Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Workshop

Comments by Department of Market Monitoring
February 12, 2018

DMM appreciates the opportunity to comment on the ISO's *Energy Storage and Distributed Energy Resources (ESDER) Phase 3 Workshop* held January 16, 2018.

The ISO's ESDER Phase 3 Issue Paper contemplates non-generator resource (NGR) modeling enhancements as part of the initiative scope. The need for NGR modeling enhancements to manage various limitations of storage resources has been raised by multiple stakeholders and has been a subject of discussion in earlier phases of the ESDER initiative. However, some stakeholders have recently indicated that existing market mechanisms may be sufficient for storage resources to manage resource limitations within the existing non-generator resource (NGR) model.

For example, during the January 16 workshop PG&E highlighted the issue of managing limitations for storage assets when distribution-level constraints limit resource charge or discharge ranges.[1] To reflect these limitations, PG&E indicated it regularly submits outage cards via the ISO's Outage Management System (OMS). During the workshop, other stakeholders confirmed they use similar practices to manage resource limitations. Some stakeholders also indicated success in managing storage resource limitations through use of appropriately structured energy bids.

DMM notes that outages and de-rates are the appropriate tool to manage temporary planned or forced physical limitations of a resource. However, to the extent that resource limitations are truly physical in nature but are systematic and predictable, the use of OMS cards should not be viewed as a substitute for market design which more completely models costs and limitations of a given resource type.

For storage resource limitations which are non-physical, the ISO specifically clarified in a market notice sent May 11, 2017 that the use of outages to manage non-physical or contractual limitations is not permissible.[2] For these limitations, DMM continues to support explicit inclusion of costs associated with resource limitations in the market optimization as opposed to using outages, hard constraints or use-limited status for non-physical constraints.

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[1] *What Are the Capabilities of the NGR and REM Market Models for Batteries?*, PG&E, January 16, 2018, p.8: http://www.caiso.com/Documents/Presentation-AlvaSvobodaPG-E.pdf

[2] *California ISO Market Notice: Outage Reporting for Energy Storage Resources with Physical Limitations*, May 11, 2017: http://www.caiso.com/Documents/OutageReporting-EnergyStorageResources-PhysicalLimitations.html.

DMM has commented on the topic of NGR resource limitations and outages in earlier phases of the ESDER initiative and DMM reports.[3] Many limitations faced by NGR resources appear economic in nature (e.g. are based on negotiated warranties, contracts, or performance guarantees). Such contractual obligations based on economic considerations are not an appropriate basis for Masterfile parameters or to justify use-limited status for NGRs or any other resource.

DMM recommends the ISO continue to work with stakeholders to identify whether hard constraints (e.g. use-limited status, use of static Masterfile parameters, or use of outage cards) are actually economic in nature and whether these constraints can be modeled explicitly within the optimization. For example, are contract terms or warranty guarantees based on routine maintenance and costs? If so, can the maintenance costs upon which contracts are negotiated be modeled explicitly within the market instead of the contract limitation itself? There may be costs specific to NGR resources that do not fit well into the existing bid structure but should nonetheless be considered in the optimization.

As noted above, some stakeholders have recently indicated success with the approach of managing NGR resource limitations through economic bidding strategies. In the short run, DMM supports this approach as the best alternative under the current market design where NGR resources are not subject to local market power mitigation and have no other avenue to reflect costs. However, this practice may become less effective in managing resource limitations should NGR resources by subject to bid mitigation in the future. This is because costs or limitations reflected in energy bids today may not be marginal costs and would not be reflected in default energy bids used in market power mitigation processes.

DMM encourages the ISO to continue working with stakeholders to fully understand costs faced by storage resources, and to consider market enhancements that will allow resources to explicitly reflect those costs in the market optimization. DMM also reiterates that hard constraints should only be used to reflect physical resource limitations and should not be based on contractual limitations or negotiated performance guarantees.

[3] *2016 Annual Report on Market Issues and Performance,* Department of Market Monitoring, Section 11.13, pp. 262-264: http://www.caiso.com/Documents/2016AnnualReportonMarketIssuesandPerformance.pdf.
See also *Energy Storage and Distributed Energy Resource Phase 2 (ESDER 2) Third Revised Straw Proposal, Comments by Department of Market Monitoring*, May 24, 2017:
http://www.caiso.com/Documents/DMMComments-EnergyStorageandDistributedEnergyResourcesPhase2-ThirdRevisedStrawProposal.pdf