

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

California Independent System Operator Corporation)

Docket No. ER10-1706-000

**MOTION TO INTERVENE AND COMMENTS OF
THE LARGE-SCALE SOLAR ASSOCIATION**

Pursuant to Rules 212 and 214 of the Commission’s Rules of Practice and Procedure, 18 C.F.R. §§ 385.212 and 385.214 (2010), and the Commission’s Notice of Filing dated July 2, 2010, the Large-scale Solar Association (“LSA”) hereby respectfully moves to intervene and submit comments regarding the California Independent System Operator Corporation (“CAISO”) proposed amendments to its approved tariff to implement revised interconnection standards for large asynchronous generators, predominantly wind and solar photovoltaic resources (“Revised Standards”).

LSA supports the CAISO’s effort to review interconnection standards and assure adequate system performance as major changes occur in the composition of the generation fleet – both increased Variable Energy Resource (“VER”) penetration and potential retirement of Once-Through Cooling (“OTC”) and other aging fossil-fuel resources. LSA also appreciates the changes in several areas that the CAISO made to address issues raised by LSA and other stakeholders, including clarification of the proposed exemptions.

However, LSA has major concerns about both the process and the content of the Revised Standards, as detailed below. LSA urges the Commission to: (1) reject the CAISO filing in its entirety; or (2) in the alternative, make the specific changes LSA recommends in this Motion to the Revised Standards proposals.

In support here of, LSA states as follows:

I. BACKGROUND

On July 2, 2010 CAISO submitted modifications to its tariff provisions relating to interconnection requirements applicable to large asynchronous generators, primarily wind and solar photovoltaic resources. The interconnection requirements would address: (1) low voltage ride-through and frequency ride-through capabilities; (2) power factor design and reactive power capabilities; (3) voltage regulation; and (4) generator power management. The CAISO has also proposed exceptions to these requirements that seek to minimize disruption to generation development and recognize the impact of previous, targeted financial commitments made by interconnecting generators.

II. INTERVENTION

The Large-scale Solar Association (“LSA”) represents twelve of the nation’s largest developers and providers of utility-scale, solar generating resources. Collectively, LSA’s members, whose technologies and models span both photovoltaic and solar thermal applications, have contracted to provide over 6 gigawatts (“GW”) of clean, sustainable solar power to utilities in the Western United States, including utilities in the CAISO territory.

LSA members are engaged in the development, construction and/or operation of renewable generation plants throughout California and other western states. LSA and its members may be directly affected by the outcome of this proceeding to the extent that this proceeding affects the grid reliability obligations imposed on LSA members’ projects developed in the CAISO territory.

The interests of LSA are not adequately represented by any other party. This timely motion of LSA to intervene in this proceeding is in the public interest. Accordingly, LSA requests that it be made a party to this proceeding with all rights attendant to such status.

All communications regarding this matter, including all pleadings, filings and orders should be served on the following persons:

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III. COMMENTS

LSA strongly supports the CAISO's effort to facilitate the achievement of California's existing RPS goals and plan for a 33% RPS. Where there is a demonstrated need for additional CAISO grid-management tools to accommodate expected generation-fleet changes – it is in LSA's interest, and that of all users of the CAISO grid, to ensure that the CAISO has them.

LSA members are ready to assume their fair share of the responsibility for maintaining grid reliability. However, grid-reliability obligations assigned to generators should be fair, clear, commercially achievable, and the least-cost means of achieving that objective.

LSA has significant concerns with both the process used by the CAISO to develop the Revised Standards and the content of those proposed standards. LSA urges the Commission to: (1) reject the CAISO filing in its entirety; or (2) in the alternative, make the specific changes LSA recommends in this Motion to the Revised Standards proposals.

A. **The Commission should reject the CAISO filing in its entirety,**

The Commission should reject the CAISO filing, for the following reasons:

(1) **The time allowed for consideration of the Revised Standards was inadequate.**

Interconnection-standards development usually takes years, requiring both consultation with affected stakeholders and examination of potential impacts and alternatives. The Revised Standards development, by contrast, began in substance in April and took less

than three months. During the stakeholder review process, stakeholder responses to CAISO proposals were often due a few days later. This rushed process did not allow stakeholders to thoroughly consider CAISO proposals or develop alternatives that might have met CAISO objectives in other ways.

(2) The Revised Standards proposals are premature and not adequately justified.

The Revised Standards would pre-empt both:

-The current NERC/WECC standards development effort for generator

interconnection standards. Adoption of standards by a single BAA is counterproductive and wasteful and, at the very least, is likely to lead to confusion and lack of equipment standardization.

- Any CAISO demonstration of need for the Revised Standards. The CAISO is conducting studies of the operational impacts of 20% and 33% RPS levels and the capability needed to manage those impacts, but those studies have not even been released yet. Piecemeal results that have been released indicate that a 20% RPS may be manageable with existing generation and grid-management tools; it seems likely that even a 20% RPS will not be reached until at least 2014 (given current completion dates for key transmission projects), so there is no urgency to rush the new standards.

(3) The Revised Standards proposals lack critical details needed to determine their

reasonableness. The CAISO filing lacks key details about: (a) how generator compliance will be measured and/or how generator non-compliance will be penalized; and (b) how the CAISO will use the capability provided by the Revised Standards. In particular, the power-management and ramp-rate control proposals would reduce the amount of energy a VER could produce, thus – under the energy-only payment structure in most VER Power Purchase Agreements (PPAs) – reducing generator revenues.

Without the commercial rules on how the CAISO will use this capability – not included in the Revised Standards in part because of the CAISO’s rush to file them – it is impossible to assess the impact or reasonableness of the CAISO filing.

(4) The CAISO Filing does not demonstrate that that the Revised Standards are the most efficient and cost-effective means to provide the services the CAISO needs.

Only after the CAISO determines the tools it needs to manage future generation-fleet changes – which, as noted above, would come after release and thorough vetting of its current 20% and 33% RPS studies, among other things – can the CAISO determine the best way to acquire those needed services. That might include, among other things: (a) increased purchases of current market products (e.g., Regulation); (b) CAISO operational changes; (c) transmission investments, where those are better or more cost-effective than individual generator modifications; (d) new market products (e.g., voltage support, which the Commission long-ago ordered the CAISO to establish as a separate Ancillary Service); and/or (e) some form of generator interconnection-standard revisions. Because the CAISO is effectively skipping the above process and jumping right to additional requirements on individual generators, it has a strong responsibility to take particular care to only require additional capability that it is highly certain will be needed and that cannot be more cost-effectively provided through market mechanisms or in some other manner. The CAISO has not met this burden of proof for many of the elements in the Proposal.

(5) The CAISO has not justified its proposal to impose the Revised Standards only on asynchronous generators. There is no reason why only intermittent generation should be required to provide that capability when others are not required to do so, because:

- *The resulting capability would support general system needs*, not just CAISO management of wind and solar resources – for example, CAISO VAR support needs

at any given time might not relate at all to VERs, and VARs provided by any generator could help meet that need; and

- *The required capability would benefit the system regardless of generating technology* – for example, increased ride-through capability that prevents tripping of any generators would increase system reliability, i.e., this benefit is not realized uniquely from keeping only VERs on-line.

If these capabilities are needed for system reliability, it would be detrimental to system reliability to not require non-VERs to provide them, and the CAISO has not shown why imposing those standards only on VERs is equitable or technically sound.

- (6) **The retroactive imposition of the Revised Standards on generators with already-executed PPAs or otherwise in advanced development would be unfair.** Serial Group and Transition Cluster generation projects generally: (a) Have little or no ability to recover any significant additional costs, because they have either already executed Power-Purchase Agreements (PPAs) or are in advanced stages of obtaining one (e.g., already submitted bids, been short-listed, and are likely wrapping up negotiations); and (b) have largely completed their plant engineering and design, and reflected those features in their Interconnection Requests, permitting, and other development activities, i.e., they are generally beyond the point where their systems can be designed to meet new standards. The CAISO's proposed exemption from power-management standards for plants that have already made a significant financial commitment to new, non-confirming inverters is simply not viable, because it would require filing of a "non-conforming" LGIA, which can take many months for the Commission to process and would thus significantly delay plant financing and construction.

(7) The revised standards rely, in part, on equipment that is either not available today or not available on a competitive basis, in particular with respect to the power-

management equipment. This is a transitional but critical concern, because:

- *Developers generally must order this equipment 18-24 months in advance of their Commercial Operation Dates (CODs),* so the required equipment must be available in 2011 or before for in order to meet the deadline; and
- *There will be many developers seeking to buy this equipment within a very short period,* given the size of the interconnection queue. Thus, multiple vendors are critical, for competitive-pricing reasons and also simple sufficiency of supply.

Three of the four vendor letters in the CAISO filing “demonstrating” equipment are from manufacturers that do not currently offer equipment to meet the standard but simply have plans to do so in the future, supposedly in time to meet CAISO deadlines. Suppliers very often miss target dates, and new equipment often does not function as designed or promised. Moreover, the CAISO advisor supposedly confirming the reasonableness of this and the other Revised Standards is itself an affiliate of one of the manufacturers, i.e., is hardly an objective observer.

B. If the Commission Does Not Reject the CAISO Filing, It Should Order Changes to Key Provisions of the Revised Standards.

If, despite the arguments made by LSA above, the Commission does not reject the CAISO filing in its entirety, it should direct the CAISO to make the sensible and necessary changes listed below, to both clarify the requirements and lessen their adverse impact on generators.

General provisions: The Commission should:

- (1) Subject the new requirements to eventual compliance with eventual NERC/WECC standards.** The Commission’s approval of the Revised Standards should be conditional

only – once NERC/WECC adopts standards addressing any of the same areas covered by the Revised Standards, the CAISO Tariff requirements should be the lesser of the Revised Standards or the NERC/WECC standards, unless the CAISO can specifically show that its more-stringent requirements are needed uniquely for CAISO Controlled Grid reliability.

- (2) **Impose the new requirements on all generation resources** that are technologically capable of meeting them, and not just on VERs.
- (3) **Require the CAISO to use available market mechanisms before exercising or dispatching the new capabilities.** “Command-and-control” directions to VERs should be a last resort; if CAISO markets are functioning properly, VERs will freely offer services enabled by the new capabilities.
- (4) **Prohibit the CAISO from exercising or dispatching the power-management and ramping-control features until it files, and receives Commission approval for, CAISO Tariff provisions thoroughly describing when and how it will use the new VER capabilities.** These details should include appropriate compensation tied, as much as possible, to market prices.
- (5) **Require the CAISO to file, within one year, additional evidence that the Revised Standards are the optimal means of providing the services the CAISO needs to manage future generation-mix changes.** This will give the CAISO time to complete its current 20% and 33% RPS studies, and finalize any OTC analyses, to enable provision of this information to the Commission.
- (6) **Exempt generation projects from the power-management and ramping-control provisions if the required equipment is readily available from at least three suppliers at least 18 months before their Commercial Operation Dates (CODs).** As noted

above, this is necessary to ensure that the equipment is available when it must be ordered, in order to prevent construction and operating delays.

(7) Exempt projects already in the interconnection queue from the Revised Standards

where:

- The developer can demonstrate that permitting changes required to comply would delay plant construction or operations.
- The equipment needed to comply is not available from at least three independent suppliers for delivery by the plant Commercial Operations Date (COD).
- The developer has already executed a PPA for the generating facility.
- The generating plant is in the Serial Group (i.e., where PPA execution should have already taken place).

(8) Exempt projects from the Revised Standards if they have been tendered a draft

LGIA for comment. The CAISO represented this exemption during the stakeholder process as applying if a developer has received a draft LGIA, with no additional conditions; however, some of the language in the CAISO filing (*add cite*) implies that this exemption would take effect only if the draft LGIA was tendered for execution, seemingly a much later stage of LGIA development.

(9) Include any approved exemptions from the Revised Standards as regular options in

the new pro forma LGIA, i.e., do not force developers electing exemptions already approved by the Commission to bear the uncertainties and delays associated with filing of “non-conforming” LGIAs.

Power Factor requirements: The Commission should:

(10) Require the CAISO to demonstrate a project-specific need in the Phase I and Phase

II Interconnection Studies before imposing the proposed power-factor requirements

on generation projects, consistent with Order 661-A. The CAISO was unable, during the stakeholder process, to cite any good reason why this requirement couldn’t be studied

for clusters and/or specific projects during those studies, and the CAISO has not shown why that simple requirement cannot be incorporated into the regular study process.

(11) Allow generators to choose to meet the new standards at either the generator terminals or through funding new equipment installation at the Point of Interconnection (POI) to the CAISO grid. Renewable generators are often located at remote sites that require long tie-lines to the CAISO grid, and it could be more difficult for such generators to meet a power-factor requirement at the POI.

(12) Require the CAISO to clarify that: (a) static VAR capability, not dynamic capability, would be required, i.e., that units would not be dispatched at a constant power factor but would simply be expected to help control voltage at the POI; and (b) power-factor capability would be measured at nominal system voltage.

Supervisory Control and Data Acquisition (SCADA) and Automated Dispatch System

(ADS) Capability: The Commission should:

(13) Delete these proposed additions to LGIA Appendix H. Any SCADA and ADS provisions should apply to all generators, not just asynchronous VERs, and thus belong elsewhere in the CAISO tariff or the LGIA if the current provisions already there are not sufficient.

IV. CONCLUSION

LSA commends the CAISO's efforts and commitment to addressing any reliability issues that may be raised by increased penetration of renewable resources on its system. Generators have a large stake in ensuring reliable transmission service, and LSA supports the introduction of market enhancements and other elements that will support such reliability in the future.

However, the CAISO filing is a rushed and premature effort to impose unjustified, onerous, and unduly discriminatory requirements on asynchronous generators. LSA respectfully moves for

leave to intervene in the above-captioned proceeding and urges the Commission to reject the CAISO filing in its entirety or, alternatively, to make the changes discussed above.

Date: July 23rd, 2010

Respectfully submitted,

/s/ Shannon Eddy
Shannon Eddy
Executive Director
Large-scale Solar Association

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list of ER10-1706 in this proceeding and in accordance with the requirements of Rule 2010 of the Commission's Rules of Practice and Procedure.

Dated at Sacramento, California, this 23rd day of July 2010.

/s/ Eric Janssen
Eric Janssen