



The focus of the California Independent System Operator's (CAISO) energy storage and distributed energy resources (ESDER) initiative is to lower barriers and enhance participation models for both storage and distributed energy resources in the CAISO's market. ESDER 4 Second Revised Straw proposal addresses the following topics:

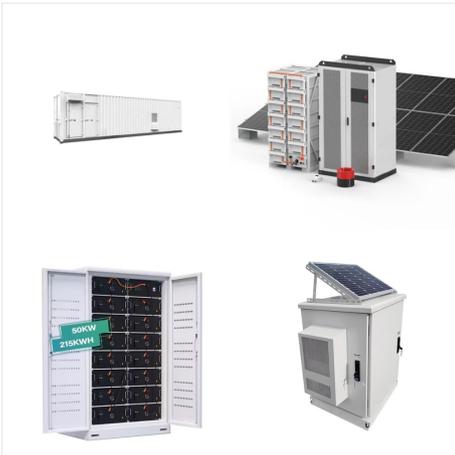


These enhancements further improve the ability of energy storage and distributed energy resources to participate in the ISO market. Outcome (3A): Effective Nov. 13, 2019, the first phase of this initiative's Phase 3 provided new dispatchable bidding options for DR resources and removed the single Load Serving Entity requirement for DR



distribution-connected resources (i.e., distributed energy resources or DER) to participate in the ISO market is the central focus of the ISO's energy storage and distributed energy resources (ESDER) stakeholder initiative. In this paper, the ISO presents its revised draft final proposals on the topics in scope for

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The focus of the California Independent System Operator's (CAISO) energy storage and distributed energy resources (ESDER) initiative is to lower barriers and enhance the abilities of energy storage and distribution-connected resources¹ to participate in the CAISO markets. The number and diversity of these resources are growing and represent



Energy Storage and Distributed Energy Resources (ESDER) Phase 4 Training Session: Market Simulation Readiness August 31, 2021 Radha Madrigal Customer Readiness Updated: 10/21/2021 Updates made to slides 32 & 43

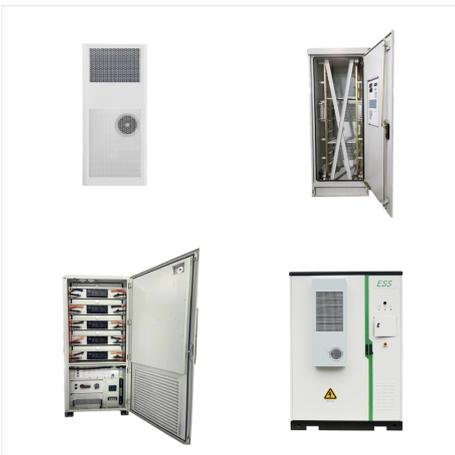


The focus of the California Independent System Operator's (CAISO) energy storage and distributed energy resources (ESDER) initiative is to lower barriers and enhance the load curtailment and the development of typical use for a sub-metered storage resource. The CAISO's rationale for separating the baseline calculation between the .

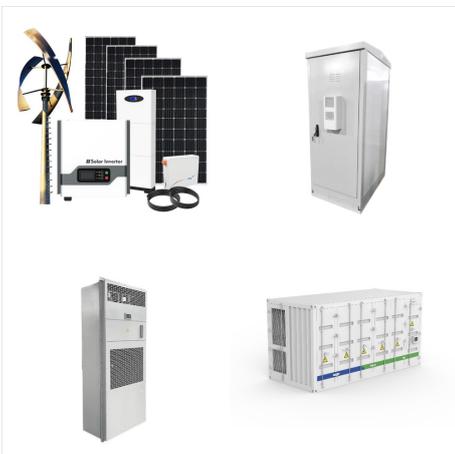
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CAISO Public Bids for storage resources work similarly to bids for conventional resources ??? Bids to charge, discharge, and "spread bids" are used in the day-ahead market to schedule energy ???

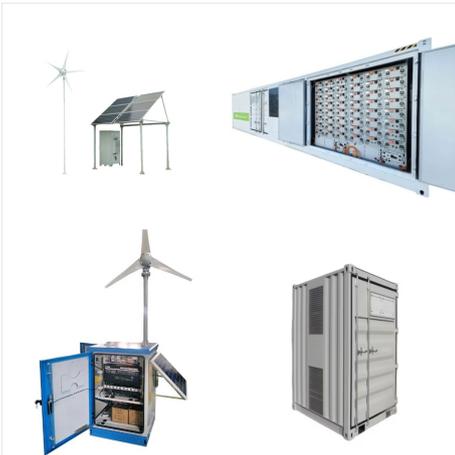


The central focus of the California Independent System Operator's ("CAISO") energy storage and distributed energy resources ("ESDER") initiative is to lower barriers and enhance the ability of transmission grid-connected energy storage and distribution-connected resources, i.e., distributed energy resources ("DER"), 1

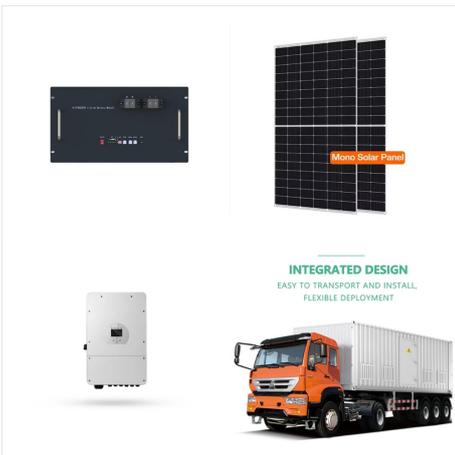


??? SCE refined bid volumes to reflect the full capability of the resources ???The CAISO appreciates the work done by SCE related to this effort and storage-and-distributed-energy-resources ??? Please submit stakeholder written comments on today's discussion and the hybrid resources draft final proposal by September 10, 2020

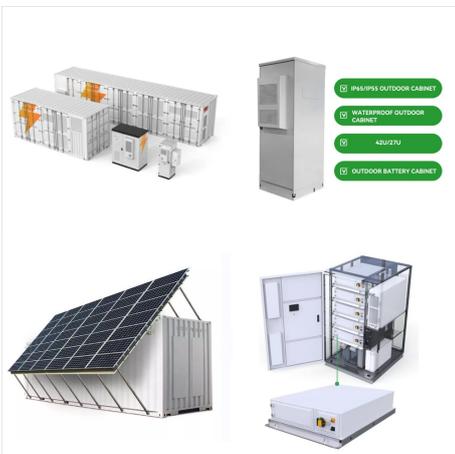
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storage and distributed energy resources ("ESDER") initiative is to lower barriers and enhance the ability of transmission grid-connected energy storage and distribution-connected resources, i.e., distributed energy resources ("DER"), to participate in the CAISO market. The number and diversity of these resources are growing and represent



distribution-connected resources (i.e., distributed energy resources or "DER") to participate in the ISO market is the central focus of the ISO's energy storage and distributed energy resources (ESDER) stakeholder initiative. In this paper, the ISO presents its draft final proposals on the topics in scope for the



storage and distributed energy resources (ESDER) initiative is to lower barriers and enhance the abilities of these resources to participate in the CAISO's market. 1 The number and diversity of ???

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Energy Storage and Distributed Energy Resources
Phase 4 Issue Paper Stakeholder Workshop March
18, 2019 10:00 a.m. ???4:00 p.m. (Pacific Time)
CAISO Public Agenda Page 2 CAISO Public
Storage resources may be mitigated, which could
change dispatch instructions for resources Page 26
Bid (\$/MWh) PMin PMax Mitigated Bid = \$80 X X



The California ISO manages the flow of electricity
on high-voltage power lines, operates a wholesale
energy market, and oversees infrastructure
planning. California ISO Search. Energy storage
and distributed energy resources; 430 Documents.
???



CAISO Public Energy Storage and Distributed
Energy Resources Phase 3 (ESDER 3) Straw
Proposal Technical Working Group March 29, 2018
10 a.m. ???4 p.m. (Pacific Standard Time) least
one service account with BTM storage. ???
Resource Adequacy will only apply to curtailment
???Must Offer Obligation still applies to the load
curtailment

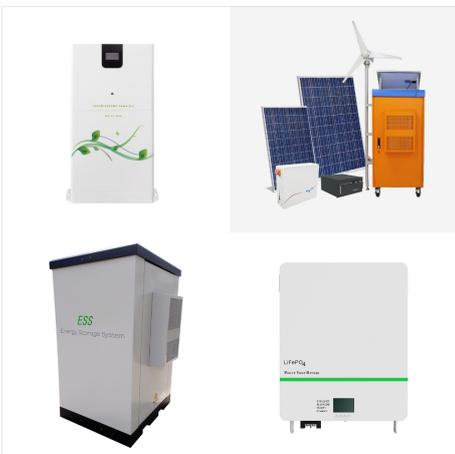
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Energy Storage and Distributed Energy Resources
Phase 4 Stakeholder Workshop June 27, 2019
10:00 a.m. - 4:00 p.m. (Pacific Time) CAISO
Public Agenda Page 2 CAISO Public Storage
definitions used in this paper Page 14 - Cycles
- Complete (100%) charge-discharge of the
battery

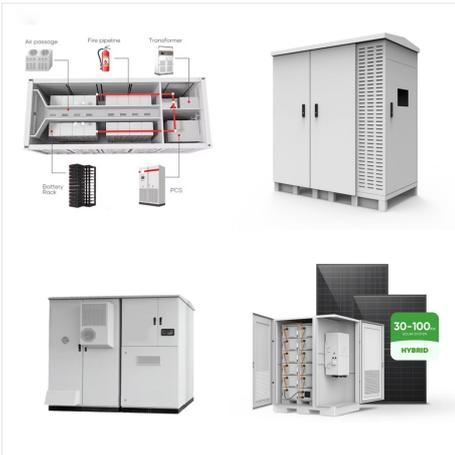


ISO PUBLIC (C) 2019 CAISO Purpose of
energy storage and distributed energy resources
initiative - The central focus of the Energy
Storage and Distributed Energy Resources
(ESDER) initiative is to lower barriers and enhance
the ability of transmission grid-connected energy
storage and distribution-connected resources to
participate in the



This report provides a description of the state of
battery storage resources in the California ISO and
Western Energy Imbalance Market. We evaluate
the performance of batteries using several key
metrics, and assess the recent market
enhancements for battery resources. 1 California
ISO, 20 -Year Transmission Outlook, May 2022, p.
2:

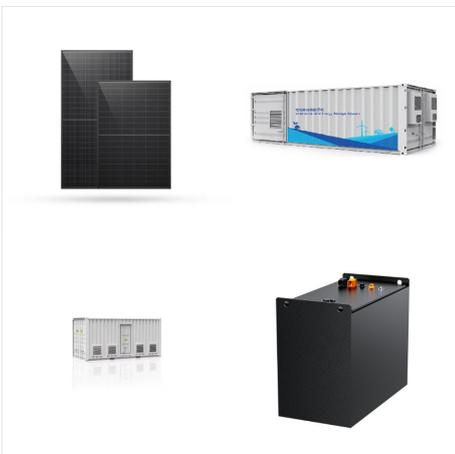
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Storage technologies. Pumped storage resources act as load while using energy to pump water to higher elevation reservoirs, and then act like generators by creating energy when releasing water back to lower reservoirs.. Non-generator resources (NGR) have the capability to serve as both generation and load and can be dispatched to any operating level within their ???

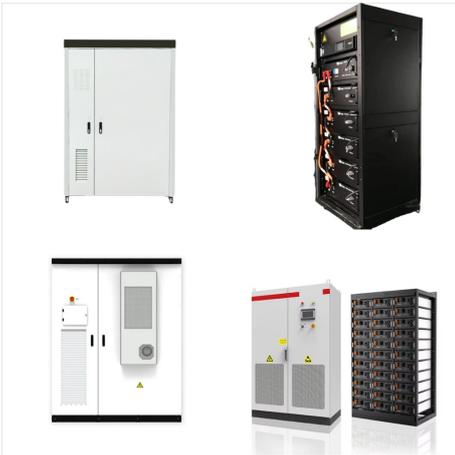


??? EIM Net Benefits Testing: ??? Changes will include addition of all gas price indices used in calculation. Metering: ??? Alternative Baselines: ??? Need to revise the BPM to explain new baselines and changes to existing systems.

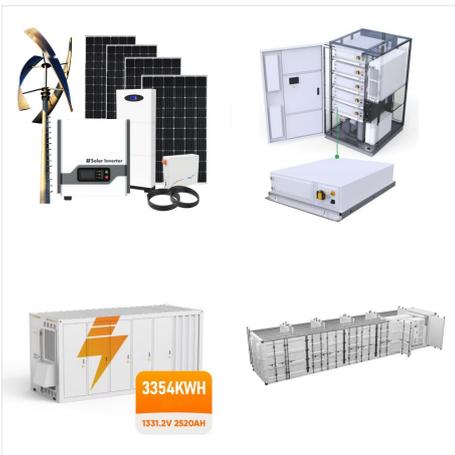


The California ISO manages the flow of electricity on high-voltage power lines, operates a wholesale energy market, and oversees infrastructure planning. Distributed Energy Resource Provider, Storage, and Load Forecast Adjustment 11/28/2023, 3:14 PM; Distributed Energy Resource Provider Participation Guide and Checklist 10/02/2019,

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Energy Storage and Distributed Energy Resources Phase 4 by James Bushnell, Member Scott M. Harvey, Member Benjamin F. Hobbs, Chair Members of the Market Surveillance Committee of the California ISO Final, September 9, 2020 I. Introduction The Market Surveillance Committee (MSC) of the California Independent System Operator



The focus of the California Independent System Operator's (CAISO) energy storage and distributed energy resources (ESDER) initiative is to lower barriers participation models of both storage and distributed energy resources in the CAISO markets. ESDER 4 will address the following topics: 1. Enhancements to the Non-Generator Resource (NGR

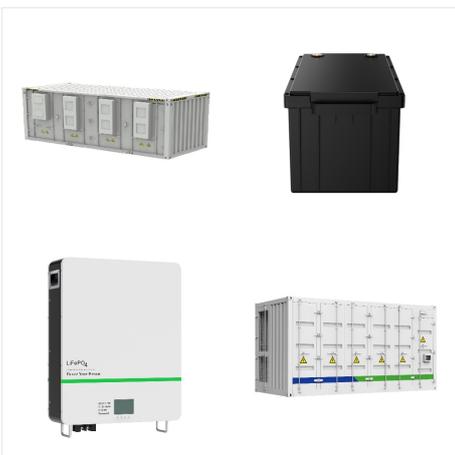


California ISO Other issues/questions 15 ??? "Frequent" Generation ??? The NAESB business practices for wholesale demand response were written for "infrequent loads", such as a backup generator; a good "rule-of-thumb" is generation subject to RICE-NESHAP* rules. ??? Distributed generation and storage solutions may be modeled in the

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participation models for both storage and distributed energy resources in the CAISO's market. ESDER 4 final proposal addresses the following topics: 1. State-of-charge biddable parameter for storage resources; 2. Streamlining market participation agreements for ???



Battery Storage Availability as a System Resource
June 27, 2019 SCE EXTERNAL. 2 Outline
???Introduction ???Dispatch of batteries in the CAISO markets for energy ???The motivation for battery participation in the energy markets
???Tradeoffs resource ???



CAISO Public Energy Storage and Distributed Energy Resources Phase 4 Straw Proposal Stakeholder Web conference. May 7, 2019. 1:00 p.m. ??? 4:00 p.m. (Pacific Time) CAISO Public to calculate a default energy bid for storage resources Example ??? A resource that can discharge for 4 hours will have a DEB matching the expected price for the second

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While developing the default energy bid for storage resources in phase four of the energy storage and distributed energy resource initiative, the ISO identified that costs for storage resources are driven by three factors. The first is energy cost, which represents the cost to buy energy from the grid, as well as parasitic