impact, unlike the loss of a single large generator or transmission facility. Intelligent grid technologies enable integration of high levels of distributed generation of renewable energy and improve power quality, grid reliability, and system resilience. This is especially important to consider as we progresses towards meeting and exceeding established State goals such as the Renewable Portfolio Standard and the Governor's 12 GW of distributed generation (DG) goal.

Issues related to potential over-generation should be explored in greater detail, including the ability to export over-generation to other balancing authorities in order to alleviate such issues. To the extent this has not been captured, the Clean Coalition recommends that this be addressed in modeling going forward.

c. Is this a change that should be handled in this LTPP or the 2014 LTPP?

The Base Case modeling assumptions described above should be incorporated at the earliest practical opportunity. However, as the critical decisions for the current LTPP relate to planning decisions that must be made prior to a decision in the 2014 round, only those factors influencing procurement in the next two years need to be incorporated at this time. Initial modeling should provide strong guidance on the margin of capacity and flexibility and whether greater accuracy is critical to decisions at this time.

While we believe that all changes should be expedited as quickly as possible, we remain realistic about the timeline for these changes in procurement. With this in mind, the 2014 LTPP should adequately address all of the DG+IG recommendations made by the Clean Coalition. These include:

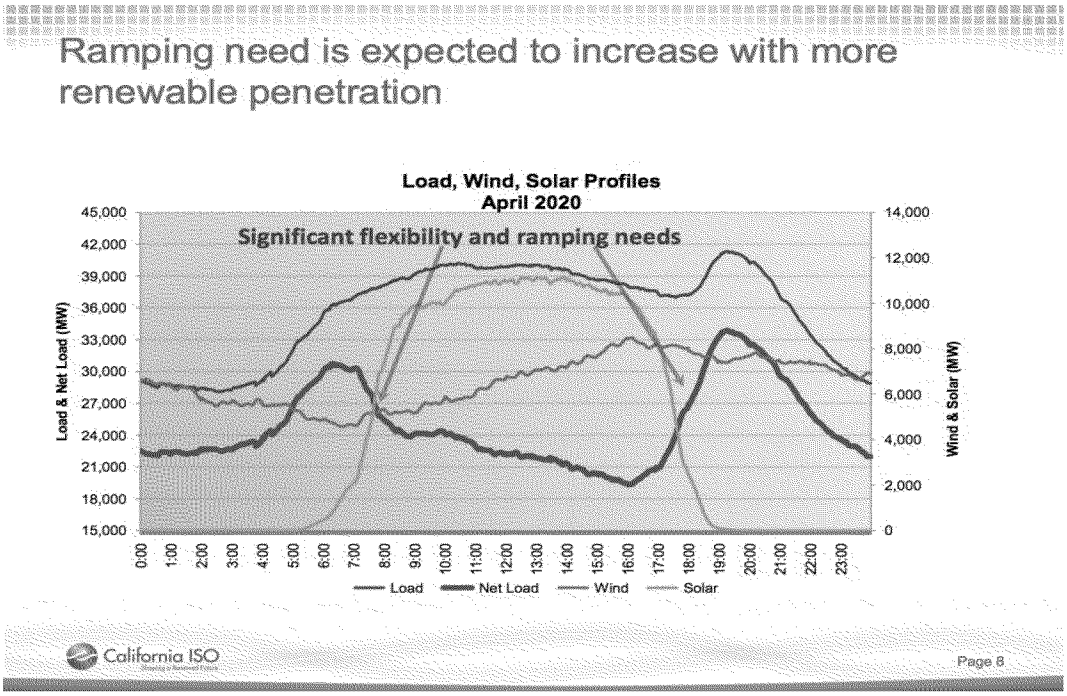
- Establishing procurement targets for DR and other IG technologies in accordance with the State's Loading Order
- Increased procurement targets for DG and ES
- Continued progress towards meeting and exceeding the Renewable Portfolio Standard and the Governor's 12 GW of Distributed Generation (DG) goal

2. **What assumptions are appropriate for <u>new</u> out of state RPS resources in terms of dynamic scheduling, intra-hour scheduling, hourly scheduling and unbundled RECs?**

As noted above, the use of intra-hour scheduling within and between balancing authorities should be fully recognized in this LTPP.

Considerable attention is being given to the issues of over-generation and ramping requirements that may be associated with the addition of planned intermittent capacity without additional mitigation. Both the Base Case and related mitigation measures will influence LTPP procurement decisions. In the interest of providing the best possible discussion for the Energy Division, the Clean Coalition presents the following charts illustrating mitigation potential with the current CAISO Base Case data:

FIGURE 1: The "Duck Chart"



This chart was created to show that conventional base load resources (nuclear and less flexible natural gas) can cause over-generation during the day because base load resources do not turn off. This was not intended to illustrate ramping, but current load and generation projections show increasing ramping with the expected addition of intermittent resources.

The Clean Coalition replicated the net load and ramping from publicly available data provided CAISO for a similar spring day as shown below in Figure 2.

FIGURE 2:

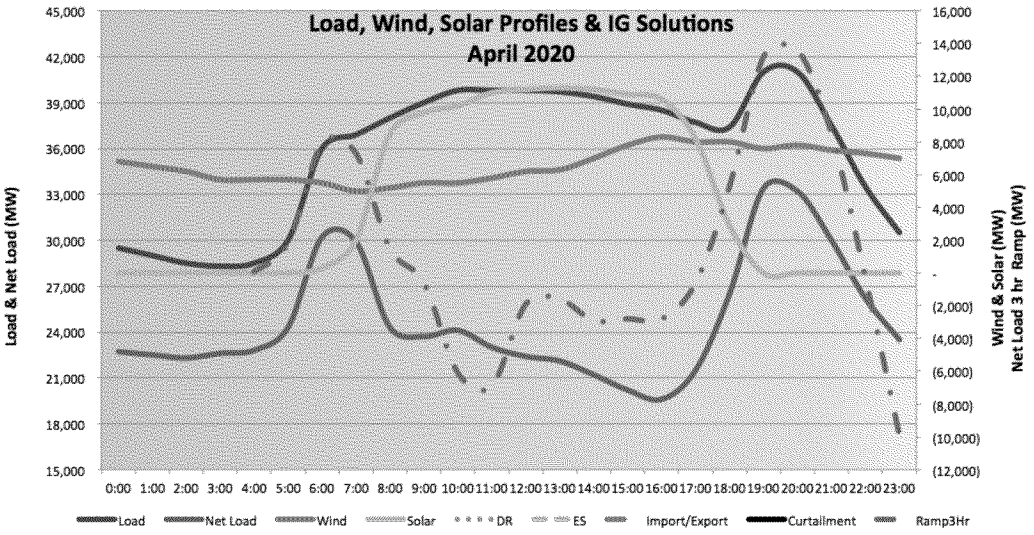


FIGURE 3:

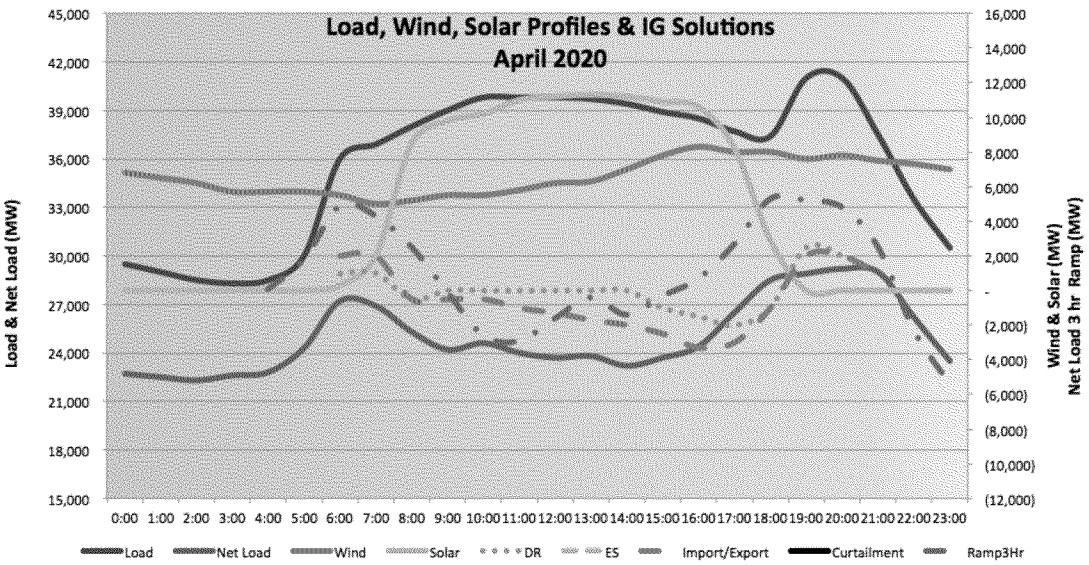


Figure 3 illustrates the changes observed when up to 3GW of energy import/export capacity and up to 2 GW of load shifting or Demand Response is incorporated, profoundly reducing both the over-generation and ramping factors:

CAISO is currently developing models of solutions provided by load shifting and other Intelligent Grid capabilities including Demand Response and WDG generation control capabilities of Advanced Inverters, and we include this example to indicate the scale of likely results.

The Clean Coalition looks forward to our continued collaboration with the Commission and with the Energy Division.

Respectfully submitted,

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