Energy Storage and Distributed Energy Resources Phase 3 (ESDER 3)

Webconference
June 25, 2018
9 a.m. – 12 p.m. (Pacific Standard Time)
## Agenda

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STAKEHOLDER PROCESS
CAISO Policy Initiative Stakeholder Process

POLICY AND PLAN DEVELOPMENT

Issue Paper ➔ Straw Proposal ➔ Draft Final Proposal

We are here

Board

Stakeholder Input
Scope/Objectives
Scope for ESDER 3

- New bidding and real-time dispatch options for demand response (DR)
- Removal of the single load serving entity (LSE) aggregation requirement and the need for application of a default load adjustment (DLA)
- Load shift product for behind the meter (BTM) storage
- Measurement of behind the meter electric vehicle supply equipment (EVSE) load curtailment
- Assessment of multiple-use application (MUA) tariff and market design changes
Objectives

Review changes and updates to PDR-LSR proposal

1. Review final design proposal

2. Discuss performance evaluation methodology
PROXY DEMAND RESOURCE-LOAD SHIFT RESOURCE
Load Shift will be an option provided for a demand response resource participating under a Demand Response Provider Agreement.

**Demand Response Provider Agreement**

**Proxy Demand Resource (PDR)**
- Economic demand response that only provides load curtailment

**PDR Load Shift Resource (PDR-LSR)**
- Economic demand response that provides both load curtailment and consumption
This load shift option will initially be available for PDRs utilizing sub-metered behind the meter energy storage

The PDR-Load Shift Resource (PDR-LSR) will allow for the provision of grid services for both the decrease or increase of load.

Key features

– Requires direct metering of BTM energy storage
– Resource pays full retail rate for all charging energy
– For load curtailment
  • Maintains RA capacity eligibility
  • Non-exporting rule applies
– For load consumption
  • Ineligible for RA capacity and ancillary services;
  • Ability to bid a negative price for energy
Clarification and Conflicting Dispatches

- June 5 – proposed a potential path of a single resource ID model for the PDR-LSR
- Proposing to return to the two resource ID model with an additional qualification
  - Resource ID for curtailment must register with a Pmin of 0 MW
- Proposed bidding requirements will remain the same to prevent conflicting dispatches
- Performance evaluation methodology
  - 10 in 10 CLB used but calculation of the event will use 15-minute interval data and not hourly
Pre-market: Registration and Masterfile

• A PDR-LSR must create a registration for both curtailment and consumption; cannot register to only offer load consumption
  – Registrations for both resources may utilize the same service account(s)
  – Registrations must include locations with a sub-metered storage device.

• The PDR-LSR will be registered as two separate resource IDs in the Masterfile
  – Resource ID for load curtailment (PDR-\(LSR_{curt}\))
  – Resource ID for load consumption (PDR-\(LSR_{cons}\))
Bidding and Energy services

**Bidding**
- Both PDR-LSR bidding options must be uniform
  - 15-minute or 5-minute dispatchable
- Will be eligible for bid cost recovery
- PDR-$L_{SR_{curt}}$ can bid at or above $0$
- PDR-$L_{SR_{cons}}$ can bid from -$150$ to $< 0$

**Energy Services**
- Energy
- Ancillary Services (only for curtailment)
- Flexible Ramping Product
- Day Ahead Flexible Ramping Product (DA Markets Enhancements)
10 in 10 typical use calculation to determine performance value of load shift

• PDR-LSR will separately calculate for curtailment and consumption
  – Calculation will be triggered when a resource is awarded and dispatched in the ISO market
  – 10 non-event “like” days, specific to the 15-minute interval of the “event” is selected
    • “Event days” are considered as either a dispatch or outage in the ISO market
    • An “event interval” can occur on either the consumption or curtailment end
PDR-LSR Performance Evaluation Methodology

- Will measure and net out “typical use” to define incremental value of load shift provided

  - LSR-curtailment
    - \( LSR_{curt} = [|G(t)| - G_{LM}] \)

  - LSR-consumption
    - \( LSR_{cons} = [G(t) - G_{LM}] \)
PDR-LSR “typical use” calculations

- Typical Use Curtailment ($G_{LM_{curt}}$): 10-in-10 CLB, using 10 non-event hours including both consumption and curtailment but only accept a value that is at or above 0.

\[
G_{LM} = \max \{ (G_{LM_{curt}} + G_{LM_{cons}}), 0 \}
\]

- Typical Use Consumption ($G_{LM_{cons}}$): 10-in-10 CLB, using 10 non-event hours including both consumption and curtailment but only accept a value that is at or below 0.

\[
G_{LM} = \min \{ (G_{LM_{curt}} + G_{LM_{cons}}), 0 \}
\]
Key takeaways from performance evaluation methodology of PDR-LSR

• Both methodologies will incorporate consumption/curtailment values when calculating “typical use”

• The net-export rule will only apply under the LSR-curtailment methodology

• When choosing non-event 15-minute intervals for both curtailment and consumption, events from either resource will be taken out.
  – An event from either resource creates “non-typical” behavior of those resources.
NEXT STEPS
Next Steps

Preparing Draft Final Proposal for mid-July release

Written stakeholder comments on today’s stakeholder call are due by COB July 6 to InitiativeComments@caiso.com.