

Stakeholder Comments Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the FRACMOO Phase 2 stakeholder initiative Revised Draft Framework Proposal posted on January 31, 2018.

Submit comments to InitiativeComments@CAISO.com

Comments are due February 21, 2018 by 5:00pm

The Revised Draft Framework Proposal posted on January 31, 2018 and the presentation discussed during the February 7, 2018 stakeholder web conference may be found on the [FRACMOO](#) webpage.

Please provide your comments on the Revised Draft Framework Proposal topics listed below and any additional comments you wish to provide using this template.

The ISO is in the process of updating the data provided in the Revised Draft Framework Proposal. The ISO will include additional observations for 2016 and 2017. Additionally, the ISO will estimate the impacts of 15-minute IFM scheduling. The ISO will release this updated analysis as soon as possible.

First Solar, Inc. (First Solar) appreciates the opportunity to comment on this proposal and is pleased to see the CAISO addressing these operational issues by considering dispatchable variable energy resources (VERs) as part of the solution. As we have discussed in our previous comments and demonstrated through specific studies, utility-scale solar generating facilities can be controlled and operated to provide flexible ramping and essential reliability services

faster than traditional resources.¹ Overall, we find the CAISO’s proposal reasonable and believe that with some fine-tuning this framework outlines a workable solution to the identified operational needs. First Solar offers the below comments on specific topics:

Identification of ramping and uncertainty needs

The ISO has identified two drivers of flexible capacity needs: General Ramping needs and uncertainty. The ISO also demonstrated how these drivers related to operational needs.

Comments:

First Solar commends the CAISO for recognizing the important contributions that dispatchable VERs can make towards meeting flexible ramping needs. However, the CAISO needs to ensure that the current methodology, starting with calculation of net load (i.e. load from both non-dispatchable and dispatchable VERs), does not unduly discount the additional value provided by dispatchable VERs, which is properly recognized elsewhere in the proposal. Dispatchable utility-scale solar offers opportunities to provide flexibility to the grid because of both its visibility and controllability in a way that non-dispatchable behind-the-meter solar cannot. Failing to differentiate dispatchable VERs from non-dispatchable VERs in the evaluation of need could result in an inaccurate assessment that undermines flexible capacity drivers.

We ask that the CAISO include the benefits of dispatchable VERs in the assessment of ramping needs, either through removing these dispatchable resources from the assessment of net load or through another means. We support the ability of renewables to participate in the solution, but we believe a further step is necessary. CAISO can better quantify the operational needs of the system by considering the capabilities of dispatchable VERs distinct from non-dispatchable VERs in its evaluation.

Definition of products

The ISO has outlined the need for three different flexible RA products: Day-ahead load shaping, a 15-minute product, and a 5-minute product.

Comments:

First Solar seeks clarification on how the bidding process will work for the different real-time products. We believe that the proposal for the must-offer obligation for dispatchable VERs as the lower of the shown Effective Flexible Capacity (EFC) value or the resource’s forecasted output will ensure that these resources can bid zero during non-available hours. However, the workability of the CAISO’s proposal depends on the ability of dispatchable VERs to participate in the described way without prejudice or penalty.

¹ NREL, CAISO, and First Solar, Using Renewables to Operate a Low-Carbon Grid (January 2017), available at <http://www.caiso.com/Documents/UsingRenewablesToOperateLow-CarbonGrid.pdf>

Quantification of the flexible capacity needs

The ISO has provided data regarding observed levels of uncertainty, in addition to previous discussions of net load ramps.

Comments:

First Solar reiterates our above comments on the importance of incorporating dispatchable VER capabilities into the CAISO’s assessment of flexible ramping needs. We believe incorporating the capabilities provided by dispatchable VERs into the assessment will result in a more accurate quantification of the flexible capacity needs.

Eligibility criteria and must offer obligations

The ISO has identified a preliminary list of resource characteristics and attributes that could be considered for resource eligibility to provide each product. Additionally, the ISO is considering new counting rules for VERs that are willing to bid into the ISO markets.

Comments:

First Solar commends the CAISO for creating a workable proposal that will allow dispatchable VERs to participate in the flexible capacity framework. The ability to bid zero MW when a dispatchable VER is unavailable appears to meet the goals of allowing dispatchable VERs to fully and equitably participate in the market. We believe this solution is workable and encourage the CAISO to continue to evaluate internal processes to avoid unintended barriers that could hinder the ability of dispatchable VERs to participate in a meaningful way. Our major concern is that the CAISO must ensure that in implementation there is not a bias created towards resources that bid non-zero for all 24 hours. We look forward to working with the CAISO on this topic to ensure unbiased implementation.

The CAISO has also described a determination that roughly 75% of uncertainty is a “reasonable starting point” for how much capacity should be available 24 hours a day, essentially resulting in a 25% cap on the flexible resource adequacy products dispatchable utility-scale solar could provide. First Solar seeks clarification on how this “cap” would be interpreted and applied to calculate how much and when dispatchable utility-scale solar resources could provide which flexible RA products, and how the allocation would be determined across load serving entities. We request that the CAISO elaborate on this concept and provide more details that would enable us to better assess the impact on the ability of dispatchable utility-scale solar to provide flexible RA capacity.

Finally, the CAISO has asked specifically for stakeholder feedback on how the EFC for VERs should be calculated. Upon preliminary review, First Solar believes that PG&E’s “simplified” proposal for EFC appears to be more reasonable than the exceedance approach. However, we believe that the CAISO should continue to work towards an approach that more accurately characterizes the flexible resource that dispatchable solar generation can provide.

The PG&E proposal is a reasonable interim measure while the CAISO continues to improve their methodology.

Equitable allocation of flexible capacity needs`

The ISO has proposed a methodology for equitable allocation of flexible capacity requirements. The ISO seeks comments on this proposed methodology, as well as any alternative methodologies.

Comments:

First Solar has no comments at this time.

Other

Please provide any comments not addressed above, including comments on process or scope of the FRACMOO2 initiative, here.

Comments:

First Solar compliments the CAISO on this initiative addressing identified operational issues within the existing flexible capacity framework. We have demonstrated the capabilities of utility-scale solar to provide solutions and appreciate the CAISO considering these in its proposal.