

Storage as a Transmission Asset

Stakeholder Comment Template

Submitted by	Company	Date Submitted
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Please use this template to provide your comments on the Storage as a Transmission Asset stakeholder initiative Straw Proposal that was published on May 18, 2018.



Submit comments to InitiativeComments@CAISO.com

Comments are due June 7, 2018 by 5:00pm

The straw proposal, posted on May 18, 2018, as well as the presentation discussed during the May 24, 2018 stakeholder web conference, may be found on the [Storage as a Transmission Asset](#) webpage.

Please provide your comments on the Straw Proposal topics listed below, as well as any additional comments you wish to provide using this template.

Scope of policy examination

The ISO has modified its initial identified scope for this stakeholder process. The scope of this initiative will focus on: If storage is selected for cost-of-service-based transmission service, how could that resource also provide market services to reduce costs to end-use consumers? Please provide comments on this proposed scope (including those issues identified as out-of-scope). If there is a specific item not already identified by the ISO that you believe should be considered, please provide the specific rationale for why the ISO should consider it as part of this initiative.

Comments:

Request 1: CAISO should publicly post on its website all comments when received and its responses as soon as possible in order to facilitate the upcoming stakeholder meetings.

1. Introduction

CAISO’s Straw Proposal states that it intends to keep the ratemaking and transmission planning process (“TPP”) selection criteria separate. CAISO, however, also states at page 18 that “the scope of this initiative focuses specifically on storage resources the ISO identifies through the TPP as needed to provide transmission services” It adds that a precondition to storage as a transmission asset (“SATA”) treatment is that the CAISO must determine that the storage facility will serve a specific transmission need identified in the TPP. The Straw Proposal states that “[if] additional clarification of the evaluation process is needed in the future, the ISO will address it on a case-by-case basis within the annual TPP.” Finally, the Straw Proposal states at page 15, footnote 11 that “[t]he ISO’s intention is not to create a parallel and duplicative procurement process for preferred resources that competes and potentially conflicts with existing procurement processes overseen by local regulatory authorities.”

These statements require clarification of the eligible transmission needs or service categories and the applicability of CAISO’s Transmission Economic Assessment Methodology (“TEAM”) for the selection of SATAs in the TPP and eligibility for the CAISO’s proposed ratemaking.

2. Eligible Transmission Categories

On the bottom of page 18 of the Straw Proposal CAISO states that it “must first determine that the resource is needed to address a specified transmission need as determined in the ISO’s TPP.” On page 6 of the May 24 power point presentation CAISO states that the “initiative will not restrict consideration to only storage resources providing reliability based transmission services....” Nevada Hydro interprets these statements to mean that storage can be used to address any of the seven transmission categories listed in the Tariff: (1) merchant transmission; (2) reliability; (3) location-constrained renewable energy interconnection facilities; (4) facilities to maintain the feasibility of long-term congestion revenue rights; (5) network upgrades to interconnect large generators; (6) transmission facilities to address Federal, state or local policy requirements; and (7) upgrades required for the economic relief of transmission bottlenecks (*i.e.*, transmission congestion). Nevada Hydro recognizes that reliability, public policy and economic transmission needs are most commonly identified through the TPP.

Request 2: CAISO should confirm that SATAs can qualify to serve any of the seven transmission categories identified in the CAISO transmission planning tariff.

Request 3: The CAISO should confirm that SATAs will be studied and evaluated as transmission facilities in the TPP and will be considered and selected to satisfy any of the transmission categories specified in the Tariff on a comparable basis to other transmission solutions (e.g., “wires” projects).

This confirmation is needed because at page 5 of the Straw Proposal CAISO states that “storage has not aligned with the needs triggered by policy direction that has formed the basis for policy-driven approvals in the past.” The Straw Proposal does not further explain the statement, nor does it cite specific findings in transmission planning studies where the CAISO has supported the conclusion. The statement in the Straw Proposal conflicts with CAISO’s studies of pumped storage performed in conjunction with recent transmission planning cycles which have specifically found that such facilities can reduce the amount of wind and solar resources needed to meet California’s renewable portfolio standard goals, reduce adverse market pricing conditions known as the “duck curve,” facilitate renewable energy resource integration and reduce curtailment payments to renewable generation that arise to manage the foregoing inefficiencies. In other words, CAISO has specifically found that pumped storage hydroelectric facilities can support California’s public policy goals to expand the use of renewable energy resources.

Request 4: If CAISO does not consider the referenced benefits of pumped storage it has previously identified to be “public policy” benefits, it should explain its reasons and reconcile this with the TEAM criteria discussed below.

3. Role of TEAM

CAISO’s TEAM analysis examines five benefits categories when selecting solutions for transmission needs: (1) production cost savings, (2) capacity benefits through increased import capability into the CAISO balancing authority area, increased deliverability within CAISO, or relief of a known transmission constrained area within CAISO, (3) public policy benefits, such as the ability to lower the cost to integrate renewable energy resources, (4) the ability to relieve the over-supply and associated curtailment problems that arise from excess renewable energy production, and (5) reliability benefits and the ability to avoid other costly transmission upgrades. CAISO applies this analysis, for example, when choosing public policy transmission upgrades or economic upgrades, but does not deduct “market” impacts from the results, such as the effect on market pricing that arises from eliminating a transmission bottleneck.

Request 5: CAISO should confirm that TEAM will apply to the evaluation and selection of SATAs in the TPP and that CAISO will apply all five TEAM categories on a comparable basis with traditional transmission solutions (e.g., “wires” projects).

At page 17, the Straw Proposal states “that over reliance on market revenues to justify the necessity of an energy storage resource as a transmission asset runs the risk of looking like a market resource and encroaching on local regulatory authority jurisdiction over resource planning,” and at page 20 it states “[t]he ISO will not consider cost-of-service based storage resources procured through the TPP to count as resource adequacy resources. . .” even though TEAM counts such benefits.

Question 1: Given the foregoing statement, please state whether CAISO agrees that, if a SATA qualifies as a transmission facility, CAISO must apply TEAM to the SATA facility in the

same way it applies that analysis to a typical or traditional transmission solution and that, otherwise, the analysis violates the comparability requirements of FERC Order Nos. 888, 890 and 1000?

Question 2: If the CAISO believes there is a justification for treating SATAs that are needed to address an identified transmission need differently under the TEAM approach from classic transmission assets (e.g., a “wires” project), please explain and state any such reasons so that they can be discussed at the next stakeholder meeting.

SATAs may provide numerous benefits for which CAISO has no markets. For example, they may provide voltage support, capacity benefits, black start capability, and other benefits, whereas CAISO has markets for only four types of ancillary services (regulation up and down and spinning/non-spinning reserves).

Question 3: How will CAISO determine the “market” value of service for which CAISO has no markets?

Question 4: How will such benefits be considered in the TEAM or other evaluation of the SATA?

Question 5: Will CAISO quantify resiliency benefits, such as the ability of SATA’s to shorten restoration times following system outages, for which there also is no market?

Question 6: In CAISO’s view, does the answer to Question 5 depend on whether a SATA seeks full or partial cost-based rate recovery? Please explain.

At Section 5.3.1 of the Straw Proposal, and pages 22-23 of the power point, the CAISO states that transmission needs for SATAs may not be predictable, and when this is the case SATAs may be precluded from participating in the market. This raises two issues: whether the CAISO’s proposal is a voluntary arrangement and whether CAISO’s proposal satisfies FERC’s comparability requirements.

Request 6: As to the voluntariness issue, CAISO should clarify whether the CAISO is proposing that it will decide whether, and the extent to which, a SATA may request full or partial cost-based rate recovery.

Question 7: If CAISO’s proposal is that it will decide whether a SATA may request full or partial cost recovery, how does that satisfy CAISO’s obligation to treat all transmission solutions on a comparable and non-discriminatory basis when the owners of traditional transmission facilities retain the right to file their revenue requirements for acceptance by FERC?

Request 7: If CAISO believes that it has the Federal Power Act authority to divest SATAs of their Section 205 filing rights, it should identify the basis for such authority and reconcile its position with FERC’s holding at paragraph 18 of the Policy Statement that “*at the electric storage resource owner’s or operator’s discretion*, this market revenue offset can be used to reduce the amount of the revenue requirement to be used in the development of the cost-based rate.” (Emphasis added.)

CAISO’s proposal raises an additional comparability issue because it seems to contemplate different treatment among SATAs based on a transmission need predictability assessment when CAISO makes no

such assessment for traditional transmission solutions. For example, transmission solutions to transmission constraints (*i.e.*, economic upgrades) eliminate the congestion and thereby affect market prices. Further, the market effect can vary based on predictable or unpredictable congestion patterns that may change daily, seasonally and from year-to-year. Apart from projects that may rely solely on financial congestion compensation (that are rare and not applicable here), economic upgrades do not receive variable compensation based on changing congestion patterns, nor does the cost-benefit analysis supporting such projects (*i.e.*, TEAM) impose a market deduction to the benefits calculation based on the congestion relief that the project provides.

Request 8: CAISO should clarify that its unpredictability concept applies solely to those projects that may seek to receive and retain market revenues above cost-based revenues, and does not apply to solely cost-based projects.

Request 9: To the extent the CAISO disagrees with Request 8, it should explain its reasons, and also explain how it will use unpredictability in the valuation of SATAs in its TEAM analysis so this can be further discussed during the stakeholder process.

Request 10: CAISO should confirm that it will include explanations in its published transmission plans of how it has satisfied the comparability principle, including a listing of assumptions, data inputs, and modifications to the TEAM analysis with respect to SATAs so that the sponsors of such projects can evaluate whether the CAISO's study results support just, reasonable and not unduly discriminatory rate treatments for those facilities.

4. Duplication of CPUC Resource Adequacy Process

CAISO's Straw Proposal recognizes and agrees that FERC policy allows energy storage devices to be treated as transmission facilities, but inconsistently implies that the existence of a state resource procurement process changes the transmission classification of SATAs. At Section 2.1 on page 5 the Straw Proposal states: "The ISO economic-driven and policy driven transmission planning processes are not meant to be duplicative of the CPUC resource planning processes." The Straw Proposal adds at page 19 that issues beyond the scope include "Storage procured, in whole or in part, through a CPUC-mandated capacity procurement process."

Request 11: CAISO should confirm that the CPUC's storage resource procurement process does not alter the transmission classification of SATAs under the FERC Policy Statement, nor disqualify SATAs from cost-based contracts. If CAISO disagrees please explain.

Transmission and generation can provide alternative solutions to the same transmission need. For example, a new generator built inside of a transmission constraint may relieve the constraint, or a new transmission line may be constructed to remove the bottleneck instead. That is why CAISO's tariff considers non-transmission alternatives in the transmission planning process. The potential availability of a generating resource, however, does not relieve the CAISO of the tariff obligation to plan its transmission system to maintain reliability or relieve constraints when it is economic to do so, or address public policy driven transmission needs, even though these objectives are "duplicative" of generation development through the CPUC resource procurement process.

- Request 12:** CAISO should clarify whether its Straw Proposal is that SATAs are disqualified as transmission solutions to transmission needs merely because the CPUC can consider storage facilities as generation solutions to the same transmission needs.
- Request 13:** CAISO should explain how it will decide whether to exclude SATAs from the TPP evaluation. For example, will it limit that approach solely to SATAs that have power purchase agreements under review by the CPUC, or will it apply this approach to any SATA that might be considered by the CPUC?
- Question 8:** Would the SATA be disqualified even if the SATA prefers consideration in the TPP to the CPUC process? Please reconcile CAISO’s position with its recent selection of two battery storage projects, one of which CAISO suggested should seek cost recovery from the CPUC.

In the transcript of the CAISO’s presentation of its Straw Proposal (available at: <http://www.caiso.com/informed/Pages/StakeholderProcesses/StorageAsATransmissionAsset.aspx>) the CAISO staff explained the close coordination between the CAISO in the TPP and the CPUC resource procurement process. This coordination raises significant independence and objectivity concerns.

- Request 14:** The CAISO should explain whether it intends to ask the CPUC staff for input on which SATAs are eligible for study through the TPP, and which should be considered through the CPUC process.
- Request 15:** The CAISO should further explain how such close coordination with the CPUC is consistent with the openness and transparent planning principles of FERC Order Nos. 890 and 1000.
- Question 9:** How does the availability of the CPUC integrated resource planning process affect the ability of SATAs to qualify for the CAISO’s storage as transmission concept?

Background and the ISO’s Transmission Planning Process (“TPP”)

The ISO has provided a discussion on how certain stakeholder comments could be addressed within the current Transmission Planning Process (TPP) framework – on a case-by-case basis. Please provide any additional questions or clarifications regarding how the ISO’s TPP might incorporate the market participation by SATA resources.

Comments:

CAISO must harmonize its SATA proposal with the TPP.

As explained above, there are several interrelationships between the SATA proposal and the TPP that must be harmonized.

An additional clarification is also needed. CAISO uses a “least regrets” method to identify transmission solutions to support renewable energy that selects backbone transmission upgrades that are most likely to facilitate renewable energy integration by reducing the need for renewable generators to pay for network transmission upgrades identified through the generation interconnection process. As

mentioned, CAISO’s recent studies of pumped hydroelectric storage resources show that these storage assets can reduce renewable generation over-build, which in turn relieves the demand for new backbone transmission upgrades—benefits specifically identified in TEAM category 5 (“reliability benefits and the ability to avoid other costly transmission upgrades.”). Thus, defining the transmission need for SATAs necessarily depends on an assessment of the extent to which such storage facilities reduce renewable generation over-build, and how that translates into the displacement of backbone transmission infrastructure that would otherwise be needed. That analysis, in turn, drives the sizing of SATAs to serve public policy transmission needs, which in turn determines the extent to which cost-based or market-based compensation for SATAs is appropriate. In other words, the TPP and SATA compensation processes are intertwined.

Request 16: To the extent the CAISO proposes distinct processes for the sizing and pricing of SATAs, it must explain and justify its reasoning in light of the close connection between project selection and cost recovery.

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) agreement and Transmission Control Agreement (TCA). Additionally, the ISO has indicated its preference to control SATAs when they operate as transmission assets. Please provide comments on this proposal.

Comments:

Public utilities such as SATAs have a statutory right under Section 205 of the Federal Power Act to file rate proposals with FERC, consistent with FERC’s ratemaking policies.

Transmission asset owners, other than merchant projects, file transmission cost-of-service tariffs for FERC approval under Section 205 of the Federal Power Act. Such filings normally take the form of formula rates. CAISO then makes ministerial filings to incorporate the FERC-approved cost-of-service into its annual transmission access charge (“TAC”) formula, for recovery of the collective revenue requirement from transmission customers. This arrangement is memorialized in the Tariff and through the TCA.

There may be elements of the relationship between SATAs and CAISO that are best memorialized through a variation to the TCA to address the market-participation option, but this is potentially needed only for SATAs that specifically intend to rely in part on market participation to meet their annual revenue requirement. It is neither necessary nor appropriate for SATAs that plan to rely solely on cost-of-service rates because their FERC-approved rate formulas will include inputs that will automatically credit incidental market revenues to the transmission cost-of-service.

Nevada Hydro’s position is that the transmission formula approved by FERC for SATAs will address the market revenue issue and the resulting revenue requirement will be billed and collect by the CAISO through its TAC.

Market Participation

The ISO provided additional details regarding how and when SATA resources would be permitted to provide market services and access market revenues. Please provide comments on this proposal.

Comments:

Nevada Hydro has addressed this issue in its comments on the sections above. SATAs are entitled to cost based recovery as determined by FERC subject to the obligation to credit any market revenues which will be handled in the SATA's formula rate approved by FERC.

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

Please provide comments on these two options and any other options the ISO has not identified. Please include how the ISO might incentivize or compel SATAs to participate in the markets competitively and efficiently where they would receive full cost-based recovery.

Comments:

Nevada Hydro has addressed this issue in its comments on Market Participation. As mentioned above, the SATA, like all transmission solutions, has the right to full cost recovery with revenue crediting. The second option can be used only by mutual agreement

Allocation to High- or Low-Voltage TAC

The ISO proposes to maintain the current practice of allocating costs to high- or low- voltage TAC, based on the point of interconnection, and consistent with other transmission asset classifications to regional (high voltage) or local (low voltage) TAC. Please provide comments on this proposal.

Comments:

Nevada Hydro has no comments on this issue.

Consistent with FERC Policy Statement

The ISO believes the straw proposal is consistent with the FERC Policy Statement. Specifically, that the straw proposal does not inappropriately suppress market prices, impact ISO independence, nor result in double recovery of costs. Please provide comments on the whether you agree or disagree with the ISO. If you disagree, please clarify why and how the ISO might address this issue.

Comments:

Nevada Hydro agrees with CAISO that SATAs will not inappropriately suppress market prices or adversely impact ISO independence, nor result in double recovery. However, Nevada Hydro believes that the Straw Proposal is consistent with FERC's Policy Statement only in the limited respects identified above.

CAISO's Straw Proposal is not consistent with the Policy Statement in any other respect. It is not consistent with the Policy Statement to the extent that it seeks to limit SATA eligibility solely to "transmission" services or seeks to exclude transmission support services for which FERC stated that cost-based rates may be appropriate. For example, FERC's long-standing policy requires reactive power and black-start services to be procured through cost-based rates due to the lack of workable competition for such resources given their localized nature. The Policy Statement identified cost-based reactive power service as an example where generators may obtain market-based and cost-based rates. Policy Statement at P 22 ("We agree that many assets that participate in RTO/ISO markets receive some form of cost-based rate recovery. For example, many participating generation resources seek and are paid a cost-based rate for providing reactive supply, even as they make market-based rate sales into organized wholesale electric markets.").

Nevada Hydro further disagrees with CAISO's assertion at page 16 of the Straw Proposal that the Policy Statement restricts CAISO's ability to consider "market" benefits that SATAs may provide in the transmission planning TEAM analysis which lists out five such categories. FERC's Policy Statement provides no such guidance, which would be a directive to discriminate between SATAs and traditional transmission solutions to the same transmission need, in violation of FERC's comparability policy as expounded in Order Nos. 888, 890 and 1000. Excluding market benefits specifically contemplated by the TEAM analysis (and normally applied in the selection of traditional transmission solutions), while not counting benefits for which CAISO has no markets, as the Straw Proposal seemingly contemplates, would lead to non-comparable treatment and undue discrimination against SATAs offered into the TPP as transmission solutions to identified transmission needs. The Policy Statement does not dictate such a result.

Request 17: As discussed above, CAISO must clarify that it will apply TEAM to SATAs in a comparable manner to traditional transmission facilities studied in the TPP, and that it will post complete study results showing that the comparability requirement has been satisfied in a transparent manner.

Use Cases

Stakeholders raised numerous scenarios involving a storage device being used as a transmission asset, and with having additional storage or other generation capacity at the same site. The ISO provided feedback on how some, but not all, of these concerns expressed at the stakeholder session could be addressed. The ISO seeks stakeholder feedback on issues or concerns that would need to be addressed, as well as possible mechanisms to address such concerns.

Comments:

Nevada Hydro has no comments.

EIM classification

The ISO believes this initiative falls outside the scope of the Energy Imbalance Market (EIM) Governing Body's advisory role. The ISO seeks stakeholder feedback on this proposed decisional classification for the initiative.

Comments:

Nevada Hydro has no comments.

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:

CAISO must reconcile its idea that (a) SATA ratemaking and TPP review are separate processes with (b) the right of transmission developers to propose projects into the TPP and propose to FERC in the first instance the ratemaking treatment that will apply to those projects.

FERC held in Order 1000 that ratemaking certainty is essential to transmission development, and that the ratemaking question must be addressed in conjunction with the transmission planning process. *E.g.*, Order 1000 at P 562 (“we require the development of a cost allocation method or a set of methods in advance of particular transmission facilities being proposed so that developers have greater certainty about cost allocation and other stakeholders will understand the cost impacts of the transmission facilities proposed for cost allocation in transmission planning. The appropriate place for this consideration is the regional transmission planning process because addressing these issues through the regional transmission planning process will increase the likelihood that transmission facilities selected in regional transmission plans for purposes of cost allocation are actually constructed, rather than later encountering cost allocation disputes that prevent their construction.”) (Emphasis added.)

Any proposal to separate SATA ratemaking from transmission planning will be contrary to Order No. 1000. More fundamentally, such an erroneous approach will foster uncertainty because developers will not know whether their projects, or portions of projects, will be selected in the TPP, how the TPP selection criteria (*i.e.*, TEAM) will factor into the analysis, or how and why the CAISO will apply market pricing offsets to its benefits calculation.

Request 18: CAISO must confirm entitlement to cost recovery as part of the selection process in conjunction with the TPP.

CAISO’s deference to the CPUC resource procurement planning process set forth in the Straw Proposal and discussed in further detail in its oral presentation of the plan to stakeholders raises concerns that CAISO’s requisite independence to make unbiased SATA selection decisions is compromised.

Request 19: CAISO must explain how it intends to lay the independence concerns to rest and ensure that its decisions to select transmission facilities to address transmission needs—whether the solution is a traditional wires response or a SATA facility—is undertaken in a fair, open and transparent manner that is reproducible by developers and defensible in a FERC proceeding.