September 3, 2014

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RE: LSA comments on Flexible Ramping Products Incorporating FMM and EIM – Revised Straw Proposal

The Large-scale Solar Association (LSA) hereby submits these comments on the August 13th Flexible Ramping Products Incorporating FMM and EIM – Revised Straw Proposal (Proposal), and the subsequent discussion at the August 18th stakeholder meeting.

Consistent with its earlier FRP comments, LSA's remarks here address the cost-allocation portions of the Proposal and reflect the CAISO's responses to LSA's submittal for the last version of the Proposal in June. LSA recommends that the CAISO to make the changes to the Proposal that are listed below and described further in the remainder of this document.

- **Revisit the FRP cost-allocation framework.** The FRP framework and cost allocation should be consistent with CAISO practices for reserve products and coordinated with California Public Utilities Commission (CPUC) procurement policies. LSA believes that FRP is a type of reserve or ancillary product intended to improve system operation, and its cost should be allocated in the same manner as other such products. MISO's recent filing of a very similar "Ramp Capability Service" with FERC describes the product in this way.

  LSA understands that the CAISO does not consider FRP a reserve product and more like an energy cost. Reconciliation of the disparate approaches to the same product may have to be resolved at the FERC level. Regardless, LSA seeks the CAISO's support for the principle that FRP costs (the first direct CAISO-market "integration costs") should not effectively be imposed twice, i.e., they should not be included in "integration cost adders" in the CPUC-jurisdictional procurement process (effectively reducing procurement prices to developers) if they are also imposed on generators by direct allocation in CAISO markets.

- **Cap FRP charges for beneficial schedule deviations at those for harmful deviations.** The proposed monthly aggregation of FRP metrics could help ensure that charges for deviations in the "right" direction (e.g., in response to real-time price signals) are less than those for deviations in the "wrong" direction, but the Proposal contains no mechanism to ensure that this will be the case. LSA believes that helpful deviations should not be charged at all, but at a minimum, if those deviations are charged, a small quantity of such deviations should not result in unreasonably high charges. The CAISO should not discourage generators that have not submitted economic bids from nevertheless responding to real-time price signals in a manner that helps the system at the time.

- **Clarify the benchmark for assessing FRP charges to Variable Energy Resources (VERs).** FRP charges for VERs should be assessed for deviations from 5-minute forecasts, not the 15-minute FMM schedule amounts divided by three. LSA understands from the CAISO's response to its last comments that this would be the case and requests confirmation from the CAISO that this interpretation is correct.

- **Modify the proposed "deadband" for deviations before FRP charges are applied.** The threshold should be the greater of 3% or 5 MW per hour – the same threshold as the Uninstructed Deviation Penalty – and not the lesser of the two. Otherwise, large projects would be subject to tighter tolerances (e.g., 1.7% for a 300 MW project) than the CAISO has found to be reasonable in the past.

- **Incorporate a grandfathering element.** This limited provision would apply to resources with Power Purchase Agreements (PPAs) executed before the November 1, 2011 issuance of the CAISO's original FRP Straw Proposal (i.e., those where suppliers could not have anticipated FRP costs) and where suppliers would be responsible for FRP costs.

Coordination with current practices and procurement framework

There are two major conceptual issues the FRP cost allocation should address – market cost allocation and treatment in resource procurement activities.

As a general issue, a ramping product is really no different than Ancillary Service products, which contribute to the reliable and efficient operation of the system and the market. The FRP is one tool for reducing scarcity and out-of-market interventions, improving market price development and transparency, and generally helping the overall system operate more reliably and efficiently.

LSA comments throughout the FRP stakeholder processes have consistently supported allocation of FRP costs consistent with Ancillary Services costs, which are allocated to load. MISO's recent FERC filing for its Ramp Capability Product (2014-06-10 Docket No. ER14-2156-000) supports this argument. MISO states that a properly designed ramping product results in a net benefit to load and states: "The costs of ramp capability will be allocated like the costs of the existing Operating Reserve products because, like MISO's operating reserve products, ramp capability is similarly needed for reliable system operations."

As explained in the testimony of Joseph Gardner (MISO Vice President of Forward Markets & Operations Services) MISO has elected to allocate costs to the "beneficiaries of the ramp capability product rather than those transactions that caused the need for the ramp capability product." (Section 2.4 of Attachment A). Mr. Gardener states as follows:

> If Up Ramp Capability and Down Ramp Capability costs were allocated to those transactions that cause the need for the product, analysis to apportion the causes of expected and unexpected changes would be required. This approach would result in a very complex rate design. About 90% of the need for Up Ramp Capability and Down Ramp Capability is due to Load and changes in scheduled interchanges. MISO does not believe that the total yearly Up Ramp Capability and Down Ramp Capability costs and the small potential cost shift between entities justifies the development and implementation of a highly complex cost causation rate design. Furthermore, it is unclear if a cost causative rate design for Ramp Capability Product costs would provide the proper incentives to reduce those transactions that cause the need for the product, thus reducing the amount of product needed.
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> MISO thus proposes to allocate the cost of the Ramp Capability Product to those transactions that primarily benefit from the product (i.e., load and exports). This approach is consistent with the cost allocation methodologies for Operating Reserves. Moreover, with a cost allocation approach identical to contingency reserve allocation, a new charge type is not required to allocate the costs associated with the Ramp Capability Product; rather, the costs can be allocated using an intermediate calculation in the same charge type used for contingency reserves.

The tremendous complexity of the proposed FRP cost allocation certainly illustrates the correctness of MISO's concerns in this regard. Likewise, based on the available information, MISO's assumptions regarding cost levels may apply also to the CAISO system – the CAISO's August 18th Q2 2014 Report on Market Issues and Performance shows that costs for the Flexible Ramping Constraint (FRC) were about $5.3 million for the first half of the year and appear to be trending downward (pp. 25-26).

The CAISO's responses to LSA's comments in this respect have consistently reflected the CAISO's apparent view that it does not consider FRP to be like a reserve product but more like an energy product. As noted above, conflicts and inconsistencies in the treatment of costs for the same product in different jurisdictions may have to be resolved ultimately by FERC.

However, if the CAISO persists in allocating FRP costs to generators (or their Scheduling Coordinators (SCs)), LSA seeks the CAISO's agreement that those costs should not be included in an integration-cost "adder" in the CPUC-jurisdictional resource procurement process. Such adders count against supply bids in the procurement process on the assumption that they are borne by ratepayers.

For example, the transmission-cost adder ensures that a cheaper energy bid from a project with high Network Upgrade costs is not selected over a more expensive bid that will cost ratepayers less overall. From the supplier's perspective, the transmission cost is "paid" once, through the procurement-process adder, since its transmission costs are reimbursed.

Similarly, the CPUC is developing an "integration cost adder" in the procurement process. The concept – as with transmission costs – assumes that operational costs to accommodate different supplier technologies and projects will ultimately be borne by ratepayers and, therefore, should be counted against supply bids.

As noted above, FRP will likely be the first separately identified CAISO "integration cost." If the CPUC adopts use of an integration adder in the procurement process that includes expected FRP costs, and then the CAISO charges FRP costs to generators (or their SCs) directly, then the combination will effectively charge generators twice.

As noted in LSA's last comments, there are two ways to avoid this double-counting.

The first way is to include estimated FRP costs in the procurement process integration adder and then allocate FRP market costs to the Load-Serving Entity (LSE) (or its SC) that has contracted to buy the output of the generation project. That way – like transmission costs – the LSE can consider FRP costs in its resource selection. As with transmission costs, this allocation would not interfere in any way with bilateral supplier-LSE negotiations, and those parties could still decide between them to share FRP costs in a different manner.

The second way is to allocate FRP costs to the generator (and its SC) but ensure that the CPUC does not include FRP (or other integration costs billed directly to generators) in any integration-cost adder. This approach is less optimal, because it would require developers to estimate FRP costs and include them in their bid prices to LSEs. Developers are far less able than the CAISO or LSEs to be able to estimate likely FRP costs, and the resulting uncertainty will make it more difficult to finance generation projects under those terms.

The higher financing costs would also have to be reflected in generation bid prices and would ultimately be paid by ratepayers. Moreover, generators usually do not control how their output is scheduled or bid into the market, so allocating costs based on imbalances from those schedules or bids would be unfair.

However, despite the inefficiency of this approach, if the CAISO continues to propose allocation of FRP costs to generators (or their SCs) through CAISO-market settlements, LSA requests that the CAISO include in the next version of its Proposal a commitment to working with the CPUC (e.g., making filings in any CPUC proceeding where integration-cost adders or similar features are considered) to help ensure that FRP costs are not double-counted.

FRP charges for helpful scheduling deviations

As stated in its prior comments, LSA believes that the CAISO should not charge at all for schedule deviations in the "right direction" (that help the system by moderating net load ramps). The CAISO should encourage these deviations, and not send price signals to reduce them. For example, generation deviations in the upward direction in hours when net load is increasing help the system and should not be charged, and the same is true of deviations in the downward direction in hours when net load is decreasing.

LSA understands that the CAISO wants generators and loads with operating flexibility to submit economic bids. However, such bids are not required. The CAISO should not discourage real-time market response to price signals by resources and loads that have not submitted bids in advance that will help in resolving real-time market problems by penalizing them through allocation of additional costs for doing so.

Moreover, because of the cost-sharing aspect of the cost allocation, it is possible that charges for deviations in the "right" direction will actually be higher per MWh than those in the "wrong" direction – i.e., if there are few deviations in that "right" direction, so the costs would be spread over few MWh. This is simple math. If only a few resources are helping the CAISO, it seems perverse for the CAISO to charge them more as a result.

The proposed hourly FRP cost allocation granularity, and the monthly aggregation of hourly costs and deviations, might increase the likelihood that FRP charges for deviations in the "right" direction will at least be lower than those in the "wrong" direction, but that is not certain under the Proposal.

At a minimum, there should be a cap on charges for deviations in the "right" direction at the same level as deviations in the "wrong" direction for each hour. If the CAISO monthly/hourly cost-allocation methodology yields this result, then so much the better – no adjustment would be needed. If not, this rule would ensure that generators helping the CAISO manage its system are not penalized through charges that are higher than those to whose deviations harm the system.

The CAISO did not fully explain its reasons for rejecting this common-sense suggestion in its earlier FRP effort, and its responses to LSA's last comments likewise did not explain the reasons for its position. LSA requests that the CAISO either adopt this proposal or clearly explain why it will not.

Measurement of 5-minute deviations for FRP cost allocation

LSA understands from the CAISO's response to its last comments that real-time dispatch instructions to VERs would use the 5-minute forecast (and not the 15-minute FMM schedule, divided by 3) to issue real-time Dispatch Instructions. Thus, the 5-minute forecast would set the benchmark for determining real-time Uninstructed Imbalance Energy (UIE) that would be used to allocate FRP charges, and a generator following the 5-minute forecast exactly would not be penalized through an FRP cost allocation for the forecast "smoothing" in the FMM scheduling process.

LSA requests that the CAISO explicitly confirm its interpretation above, including the applicability of this approach whether a VER submits self-schedules or economic bids.

Tolerance threshold for FRP cost allocation

The Proposal retains the prior CAISO "tolerance band" feature, i.e., FRP charges would only apply for deviations exceeding the lower of 3% of capacity or 5 MW per hour (~0.42 MWh per 5-minute interval). This is, on the surface, the same tolerance band used 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 was based on CAISO and stakeholder agreement that it would be unreasonable to expect large generation projects (not just variable resources, 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 both practical output control limits and deviation impacts.

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 Proposal does not explain why a 3% tolerance band is reasonable for large projects under UDP but a lower limit should apply for FRP. The CAISO response to LSA's last comments indicated that the CAISO wants tighter tolerances because even 5 MW more of FRP procurement can increase costs. However, this is no different from the case with energy costs and UDP.

LSA believes that the tolerance bands for both UDP and FRP should be based on the same metrics and applied in the same way. Alternatively, the CAISO should clearly explain its rationale for tolerance bands that do not reasonably reflect the operating limits of the resources to which they would apply.

Grandfathering proposal

As noted above, LSA recommends that the CAISO exempt generators in a limited number of situations from imposition of FRP charges. This exemption would only apply where sellers could not have anticipated these costs and have no realistic way to recover them. Specifically, generation projects would only qualify where:

- Their PPAs were executed before the November 1, 2011 issuance of the CAISO's initial Straw Proposal;
- Those PPAs did not anticipate the imposition of integration charges (i.e., the parties did not already consider the possibility of such charges);
- They would be responsible, fully or partly, for FRP charges; and
- Their PPAs do not allow them to control their exposure to such charges, e.g., contain requirements generally that they produce all the energy that they can. In other words, they cannot moderate their ramps or schedule deviations in order to manage their exposure to the new costs without violating their PPA terms.

The ability to transfer FRP cost responsibility from the seller to the buyer – an element of the 2012 CAISO FRP proposals – would not mitigate this problem, because those sellers have no leverage to require their buyers to accept this responsibility. Likewise, any transitional mechanism to allow for "renegotiation" of contracts would not mitigate this problem either, because those sellers have no leverage to require buyers to accept such contract revisions.

SCE stated in 2012 that the above criteria would apply only to a small number of projects, e.g., that it would be responsible for most or all the FRP charges assessed to generators under the terms and conditions of its own supply contracts. LSA understands that this is likely the situation for SCE contracts, however, it is likely less true for the other large investor-owned utilities and perhaps many municipal utilities as well; for example, some of them (e.g., earlier contracts) do not designate the buyer as the SC, so the generator bears any additional CAISO market costs and (as noted above) many of those contracts do not allow the generator to make operational changes to mitigate those risks.

LSA does not know the extent to which its proposed exemption would apply but does not disagree with SCE's assessment. Moreover, generation projects that would be eligible might not request exemptions, depending on the terms and conditions of the exemption and the final FRP framework.

However, like the situation with the Resource Adequacy (RA) Standard Capacity Product (SCP), a grandfathering-type exemption (or at least an optional transitional mechanism, like the provisions for recent Participating Intermittent Resources Program (PIRP) changes) is warranted for those contracts.