September 24, 2012

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

RE: LSA comments on Flexible Ramping Products Technical Workshop

The Large-scale Solar Association (LSA) hereby submits these comments on the information presented at the CAISO's September 19th Flexible Ramping Product Technical Workshop (Presentation). LSA appreciates the opportunity to comment on the Presentation, which reflects the CAISO's latest version of the proposed Flexible Ramping Product (FRP) framework, including several changes from the August 9 Flexible Ramping Products – Revised Draft Final Proposal (Proposal).

Consistent with its earlier comments in this stakeholder process, LSA's remarks here address the cost-allocation portions of the Proposal – specifically, on the new elements in the Presentation in that area. However, LSA's past comments and recommendations about other elements still apply. For example, LSA still believes that the proposed FRP framework should be revised to:

- **Allocate FRP costs for generation to the Scheduling Coordinator (SC) of the Load-Serving Entity (LSE) buying the power**, and take other actions to ensure that generators do not effectively bear this and other integration costs twice;
- **Coordinate implementation of any resource-specific FRP charges with Variable Energy Resource (VER) scheduling changes required by FERC – specifically,** the 15-minute scheduling option required by FERC Order No. 764 in Docket No. RM10-11-000 ("Integration of Variable Energy Resources"), issued June 22;
- **Eliminate FRP charges for schedule deviations in the direction that helps the CAISO manage the system**, or at least ensure that charges for deviations in the "right" direction are less than those for deviations in the "wrong" direction; and
- **Incorporate a grandfathering element** for resources with contracts Power Purchase Agreements (PPAs) where the LSE buyer is not the SC and that were executed before the November 1, 2011 issuance of the CAISO's FRP Straw Proposal – i.e., those where suppliers could not have anticipated the FRP cost-allocation proposal.

Overview of LSA comments on new Presentation elements

LSA has comments on three elements of the new Presentation, as described below.

- **Expected Energy "Baseline:"** LSA supports the introduction of VER options to establish the basis for FRP charges. LSA urges the CAISO to also provide both sufficient flexibility to switch between the options and additional information for each option. This flexibility and information is especially needed initially, when generators and their SCs may have to test different approaches to determine the best options for their facilities.

- **Timing of baseline-profile submission:** LSA is concerned about the requirement that profile values become "binding" 37.5 minutes in advance and urges the CAISO to explore the possibility of shortening that time lag.

- **Tolerance threshold:** LSA opposes the revised threshold of the lower of 3% of capacity or 5 MW per hour; instead, the CAISO should use the threshold established for Uninstructed Deviation Penalties (UDP) – the greater of 3% of capacity or 5 MW per hour.

These comments are explained in further detail in the remainder of this document.

Expected Energy "Baseline"

The Presentation indicated that the CAISO would base FRP charges on a VER-elected profile, adjusted for Dispatch Instructions pursuant to economic bids. The profile would be selected from the three options listed below and entered into the Master File.

(1) Hourly PIRP self-schedule, divided by 6 (no intra-hour updates);

(2) New 15-minute profile to be produced by CAISO PIRP Forecast Service Provider (FSP) for each VER (at T-37.5 minutes and updated every 15 minutes), divided into 5-minute intervals and re-aggregated into 10-minute intervals; or

(3) VER-submitted 15-minute profile (at T-37.5 minutes and updated every 15 minutes), divided into 5-minute intervals and re-aggregated into 10-minute intervals. The CAISO plans to monitor deviations from these profiles to ensure that there is no gaming (e.g., systematic deviations to minimize charges).

LSA notes that coordination with the implementation of 15-minute scheduling would obviate the need for this separate profile for FSP cost allocation (and the need to monitor VER-submitted profiles for gaming potential). However, these options for establishment of the VER cost-allocation baseline represent a significant improvement to the Proposal.

LSA appreciates the CAISO's consideration of LSA's concerns in this area and the addition of these reasonable cost-allocation options in response to those concerns. The options offered would accommodate VERs that want to actively manage their FRP exposure through provision of their own profiles, as well as those content to have the FSP construct their profile. LSA also appreciates the CAISO's provision of FSP forecast-accuracy data to date for both wind and solar plants, in response to earlier LSA comments.

However, there are two additional provisions that should be added to this framework:

- **Continued provision of recent FSP accuracy data, and expansion to facility-specific data.** The data provided are effectively those under Option (1) above – i.e., based on the current hourly PIRP forecasts, and aggregated for all PIRP plants. (Individual PIRs (and/or their SCs) would have comparable data for their projects.) The CAISO and its FSP should provide comparable data for Option (2) – in aggregate, and for each VER – once the FSP has developed and implement the ability to produce those more granular facility-specific forecasts. This will allow VERs and their SCs to assess the relative accuracy of the different methods and select the option that would be best for their facilities.

- **Flexibility to change options as needed**, particularly when FRP is first implemented (and, for new generation projects, when they first come on-line). The economic benefits and risks of the different options may not be apparent until FRP is implemented, VERs and their SCs have some experience with those options, and the relative costs of Upward and Downward FRP become known. Even after FRP is implemented, new VERs may need some actual experience to determine the optimal option for their specific projects.

Timing of Baseline-Profile Submission

The 15-minute granularity of the baseline profiles in options (2) and (3) above, and the ability to update them 37.5 minutes before each value is binding, are significant improvements on both the T-90 hourly PIRP forecasts and the T-45 economic-bid submission deadline. However, as the CAISO knows, VER forecast accuracy increases when the forecast is closer to the time of production, and it is not clear how the 37.5-minute timing was selected. For example, MISO allows submission of wind-energy forecasts up to 10 minutes before the each 5-minute dispatch period, and there is no obvious reason why the CAISO cannot do the same.

LSA urges the CAISO to explore the potential for submission of FRP profile updates closer to the dispatch intervals where they would apply. If that is not possible for the initial FRP framework, then the CAISO should certainly consider this enhancement in the upcoming compliance initiative for the 15-minute scheduling requirement under FERC Order No. 764.

Tolerance Threshold

The Presentation adds a MW-per-hour "tolerance band" to the previously proposed percentage threshold, so that FRP charges would only apply for deviations that exceed the lower of 3% of capacity or 5 MW per hour (0.83 MWh per 10-minute interval). These are, on the surface, the same metrics used for the tolerance band for Uninstructed Deviation Penalties (UDP), which are included in the CAISO tariff but have not been activated.

However, the UDP tolerance band is set at the greater of the two metrics, while the FRP tolerance band is proposed to be the lower of the two metrics. LSA believes that the FRP tolerance band should be the same as the UDP tolerance band, for the reasons set forth below.

The 3% UDP tolerance-band metric was initially set because the CAISO agreed that it would be unreasonable to expect large generation projects (not just VERs, but gas-fired and other technologies also) to control their output with significantly greater precision than that. The 5 MW alternative was added to accommodate smaller projects, where 3% could constitute small fractions of a MW and even large percentage deviations would have little impact on the CAISO system. Thus, setting the UDP tolerance band at the greater of 3% of capacity or 5 MW recognized the practical limits of both output control and deviation measurement/impact.

The proposed FRP tolerance band sets this reasoning on its head by setting the limits at the lower of the two metrics. Thus, any generation project above 167 MW would be charged for deviations greater than 5 MW, e.g., a 300 MW project would have a limit of 1.7%.

The Presentation and workshop discussion did not explain why a 3% tolerance band would be reasonable for large projects under UDP but a lower limit should apply for FRP. LSA believes that the tolerance bands for both UDP and FRP should be set using the same metrics, and applied in the same way.