August 1, 2016

Submitted to the CAISO at initiativecomments@CAISO.com by Rachel Gold (Policy Director) and Susan Schneider (Consultant)

RE: Comments of the Large-scale Solar Association on Regional Resource Adequacy Stakeholder Working Group Meeting Materials and Discussion

The Large-scale Solar Association (LSA) hereby submits these comments on the CAISO's Regional Resource Adequacy Stakeholder Working Group Meeting Materials and Discussion (WG Proposal) in its Regional Resource Adequacy (RA) initiative.

Among other things, the CAISO Regional RA proposals have consistently supported use of a system Planning Reserve Margin (PRM) and uniform RA counting rules for generation resources in a RISO monthly reliability assessment. That assessment would determine whether sufficient resources were procured by Load-Serving Entities (LSEs) to meet system, local, and flexible capacity requirements. LSA supports that general framework.

LSA's comments here focus on the solar and wind RA counting rules in this RISO reliability assessment. LSA is very concerned that the WG Proposal reverses the CAISO's position on the solar/wind RA counting rules in the Second Revised Straw Proposal (RA2 Proposal). Instead of retaining the Exceedance methodology initially, and considering a transition to the Electric Load Carrying Capacity (ELCC) methodology later, the WG Proposal would implement ELCC for RISO assessments from the beginning of the RISO, and under a constrained timeline.

The WG Proposal states that CAISO would establish a new stakeholder process to determine "most specific details of an ELCC study" based on "an assessment of the entire ISO footprint" – i.e., to determine the details needed for a CAISO Board decision in October, and a RISO conceptual filing at FERC by year-end. The Exceedance method would be retained "if [the] ELCC methodology is not completed" before the annual reliability assessment.

LSA opposes this change and continues to support the RA2 Proposal methodology. In short, there are simply too many key outstanding methodological issues to move forward with a conceptual CAISO/RISO ELCC-based filing at FERC this year, and too many other critical-path issues requiring CAISO and stakeholder effort at this time.

LSA is concerned that the CAISO has seriously underestimated the complexity of the issues that must be resolved for ELCC implementation (e.g., the CPUC has been working hard on ELCC for upwards of three years and still has not resolved them) and that the proposed approach will lead to duplication and confusion.

LSA's support for the CAISO's RA2 Proposal position is based on the following:

- **The Exceedance methodology is simple and has worked well**, and it is not necessary to change it for RISO implementation, particularly in light of the CPUC's long delay in its implementing an ELCC methodology.
- **There is insufficient time and resources to initiate and complete yet another new RISO formation stakeholder process to** work out the complex unresolved ELCC methodological "details."
- **There is insufficient time for LSEs to react to an RA methodology change.** Though the new methodology would apply only to the RISO assessment, there could be implications for LSE procurement (and CAISO exercise of its backstop authority) if resulting lower RA values lead to a RISO insufficiency finding.
- **The CAISO list of just three "details" that need to be resolved before a FERC filing significantly underestimates the work and complexity involved**.
- **The CAISO and stakeholders must address other, higher-priority RISO implementation issues**, and resources should not be diverted to less-critical areas.

Each of these statements is explained further below.

The Exceedance methodology is simple and has worked well.

This methodology can safely be left in place for a couple of years while the rest of the RISO framework is designed and implemented. It has been in effect many years, and it is well-established and easy to understand. Though reasonable arguments can be made about whether it is the most accurate methodology, there have been zero shortages of capacity to serve load during all this time, even with large increases in wind and solar resources. In addition, while long-term a change to ELCC is anticipated, that is a complex effort, as evidenced by difficulty the CPUC has had with development of its ELCC methodology.

There is insufficient time to complete a reasonable RISO stakeholder process to work out the complex unresolved ELCC methodological "details" for the FERC filing.

It is already August, and the CAISO Board meeting where the RISO RA proposals would be considered has been delayed to late October. This timeline leaves at most two months (~8 weeks) – early August to early October – for work needed to determine the critical ELCC details, if that effort is initiated immediately. There is simply not enough time for a reasoned CAISO stakeholder process of around three proposals, and associated discussion opportunities and comment rounds for each, with 1-2 weeks minimum between each step.

It was clear from the discussion during the Working Group Meeting that the scope of the basic framework for an ELCC methodology is unclear and will require significant consideration and discussion. This includes whether an average or marginal approach should be used, technological and potentially regional differentiation, and the complex question of whether and how annual ELCC values, once developed, could be translated into monthly values. There is simply not enough time for any reasoned consideration of these complicated issues.

There is insufficient time for LSEs to implement changes needed to respond to an RA methodology change after any RISO reliability assessment.

The schedule for the RISO reliability assessment is not the only timing issue. One critical ELCC issue under discussion in the CPUC proceeding is the potential impact on LSE procurement needs, e.g., the possible need for LSEs to secure additional resources if some resource types will count for less RA credit going forward.

The CAISO/RISO methodology would technically only apply to the RISO reliability assessment and not necessarily to individual LSEs. However, any deficiencies found in that assessment for the RISO as a whole would trigger a look at individual LSE portfolios using this same methodology. Thus, RA deficiencies may be identified for LSEs even where they are compliant with their respective Local Regulatory Authority (LRA) requirements.

Realistically, CPUC-jurisdictional LSEs will comprise the large majority of RISO load for quite some time. Thus, it is likely that the RISO reliability assessment would find deficiencies overall if a significant RA methodology change from the Exceedance method reduces RA value for one or more major resource category. (If no significant change was needed, of course that would be an indication that the rush to change the methodology was unnecessary.)

In addition to developing a basic framework in a very compressed timeframe, the CAISO will need to closely coordinate its efforts with the CPUC, and address any potential inconsistencies between its and the CPUC's ELCC methodologies and implementation timelines. This coordination will require sufficient time for the CPUC to react (review the RISO results, examine potential alternatives for its jurisdictional LSEs, and approve a course of action) and for the LSEs to make any adjustments pursuant to such CPUC guidance before the planned 2019 RISO implementation (especially if new resources are involved). Unless the CAISO is prepared to implement a significantly enlarged backstop procurement role, a reasonable transition may be needed – yet another element that likely cannot be adequately considered in the proposed truncated stakeholder process.

The CAISO list of just three "details" that need to be resolved before a FERC filing significantly underestimates the work and complexity involved.

As noted above, the CPUC has been working through ELCC details for years and has not yet determined definitively how to apply this methodology to individual resources. Because of the many unresolved issues in that proceeding, only Calpine and CalWEA supported adoption of ELCC values for wind and solar for the 2017 RA year, and even those parties acknowledge that further improvements are necessary. None of the utilities supported adoption of ELCC-based values for this RA year (though PG&E suggests that advisory results may be issued).

The CPUC is continuing to examine the same ELCC application issues that the CAISO/RISO would have to address. Many complex issues remain unresolved even after the CPUC's intensive efforts to date, and there is no basis for concluding that a separate CAISO effort would somehow be more expeditious or less controversial than allowing the CPUC's reasoned examination to proceed and then using the results in a RISO effort.

The WG Proposal lists "three" potential "details" that must be determined for ELCC: (1) Converting annual ELCC values to monthly capacity values; (2) establishing correct Loss of Load Expectation (LOLE) levels; and (3) methods for developing load profile and/or resource portfolios. However, each of those three topics themselves contain many complex questions.

LSA offers below a more detailed list of these issues, as well as other key unresolved ELCC issues. It is hard to see how the CAISO could resolve them in an 8-week stakeholder process.

- **Monthly ELCC values:** This issue is extremely complex, and under discussion in the CPUC process but with no workable solution yet in sight. As the CPUC noted in its recent decision in the Resource Adequacy proceeding, D.16-06-045, p.25:

  > "While we agree with parties that Energy Division has performed admirable modeling work, we acknowledge that Energy Division faces the unenviable task of metaphorically fitting the square peg into the round hole.
  >
  > In theory, ELCC is one step in how an integrated resource planner should evaluate potential marginal changes in the generation fleet of a vertically integrated system. Such a planner does not need to allocate credit to individual existing resources at all, let alone on a monthly basis. Instead, the integrated resource planner must only use modeling results to quantitatively compare the level of reliability risk on the system given different potential generation fleets. Our current RA framework, however, is designed very differently because it is market based. Our framework requires that each and every resource has its own monthly NQC value and implicitly assumes that two different resources with the same NQC offer the same reliability benefit in the relevant month."

  The CPUC ELCC model currently uses the same generation capacity to calculate LOLE in each month. Hence, off-peak months have surplus capacity compared to the RA requirement for that month, and could not have a positive LOLE.

  The CPUC Energy Division (ED) has examined methods to "shape" the generation capacity to allow for a monthly LOLE/ELCC consistent with the RA program requirements. However, it is unclear: (1) How the LOLE should be assigned across months, e.g., 1/12 * 0.1 LOLE per month, or 0.1 LOLE only in the peak month (which implies different reserve margins in off-peak months, or some other mix); and (2) the interaction between varying monthly LOLE factors and flat annual ELCC factors.

  There has also been discussion of phasing in ELCC ratings using a weighting methodology, an element not on the CAISO's list.

  In addition, the CAISO would presumably be addressing LOLE issues separately in its own RISO-related examination of the PRM to use in the RISO reliability assessment, and that effort should also inform any RISO ELCC conceptual design.

- **Locational methodology:** We note the initial CAISO proposal is to have a RISO-wide assessment. LSA encourages the CAISO to include locational values, which is under development by the CPUC and critical to multiple parties.

  Like the monthly methodology, the CPUC's locational methodology is not yet well described or supported. In the CPUC proceeding, to capture locational values, ED calculated a series of marginal ELCCs in three steps, under different scenarios for northern and southern California solar penetration and arbitrary averaging of the scenario results.

  Results to date using this methodology indicate that a marked increase in solar production in southern California would impact capacity ratings in northern California. Additional sensitivities are needed to understand these major new results, e.g., impacts of smaller increments added and different penetration levels in northern and southern California.

- **Load profiles:** Historic load profiles are likely not good indicators of future behind-the-meter (BTM) solar impacts (see below) and other load changes. In addition, there are outstanding questions regarding the appropriate levels of load forecast uncertainty and whether different weather patterns and/or economic assumptions should be used. These are critical details as they are key inputs that can materially impact the resulting values.

- **"Perfect generator" issues:** The CPUC's ELCC model currently measures solar and wind against a perfect generator, it does not do so for conventional generation. This approach unfairly holds wind and solar generators to a higher standard than conventional generators and is another critical issue that remains disputed in the CPUC proceeding.

- **Technology profiles:** The profiles for solar PV and solar thermal must be separated and updated regularly. TM profiles used to date are based on historic data and should be updated to reflect the much higher penetration levels and locations in more recent forecasts.

- **Other approaches:** SCE has pointed out modeling discrepancies in the current CPUC proceeding approach and suggested a new "Net Load Peak" approach.

The CAISO and stakeholders must address other, higher-priority RISO implementation issues during that time, and resources should not be diverted to less-critical areas.

The proposed separate, necessarily truncated stakeholder process to develop critical ELCC details would have to be conducted at the same time as all of the other RISO-related efforts. For the Regional RA Rules initiative alone, this work will include development of a new PRM methodology (LSA notes that it took years to arrive at the current methodology), new Maximum Import Capability (MIC) features, and any contractual or other adjustments that stakeholders must make in their own procurement, contractual, and other activities.

One RA issue raised at the July 21st meeting element that does need additional attention is the availability hours used to determine Qualifying Capacity under the Exceedance methodology. The current CAISO tariff already provides for adjustment of those hours over time, and the CAISO should use that current practice to examine the optimal hours to use with a RISO.

(This determination need not necessarily be uniform across the RISO footprint. For example, electric load in the northwest peaks in different seasons, and at different times, than California load. Consideration of the different load patterns in different RISO areas would be a better use of CAISO and stakeholder resources in this initiative than duplicating the CPUC ELCC proceeding.)

The CAISO has identified significant RISO-related work in other areas – such as generator interconnection – that have already been postponed and have not even been initiated yet. Stakeholders are already struggling to keep up with the "normal" level of market changes (e.g., nearly 1,000 BPM changes in the last few years) and all the other RISO-related activities.

In this environment, the CAISO should be judicious in investing its and stakeholder resources where those resources are most needed now. Duplicating more reasoned proceedings elsewhere should be assigned a lower priority than designing and implementing the many new features needed for RISO implementation, and re-doing the solar/wind RA counting methodology is just not a critical element of RISO formation under the current circumstances.

LSA does not see a conflict between initial adoption of the Exceedance methodology and a later transition later to ELCC. As is clear from the above discussion, there is not now a standard, accepted methodology for applying ELCC to individual resources (including any transitional issues with contracts specifying specific RA amounts), and there is insufficient time to develop one in a reasoned manner. When those questions are resolved (e.g., through current CPUC proceedings and processes in the PacifiCorp jurisdictional states), the RISO can consider moving to that methodology.