

**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

**OPENING BRIEF OF THE LARGE-SCALE SOLAR ASSOCIATION (“LSA”) ON
TRACK I AND TRACK III ISSUES**

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SUMMARY OF RECOMMENDATIONS

In accordance with Rule 13.11 of the Commission's Rules of Practice and Procedure, the Large-scale Solar Association (LSA) recommends that the Commission:

- Approve the Settlement Agreement's key provisions that appropriately recognize the inconclusive nature of the renewable integration analyses conducted to date in this proceeding and provide a reasonable road map for the timely completion of the next steps of this critical work;
- Promptly initiate a process with robust and meaningful stakeholder participation and sufficient lead-time to revamp the fundamentally flawed environmental scoring criteria before new renewable generation development scenarios are developed for use in future planning efforts;
- Reject SCE's proposal that this Commission open a proceeding narrowly focused on a special-purpose CAISO auction to procure new generation for renewable integration needs, and instead:
 - Examine mechanisms for procurement of needed operational attributes more broadly through the new Resource Adequacy (RA) Rulemaking and continuing CAISO stakeholder processes; and
 - Defer cost allocation issues until these costs are better defined following the next phase of the integration analysis, and regulatory and market options to procure operational capabilities are clarified.

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TRACK I AND TRACK III ISSUES**

I. INTRODUCTION

The Large-scale Solar Association (LSA) respectfully submits this Opening Brief on (1) the Motion for Expedited Suspension of Track I Schedule and For Approval Of Settlement Agreement dated August 3, 2011 (Settlement Motion); (2) the Track I System Resource Plan of Southern California Edison Company (SCE), Pacific Gas and Electric Company (PG&E), and San Diego Gas and Electric Company (SDG&E) (collectively, Investor-Owned Utilities (IOUs)); and (3) the Track III issues identified in the Administrative Law Judge’s (ALJ) Ruling Addressing Motion for Reconsideration, Motion Regarding Track I Schedule, and Rules Track III Issues dated June 13, 2011. This Opening Brief is filed and served pursuant to Rule 13.11 of the Commission’s Rules of Practice and Procedure and the briefing schedule established by the ALJ on August 15, 2011.¹

This Opening Brief addresses three topics: (1) the reasonableness of the Settlement Agreement dated August 3, 2011, which the Settlement Motion asks the Commission to approve (Settlement Agreement); (2) the need to revise the environmental scoring criteria used to develop the four scenarios that Assigned Commissioner and Administrative Law Judge’s Joint Scoping

¹ Reporter’s Transcript (R.T.). Vol. 4, pp. 353-354.

Memo and Ruling dated December 3, 2010 (Scoping Memo) required the IOUs analyze (CPUC-Required Scenarios), and (3) the lack of support for SCE's proposal that the Commission initiate a new proceeding to consider whether the California Independent System Operator (CAISO) should procure new generation for renewables integration and charge the costs to renewable generators. In light of the Settlement Agreement's proposed resolution of the key issues in this case regarding the need for new system resources, this Opening Brief does not discuss LSA's remaining concerns with the underlying assumptions, scenarios, modeling and inputs required in the Scoping Memo or used in the IOUs' System Resource Plan or CAISO renewables integration analysis. LSA reserves the right to present these concerns in any subsequent phase or extension of this proceeding or in the next LTPP cycle.

In this Opening Brief, LSA urges that the Commission:

- Approve the key provisions of the Settlement Agreement which appropriately recognize the inconclusive nature of the renewable integration analyses conducted to date in this proceeding and provide a reasonable road map for the timely completion of next phase of this critical work;
- Promptly initiate a process with robust and meaningful stakeholder participation and sufficient lead-time to revamp the fundamentally flawed environmental scoring criteria before new renewable generation development scenarios are developed for future planning efforts;
- Reject SCE's proposal that this Commission open a proceeding narrowly focused on a special-purpose CAISO auction for renewable integration to renewable needs, and instead:
 - Examine mechanisms for procurement of needed operational attributes more broadly through the new Resource Adequacy (RA) Rulemaking expected to be opened later in 2020, as well as in the continuing CAISO stakeholder processes; and
 - Defer cost allocation issues until these costs are better defined following the next phase of the integration analysis, and the full range of regulatory and market options for procuring desired operational capabilities are is clarified.

II. DISCUSSION

A. The Settlement Agreement's Resolution Of System Resource Need And Renewables Integration Issues Is Reasonable And In The Public Interest, And Should Be Approved.

As the Settlement Motion observes, the Settlement Agreement resolves the fundamental issue in Track I of this proceeding, which is whether the Commission should authorize the IOUs to procure additional generation resources to meet system needs. (Settlement Motion, p. 4). The Settlement Agreement appropriately concludes first, that the system resource plans and scenarios analyzed in this proceeding do not conclusively demonstrate the need to add new capacity to meet system needs, and second, that this analysis, particularly of renewable integration needs, should continue expeditiously and be completed promptly. While LSA did not sign the Settlement Agreement, LSA agrees with these conclusions. LSA accordingly supports Commission approval of the Settlement Agreement's disposition of these issues.²

The Settlement Agreement states that “[t]he resource planning analyses presented in this proceeding do not conclusively demonstrate whether or not there is need to add capacity for renewable integration purposes through the year 2020, the period to be addressed during the current LTPP cycle.” (Settlement Agreement, p. 5). LSA concurs. As stated in Exhibit (Ex.) 1801, the Prepared Direct Testimony of Dr. Udi Helman on Behalf of the Large-scale Solar Association, “[b]ased on the assumptions, scenarios, and modeling used to perform the analysis conducted as part of Track I of this proceeding, no definitive finding could be reached that new generic resources are needed to meet system operational requirements in 2020.”³ Dr. Helman further observed that:

Notably, at this time, and given the present state of knowledge, the LTPP simulations did not demonstrate the need for additional resources to support integration of the level of renewable generation resources required under the 33% Renewable Portfolio Standard (RPS), but have raised a large number of questions for further examination. This finding

² LSA's support for Commission approval of the Settlement Agreement is conditioned on its understanding that Commission approval of the Settlement Agreement would not prevent the Commission from examining the flaws in the environmental scoring criteria and adopting a process to revise the environmental scoring criteria, as LSA recommends below.

³ Ex. 1801, p. 2, lines 8-11.

is reasonable both on the basis of the modeling results to date and because there is further time available for further refinement. (Ex. 1801, p. 4, lines 3-8).

Dr. Helman testified that the CAISO studies and analysis indicate that California's existing generator fleet has sufficient residual capability to integrate renewable generation expected on line in the next 1 to 3 years, thus providing the opportunity to complete the integration analysis started in this proceeding before new resource commitments must be made, as contemplated in the Settlement Agreement:

The CAISO's 20% RPS study and its associated supplemental analysis – both of which evaluate less dramatic changes on the power system over a 1-3 year look-ahead – have suggested that California's existing generator fleet has sufficient residual capability to integrate the renewable generation expected on-line in that period and perhaps accommodate additional renewable generation beyond what is expected over the next 1-3 years. Arguably, then, the LTPP and related proceedings have at least one more year to continue to evaluate the operational needs and technology options associated with renewable integration over longer time horizons before commitments must be made to procure new resources specifically to address renewable integration requirements. (Ex. 1801, p. 4, lines 8-16)

However, as Dr. Helman observed, “that breathing room needs to be used efficiently to ensure that the integration analysis started in this proceeding continues on an uninterrupted basis even after this proceeding ends.” (Ex. 1801, p. 4, lines 16-18) The Settlement Agreement also recognizes the need to continue the integration analysis without interruption. It states that “the Commission should, in collaboration with the CAISO, continue the work undertaken thus far in this proceeding to refine and understand the future need for new renewable integration resources, either as an extension of the current LTPP cycle or as part of the next LTPP, which should be initiated expeditiously in the first quarter, 2012 and contain the procedural milestones set forth in [sic] agreement.” (Settlement Agreement, p. 5) The schedule calls for the CAISO to present the results of its additional Once Through Cooling (OTC) generation and renewable integration studies by the end of March 2012, discovery and evidentiary hearings in the second quarter, 2012, and final Commission assessment of need or decision by the end of 2012. This schedule is consistent with Dr. Helman's recommendation for continuation and timely completion of the integration analysis.

Dr. Helman offered additional recommendations regarding both the process and the substance for the continued integration analysis. He discussed “the value of coordination and

communication among the state energy agencies and stakeholders.” (Ex. 1801, p. 4, lines 19-20) He suggested formation of a technical working group with periodic meetings and workshops with LTPP parties and stakeholders, as well as periodic reports from the CAISO addressing the status and recommendations for the analysis. (Ex. 1801, p. 14, lines 4-7) He emphasized the need to “promptly complete the critical tasks left unfinished in the current analysis in order to have a solid foundation for the development of appropriate market-based mechanisms to respond to integration needs efficiently and cost-effectively.” (Ex. 1801, p. 5, lines 13-16) He recommended completion of the CAISO’s Phase 2 analysis, which involves “consideration of a range of potential solutions to integration requirements, including those that can be provided by demand response, storage and renewable technologies.”⁴

The Settlement Agreement and the CAISO’s plans for implementing it are consistent with Dr. Helman’s recommendations regarding the process that should be used in the continued integration analysis. The Settlement Agreement states that the Commission should continue the process undertaken in this proceeding, which allows public review and comment on CAISO and IOU models, scenarios and inputs used to analyze integration needs. The agreement would also give all parties the opportunity to submit alternative recommendations or proposals. (Settlement Agreement, p. 6) CAISO witness Mark Rothleder testified to the CAISO’s interest in having an “open and transparent process” and in giving “everybody an opportunity to identify what specific sensitivities they are interested in.” (R.T. Vol.5, p. 364, lines 12-15) He also stated the CAISO plans to use a working group of technical experts to participate in the analytical work. (R.T. Vol. 5, p. 367, lines 8-19).

The Settlement Agreement’s recommendations for the substance of the continued renewable integration analysis are also consistent with Dr. Helman’s recommendations. Like Dr. Helman, the Settlement Agreement recommends completion of the CAISO’s proposed Phase 2 analysis, which is to address the potential of integrating renewables with a variety of resources in addition to conventional generation. (Settlement Agreement, pp. 6-7) Dr. Helman also presented other specific recommendations for the continued analysis, including a more detailed examination of intra-hourly flexibility requirements and the effects on integration requirements of forecast error and operational attributes of different renewable technologies, more sensitivities

⁴ Ex. 1801, p. 5, lines 17-18; *see also* p. 10, lines 9-10 and p. 13, lines 6-9.

of different hydro years, and further evaluation of changes to imports and exports to California with consideration of the impact of planned transmission infrastructure improvements. (Ex. 1801, p. 14, lines 10-18) While the Settlement Agreement does not explicitly incorporate all of these recommendations, LSA believes that the process for the continued integration analysis contemplated in the Settlement Agreement and by the CAISO will provide a reasonable opportunity to address LSA's concerns regarding the substance of the analysis.

As a result, LSA believes the Settlement Agreement's resolution of system need issues and roadmap for completing the renewable integration analysis are reasonable in light of the whole record, consistent with law, and in the public interest, and should be approved.

B. The Commission Should Initiate A Stakeholder Process To Revamp The Fundamentally Flawed Environmental Scoring Criteria Before New Scenarios Are Developed.

The Scoping Memo adopted environmental scoring criteria and directed that they be used to create the CPUC-Required Scenarios incorporated into the IOU system resource plans and studied in the integration analyses conducted as part of Track I of this proceeding. However, as described in Exhibit 1800, the Prepared Direct Testimony of Timothy M. Mason on Behalf of the Large-scale Solar Association, these environmental scoring criteria are "deeply flawed" and need to be revised before they are used again for any proceeding. (Ex. 1800, p. 13, lines 1-2) Flaws in the environmental scoring criteria could materially impact the resulting scenarios, particularly for scenarios in which environmental scores were heavily weighted. (SCE Ex. 216, p. 3) LSA believes the assumptions and methodology used to develop the CPUC-Required Scenarios suffer from other defects as well, and intends to raise those concerns consistent with the process contemplated in the Settlement Agreement or any alternative approach the Commission may adopt. However, due to the long-lead time that will likely be necessary to develop revised environmental scoring criteria with meaningful stakeholder involvement, LSA wishes in particular to draw the Commission's attention to the defects in the environmental scoring criteria, and encourage the Commission promptly to initiate a stakeholder process to develop a replacement environmental scoring methodology.

The environmental scoring criteria used to develop the CPUC-Required Scenarios are described in Appendix E to Attachment 2 of the Scoping Memo.⁵ According to Appendix E, the Aspen Environmental Group (Aspen) used environmental data developed through the Renewable Energy Transmission Initiative (RETI) to create environmental scores for individual renewable projects. These environmental scores were then used in the RPS Calculator as described in Attachment 2 of the Scoping Memo to create the CPUC-Required Scenarios.

Environmental scoring criteria were initially proposed as part of a June 22, 2010 ALJ ruling in this proceeding.⁶ According to the Scoping Memo, the criteria were substantially revised to conform more closely to the RETI environmental scoring methodology, consistent with party comments on the initial proposal.⁷ Comments submitted on the initial environmental scoring methodology urged consistency with the RETI environmental scoring methodology because it was the product of rigorous and extended discussion by multiple stakeholders representing a wide variety of commercial, land use and environmental interests.⁸ However, the RETI methodology was designed to create environmental scores for competitive renewable energy zones (CREZ), not individual renewable energy projects. LSA requested the opportunity for additional public engagement to develop the replacement environmental scoring methodology.⁹ No such opportunity was provided. Instead, Aspen altered the RETI methodology to score individual projects rather than CREZs behind closed doors, without workshops, opportunity for comment, or any other process for party participation in developing

⁵ See also Ruling Modifying System Track I Schedule and Setting Prehearing Conference issued February 10, 2011, Att. 2, App. E (attaching same environmental scoring criteria).

⁶ Administrative Law Judge's 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 June 22, 2010 (June 22, 2010 ALJ Ruling).

⁷ Scoping Memo, pp. 32-33.

⁸ See Comments of the Center For Energy Efficiency And Renewable Technologies On Resource Planning Assumptions – Part 2 (Long Term Renewable Resource Planning Assumptions) dated July 9, 2010, pp. 5-6; Comments of the Large-scale Solar Association On Resource Planning Assumptions – Part 2 (Long Term Renewable Resource Planning Standards) dated July 9, 2010, p. 7 (“LSA July 9, 2010 Comments”); Reply Comments Of The Green Power Institute On The RPS Planning Standards For The 2010 LTTP dated July 16, 2010, pp. 3-4. In contrast to the RETI process, in this proceeding, the only public workshop to address the environmental scoring methodology – as just one of multiple topics -- was held on June 18, 2010. Written description and documentation of the methodology was not provided until four days after the workshop, as part of an attachment to the June 22, 2010 ALJ Ruling. Comments quickly followed, with opening comments due on July 9 and reply comments due on July 16, 2010.

⁹ LSA July 9, 2010 Comments, *supra*, p. 8; Reply Comments Of The Large-Scale Solar Association On Resource Planning Assumptions — Part 2 (Long Term Renewable Resource Planning Standards) dated July 16, 2010, p. 11.

the revised environmental scoring criteria. Consequently, the revised environmental scoring criteria made their first public appearance as a final product in the Scoping Memo.¹⁰

Regrettably, the deficiencies in the process used to develop the revised environmental scoring methodology are mirrored in the defects embedded in the methodology adopted in the Scoping Memo. The adopted Aspen criteria misapplies the RETI methodology and oversimplifies the complex question of environmental performance by focusing almost entirely on a single environmental indicator, project footprint, as Mr. Mason explains in his uncontroverted testimony. Mr. Mason is employed by Black & Veatch, which was the technical consultant to the RETI process during Phase 1 of the effort, and was actively involved with the identification and characterization of CREZs, as well as in the development of the methodology for scoring and ranking the economic and environmental criteria in RETI Phase 1, when the initial CREZs were developed. (Ex. 1800, p. 2, lines 1-9) As a result of Mr. Mason's deep personal familiarity with RETI, he is well-positioned to compare the RETI environmental scoring methodology with the Aspen methodology adopted in the Scoping Memo.

According to Mr. Mason, the RETI and Aspen "approaches are very different in their goals and methodology. While Aspen does use (mostly) the same categories of environmental impacts that RETI did, this is where the parallels end." (Ex. 1800, p. 2, lines 15-7) First, Mr. Mason observes that "[w]hile Aspen has developed the scores for individual projects as described, the RETI criteria were not designed for this purpose and, thus, the act of converting the RETI numbers to individual project scores is a misapplication of the RETI criteria." (Ex. 1800, p. 3, line 1-3) Second, he points out that "[t]he RETI criteria measure the environmental impact per mega-watt hour (MWh) of renewable generation" while the Aspen approach measures environmental impact of land development." (Ex. 1800, p. 3, lines 15-17) Finally, he notes that the "RETI analysis used the following criteria in its environmental assessment: transmission and project footprint; Sensitive Areas in CREZs; Sensitive Areas in CREZ buffer zones; Significant Species; Wildlife Corridors; and Important Bird Areas", to which Aspen added EPA Tracked Degraded Lands. (Ex. 1800, p. 4, lines 1-4) While some of these

¹⁰ The revised environmental scoring methodology attached to the Scoping Memo differs markedly from the initial proposal; indeed, an introductory note states, "[d]ue to the number of changes to the environmental scoring methodology since the June 22 draft, the Appendix has been replaced in its entirety, and individual changes are not highlighted. *See* Scoping Memo, Att. 2, p. 71.

differences may seem minor, their cumulative effect is to create a “deeply flawed” methodology that elevates land use intensity above all other indicators of environmental concern. (Ex. 1800, p. 13, line 1)

Mr. Mason explains how the Aspen approach gives exaggerated weight to land use:

The model overstates land use in several ways. First, Aspen used the RETI environmental factors, which considers a number of land factors including transmission footprint and the sensitive areas in CREZs and buffer zones. To this, Aspen added “EPA Tracked Degraded Land” located inside of a CREZ or within 10 miles of the CREZ boundary, another factor focused on land. These combined factors are then multiplied by an “Undisturbed Land” factor, which measures the portion of undeveloped land in the CREZ. This amplifies the impact of the previous factors. Finally, this in turn is multiplied by the size of the project development area “(acre per GWh/year)”. The result of this is that land use scores increase geometrically in the model, substantially disadvantaging any project with a large footprint, regardless of its overall environmental impact. (Ex. 1800, p. 6, lines 13-22)

He also identifies two other aspects of the Aspen approach that further distort the consequences of project footprint in the Scoping Memo’s adopted environmental scoring methodology: (1) its reliance on CREZ areas, and (2) its application of a 96.5% discount factor to all environmental criteria used in scoring wind projects.

First, because “the Aspen methodology uses the RETI data on environmental indicators divided by the CREZ area, rather than the energy output”, “the size of the RETI CREZs have a major impact on the scores.” According to Mr. Mason, “[t]his is very concerning since RETI CREZ boundaries and acreage are largely arbitrary.” (Ex. 1800, p. 7, lines 3-6) The CREZs “were developed as an indication of areas of high renewable development potential for transmission purposes”, not for assessment of the impacts of individual projects. (Ex. 1800, p. 8, lines 11-14) But the Aspen model scoring depends “on the size of the CREZ where each project is located. This means that identical projects on identical land with identical environmental impact will have difference scores based on the CREZ that they are located in. This could lead to bizarre and perverse results in portfolio development.” (Ex. 1800, p. 8, lines 4-7)

Mr. Mason provides examples of how “scores change dramatically with variations in the CREZ site” under the Aspen approach. (Ex. 1800, p. 9, line 16). The Lassen North CREZ is about six times larger than the Lassen South CREZ. According to the scores produced under the

Scoping Memo environmental scoring criteria, solar development in Lassen South would have approximately twice the environmental impact of development in Lassen South. But, if the two CREZs were assumed to have the same area, and all other assumptions remained the same, the Scoping Memo criteria would produce nearly identical scores for solar development in these two CREZs.¹¹ He also calculated the impact of increasing the acreage of selected CREZs by 50 percent to better understand the Aspen methodology's dependence on CREZ size. The impact was negligible in some CREZ to extremely significant in others.¹² These examples demonstrate that Aspen selected the wrong yardstick when it chose to substitute the CREZ area for energy output in measuring relative environmental impact.

Second, Mr. Mason points out that the Scoping Memo's environmental scoring criteria apply a discount factor to all the environmental criteria used in scoring wind projects.¹³ He notes that under the RETI methodology, "the wind land use area was discounted by 96.5% of project total land requirement to account for the disbursed development of wind on a given site." But while he "would expect this de-rate factor to apply to project acreage," he does not believe that "this discounting should apply to all environmental factors." However, under the Aspen approach, this factor is then applied to all the environmental criteria – including even transmission and important bird areas.

Mr. Mason illustrates the absurd results produced by use of the wind project discount factor. Under the Aspen approach, the wind projects located in the Barstow CREZ have an adjusted wind area of 0.74 acre per GWh/year, which is then applied to all the environmental criteria to develop a project score. But as Mr. Mason observes,

this effectively discounts transmission area and important bird area scores by nearly one-third. The transmission right-of-way requirements are based on the capacity of the facility and should not be discounted. Further I would not expect that the "Important Bird Areas" would be discounted for wind since the impact on birds would be over the entirety of the site."

¹¹ See Ex. 1800, p. 9, line 15 through p. 10, line 5.

¹² See Ex. 1800, p. 10, line 5 through p. 11, line 1.

¹³ As shown in Appendix E to Attachment 2 of the Scoping Memo, the wind project discounting is applied by summing the environmental scores calculated in Table 4, page 81 and multiplying that number by an adjusted wind area. The adjusted wind area is calculated using the 96.5 percent discount rate applied to wind project footprints under the RETI approach.

In contrast, keeping with the Barstow example, these same criteria are multiplied by a factor of 2.99 acres per GWh/year to determine the solar environmental score. Similarly, the transmission area requirements should not be multiplied nearly three times for solar projects. Moreover, avian impacts by solar projects are much less than for wind projects and the Aspen methodology not merely assumes equal impact but actually assigns greater avian impacts to solar technologies by multiplying this by the land usage factor. (Ex. 1800, p. 9, lines 3-9)

The Aspen approach of applying a wind discount adjustment factor to all the environmental criteria used to score projects has no rational basis, magnifies the arbitrariness of the scores, and must be revised. But, as Mr. Mason notes, correction of the 96.5% wind project discount rate is not enough to fix the Scoping Memo's environmental scoring methodology, given its remaining flaws and exaggerated focus on land usage. Eliminating the wind project adjustment factor would increase wind environmental scores calculated using the Aspen approach by more than 2,700% which, as Mr. Mason points out, dramatizes "the extent to which the Aspen model heavily weights technology land usage criteria." (Ex. 1800, p. 11, lines 3-10)

Originally, the environmental scoring criteria were envisioned as a way to measure the scenario's contribution towards the environmental policy goal of the Renewables Portfolio Standard ("RPS").¹⁴ Seeking to compare the environmental performance of different renewable scenarios is an ambitious goal, but one that should be pursued to meet RPS policy objectives. LSA joins Mr. Mason in commending the Commission for attempting to quantify the environmental scoring criteria in this proceeding. LSA likewise recognizes the challenges of developing appropriate environmental scoring, "[g]iven the novelty of implementing this and the inherent uncertainty in developing comparable scores for disparate environmental impacts." (Ex. 1800, p. 12, lines 12-15) However, the adopted environmental scoring criteria contain fundamental flaws that must be corrected before they can serve their intended purpose. As Mr. Mason states,

"the methodology developed by Aspen is deeply flawed and should be reconsidered prior to it being used again, either in the next long-term procurement plan proceeding or any other forum. In its current form, the scoring may result in resource portfolios that are inappropriately skewed against certain types of resource or resources located in certain locations. (Ex. 1800, p. 13, lines 1-5)

¹⁴June 22, 2010 ALJ Ruling *supra*, pp. 9-10 (June 22, 2010).

LSA recommends that the Commission promptly convene a stakeholder process to develop a revised environmental scoring methodology using an approach similar to that contemplated in the Settlement Agreement for completion of the renewables integration analyses. While the stakeholder process should be led by Commission rather than by CAISO staff, the approach of forming a working group of technical experts to perform analyses and prepare recommendations, with periodic workshops and reports to interested stakeholders who lack the time or technical expertise to participate actively in the working group, provides a model to develop revised environmental scoring criteria efficiently, but with robust stakeholder participation. The timeline for developing a replacement scoring method should ensure that the replacement method is ready in time to be used for developing new scenarios in the next LTPP cycle and other planning efforts.¹⁵

Investing in work up-front is critical to building a robust environmental scoring methodology for future planning efforts and developing stakeholder confidence in the modeling assumptions and results. Moving forward, LSA urges the Commission to look at environmental impacts of the scenarios more broadly, evaluating the environmental performance of all of the different scenarios under a robust set of environmental criteria and focusing on each scenario's overall generation profile, including conventional and renewable resources. Focusing only on the siting aspects of the renewable generation facilities is short-sighted and fails to account for the environmental impacts that result from integrating these facilities into the overall electric grid. Moreover, as Mr. Mason points out, "[n]either RETI nor Aspen considered air emissions, water impacts, waste streams or numerous other environmental criteria that may be applicable to the evaluation of the environmental impacts of individual projects." (Ex. 1800, p. 4, lines 4-6) Accordingly, LSA urges the Commission to promptly initiate a stakeholder process to develop a more robust set of environmental scoring criteria to account for non-siting-related environmental impacts of renewable generation, including avoided air emission impacts.

¹⁵ LSA is not recommending that the renewables integration work contemplated in the Settlement Agreement be postponed until revised environmental scoring criteria are developed and new scenarios based on those criteria are created. To meet the timeline outlined in the Settlement Agreement, LSA recognizes that the renewables integration analysis must proceed based on the current scenarios. However, the flaws in the assumptions and methodology used to create the current scenarios – which include but are not limited to the flaws in the environmental scoring criteria – limit broader implications regarding RPS procurement or transmission policies which can legitimately be drawn from the scenarios.

C. The Commission Should Reject SCE’s CAISO Auction Proposal And Should Instead Evaluate Integration Procurement And Cost Allocation Issues Comprehensively After The Completion Of The Next Phase Of The Integration Analysis.

SCE recommends that the Commission open a proceeding to evaluate creation of a CAISO-run auction to procure new generation to meet local capacity requirements and renewable integration and charge the resulting costs to local load and intermittent renewable generators. (SCE Ex. 211, p. 6, lines 7-10) LSA acknowledges that SCE’s proposal points to important issues about procurement and the allocation of the costs of new integration resources that will require Commission attention in the near term. However SCE’s proposal prejudices the answer to these complex questions. SCE puts forth a cost allocation framework without first demonstrating that its ex post, cost-causation approach provides the best solution. A proceeding focused on just one option would also be premature given the on-going CAISO stakeholder market review process and contemplated new RA proceeding that will evaluate other solutions and provide necessary supporting analysis. LSA contends that a comprehensive look at these issues is needed instead of a proceeding narrowly focused on fleshing out the details of a single “conceptual” option.¹⁶ After integration requirements are better defined following the next phase of the integration analysis, the Commission’s first step should consist of working with the CAISO and stakeholders to inventory the issues, options and timing for addressing integration costs and create a roadmap for their resolution.

As a general matter, LSA believes that a cost-causation approach that assigns integration costs to renewable resources, whether applied ex ante through procurement or interconnection processes or ex post through the CAISO markets, is premature and that no findings or conclusions about the appropriate approach to allocation of renewable integration costs can yet be made. First, as recognized in the Settlement Agreement, there is still substantial uncertainty

¹⁶ SCE Ex. 215, p.1, line 17. During the evidentiary hearing, SCE’s witness, Nicole Neeman Brady, could not identify the agency that would be the final decision-maker for local capacity and renewable integration needs (R.T. Vo. 5, p. 519, line 26-p 520, line 7), how disagreements between the Commission and CAISO regarding forecasts of these needs would be resolved (*id.* at p. 520, lines 11-19), the role of municipal utilities (*id.* at p. 525, line 24- p. 526-line 27), allocation of winning bids between entities subject to Commission jurisdiction and those that are not (*id.* at p. 527, line 15 to page 528, line 8), the contracting process between the CAISO and winning bidders (*id.* at p. 520, line 15 – p. 532, line 14), or the manner in which the costs of winning new generation projects would be recovered (*id.* at p. 533, line 11 – p. 534, line 19).

about the scope of such costs. (Settlement Agreement, p. 5) Second, SCE has not demonstrated that its recommended approach would provide the right economic and technological incentives in the current regulatory and market structure. If this determination is made prematurely in this LTPP proceeding, it will simply create additional financial uncertainty for renewable developers in their contract negotiations with the IOUs, and may further undermine project viability. Third, SCE's proposal would create a jurisdictional split in the responsibility for procurement of new generation that could prove problematic over the "long-term (up to twenty years) commitments" that SCE envisions will be created under its recommendation. (SCE Ex. 211, p. 6, line 21).

SCE has acknowledged that its CAISO auction proposal would ultimately fall in significant part under the jurisdiction of another agency – the Federal Energy Regulatory Commission (FERC).¹⁷ Under SCE's proposal, this Commission would retain jurisdiction over procurement of new generation for system reliability needs to satisfy the planning reserve margin, while the CAISO and FERC would have jurisdiction over procurement of new generation for local capacity and renewables integration needs "beyond the planning reserve margin."¹⁸ However, the distinction between renewables integration and reliability needs is the function of resource adequacy rules and system requirements that will almost certainly change over time.

The renewables integration studies performed as part of this proceeding have attributed new system resources needs above those required to meet load and the planning reserve margin to renewable integration needs. As discussed in the testimony of Mark Rothleder on behalf of the CAISO¹⁹, the production simulation model simply solves to ensure feasibility of the commitment and dispatch under all conditions modeled, without distinguishing between reliability and integration needs. Calculation of the new system resources in excess of those required to meet PRM depends on the Net Qualifying Capacity (NQC) assigned to the renewable resources under the Commission's (RA) rules.²⁰ The NQC determines how many "additional"

¹⁷ R.T. Vol. 4, p. 519, lines 23-23; p 524, line 24 – p. 525, line 3.

¹⁸ R.T. Vol. 4, p. 519, lines 8-9.

¹⁹ CAISO Ex. 2400 (Track 1 Direct Testimony of Mark Rothleder On Behalf of the California Independent System Operator), pp. 34-35.

²⁰ See Ernest Orlando Lawrence Berkeley National Laboratory, "DRAFT: Review of PG&E Renewables Integration Model and CAISO 33% RPS Analysis", attached as Appendix C to Administrative Law Judge's Ruling Requesting Post-Work Shop Comments, Updating Standardized Planning Assumptions, And Providing Lawrence Berkeley Report On Modeling Issues issued December 23, 2010, p. 24, 27 (LBNL Review).

resources are identified as needed for reliability by the model, if any, while the overall combined resource needs (for reliability and integration) remain the same. Thus, the distinction between reliability and integration is a function in part of the NQC counting rules. The NQC counting rules have changed significantly since they were first adopted, and will almost certainly continue to evolve.²¹ Each change will reset relative reliability and renewable integration needs, and will require the Commission, CAISO and, potentially, FERC to reallocate reliability and integration costs in a timely and consistent manner.

Other RA program and market changes will likely further recast reliability and integration needs and blur any lines drawn between them over the term of the commitments resulting from SCE's proposed special purpose auctions. The RA program itself might shift to value operational attributes, such that over time, new generation added through a CAISO auction for renewable integration is partly or completely procured for RA. With the addition of storage and supplemental gas to solar plants, or deployment of other innovative technologies, the integration services required for renewable technologies may lessen significantly. Resources added for the purpose of meeting renewables flexibility requirements could also be used to help meet future load growth.²²

As a result, the costs of new resources cannot be neatly assigned between static "integration" and "reliability" buckets and allocated permanently to discrete classes of customers and generators. Instead, the costs of the new generation initially procured through the CAISO renewables integration auction could have to be repeatedly reassessed and reassigned over time. SCE states that "the value that is determined to be associated with generic capacity, or for attributes needed to integrate load need, would be charged to all loads", while load-serving entities' "capacity requirement, for years in which this capacity has been procured by the CAISO, will be reduced by the capacity of the new generation." (SCE Ex. 211, p. 7, lines 1-4) The remaining costs would be charged to local load or to intermittent generators. (SCE Ex. 211, p. 7, lines 5-6) But, SCE does not explain how the CAISO and this Commission would make

²¹ See, e.g., SBX1-2 (Stats. 2011, Ch. 1), enacting Cal. Pub. Util. Code § 399.26(d) (requiring the Qualifying Capacity (QC) of wind and solar resources to be calculated using the effective load carrying capacity approach); D. 04-10-035 (2004) pp. 24-25 (adopting the historic performance approach for calculating the QC for intermittent wind and solar resources); D. 09-06-028 (2009), p. 46 (adopting an exceeding methodology for determining the QC of wind and solar resources).

²² LBNL Review, *supra*, at p. 54.

these determinations, or which agency's judgment would prevail in the event of disagreement. The jurisdictional split would make reallocation of costs for generation used both for reliability and integration purposes cumbersome and fraught with the potential for inconsistent outcomes. Divided jurisdiction for reliability and integration procurement and costs could prove particularly troublesome in the rapidly changing market rules and conditions that California has frequently experienced.

Notwithstanding these reservations about the timing and specifics of SCE's proposal, LSA believes that integration cost allocation will require the Commission's attention after the next phase of the integration analysis is completed, and integration requirements and options for reducing those requirements and providing the needed flexibility are better identified. However, the Commission should investigate a broader set of issues and options than those that SCE has fielded. Some of these issues have already been targeted for review in other proceedings. The Commission's RPS rulemaking has identified modification of the renewables bid evaluation methodology to address integration cost adders as an issue within the scope of the proceeding.²³ The CAISO's proposal to modify the Commission's resource adequacy program to "add resource operational characteristics such as regulation and ramping 'load-following' capabilities into the resource adequacy procurement requirements" is to be the subject of a new Rulemaking expected to be opened later this year.²⁴ The CAISO intends to "consider a forward market for capacity resources that can provide balancing capacity" for purposes including renewable integration as part of Phase 2 of its current Renewable Integration Market and Product Review.²⁵ Rather than add another narrowly-focused proceeding to this mix, the Commission should work with the CAISO to evaluate all options systematically in order to identify those that will best reduce overall integration costs while minimizing the opportunity for jurisdictional cross-signals. Integration costs should be addressed comprehensively in order to align Commission and CAISO regulatory and market design decisions, establish consistent and effective market signals, and

²³ R. 11-05-005, Scoping Memo and Ruling of Assigned Commissioner issued July 8, 2011, p. 3 and Att. 2, p. 4.

²⁴ R. 09-10-032, Assigned Commissioner's Ruling Deferring Issues To Future Rulemaking issued Sept. 7, 2011, pp. 1, 2.

²⁵ Renewable Integration Market And Product Review, Phase 2, "Revised Straw Proposal –Renewables Integration Market Vision & Roadmap" dated August 29, 2011, available at <http://www.caiso.com/informed/Pages/StakeholderProcesses/RenewablesIntegrationMarketProductReviewPhase2.aspx>.

achieve the overarching goal of integrating renewable generation at the lowest overall cost to ratepayers.

III. CONCLUSION

LSA respectfully recommends that the Commission (1) approve the Settlement Agreement's recommendations regarding the inconclusive nature of the renewable integration analyses conducted in this proceeding and road map for the timely completion of this critical work; (2) promptly initiate a process with meaningful stakeholder participation and adequate lead-time to revamp the fundamentally flawed environmental scoring criteria before new renewable generation development scenarios are developed for use in future planning efforts; and (3) examine integration procurement and cost allocation issues and options comprehensively after these costs are better defined and the full range of regulatory and market options for procuring desired operational attributes is clarified. In light of the Settlement Agreement's proposed resolution of the key issue in this proceeding regarding the need for new system resources, LSA does not address its remaining concerns with the underlying assumptions, scenarios, modeling and inputs used in developing the IOUs' system plans and the CAISO's renewables integration analysis. LSA reserves the right to present these concerns in any subsequent phase or extension of this proceeding or in the next LTPP cycle.

Respectfully submitted,

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