

**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 10-05-006

**COMMENTS OF THE LARGE-SCALE SOLAR ASSOCIATION (“LSA”)
ON RESOURCE PLANNING ASSUMPTIONS – PART 2
(LONG TERM RENEWABLE RESOURCE PLANNING STANDARDS)**

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I. INTRODUCTION

In accordance with the Administrative Law Judge’s (“ALJ”) “Ruling Revising The Schedule For The Proceeding And Regarding Staff’s Proposals For Resource Planning Assumptions – Part 2 (Long Term Renewable Resource Planning Standards)” issued on June 22, 2010 in this proceeding, the Large-Scale Solar Association (“LSA”)¹ submits its comments on the proposals of Energy Division (“Staff”) regarding long-term renewable resource planning standards attached to the ruling as Attachment 1.

LSA appreciates the opportunity to comment on Staff’s proposed renewable planning standards, and acknowledges Staff’s considerable effort to refine and update assumptions and reflect comments from Staff’s previous 33% RPS Implementation Analysis. However, the ultimate purpose and effect of this massive labor and dauntingly detailed analysis remains unclear. LSA urges the Commission to confirm in the scoping memo that the purpose is to develop a set of plausible renewable generation portfolios to identify the need for new system resources rather than to select a single preferred renewables procurement strategy, or a narrowly-conscripted set of such strategies, that will govern the specific projects selected in

¹ LSA represents ten of the nation’s largest developers and providers of utility-scale solar generating resources. Collectively, LSA’s members have contracted to provide over 6.5 gigawatts (“GW”) of clean, sustainable solar power under contract to California’s load-serving entities. Its members develop, own and operate various types of utility-scale solar technologies, including photovoltaic and solar thermal system designs. For more information, see <http://www.largescalesolar.org>

future proceedings or solicitations regardless of the dynamically-changing facts and circumstances relevant to attaining a least-cost, least-emissions, reliable and overall best-fit renewables portfolio.

We collectively know with certainty three things: that our present knowledge of the evolving facts is at best uncertain; that the challenges ahead are substantial; and that those challenges, however immense, are exceeded by the exceptional opportunity for renewable energy to transform our energy infrastructure, economy and environment. We must not straitjacket nor stunt that opportunity by an overly rigid extrapolation from today's very limited understandings of the nature, needs and benefits of a renewables-based energy system. Instead, we should focus on the principles that should guide planning and procurement for that renewables-based energy system, allowing decisions to follow the changing facts while constantly contributing towards achieving the State's unchanging goals and objectives, rather than blindly following a dimly-projected future that we know will certainly never occur, however much effort we put into guessing it today.

LSA also responds to the specific questions presented in the June 22 ALJ ruling. For participants in this proceeding that lack abundant resource planning expertise, it is a daunting task to review the detailed and complex proposed renewable planning standards, inputs, assumptions, scenarios and methodology plus lengthy supporting documentation, and provide meaningful comments. Even with the extended comment timeline, parties have had little more than two weeks to review the report containing Staff's proposal for renewable planning standards, and as the workshop on renewable planning standards was held before the report was issued, limited ability to question or clarify the report's contents. Having other aspects of this proceeding run concurrently with the renewables planning effort has further increased the challenge parties such as LSA face in making their participation meaningful. LSA must accordingly caution that its responses to the questions are preliminary and request the opportunity to provide additional comment later in this proceeding if necessary after further clarification and review of Staff's proposal.

II. The Renewables Planning Process In This Proceeding Should Focus on Identification of A Robust Set of Plausible RPS Scenarios That Create Guiding Principles, Rather Than Selection of A Single Preferred Scenario or Scenarios That Unduly Bind Procurement and Transmission

At the June 18, 2010 workshop on renewable planning assumptions, Staff explained that this proceeding was not to be the forum for deciding RPS procurement obligations. Rather, the results of the renewable planning analyses were to serve three purposes: (1) identify the type and quantity of new system resources needed reliably to integrate renewable resources; (2) identify high-level, conceptual transmission needs to meet California's renewable energy targets in coordination with the CAISO's transmission planning process, and (3) generate alternative renewable procurement strategies to inform the Renewable Portfolio Standard ("RPS") proceeding. Consistent with the first two goals described at the June 18 workshop, the June 22 ALJ ruling states at page 2 that "detailed information about plausible renewable generation portfolios and associated transmission infrastructure requirements is desirable for identifying the need for new system or local resources, as well as any operation needs to integrate intermittent renewables." However, echoing the third goal, the ruling adds at page 3 that "the long-term renewables analyses performed in this proceeding need to provide sufficient information to support Commission determinations of preferred RPS implementation strategies under a variety of potential scenarios."

While the first two goals are clear, straight-forward and appropriate for this proceeding, the third is puzzling. Are the alternative strategies intended to establish a robust range of reasonably feasible renewable strategies for meeting the state's renewable energy goals notwithstanding planning uncertainties such as future energy prices, demand growth, technology developments, carbon regulation and market changes? Or is the intent ultimately to pick a single preferred strategy or narrow set of strategies, either in this proceeding or in the RPS proceeding, that would dictate utility selection of individual renewable projects? Are the results of this proceeding intended to form a starting point for the RPS proceeding subject

to updated assumptions, deeper review and evidentiary testing? Or are the findings and conclusions in this proceeding to be treated as binding in subsequent RPS proceedings?

In LSA's view, the Commission should not attempt to pick a single preferred renewable resource strategy or reach findings and conclusions in this proceeding that will control the selection of specific renewable projects in other proceedings or utility solicitations. As Staff notes in Attachment 1, page 10, "there is tremendous uncertainty around the future of renewable generation and the performance of any of these scenarios against the stated policy objectives." Attachment 1 employs a number of heroic assumptions to generate draft renewable portfolios with specific resource types and locations notwithstanding these uncertainties. However, the magnitude of the renewable planning uncertainties severely handicaps the ability to reach firm conclusions based on a single scenario, or even a limited set of scenarios. Under these circumstances, the proceeding should not try to single out one scenario out as the best or preferred scenario based on a bet that the uncertainties will unfold in a way that favor that scenario. Instead, the proceeding should adhere to the guiding principles of developing a set of plausible, but differently composed ("substantially unique") renewable scenarios that will promote identification of robust long-term procurement principles designed to allow procurement and transmission planning to respond adroitly no matter how the uncertainties are resolved.

In addition, the work product generated in the course of this proceeding must acknowledge the substantial uncertainties that affect many of the critical inputs and assumptions used in the analyses which create them. The products of this proceeding will likely be disseminated widely; to avoid misunderstanding and inappropriate use, it is critical that they disclose the range of uncertainties and avoid conveying any impression of over-precision in their results.

Finally, if the goal is to identify a preferred renewable procurement scenario that will govern the selection of projects in future proceedings or solicitations, significantly more time and focus must be provided in this proceeding to an examination of the assumptions, selection criteria and methodology for the various scenarios. Evidentiary hearings on these issues will likely be necessary.

III. Responses to The Questions Posed In The ALJ Ruling

Question 1: *Do the proposed inputs and assumptions regarding the cost, value and estimated Megawatt (MW) availability of renewable resources in California and throughout the West accurately reflect the best-available industry knowledge?*

The Staff report states that the solar thermal cost shown in Attachment 1 is higher than in Staff's 2009 analyses because the new estimates assume dry cooling. While it is true that solar thermal costs increase with dry cooling, it is also true that the increase in costs is highly technology-dependent and, given the rapidly-changing solar thermal technologies and extent of commercial deployment, highly likely to decline. Staff's 2009 analyses and the proposed solar thermal costs in Attachment 1 are apparently premised on a single, decades-old solar thermal technology – solar trough – without the improvements to that technology envisioned by those companies seeking to deploy it for new projects. It is inappropriate, and could create substantial and misleading distortion, to extrapolate from a single solar thermal technology substantially increased costs for all types of solar technologies that make up this highly diverse class.

In addition, LSA questions the narrow definition of “value” used in the Staff proposal, which is limited to a forecast of the market price of renewable generation’s energy and capacity products. The value calculation should additionally incorporate the growing awareness that existing markets (bilateral or centralized) do not properly reflect the products, services and attributes that must be taken into consideration in building a robust, reliable, least-cost and least-emissions energy system. Existing and proposed ancillary services, and the extent to which renewable resources can either provide or increase the demand for such services, are but one example. Transparency and control to the grid operator, including the extent to which performance can be forecast, is a major factor for overall cost, emissions and reliability of the energy system as a whole. Indirect costs may be harder to quantify than direct costs, but they are real and should be addressed. LSA suggests the calculation be expanded to look at both the simple, direct costs and benefits and an all-in quantification of the direct and indirect costs and benefits.

In addition, LSA is concerned that the use of Net Qualifying Capacity (“NQC”) to assess and value the performance of renewable energy technologies will distort the analysis and limit the usefulness of the results. NQC values for renewable energy technologies will change substantially as variable energy resource (“VER”) technologies develop and rules for assessing VERs contributions to capacity evolve. As VER evolves, the performance of emerging technologies such as large-scale solar will almost certainly improve. Indeed, the concept of “Resource Adequacy” and role in ensuring system reliability will likely change to adapt to the significantly different grid operation needs when high VER penetration of is achieved. See, e.g., “Notice of Inquiry: Integration of Variable Energy Resources,” 130 FERC ¶ 61,053 at pages 38-39 (Jan. 21, 2010).

Question 2: Do you agree that concerns about environmental impacts may significantly affect the development of renewable generation between now and 2020, and should thus be considered in long-term planning, to the extent possible? Is the Staff-proposed methodology appropriate for providing a high-level screening of the environmental concerns associated with renewable generation, by type and location?

While LSA certainly concurs that concerns about environmental impacts may affect the development of renewable generation, LSA is very concerned about the proposed methodology, and is unclear what Staff intends to achieve with its use to address these concerns in the long-term planning process. As Attachment 1 notes at page 23, multiple efforts are already underway to examine these environmental impacts in a “scientific and rigorous way”. California and the federal government, as well as a wide range of stakeholders, are investing substantial time and resources on the Desert Renewable Energy Conservation Plan (“DRECP”), and that effort, although yet beginning, has already made clear that the high-level RETI analyses are not sufficient to guide renewable energy project siting or conservation needs. Permitting is proceeding apace for many projects, with close examination of their specific environmental impacts, which provide the strongest evidence that high-level analyses are of extremely limited use in projecting whether particular projects are of greater or lesser environmental concern.

Attachment 1 acknowledges that the generic, high-level environmental scoring methodology it presents is not “intended or adequate to reflect project-specific environmental assessments.” Since it is admittedly not an adequate substitute for the environmental review

underway elsewhere, nor a legitimate basis for ruling out specific projects or influencing permits now underway, its precise value or expected contribution to this proceeding is unexplained and needs further elaboration.

The suggestion that the revised factors and methodology in Attachment 1 are more precise than the RETI methodology due to pairing of technologies with impacts is not well-founded; the gross generalizations inherent in the Aspen approach would result in conclusions that would be quite often belied by the relevant facts, which require a deeper analysis. The net result would be to presume resource areas that, in fact, would be more environmentally and economically preferable should be avoided, while others that look good under this purely theoretical exercise but would serve the public's interest less well should be pursued. The greater precision sought to be provided by the pairing is illusory, and the attempted refinement to the RETI methodology should be dropped.

LSA also questions the changes the proposed methodology makes to the RETI environmental ratings. The RETI environmental ratings are the product of considerable analysis, stakeholder input and debate, and public review. Indeed, of the RETI Environmental Working Group factors, one of the most useful indicators of environmental concern—if not of actual biological sensitivity—in the many formal and informal stakeholder discussions on renewable energy development has been the categorization of environmentally sensitive yellow and black areas. However, the Staff proposal rejects this factor with only the anecdotal support of the contractor's individual experience and presumption that proposed projects in "yellow" areas could not or should not be developed. No factual basis is presented to support the change. New factors should not be added without clear supporting environmental data, discussion with formal or informal stakeholder groups who have been spending extensive amounts of time and resources on these issues, and consideration of overlap of factors and "double-counting" that was the subject of extensive debate in the RETI Environmental Working Group. LSA is particularly troubled by the addition of a factor just for a high desert location. While this area is of environmental concern, there are many other areas of at least equal environmental importance and potential for controversy, such as wetlands, old-growth forests, coastal estuaries, important breeding and migration areas, and grasslands. Moreover, this simplified screening factor ignores non-land use considerations

such as the extent to which air quality and overall carbon emissions might be impacted if high desert areas are avoided.

LSA sees no meaningful gain, and considerable downside in retracing the RETI process and in deviating from the RETI ratings for this effort. Any changes in the RETI ratings certainly must not without a careful and comprehensive, not ad hoc, assessment of how the RETI factors have reflected actual environmental impacts, and whether those factors should all have equal weight – a topic of considerable debate within RETI. If this proceeding is to result in any new or different factors or changes to the way that those factors are actually assessed, more serious consideration must be given than is possible in these time-constrained written comments; workshops and potentially evidentiary hearings would be required. In LSA's view, this LTPP is not the place to undertake such an effort, which requires a serious devotion of time and resources and the opportunity to evaluate the vast quantity of data now being generated through both individual permitting and a variety of federal, state and joint renewable energy evaluation exercises.

Question 3: Do the proposed methodology and automated time tool provide realistic estimates for the timing of generation and transmission development?

The basis for the estimates is not entirely clear, making comment difficult. For example, the utilities' various PV program projects are assumed to have full and timely completion, even though the projects will also be subject to siting, permitting and interconnection challenges.

Question 4: Are the proposed assumptions about the availability and cost of transmission appropriate, considering the margin of error that must be accepted when performing a statewide study of this sort?

The categorization of projects into CREZ, non-CREZ and out-of-state should be further examined, preferably in workshops or, depending on the ultimate purpose and effect of the renewable planning effort as discussed earlier, potentially even in evidentiary hearings. FERC's VERs NOI (discussed above) and recent Notice of Proposed Rulemaking on Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities, 131 FERC ¶ 61,253 (June 17, 2010) provide strong support for CPUC's

consideration that the proper planning, development and operation of a renewables energy infrastructure is regional, and not limited to the confines of any particular state or balancing area authority.

LSA agrees that the presumption in Staff's 2009 33% RPS implementation analysis that transmission upgrades essentially would consist of all single or double circuit 500kV lines "trunk lines" was inappropriate, and is pleased that it has been corrected. However, Attachment 1 assumes construction of 500kV transmission lines for large and out-of-state zones. It is not clear that 500kV is necessarily appropriate for out-of-state zones, and this assumption should be further examined.

Question 5: Do you agree with the concept of holding constant throughout all scenarios a discounted core of the generation resources that appear most likely to develop by 2020? Do the proposed criteria and resulting projects comprising the "discounted core" present a reasonable forecast of viable RPS generation by 2020, not necessarily by specific project, but by technology and location? If not, what other objective, publicly-available criteria might be more appropriate for building a "discounted core"?

The guiding principles for developing the RPS scenarios and associated inputs, assumptions and methodologies emphasize plausibility, consistency with previous decisions, and compatibility with market behavior. Disregarding the numerous power purchase agreements that the utilities have signed based on Commission-approved RPS procurement plans would flout these principles. Unlike the generic resources, these agreements reflect projects that have specific pricing, locations, commercial developers, development schedules and have passed the utility's initial viability screening. If the goal is to develop plausible scenarios, the concept of assuming a consistent core of renewable resources reflecting the existing power purchase agreements makes eminent sense.

However, the information presented in the workshop and Attachment 1 is insufficient to verify that the discounted core concept has been properly and consistently implemented, particularly with regard to the assessment of what resources "appear most likely to develop." For example, the slides presented at the workshop state that the IOUs have signed power purchase agreements with solar thermal projects representing 4,049 MW. However, the solar thermal projects reflected in the scenarios range from 1,333 MW to 2,733 MW. While LSA appreciates and endorses Staff's effort to avoid the use of confidential or subjective data that could prejudice project development, further explanation and opportunity to examine the

specific assumptions is needed before the “discounted core” can be said to provide a reasonable forecast of likely renewable development by 2020.

In addition, the considerable focus and attention provided by federal and state permitting agencies to projects that can contribute towards the goals and programs of the American Recovery and Reinvestment Act of 2009, well as the considerable efforts of both the Obama and Schwarzenegger administrations overall to support realization of these projects, should be given substantial weight in assessing the likelihood of their success and their inclusion in a “discounted core.”

Question 6: The June 2009 33% RPS Implementation Analysis Preliminary Results report found that different 33% RPS scenarios help achieve different policy goals, with no one scenario performing well across all policy metrics. Therefore, does the proposed set of scenarios strike an appropriate balance, presenting “reasonably feasible” and “plausible” 33% generation futures that still represent “substantially unique procurement strategies resulting in material changes to corresponding (fossil) procurement needs and/or required (conceptual) transmission”, as envisioned in the guiding principles above?

Without a better understanding of the assumptions and rationale for the scenarios, as discussed earlier, LSA cannot respond directly to this question. In addition, LSA does not have the expertise to judge whether the scenarios would likely result in material changes to the corresponding fossil procurement needs or transmission.

However, LSA is concerned that the proposed scenarios do not appear to acknowledge the potential for rapid technology change or transformation in renewable energy markets as either an assumption or an objective. California’s ambitious renewable energy and greenhouse gas emissions reductions targets are aimed in part at giving the state the opportunity to take a global technological leadership role. Investment in innovative and pioneering technologies will be required for California to achieve these goals. Staff’s 33% RPS integration analysis discussed market transformation and efforts to jump-start technology change, but these concepts have not been explicitly addressed in the current renewables planning effort. Just as realization of the “Big Bold Energy Efficiency Strategies” is being examined in the energy efficiency scenarios and assumptions, so too should rapid renewable technology change and market transformation be considered – and endorsed as a key objective – in the renewable planning scenarios and assumptions.

IV. CONCLUSION

As this proceeding has progressed, it has become increasingly apparent that one of its key challenges is to establish the correct alignment between the goals for the proceeding and the information and resources available to attain those goals. Even with greater time, resources and effort, LSA does not believe the data exist to support selection of a single strategy or narrow set of preferred renewable procurement strategies in this proceeding that should be accorded binding impact in other proceedings or dictate the projects chosen in utility renewable resource solicitations. LSA urges that the goals for this proceeding be further clarified and that the inherent planning uncertainties be explicitly evaluated and described in the analyses that result from this proceeding. Finally, as reflected in its responses to the questions in the ALJ ruling, LSA believes that additional clarification and opportunity for dialogue, including additional workshops, would be extremely useful to improve the proposed renewable resource planning standards and assumptions.

Respectfully submitted,

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July 9, 2010

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the foregoing

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on all parties of record in R.10-05-006 by transmitting an email message with the document attached to their email addresses of record and, for those parties without an email address of record, by mailing a properly addressed copy by first-class mail with postage prepaid to each party on the Commission’s official service list for this proceeding.

This Certificate of Service is executed on July 9, 2010, at Berkeley, California

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