

## DOCKETED

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# CAISO Progress on Meeting IEPR Demand Response Recommendations

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2017 IEPR Workshop on Barriers to Demand Response  
August 8, 2017

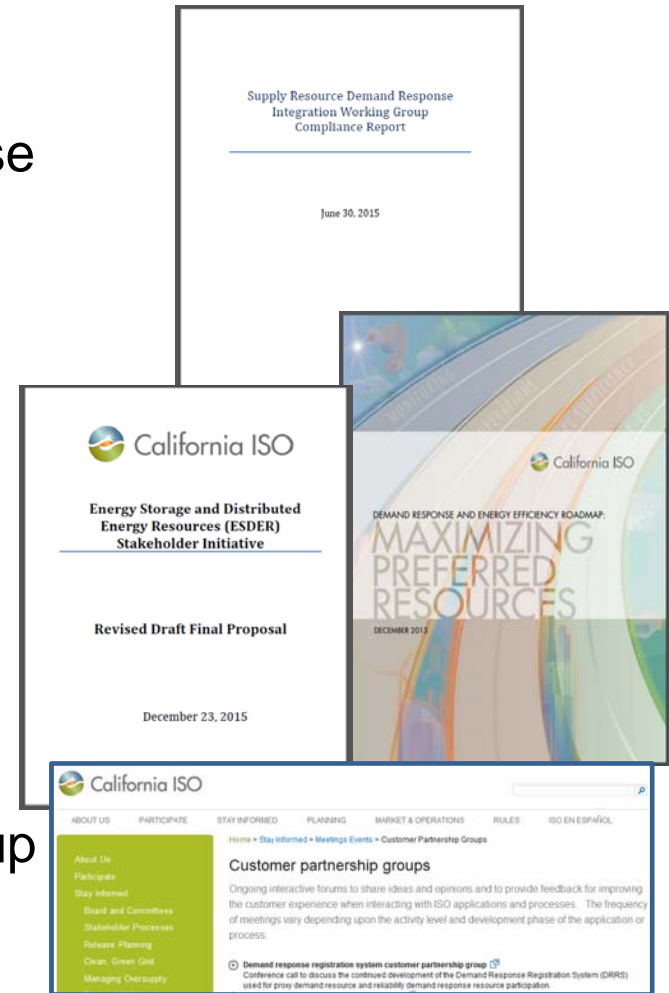
# Addressing barriers identified in the 2013 Integrated Energy Policy Report (IEPR)

Since the report the ISO actions included:

- Development of additional demand response participation rules and market design.
- Enablement of adopted policies for DR wholesale market integration including third party DRAM participation.

Actions were taken based on priorities identified:

- Within the 2013 DR and EE Roadmap
- By the Supply DR Integration Working Group (SIWG)
- Through ISO Stakeholder Initiatives and Customer Partnership Groups



## Completed implementation of additional DR participation model and additional ancillary service provision capability

Obtained FERC approval for implementation of the reliability demand response resource (RDRR) participation model

- Implemented in 2014
- Enabled integration of utility retail emergency triggered demand response programs to begin in 2015

Allowed provision of Spinning Reserve from Proxy Demand Resources (PDR)

- Implemented in 2015
- Operational experience obtained with SDG&E Optimized Pricing and Resource Allocation (“OPRA”) project with Non-Spin and Spinning reserve market participation throughout 2015

## Completed market design enhancements to meet specific DR and EE Road Map goals

### Flexible resource adequacy must offer obligation (FRACMOO)

- Implemented 2014
- Initial step towards ensuring that adequate flexible capacity is available to address changing grid needs
- Includes technology agnostic flexible capacity categories accessible to demand response - Category 3 (Super-Peak Flexibility)

### Commitment Cost Enhancements (phase 3)

- Implementation September 2018
- Provide use-limited resources opportunity cost adders for start-up, minimum load, and variable energy costs

## Improved modeling methods to reduce distributed energy resource implementation time to market participation

Developed and implemented modeling enhancements in 2016 to gain efficiencies in DR registration and ISO network modeling processes.

- Resource can now be created on demand without a Full Network Model (FNM) update
- Significantly reduced processing timelines and management of requests for new DR resource IDs
- Simplifies requests to customize modeling of DR resources

*DER modeling enhancement was essential to successfully implement Sub-Lap realignment*

## Aligned Sub-Load Aggregation Points with local capacity areas and relaxed telemetry requirements as prioritized by the Supply DR Integration Working Group

In 2016, ISO re-defined existing Sub-Lap boundaries.

- Realignment helped demand response providers know if there resources were fully within a local RA capacity area.
- Implemented new Sub-Laps beginning 1/1/2017
  - ✓ Required significant coordination with demand response providers integrating DR for resource adequacy commitments

Relaxed telemetry requirements based on recommendations

- Provides for a lengthened scan rate when providing telemetry to help lower costs for aggregated DR resources
  - ✓ Expanded to 5 minute updates for Day-Ahead and Real-Time energy markets
- Implemented business practice manual changes in 2016



## Completed development of the Demand Response Registration System (DRRS) to reduce DR integration barriers identified

### Demand Response Registration System DRRS deployed March 2015

- Provided Application Programming Interfaces (API) needed for bulk loading and downloading of location management
- Successful 2015/2016 utility program and DRAM integration utilizing initial functionality

### DRRS Enhancement Phase 2 deployed November 2016

- Participants provided with a unified registration processing system with stakeholder requested API

### DRRS customer partnership group call August 7, 2017

- Capturing and delivering on additional application enhancement requests



# Settlement challenges experienced by PDR and RDRR participants who had 2016 market activity

Performance degradation of the legacy demand response system (DRS) resulted in settlements statement processed using incomplete and missing performance data.

- CAISO completed a comprehensive evaluation of observed system failures that resulted in inaccurate or lack of settlement and has taken corrective actions
- All 2016 performance data has been reprocessed and will be reflected on the next available settlement recalculation statement
- Full resettlement should be completed by October 2017
- Monitoring of DRS processing along with responding to DRPs inquiries has been intensified to swiftly correct errors identified
- DRS will be fully replaced in 2018 with more robust systems

# New performance methodologies evaluated and proposed within the Energy Storage and Distributed Energy Resource (ESDER) initiative

## Energy Storage and DER (ESDER) Phase 1

- Implemented 2016
  - ✓ Additional baselines recognizing behind the meter generation (MGO)
  - ✓ Statistical sampling methodology option

## Energy Storage and DER initiative phase 2 (ESDER2)

- Implementation in 2018
- Adds three additional load baseline methodology options to better reflect performance of various DR types
  - ✓ Control Group (randomized – withheld from dispatch)
  - ✓ Weather Matching (4-day)
  - ✓ Day matching (highest 3 of 5 weighted day matching)

## Energy Storage and DER initiative phase 3 (ESDER3)

- Issue paper in development for September publication

# What is needed to best position DR to address the needs of California's transforming grid?

## More time-variant rate options that align with grid needs

- Shift and shape load to create a flatter load profile

## More flexible DR program designs

- Tailored to customer capabilities and aligned with grid needs; more agile designs than one-size fits all
- Ability to combine multiple retail programs into wholesale DR resources to capture synergies to create flexible attributes

## More robust DR dispatching systems and algorithms

- Incremental dispatch capability to help balance system
- Precise locational dispatch capability

## Greater real time visibility

- Telemetry as a service using existing advanced metering infrastructure
- Explore alignment between transmission and distribution system telemetry requirements

