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
January 14, 2019
## Storage as a Transmission Asset
### Second Revised Straw Proposal Meeting
#### Agenda – 1/24/2019

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00 – 10:05</td>
<td>Introduction</td>
<td>James Bishara</td>
</tr>
<tr>
<td>10:05 – 10:15</td>
<td>Review of stakeholder comments</td>
<td>Karl Meeusen</td>
</tr>
<tr>
<td>10:15 – 10:50</td>
<td>Review of scope and outstanding SATA market participation issues</td>
<td></td>
</tr>
<tr>
<td>10:50 – 11:00</td>
<td>Next Steps</td>
<td></td>
</tr>
</tbody>
</table>
Stakeholder comments typically addressed three topics

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