



Opportunities for Adding Storage at Existing or New Generation Sites

November 4, 2019 update

November 4, 2019 Stakeholder Call

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Agenda

- Introduction
- Revised timeline
- Revised approach for transferring the deliverability

Introduction

- On October 10, 2019 the CAISO presented Opportunities for Adding New Storage at Existing or New Generation Sites
- <http://www.caiso.com/Documents/Presentation-OpportunitiesforAddingStorageatExistingorNewGenerationSites.pdf>
- Stakeholders raised concerns about the short timeline and also proposed a revised approach for transferring the deliverability
- The CAISO has revised the timeline and revised the approach

Acronyms

- FCDS –Full Capacity Deliverability Status
- MMA –Material Modification Assessment
- PCDS –Partial Capacity Deliverability Status
- TPD –Transmission Plan Deliverability



Revised Timeline

Timeline has been revised to allow data validation through March 15

- MMA email request submissions must be received on or before December 2, including MMA deposit, to QueueManagement@caiso.com
- The Interconnection Request including the load flow model must be complete and valid by January 15 – as assessed by the ISO – to proceed with the TPD allocation process
- The 2020 TPD allocation will be based on assuming none of the valid MMA requests are material modifications
- All remaining technical data must be received by February 3, 2020 and valid by March 15 – as assessed by the ISO – to proceed with the TPD allocation

Technical data requirements (data set) include:

Due on December 2, 2019

- Completed Interconnection Request - Appendix 1
 - Word document posted on caiso.com
- Completed Attachment A to the Interconnection Request
 - Excel document posted on caiso.com
- Load flow model
 - epc format
 - Including short circuit data

Due on February 3, 2020

- Dynamic data file
 - dyd format
- Single line diagram
- Site map
- Inverter specification sheet

MMA evaluation will be performed together with the reassessment analysis

- The MMA evaluation will be performed via "batch processing" together with the 2020 reassessment analysis – which begin in March
- The identification of new reliability concerns will trigger a more detailed material modification assessment
- MMA requests with the highest impact on the newly identified reliability concern will be deemed to be a material modification and removed from the analysis one by one until the reliability concern is removed



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Revised approach for transferring the deliverability

The study amount under the current methodology will determine how much deliverability can be transferred.

Study Amounts for Wind and Solar under the Current Methodology

Type	Area	Study Amount (% of requested maximum net MW output)
Wind	SCE Northern & NOL	38%
	SCE Eastern	47%
	SDGE	37%
	PG&E NorCal	37%
	PG&E Bay Area (Solano)	47%
	PG&E Bay Area (Altamont)	32%
Solar	SCE Northern	92%
	SCE/VEA others	93%
	SDGE	87%
	PG&E	92%

Deliverability status after the transfer is then determined by the proposed methodology

Study Amounts for Wind and Solar under the Proposed Methodology

Area	HSN		SSN	
	Solar	Wind	Solar	Wind
SDG&E	3.00%	33.70%	40.20%	11.20%
SCE	10.60%	55.70%	42.70%	20.80%
PG&E	10.00%	66.50%	55.60%	16.30%

The original project can retain enough deliverability to maintain its FCDS

1. The original project could maintain FCDS by transferring the study amount equal to the difference between the current and the proposed methodology to the energy storage addition
2. The original project could become Energy Only and transfer all of its study amount to the energy storage addition
3. The original project could become PCDS and transfer less of its study amount transferred in item 2 but more of its study amount transferred in item 1

Deliverability Transfer Example 1

	Installed Capacity(MW)	Study Amount	Deliverability Status
Original Facilities: Solar only			
Solar	100	92	FCDS
Modified Facilities: Solar and Battery, MW at POI is limited to 100 MW, battery sized to keep FCDS for solar (solar 55.60% SSN)			
Solar	100 MW	55.60	FCDS
Storage	36 MW / 144 MWh	36	FCDS

Future configuration of the resource as hybrid or co-located does not impact the transfer results.

- If hybrid, the hybrid resource has FCDS with NQC ≤ 100
- If co-located, each resource has FCDS with combined NQC ≤ 100

Deliverability Transfer Example 2

	Installed Capacity(MW)	Study Amount	Deliverability Status
Original Facilities: Solar only			
Solar	100	92	FCDS
Modified Facilities: Solar and Battery, MW at POI is limited to 100 MW, full transfer to battery			
If assuming co-located configuration			
Solar	100 MW	0	EO
Storage	100 MW / 400 MWh	92	PCDS up to 92 MW
If assuming hybrid configuration			
Solar & Storage	100 MW & 100 MW / 400 MWh	92	PCDS up to 92 MW

Deliverability Transfer Example 3

	Installed Capacity(MW)	Study Amount	Deliverability Status
Original Facilities: Solar only			
Solar	100	92	FCDS
Modified Facilities: Solar and Battery, MW at POI is limited to 100 MW, partial transfer to battery (solar 55.60% SSN)			
If assuming co-located configuration			
Solar	100 MW	52	PCDS of 93.5%
Storage	40 MW / 160 MWh	40	FCDS
If assuming hybrid configuration			
Solar & Storage	100 MW & 40 MW / 160 MWh	92	PCDS up to 92 MW

$52/55.6=93.5\%$



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Please note the December 2 requirement,
and contact QueueManagement@caiso.com
for assistance as needed.