



# Storage as a Transmission Asset:

*Enabling storage assets providing regulated cost-of-service-based transmission service to access market revenues*

## Webinar

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Stakeholder Meeting  
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# Storage as a Transmission Asset

## Second Revised Straw Proposal Meeting

### Agenda – 1/24/2019

Time	Topic	Presenter
10:00 – 10:05	Introduction	James Bishara
10:05 – 10:15	Review of stakeholder comments	Karl Meeusen
10:15 – 10:50	Review of scope and outstanding SATA market participation issues	
10:50 – 11:00	Next Steps	

# Stakeholder comments typically addressed three topics

- Limitations in the proposed cost recovery options
- Various contractual terms
- Timing of notification for market participation



California ISO

# Scope and Background

Scope: If storage is selected for cost-of-service based transmission service, how can that resource also provide market services to reduce costs to ratepayers?

- Initiative will consider:
  - Storage resources providing reliability-based transmission services, economic, and policy projects
  - Indifferent to transmission or distribution connection
- Issues outside the scope of this initiative:
  - The TPP evaluation methodologies
  - The framework for competitive solicitation and the applicability of the ISO's current competitive solicitation framework
  - Cost allocation of the cost-based revenue requirements for rate-based assets
  - Resource adequacy value

FERC stated if a cost-of-service based resource providing transmission service is also accessing market revenues, the following need to be addressed:

1. The potential for cost recovery through cost-based rates to inappropriately suppress competitive prices in the wholesale electric markets to the detriment of other competitors who do not receive such cost-based recovery;
2. The level of ISO control over the operation of an electric storage resource could jeopardize its independence as the market operator; and
3. The potential for combined cost-based and market-based rate recovery to result in double recovery of costs by the electric storage resource owner or operator to the detriment of the ratepayer.



California ISO

# Outstanding SATA market participation issues

## The CAISO is contemplating four cost recovery options for regional SATA projects

1. Full cost-of-service based cost recovery with complete energy market crediting back to ratepayer
  - Option 1 - Includes must-offer obligation, covers maintenance
  - Option 2 - No must-offer obligation, no maintenance coverage
2. Partial cost-of-service based cost recovery and retain energy market revenues
3. Full cost-of-service recovery with partial market revenue sharing between owner and ratepayer
  - Direct assigned projects limited to no more than 50-50 split
4. Partial cost-of-service recovery with partial market revenue sharing between owner and ratepayer



The ISO must identify a bidding requirements for SATA resources selecting full cost-of-service with complete energy market crediting back to ratepayer with MOO

- The ISO proposed direct assigned SATA project have a MOO to ensure market participation
  - Contemplating an option for all project sponsors
- Because of MOO, ISO would cover all costs, including upkeep costs incurred due to market participation
  - May result in opportunities for market price suppression
- ISO has explored
  - Minimum bid price requirements
  - Opportunity cost bidding

# The ISO must identify a bidding requirements for direct assigned SATA resources

- Minimum bid price requirements
  - Fail to ensure resource provides maximum benefit for rate payers
  - May result increased exceptional dispatch for both charge and discharge needs
- Opportunity cost bidding
  - Would ensures more efficient use of storage resource

CPM/RMR opportunity cost provisions may not be applicable to storage resources

- Opportunity cost would be a function of the spread between charge and discharge cost (i.e. spread bidding)

## The ISO is still considering allowing for Day-Ahead Market participation by performing a load based notification test

- Load studies would include an additional 15% operational reliability margin
- Will identify when SATA resources are needed as a transmission asset based upon:
  - Load forecast for the local load pocket area,
  - Available capacity from other local area resources, and
  - Import capability into the load pocket
- ISO expects to manage all other constraints in the market

## ISO previously proposed a load based notification test process to determine if SATA resources will be needed

- Proposed notification process studied in Day-Ahead timeframe will determine if forecasted load levels for following day indicate a need for a SATA resource as a transmission asset
- ISO believes a load based test would be an accurate approach to determine if needs in a local area will require SATA resource be dedicated to providing transmission services the following day
- SATA resources would not receive different treatment than NGR resources providing market services

**All other SATA needs, including voltage stability needs, would be managed through market and operations**

Given the additional complexity of a flow-based analysis, the CAISO has not been able to design a flow based notification test at this time

- Could have negative implications on the CAISO's market computational timeline
- Limited number of potential situations could be studied due the added complexity and computation timing
- Absent an upfront test, the ISO would need to establish new protections for market dispatches
  - Existing market functionality is insufficient to protect and ensure SATA resources are available as needed
  - For example, grid conditions differing from forecast may result in a morning commitment when needed for an afternoon contingency

**This problem exists all for NGR resources in local areas**

## Many of the market participation issues are applicable to NGR resources generally

- Spread bidding will enhance the ISO's ability to efficiently utilize NGR resources
  - SC no longer required to try to guess charge and discharge prices
  - Will allow for calculating opportunity costs
- ISO must determine an efficient means of ensuring Day-Ahead NGR awards are protected to maintain reliability

## Next steps

- The ISO will temporarily suspend SATA initiative
- Generally applicable NGR issues identified in SATA initiative will be addressed in the scope of Energy Storage and Distributed Energy Resources – Phase 4 (ESDER 4)
  - Starting Q1 2019
- The ISO will reinitiate SATA once ESDER 4 has resolved the identified gaps