



April 16, 2013

Submitted by email to the CAISO at Order764@caiso.com

RE: LSA comments on FERC Order 764 Compliance/15-Minute Scheduling and Settlement: Revised Straw Proposal

The Large-scale Solar Association (LSA) hereby submits these comments on the CAISO's document, FERC Order 764 Compliance/15-Minute Scheduling and Settlement: Draft Final Proposal (Proposal) and the April 2nd stakeholder meeting discussion about the Proposal.

The Proposal contains the CAISO's revised approach to implementing FERC Order 764 (Order), issued June 22, 2012. The Order requires 15-minute scheduling to accommodate Variable Energy Resources (VERs) – solar and wind resources – and the CAISO proposes to comply through establishment of a 15-minute market (15MM).

LSA continues to support the CAISO's overall approach to addressing the Order, i.e.: (1) focusing on the 15-minute scheduling provisions; (2) using existing and already-planned software functionality where possible; and (3) deferring implementation of the Flexible Ramping Product (FRP) until after these provisions are in place.

As before, LSA 's comments focus on three main areas:

- **Grandfathering of PIRP monthly netting:** Consistent with its prior comments in this process, LSA continues to strongly support continuation of the monthly netting provisions of the Participating Intermittent Resources Program (PIRP) for projects with Power Purchase Agreements (PPAs) executed before year-end 2012, for the existing contract duration (same provisions as in the recent Technical Bulletins for "existing" resources).

However, this grandfathering could be narrowed to far fewer generation projects under certain circumstances, and phased out entirely shortly after the new framework is implemented. Specifically:

- No grandfathering would be needed for the large majority of contracts where buyers are responsible for imbalances from forward schedules, if those buyers (e.g., the large Investor-Owned Utilities (IOUs)) commit to foregoing reopeners based on the CAISO-proposed market changes.
 - Grandfathering would then apply only to the small number of contracts under which suppliers are responsible for Imbalance Energy (I/E) risk – i.e., those who act as their own SCs or are otherwise responsible for I/E costs under their PPAs. Moreover, that grandfathering could be eliminated after a year under the new structure if imbalances from forward schedules are significantly reduced, as the CAISO has postulated.
- **Use of an SC's own forecast for VERs:** The Proposal still does not include CAISO criteria for any certification of an SC to schedule using its own forecast, or for determining whether an SC's forecast is sufficiently accurate to continue the practice. Without this information, it is not possible to determine the reasonableness of this Proposal provision.

- **Use of 5-minute forecasts:** LSA is still concerned that, while the Proposal allows use of 5-minute forecasts/schedules to reflect expected intra-hour ramps, the method for constructing 15-minute schedules, and measuring 5-minute imbalances from them, would undercut the benefits of the greater granularity. Instead, the CAISO should measure imbalances from the 5-minute forecasts directly.

The CAISO has said that use of 5-minute forecasts to measure 5-minute imbalances could require changes to the existing 15-minute Real Time Pre-Dispatch (RTPD) software. If these changes are not possible by the planned May 2013 15MM implementation, the CAISO should make them as soon as possible thereafter.

In addition, LSA notes that the allocation method for FRP costs is still unsettled. If the additional imbalances created by the Proposal framework would increase FRP costs allocated to suppliers, then the inaccuracies in the RTPD software should certainly be corrected before FRP is implemented.

Each of these positions is explained further below.

PIRP revisions and monthly netting of imbalances

LSA agrees (and has stated before) that more granular scheduling/settlement provisions, and schedule submission closer to real time, should reduce or eliminate the need for PIRP monthly netting of imbalances from forward schedules. The proposed provisions certainly move in the right direction in this respect, and LSA has strongly supported such changes. Even with complete retention of PIRP monthly netting, the volume of imbalances (in general and as netted) should be less, reducing the scale, scope, and urgency of the issue.

LSA's support for PIRP monthly netting has been motivated by three PPA problems that would be caused by prior versions of the CAISO's Proposal: (1) specific PIRP certification and/or compliance requirements, which would be impossible if PIRP was eliminated; (2) more general provisions for potential contract re-openers for significant PIRP or rate-design changes; and (3) imbalance-energy (I/E) risk for suppliers who act as their own SCs or are otherwise responsible for I/E costs under their PPAs.

The CAISO's retention of a revised PIRP has adequately addressed the first problem. The Proposal retains a form of PIRP, with certification and scheduling provisions that generators can use to comply with the common PPA requirements concerning PIRP.

The second problem can be addressed in this process through a settlement (or at least a public commitment) where buyers who are responsible for imbalances from forward schedules agree not to seek contract revisions based on the Proposal market changes. The large IOUs (who comprise most buyers in the market today) and other buyers have been reluctant to offer those commitments. However, those entities have been among the strongest supporters of eliminating PIRP monthly netting, and they should seriously consider such commitments as a fair tradeoff for attaining that objective.

Thus, the PPA problems from the Proposal framework could be resolved in a manner that would eliminate monthly netting of imbalances for nearly all generators. However, the Proposal does not address the third problem at all, for generators with imbalance risk.

While the proposed market-design improvements – scheduling closer to real time, and allowing 15-minute schedule updates – will likely improve forecast accuracy, the degree to which this will occur is not clear, particularly in the absence of any public analysis by the CAISO. The CAISO should allow the few generators in this situation to continue PIRP monthly netting for a limited period – e.g., 1 year – and then re-consider eliminating monthly netting if I/E seems manageable in actual practice.

SC forecasts for VER scheduling

The Proposal’s lack of certification (and potential suspension) rules for VER/SC use of a non-CAISO forecast for scheduling make it impossible to assess whether that option will be viable. This is really the only option for resources for which the CAISO forecast is not accurate, but until those requirements are specified, that alternative cannot be assessed.

Measurement of 5-minute imbalances

The current Proposal includes 5-minute PIRP forecasts, and SCs using their own forecasts can submit 5-minute schedules. In both cases, the Proposal states that the CAISO would add the 5-minute figures (e.g., that reflect expected ramping) to get a 15-minute schedule, and then divide that 15-minute schedule total to derive average 5-minute figures from which imbalances would be calculated. The CAISO would issue real-time 5-minute Dispatch Instructions based on 5-minute forecasts made 7.5 minutes before the start of the 5-minute interval.

The difference between each “smoothed” 5-minute schedule figure and the corresponding 5-minute Dispatch Instruction would be Instructed Energy, and the difference between the 5-minute Dispatch instruction and 5-minute production in that period would be Uninstructed Energy. Both imbalances would be billed/paid at the 5-minute RT price.

So, for example, a VER SC submitting 5, 10, and 15 MWh submittals for the three 5-minute intervals within a 15-minute interval, then following those exact 5-minute schedules in actual operations, would face the following situation:

SCHEDULING/SETTLEMENT ELEMENT	INT 1	INT 2	INT 3
Submitted 5-minute schedules	5 MWh	10 MWh	15 MWh
15 MM schedule (sum of submitted 5-minute schedules)	30 MWh		
5-minute Instructed Energy (15 MM schedule divided by 3)	10 MWh	10 MWh	10 MWh
Actual operation (same as 5-minute schedules)	5 MWh	10 MWh	15 MWh
Imbalance Energy	-5 MWh	0 MWh	+5 MWh

Thus, VERs with completely accurate 5-minute forecasts that reflect expected ramping behavior (i.e., whose production follows those forecasts exactly) would still be exposed to imbalance-price risk. This result basically negates the rationale and increased accuracy from 5-minute forecasts.

Ultimately, it makes no sense to forecast more accurately, and then intentionally lose that accuracy through the proposed structure. The CAISO should fix this problem as soon as possible – before the 15MM is implemented if possible, and certainly before FRP implementation if the inaccuracies impact FRP cost allocation.