

Storage as a Transmission Asset

Stakeholder Comment

Submitted by	Company	Date Submitted
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CESA appreciates the opportunity to submit comments on presentation materials discussed during the working group meeting, hosted on June 29, 2018, in the Storage as Transmission Asset (SATA) Initiative at the California Independent System Operator (CAISO). CESA continues to support the direction and scope of the SATA Straw Proposal and looks forward to reviewing and providing constructive feedback on the forthcoming Revised Straw Proposal.

Informational discussion

Based on stakeholder comments to the straw proposal, the ISO provided additional information regarding how SATA resources will be considered in the ISO's Transmission Planning Process (TPP). The ISO's working group presentation built on the materials covered through the straw proposal and focused on:

1. Assessments of need and technical requirements
2. Economic evaluation of project alternatives
3. Transmission Asset versus Market Local Resource considerations
4. ISO Operational control of storage assets

Are there additional questions regarding the materials that the ISO provided during the working group process or questions specifically relating to how the ISO will consider SATA resources in the TPP that the ISO has not yet discussed?

Comments:

CESA appreciates the informational discussion led by the CAISO staff to help stakeholders understand the TPP technical studies and evaluation process. In doing so, stakeholders have a better understanding to recommend, in the correct forum, any potential enhancements or modifications to the TPP to accommodate the consideration of SATA resources to meet transmission service needs.

Assessments of need and technical requirements

During the working group meeting, the CAISO discussed how it will identify SATA resources as potential transmission solutions where transmission needs provide for sufficient lead time. CESA generally agrees that it may be prudent for the CAISO to seek ‘backstop’ solutions for identified transmission needs that could be met by SATA resources, but does not believe this should be a binding criteria by which SATA resources would be eligible. If existing energy storage resources (e.g., participating as a merchant plant) or energy storage resources in the interconnection queue are considered eligible, there may be opportunities to ensure the timely development and repurposing of SATA resources to address the transmission need in a timely and reliable manner.

Additionally, the CAISO explained the uncertainty of load and other power-flow related forecasts make forecasts more difficult over a longer time horizon. In many ways, the uncertainty of forecasts advantages SATA resources because it offers the CAISO optionality to truly ‘right size’ the transmission participation ‘period’ and the selected transmission solution to fit identified transmission at the right time. Large and small storage solutions can show flexibility to shift from transmission to market resources. CESA notes that the forecast used to move forward with traditional ‘wires’ solutions can be off, causing underloaded or underutilized upon solutions. The CAISO has the potential flexibility to procure SATA resources as ‘closer to the edge’ solutions that account for changes in load forecasts, thereby delivering ratepayers greater value with appropriately sized solutions that more precisely meet the need and recognizing the option value of SATA resources. At the same time, to ensure regulatory and market certainty for SATA providers, changes should be accommodated through pre-determined processes and with some bounds to the frequency and magnitude of changes.

Finally, in assessing the transmission need and the technical requirements of the SATA resource, the CAISO indicated that it would only look to procure ‘right sized’ solutions. However, CESA requests that clarifications be provided that allow appropriate sizing of the SATA resource to account for degradation and/or some *de minimis* margin of oversizing if prudent, e.g. transmission optionality. CESA notes that existing transmission solutions can leverage this type of ‘partial oversizing’ now, e.g. in cases where a double transmission corridor is constructed but only one line is strung, giving optionality to string a second line if so determined or needed in the future. Furthermore, as noted in previous comments, SATA resources should be allowed to take advantage of shared facilities with other market resources that follow the interconnection queue study process and use separate Resource IDs. This will support the efficient use of interconnection capacity and allow for capacity-differentiated multiple-use applications of energy storage resources as well as hybrid generation-storage resources.

Economic evaluation of project alternatives

The CAISO presented at the working group meeting on the criteria for SATA resource eligibility, how it will need to incorporate other cost and revenue categories in the TPP evaluation (in addition to the usual initial capital outlay consideration in the current TPP evaluation), and how it aims to evaluate SATA resources and traditional transmission solutions on an ‘apples-to-apples’ basis. Although many of these details will be resolved in the TPP, as indicated by the CAISO, CESA notes that the TPP should

accommodate evaluations on multiple time scales. At the working group meeting, the CAISO seemed to indicate a strong preference to procure SATA resources with equivalent lifespans as traditional transmission solutions, which the CAISO is accustomed to lasting 40 or more years. CESA agrees that a net present value (NPV) evaluation of SATA resources that accurately account for any replacement costs could accommodate a ‘like for like’ comparison. At least for the first TPP cycle where SATA resources will be considered, CESA recommends the development and implementation of such an evaluation, which will be more accurate for long-lasting resources such as bulk energy storage. There are significant benefits to procuring large transmission assets that can meet the identified transmission need with economies of scale and be amortized over a long period of time.

At the same time, CESA recommends explorations of ‘like for like’ comparisons on a somewhat shorter time frame in reasonable cases. While the CAISO indicated a *de riguer* expectation for SATA resources to exist for 40 years, equivalent to traditional transmission solutions,¹ it may be in the ratepayer’s interest to assess SATA projects and criteria in a shorter time frame, or at least to evaluate the sensitivities of such an analysis. The CAISO already conducts transmission needs assessments and reassessments of the need for transmission solutions on an annual basis, so CESA sees no major barriers to adapting the TPP process to consider sensitivities for shorter-duration transmission solutions, which could serve to more precisely fit transmission solutions to transmission needs as they arise or change.

Transmission asset versus market local resource considerations

CESA appreciates the appropriate roles of the CAISO to manage transmission system planning and the California Public Utilities Commission (CPUC) to manage resource planning. At the working group meeting, the CAISO presented a preliminary list of criteria for resources that would be eligible as a transmission facility instead of a local generation resource, including whether CAISO visibility is needed, heavily constrained operations are expected, capacity obligations are aligned with transmission system needs, and overly complex interconnection is required. CESA supports this criteria and recommends that this determination be made on a case-by-case basis in the TPP, as this determination will be unique to each location and transmission need.

ISO operational control of storage assets

CESA understands the CAISO must have transmission service performance be assured from SATA resources. Stakeholder discussion identified various approaches to this, and CESA recommends the CAISO accommodate ‘control’ preference of resources. On one hand, operational control can occur through out-of-market state-of-charge (SOC) management by the CAISO. Alternatively, obligations to deliver on the transmission service through combination of obligations (similar to the must-offer obligations of Resource Adequacy (RA) capacity resources), contractual provisions for non-performance, CAISO operational visibility of the resource, and CAISO recall provisions could be used. The CAISO may evaluate how the frequency of switches between domains affects the CAISO’s preference. Further, one

¹ In other words, the CAISO did not favor a transmission deferral use case for SATA resources.

approach may be more cost-effective than the other, depending on the parties willingness to absorb risk of non-performance on the market side, i.e. if the resource must forego a lucrative market opportunity even when in the market because it lacks energy after serving its transmission function. In either case, maintaining CAISO independence can be readily achieved since signals or actual switching from the CAISO, independent of price, will occur.

Contractual Arrangement

The ISO proposes to develop a new agreement with SATA resource owners that captures elements from Participating Generator Agreement (PGA), Participating Load Agreement (PLA), Reliability-Must-Run (RMR) and Transmission Control Area (TCA) agreements, among others. At the working group meeting, the ISO provided additional details about this proposed new agreement. Please provide comments on this proposal.

Comments:

At a high level, CESA supports the CAISO's proposal to develop a new SATA-specific agreement since none of the other existing agreements fully capture the capabilities of a SATA resource nor all the elements from the other existing agreements necessary for a SATA resource. As the CAISO noted at the working group meeting, a separate SATA agreement that captures elements from these other existing agreements will facilitate more simplified and easy modifications to the SATA agreement as needs for modifications arise. For the same reasons, CESA again agrees with the CAISO that a SATA resource owner and/or operator should not need to become a Participating Transmission Owner (PTO) as a condition for providing transmission service. Many of the PTO provisions are inapplicable to SATA resources and the new SATA agreement can effectively reflect the reliability, obligations to serve, and performance provisions needed from transmission assets.

Cost Recovery Mechanism

The ISO has proposed two alternative cost recovery mechanisms in the straw proposal:

1. Full cost-of-service based cost recovery with energy market crediting
2. Partial cost-of-service based cost recovery with no energy market crediting

At the working group meeting, CRI and SDG&E provided additional ideas for cost recovery. Through the discussion, a third option was proposed: Full cost-of-service with partial cost recovery. This option would mitigate risks associated with option 2 and provide incentives that do not exist under option 1. Please provide comments on the proposal and/or comments provided by CRI and SDG&E along with this third option. In comments, please provide a description of how they compare and contrast to the ISO's first two options, specifically as it pertains the direction provided in the FERC policy statement.

Comments:

CESA continues to support the CAISO's two proposed cost recovery mechanisms, including the clarifications on how SATA charging and discharging will be settled in the market during transmission reliability events. Depending on the nature of the transmission need, one of the cost recovery

mechanisms may be more appropriate. The CAISO presented on how either Option 1 or 2 would be made available as cost recovery mechanisms for SATA resources except when resources are interconnected at the local level (less than 200 kV) due to the lack of a Phase 3 competitive solicitation in the TPP. CESA understands that there are cost allocation implications of SATA resources at the local level that need to be worked out in the TPP but it should not preclude making only Option 1 and PTO ownership available for local projects.

CESA supports in initial concept SDG&E's idea for cost-recovery where energy revenue crediting is split between the SATA resource owner and ratepayers. CESA views this third option (Option 3) as being a hybrid of Option 1 and 2 by essentially allowing full cost-of-service of the SATA resource sized to the transmission need, with the TAC portion being reduced by a smaller share (as compared to Option 1) as energy market revenues are shared with the SATA resource operator. With greater incentives to participate in the market, SDG&E's proposed Option 3 may reduce the TAC portion by a larger absolute amount in practice than if no such incentives were in place. The net effect may still be that the SATA resource is a more cost-effective transmission resource due to energy market revenue offsets. Option 3 requires more detail but it may be worthwhile to test whether this cost recovery mechanism would produce a more cost-competitive SATA resource. For example, if the TAC cost recovery of the SATA resource amounts to \$10 million and energy market revenues in one year totals \$1 million, the SATA resource would only have its costs to the ratepayer reduced to \$9.5 million (instead of \$9 million under Option 1, in theory, assuming similar market participation). However, it bears to be seen whether market participation behaviors would be different under Option 1 versus Option 3, as well as whether Option 2 with a reduced TAC portion would be more cost-competitive to ratepayers since the cost to ratepayers would not depend on market participation levels and strategies.

Overall, CESA believes that any of the three cost recovery mechanisms are viable and recommends that the CAISO solicit proposals for SATA projects selecting any of the options in addressing transmission service needs. So long as the most cost-competitive yet viable transmission solution is selected, CESA sees no merit to double cost recovery concerns, though the nature of the transmission need may also inform the best structure for the cost-recovery. As the CAISO and other stakeholders pointed out, there may be greater viability for Option 1 if the transmission need is less predictable, but there may be SATA resource providers that could better manage the dual-function of transmission asset and market resource effectively without jeopardizing the transmission service. In addition, the cost recovery option may also depend on the level of competition to meet a specified transmission need, where Option 1 may not be suitable for needs where there is little competition since there would be limited ways to differentiate solicited SATA projects. Importantly, at this early stage in understanding the viability of SATA resources, all options should be considered to allow for innovative solutions to be proposed, without pre-determining the options in advance. In the TPP evaluation process, it may become apparent which options are appropriate for which circumstances.

Finally, CESA supports CRI's proposal and recommends that the CAISO should accommodate allowing SATA resource owners to contract bilaterally for energy revenues. It should be up to the project sponsor on whether to secure a hedge product, if this would improve financeability of the project, so long as the transmission service is delivered. Whether through a power purchase agreement (PPA) or through some

other contract, the SATA resource owner should have the option to contract bilaterally to mitigate market revenue risk concerns.

Other

Please provide any comments not addressed above, including any comments on process or scope of the Storage as a Transmission Asset initiative, here.

Comments:

CESA has no additional comments at this time. CESA appreciates this opportunity to comment and looks forward to reviewing the next proposal.