BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Oversee the Resource Adequacy Program, Consider Program Refinements, and Establish Annual Local Procurement Obligations.	**Rulemaking 11-10-023 (Filed October 20, 2011)**

REPLY COMMENTS OF THE LARGE-SCALE SOLAR ASSOCIATION AND THE SOLAR ENERGY INDUSTRIES ASSOCIATION ON THE STAFF PROPOSAL ON EFFECTIVE LOAD CARRYING CAPACITY AND QUALIFYING CAPACITY CALCULATION METHODOLOGY FOR WIND AND SOLAR RESOURCES

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Pursuant to Rule 14.3 of the California Public Utilities Commission's ("Commission" or "CPUC") Rules of Practice and Procedure and ALJ Gamson's February 4, 2014 Ruling requesting comments on the Staff Proposal on Effective Load Carrying Capacity ("ELCC") and Qualifying Capacity Calculation Methodology for Wind and Solar Resources ("Staff Proposal") and January 27, 2014 Workshop, the Large-scale Solar Association ("LSA") and the Solar Energy Industries Association ("SEIA") respectfully submit these reply comments.[1]

1. Introduction

In these Reply Comments, LSA and SEIA join with other parties that have requested a delay in implementation of solar and wind ELCC until the 2016 RA compliance year due to the complex nature of the ELCC analysis and the potential for a high degree of sensitivity to

[1] The reply comments contained in this filing represent the position of the Solar Energy Industries Association and the Large-scale Solar Association as organizations, but not necessarily the views of any particular member with respect to any issue.

modeling assumptions.[2] We share the concerns noted by a number of other parties that rushing the proposed methodology into implementation over the next few months could result in unforeseen, detrimental commercial effects as well as questionable results with respect to the reliability of the California power system.[3] The CPUC and California Independent System Operator ("CAISO") have a history of establishing interim methods for capacity procurement and valuation, which are often sufficient during periods of slow change on the power system. However, implementing analytical methods with clearly identified potential flaws and a high expectation of major subsequent methodological changes is not appropriate during this critical transition to a power system increasingly reliant on renewable energy and other new resources, including various types of storage. In addition, there are several ongoing processes for, and related to, capacity procurement at both the CPUC and CAISO that could affect each other in unknown ways without sufficient coordination.[4] LSA and SEIA recommend that the Commission take sufficient time to examine alternative methods for additional differentiation by location and technology, as suggested by Southern California Edison ("SCE") and other parties.[5]

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[2] *E*.g. Opening Comments of PG&E on Energy Division's Resource Adequacy Proposals (February 18, 2014) p.3.

[3] *Id*

[4] For example, as noted in our Opening Comments, there is the possibility for the ELCC model results to interact with the calculation of flexible capacity needs. In addition, the ELCC model methodology and results will of course affect the wind and solar QCs used for valuation of RPS bids, analysis of interconnection requests, CAISO and regional transmission planning, determination of the types of storage needed, and other processes and policies.

[5] SCE Post Workshop Comments (Feb.18, 2014) p 6-8; CAISO Opening Comments on Phase 3 Workshop Issues (Feb. 18, 2014) p. 7-8; Office of Ratepayer Advocates Opening Comments on Energy Division's Resource Adequacy Proposals (Feb. 18, 2014) p. 5.

Given that the wind and solar generation capacity forecast to come on-line in the 2014-16 period is fairly certain at this point, and that there is a sufficient reserve margin projected for those years,[6] the delay in the formal implementation of the methodology until the 2016 RA compliance year should not materially impact reliability in the next two years. Until then, preliminary modeling can proceed to test alternative assumptions and methods, allowing utilities, the CAISO and the industry time to prepare for any changes. We provide a suggested schedule below.

2. **The implementation of solar and wind ELCC should be delayed until the 2016 RA compliance year.**

LSA and SEIA support Pacific Gas and Electric's ("PG&E") proposal that the solar and wind ELCC methodology be targeted for implementation in the 2016 RA compliance year. We believe that this delay can be used to fully develop the ELCC model, as well as the approximation methods proposed both in our opening comments and by SCE to provide additional modeling flexibility. LSA and SEIA suggest the Commission consider the following schedule, which will allow sufficient time for careful development of this critical new policy:

Spring 2014	Workshop(s) on solar and wind ELCC methodological issues focused on assumptions and data, including technology attributes and availability of weather/production data for more detailed geographical analysis
Summer 2014	Workshop(s) on existing and future contract implications and relationship of ELCC methods to complementary policies (e.g., storage procurement mandate)
Fall 2014	Workshop(s) on methodology for ELCC and

[6] See, e.g., forecasts of the reserve margin by the CPUC in the LTPP proceeding, summarized in the February 2013 briefing paper found here: http://www.caiso.com/Documents/CPUC-BriefingPaper-LongTermResourceAdequacySummit.pdf

	approximation methods for capacity valuation
Winter/Spring 2015	CPUC releases initial monthly results of wind and solar ELCC calculations for 2015 (indicative results) and 2016. May require several iterations.
Summer 2015	Final ELCC methodology available for implementation in 2016 RA compliance year.

In the event that the Commission does not choose to delay implementation of the methodology, we reiterate our recommendation that the Commission hold additional workshops to address the commercial and technical issues in more detail before any results are released.

3. **The commercial implications of the ELCC methodology should be examined before formal implementation.**

In addition to LSA and SEIA, in opening comments a number of parties noted concerns regarding the potential contractual implications of the ELCC methodology, which will in principle change the Qualifying Capacity (QC) of individual solar and wind projects over time as penetration increases. LSA/SEIA s understanding is that a number of existing RPS contracts may have contract terms related to changes to capacity product definition, CAISO tariff or market terms, and delivery to the point of interconnection, which could be triggered by the implementation of the ELCC methodology. The contractual and market implications of the proposed changes to capacity valuation need to be well understood and addressed in this proceeding prior to the implementation of these changes.

In opening comments, PG&E suggested a transition period for the ELCC methodology to replace the current exceedance methodology so as to minimize commercial disruption and to preserve the value to customers from the existing portfolio of contracts [7] PG&E also indicates

[7] PG&E Opening Comments at pg. 2.

that the ELCC methodology could result in an immediate, significant loss of value. LSA and SEIA have concerns with PG&E's proposed approach to phasing in such a transition, but agree that the prospect of commercial disruption requires careful consideration of existing contract terms and an examination of methods to hold contract holders harmless from changes in capacity value due to the shift to the ELCC methodology. LSA and SEIA recommend that this issue be examined carefully by Energy Division staff and analysis of the potential implications shared with parties.

4. Transparency of the methodology and need for initial results

Several parties noted concerns with the level of transparency of the process including the lack of sufficient public data (other than load data) on the inputs to the modeling.[8] LSA and SEIA share these concerns. In addition a number of parties agreed with LSA/SEIA's concern about the lack of preliminary results for parties to review as a basis for evaluating how well the models correspond to actual or forecasted performance, both in the aggregate and for marginal solar additions.[9]

The CAISO points to its own development of deterministic and stochastic modeling under the Long Term Procurement Plans proceeding ("LTPP"), jointly with the California Energy Commission and CPUC, as an example of a transparent process for model development and data sharing.[10] LSA and SEIA agree. The solar industry has participated, in an advisory basis, in the use of the CAISO model for evaluating different solar technologies, including

[8] CAISO Opening Comments at p. 5; SCE Opening Comments at p.2.

[9] E.g., PG&E Opening Comments at p.3.

[10] CAISO Opening Comments at pg. 5.

capacity value.[11] Ideally, the ELCC modeling would become similarly transparent, allowing for third-parties to benchmark the results, achieve reasonable approximations of the outcomes in different scenarios for purposes of strategic planning and technology innovation.

5. Aggregation issues must be addressed in more detail.

LSA and SEIA agree with the majority of parties in pointing to analytical issues related to the proposed level of technology and geographic aggregation which could result in incorrect valuation of existing wind and solar plants as well as create incentives for inefficient investment in renewable resources. One example of this is SCE's request for project-level capacity values that reflect local weather conditions and technology attributes.[12] We do not re-state our earlier comments here, but highlight that the appropriate level of aggregation needs further investigation and our recommendation that the Commission dedicate several workshops to addressing these issues.

6. Additional capacity valuation methods need to be investigated

Finally, in our Opening Comments we recommended an inquiry into additional methods linked to the LOLE/ELCC model, such as the use of approximation methods that could allow for more flexibility to evaluate additional sub-regional aggregations, specific projects, and more variety in solar technologies, including co-located storage. We note that SCE has proposed a

[11] E.g., Denholm, P., Wan, Y -H., Hummon, M., and M. Mehos, "An Analysis of Concentrating Solar Power with Thermal Energy Storage in a California 33% Renewable Scenario," National Renewable Energy Laboratory, Technical Report, NREL/TP-6A20-58186 (March 2013).

[12] SCE Opening Comments at p. 6.

similar methodological approach, and other commenters addressed the issue generally.[13] LSA/SEIA are interested in working with the Commission and other parties on the development of additional methodological approaches and recommend the Commission hold a dedicated workshop on this issue.

Conclusion

LSA and SEIA appreciate the opportunity to submit these Reply Comments and look forward to working with the Commission and parties on the further development of the ELCC methodology.

Respectfully submitted this 3rd day of March 2014, at Berkeley, California.

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[13] SCE Opening Comments at p. 8; CalWEA Opening Comments of Staff's Proposed ELCC Methodology (Feb. 18, 2014), p. 7.