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 revised straw proposal that was posted on August 15, 2018.

Submit comments to InitiativeComments@CAISO.com
Comments are due September 4, 2018 by 5:00pm

The revised straw proposal, posted on August 15, 2018, as well as the presentation discussed during the August 21, 2018 stakeholder web conference, may be found on the Storage as a Transmission Asset webpage.
Please provide your comments on the revised straw proposal topics listed below, as well as any additional comments you wish to provide using this template.

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. Additionally, the ISO has indicated its preference to control SATAs when they operate as transmission assets. Please provide comments on this proposal.

Comments:

NextEra Energy supports the ISO's proposal to develop a new agreement with Storage as Transmission Asset (SATA) resource owners, as long as such agreement incorporates applicable and relevant Participating Transmission Owner (PTO) requirements and clearly outlines the process for determining when SATA resources can participate in competitive markets. As noted below, the ISO-SATA contract should also include non-performance penalties, appropriate incentives for market participation, and monitoring and reporting on the condition of the asset and owner actions taken to ensure that the defined services can be provided for the entire required contract term.

Transmission Revenue Requirement Capital Credit

The ISO has proposed a TRR capital credit to reduce a SATA resource's capital cost recovery. The objective of this credit is (1) to protect ratepayers from early degradation of SATA resources operational capabilities due to dispatches from ISO market participation and potential for reduced useful lifespan for a SATA resource's ability to meet the identified transmission need(s), and, (2) to ensure the SATA resource owner considers all marginal costs when bidding into the market. Please provide comments on the ISO's proposal and any potential alternative the ISO could consider to achieve the same objectives.

Comments:

As a threshold matter, the ISO should limit any TRR crediting proposal to SATA resource types that could have significant degradation through increased participation in the markets. For example, pumped storage (and perhaps other storage technologies) would not degrade or decline from increased usage.

More generally, NextEra Energy believes that the contractual agreement should govern how the ISO ensures that ratepayers are receiving the benefits of the SATA resource receiving cost recovery. With a properly written ISO-SATA contract (e.g., with a fixed term length and non-performance penalties), this proposed TRR crediting mechanism would be complex, unnecessary, and perhaps counterproductive.

First, NextEra Energy questions whether it is possible to accurately determine a TRR credit based on manufacturer-estimated asset life or performance guarantees. The following issues may impede developing a TRR credit methodology that is fair (i.e., not punitive toward storage resources participating in ISO markets) and internally consistent.

- Physical assets often have useful lives beyond (perhaps far beyond) manufacturer estimates or minimum guarantees, and the impact of additional use might not be linear. Thus, a TRR credit calculated on that basis might greatly over-estimate (or, potentially, under-estimate) any reduction in useful life due to increased market dispatch.

- A SATA provider planning to participate in the market may over-design its SATA (or be especially diligent with functions like maintenance), to maximize market participation while continuing to meet its obligations to the ISO for the life of the contract. For this and other reasons, it might not experience asset-life degradation, as the ISO might otherwise expect.

- Storage manufacturers may rely on differing assumptions or methodologies in developing useful life estimates or performance guarantees, so neither is a reliable, objective measure. For example, it is not uncommon for manufacturers and their customers to negotiate the terms of performance guarantees, and some manufacturers may be willing to accept performance risk (and potential damages) for commercial reasons, such as increasing sales or creating a relationship with a new customer.

- The cost of replacement batteries has inherent uncertainty. If this proposal is adopted, specific forecasting techniques should be universally applied to all SATA projects to prevent overly aggressive or optimistic developers from cherry picking their forecasting technique. Original Equipment Manufacturer (OEM) vendor warranties are often not honored when

the OEM goes out of business, as many storage firms have, and a standard should be applied before the use of any OEM warranty.

Second, the proposed TRR crediting mechanism would not ensure that SATA sellers bid into the market at their marginal cost. Marginal costs are more than the incremental degradation of the storage asset; for example, marginal costs include incremental O&M, energy, and round-trip efficiency losses, which may be highly variable.

Basically, SATA sellers should not need the ISO to remind them (through a TRR credit or otherwise) how to calculate their own marginal costs. Like other resource owners, they know their own cost structure and should be fully responsible for factoring in these costs when bidding into the market.

Third, SATA sellers should already bear the cost of any shortened asset life, assuming a properly written contract with a defined term. ISO-SATA contracts could include safeguards to ensure that the agreement remains in force for the entire term; for example, the ISO could be required to monitor the market participation of each SATA, and each seller could be required to report on specific actions taken to ensure full service throughout the contract term.

Finally, the main revenue-recovery options still under consideration (see below) include ratepayer retention of some or all of the market revenues earned by the SATA. Thus, ratepayers would already be compensated for any shortened asset life due to market participation not explicitly provided for under the ISO-SATA contract.

Instead of a TRR credit, the ISO should require that the contractual provisions between the ISO and the SATA resource owner provide the necessary protections to ratepayers over the life of the asset, and avoid such overly complex and hard-to-implement features with the significant shortcomings discussed above.

Market Participation

The ISO provided two additional options it is currently considering to notify SATA resources when they would be permitted to provide market services and access market revenues: Day-ahead market option and D+2 option. Please provide comments on these options, including any preference or alternative options.

Comments:

NextEra Energy supports the new proposed framework, including daily notice where SATA market participation will be allowed, exemption of SATA bids from Local Market Power Mitigation (LMPM), and use of Exceptional Dispatch (ED) if the SATA is unexpectedly needed as transmission and the commitment or dispatch must be modified intra-day. However, if a SATA is recalled from market participation (through an ED or otherwise), the ISO should ensure that the SATA is made whole, i.e., is not liable for imbalance or other charges for not following the regular market dispatch.

The ISO should implement the market-participation methodology alternative that is easiest to manage and consider further refinements at a later date. If both options require the same

implementation and management effort, then NextEra Energy prefers the D+2 option, to enable SATA to participate in day ahead and real time markets, even if that methodology would increase the possibility of EDs in real time.

NextEra Energy shares the concerns of several parties that the daily ISO notice to SATAs regarding allowed market participation could provide valuable market intelligence, since: (1) It will effectively indicate when the ISO expects supply (especially in the local area) to be tight; and (2) SATA owners and/or their Scheduling Coordinators (SC's) may have other resources in relevant market areas. Thus, NextEra Energy believes that the ISO should notify the entire market of this determination and not just the applicable SATA owner, to avoid potential gaming opportunities (or accusations of such behavior).

Cost Recovery Mechanism

The ISO has proposed three 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
3. Full cost-of-service based cost recovery with partial market revenue sharing between owner and ratepayer

Please provide comments on these three options and any other options the ISO has not identified. Please provide specific comments on (a) if the ISO should maintain option 2, above, and (b) why, if any, specific market profit threshold must be reached before the SATA resource would be permitted to retain some portion of profits and how such threshold should be determined.

Comments:

Generally, NextEra Energy supports cost recovery options that encourage competition for the benefit of ISO customers and incentivize SATA owners to maximize market revenues and thus potential customer savings. NextEra Energy prefers that the ISO maintains the cost recovery optionality proposed in the Revised Straw Proposal to allow SATA owners to select one of the available cost recovery options as part of a sponsors' submission into the Phase 3 TPP competitive solicitation process. Further, NextEra Energy recommends that the ISO allow SATA owners optionality to propose creative structures, such as cost caps, minimum revenue guarantees, and/or revenue sharing agreements in order to maximize consumer savings.

That said, NextEra Energy understands the ISO's concerns about assessment complexity associated with option 2. Thus, NextEra Energy supports the ISO removing option 2 from the SATA framework at this time to facilitate a more expeditious roll-out and implementation of SATA.

However, once the ISO has more experience with the SATA framework generally, it should reconsider in the future the viability and desirability of option 2, including changes that may provide additional benefits to customers. For example, the ISO might be open to considering two or three different option 2 structures that would simplify issues related to (1) the timing of the SATA's knowledge of its ability to participate in the market and (2) the ISO's comparison methodology.

With more SATA experience under its belt, the ISO might be able to identify creative structures to address issues like (1) how a potential SATA supplier could reasonably estimate market revenues and a reasonable partial cost-recovery bid number if participation is not known until a day before; (2) the implications for financial viability and system reliability if the market-revenue estimate is unrealistically high; (3) how to compare a bid with lower TAC recovery but low market-revenue sharing to a bid with high TAC recovery but high market-revenue sharing; and (4) complexity of bids with many other different features, e.g., sharing after certain thresholds, maximum sharing percentages.

Options in the event of insufficient qualified project sponsors

The ISO has proposed potential options for addressing SATA projects when there is insufficient qualified project sponsors. Please provide comments on these options, including preferences and/or additional alternatives that should be considered.

Comments:

NextEra Energy supports option 1 in Section 5.4.4., i.e.: "Requiring at least three qualifie[d] project sponsors for the partial cost-of-service or full cost of service with revenue sharing to be options for consideration. Additionally, all project sponsors would be required to also submit a full cost-of-service bid as a contingency option." NextEra Energy further recommends that the ISO require all three qualified project sponsors competing to offer a cost recovery option 1 bid at a minimum (but not necessarily cost recovery options 2 or 3 bids).

If there is not sufficient competition, the ISO should default to cost recovery option 1 (full cost-of-service based cost recovery and energy market revenue crediting).

NextEra Energy does not support options 2 and 3, i.e., "Only in cases of too few qualified sponsors, requiring a set percent of total TRR be recovered before any market revenues be could be retained by the project sponsor." and "Limiting the total allowable market revenue retention be limited to a fixed percent of the total annual TRR, or limiting the revenue split to no more than 50-50." These are arbitrary restrictions that should not be necessary with the contract terms and safeguards discussed above.

Consistent with FERC Policy Statement

The ISO believes the revised 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:

NextEra Energy believes that the ISO's proposed SATA methodology is consistent with FERC's policy statement and that the TRR crediting mechanism is not necessary to ensure consistency with the policy statement.

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:

NextEra Energy offers additional comments on the issues below.

- **ISO Operational Control:** The ISO has said that it will not operate the storage asset directly but will define this as an obligation to follow ISO directions regarding the asset State of Charge, similar to the tariff definition of Operational Control for transmission assets:

  > "The rights of the CAISO under the Transmission Control Agreement and the CAISO Tariff to direct Participating TOs how to operate their transmission lines and facilities and other electric plant affecting the reliability of those lines and facilities for the purpose of affording comparable non-discriminatory transmission access and meeting Applicable Reliability Criteria."

  NextEra Energy supports application of this definition to SATAs and believes that it should be specifically stated in the final proposal and associated tariff language.

- **Partial resources:** The ISO has said that it will contract only for capacity needed and that the contracted resource must have its own Resource ID (i.e., cannot be a share of a larger resource). Some shared facilities with other resources (e.g., gen-ties, substations) may be allowed; however, incremental Interconnection Facilities and other costs for co-located generation or other assets beyond that needed for the specific asset will not be covered in the TAC.

  NextEra Energy believes that more attention should be paid to this issue, especially for resources (like pumped storage) where the likely size of the resource overall may require extensive shared facilities. Specifically:

  - The ISO should clarify that TAC recovery will cover all the resources needed for the contracted capacity and service, e.g., gen-ties and switching stations, and not just Network Upgrades.
  - The ISO should clarify that other resources (e.g., generation) may share facilities with SATAs, as long as the other resources cover any incremental costs for the shared use (and, perhaps, as long as the SATAs have priority to use the shared facilities if they are impaired).
  - The ISO should consider more carefully and specifically how this provision would apply to pumped storage facilities, e.g., if the capacity of one of three turbines could serve as a SATA and, if so, the applicability of the proposed Resource ID and facility-sharing rules.

- **No GIDAP:** The ISO has said that SATA resources need not go through the generator interconnection process but will be studied in the TPP (and modeled in later generator interconnection studies) as a transmission addition. (However, bids can be made for assets already in the queue.)

  NextEra Energy supports this provision and agrees that SATA resources should not go through the generation interconnection process, just like any other transmission solution.

Unless the ISO identifies any specific reason otherwise, no additional studies beyond those in the Transmission Planning Process should be needed.