

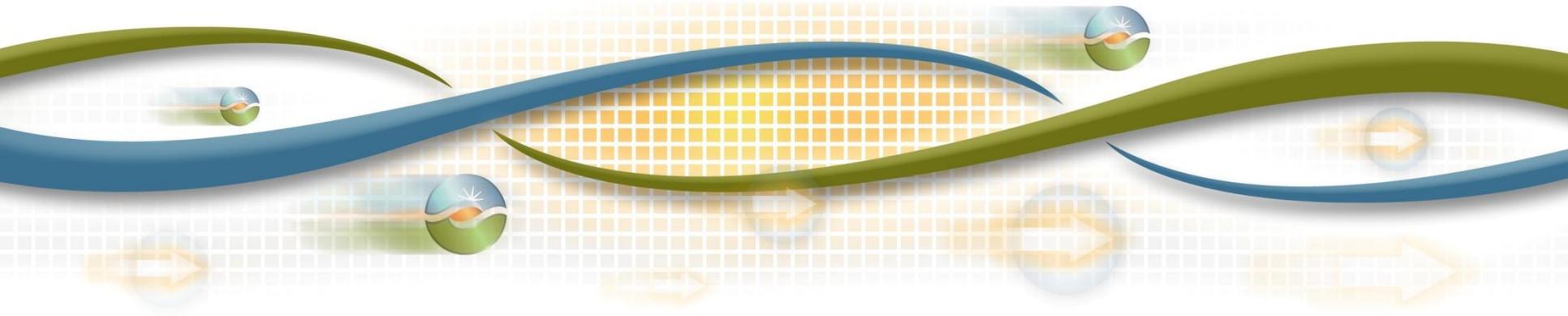


California ISO  
Shaping a Renewed Future

# Energy storage and aggregated distributed energy resources participation stakeholder initiative

## *Proposed scope and schedule*

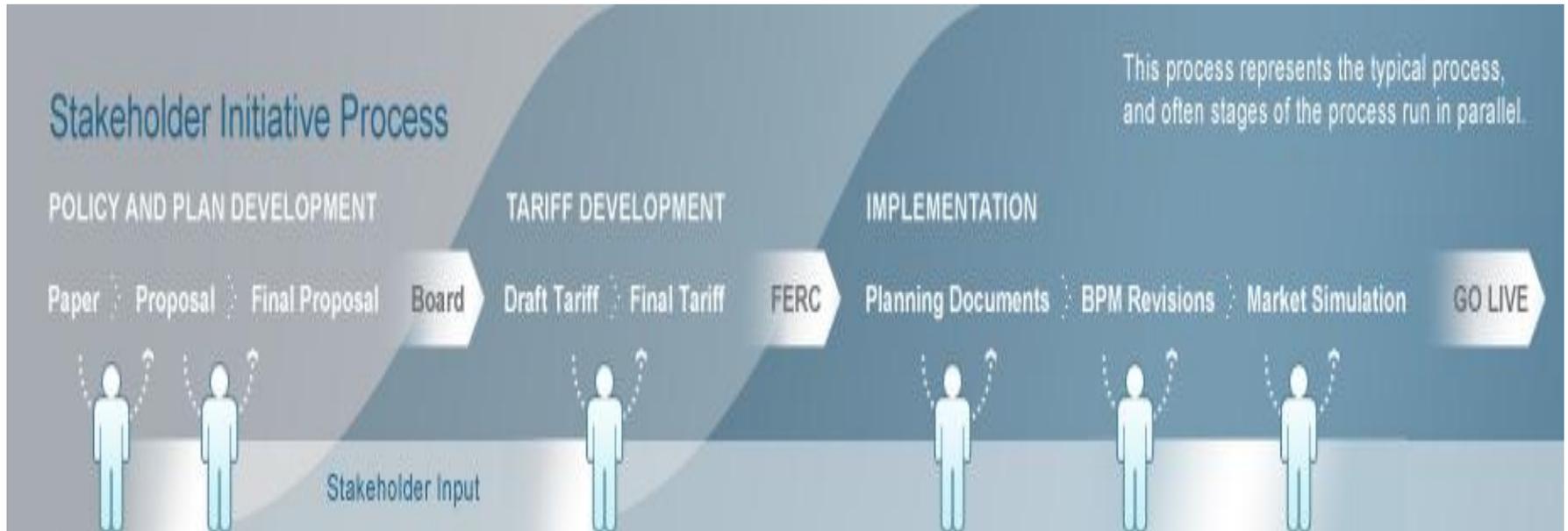
Stakeholder web conference  
May 21, 2015  
1:00-3:00



# Agenda

Time	Agenda Item	Speaker
1:00-1:10	Introduction, Stakeholder Process	Tom Cuccia
1:10-1:30	Background	Tom Flynn
1:30-2:10	Proposed scope of issues for potential policy resolution in 2015	ISO team
2:10-2:50	Proposed scope of issues for potential policy resolution in 2016	ISO team
2:50-3:00	Next Steps	Tom Cuccia

# ISO Stakeholder Initiative Process



We Are Here

# Stakeholder process schedule

Step	Date	Event
Proposed Scope & Schedule	May 13, 2015	Post proposed scope & schedule
	May 21, 2015	Stakeholder web conference
	May 29, 2015	Stakeholder comments due
Revised Scope & Schedule	June 10, 2015	Post revised scope & schedule
	June 17, 2015	Stakeholder comments due
Board approval of Scope & Schedule	July 16-17, 2015	Board of Governors meeting

# Background

- In 2013, CPUC established an energy storage procurement target of 1,325 MW by 2020.
- Energy storage developers responded by submitting requests to interconnect to the ISO grid.
- For queue cluster 7 (April 2014) developers submitted over 2,000 MW of project with energy storage as a component.
- Queue cluster 8 (April 2015) interconnection requests are still being processed, but the level of interest appears to be significantly greater than cluster 7.

## Background *(continued)*

- In 2013, the ISO launched an effort to clarify interconnection rules for storage; this effort concluded as a stakeholder initiative in 2014.
- Although the initiative found that existing ISO interconnection rules could accommodate storage, it also identified non-interconnection related issues that should be addressed.
- Thus, the ISO collaborated with the CPUC and CEC to publish the California Energy Storage Roadmap on 12-31-14.
  - Identified the broad array of challenges and barriers confronting energy storage and aggregated distributed energy resources (DER).
  - Identified needed actions to address these challenges.

## Roadmap identified several high priority action items for the ISO

- Market participation –
  - Clarify existing ISO requirements, rules and market products for energy storage to participate in the ISO market.
  - Identify gaps and potential changes or additions to existing ISO requirements, rules and market products and models.
  - Where appropriate, expand options to current ISO requirements and rules for aggregations of DER.
- Rate treatment – Clarify wholesale rate treatment and ensure that the ISO tariff and applicable BPMs and other documentation provide sufficient information.

# ISO has developed a plan for carrying out the roadmap action items

- Host a forum to educate stakeholders on existing ISO requirements, rules, market products and models for energy storage and aggregated DER to participate in the ISO market.
  - Held on April 16 and 23 (over 200 attendees).
  - Focus was on current tariff approved rules.
- Conduct a stakeholder process to specify and address any needed enhancements to existing rules.
  - Develop scope of issues and schedule for policy resolution.
  - Initial focus is on issues for potential policy resolution in 2015; remaining issues to be addressed in 2016 and beyond.
  - Present scope and schedule at July Board meeting.

## ISO also plans to participate in related CPUC proceedings on energy storage and integrated demand side management

- The energy storage proceeding will address (1) outstanding implementation issues and policy issues from CPUC's previous energy storage decisions and (2) action items from the energy storage roadmap.
  - Some roadmap action items intersect CPUC jurisdictional areas as well as ISO wholesale market areas, thus coordination and collaboration is needed.
- The integrated DSM proceeding will address aggregation of distributed energy resources to meet system needs.

# Proposed scope of issues for potential policy resolution in 2015

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1. Non-generator resource (NGR) model enhancements
  - a. Update documentation on NGR to capture material and clarifications compiled for April education forums.
  - b. Clarify how ISO uses state of charge in market optimization.
  - c. Evaluate initial state of charge as a submitted parameter in the day-ahead market.
  - d. Evaluate option to not provide energy limits or have ISO co-optimize an NGR based on state of charge.

## Proposed scope of issues for potential policy resolution in 2015 *(continued)*

### 2. Proxy Demand Resource (PDR) and Reliability Demand Response Resource (RDRR) enhancements –

Evaluate inclusion of baselines that meet the North American Energy Standards Board (NAESB) measurement and validation standards.

- clarify how to enable alternative baselines that meet NAESB standards, and
- specify tariff provisions to define alternative baselines in BPMs.

## Proposed scope of issues for potential policy resolution in 2015 *(continued)*

3. Evaluate pseudo-tie or dynamic scheduling arrangements for storage resources, using available market models.
4. Specify tariff provisions needed for the following two multiple use applications
  - a. Non-RA DER provides services to the distribution system (operational services and infrastructure deferral) and participates in wholesale market.
  - b. Non-RA behind-the-end-use customer meter DER provides services to end-use customer and participates in wholesale market.

# Proposed scope of issues for potential policy resolution in 2016 and beyond

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## 1. Additional NGR enhancements

- a. Consider a single participation agreement (rather than the current requirement of PGA + PLA).
- b. Evaluate interconnection requirements for non-exporting NGR.
- c. Explore multiple configurations for a single NGR where each configuration is allowed different operating characteristics and economic bid curves based on physical constraints of the resource.
- d. Evaluate expanding bid cost recovery for NGR to potentially cover additional resource types and configurations.
- e. Enhance load management capability and participation under the NGR model (i.e., both increasing and decreasing consumption).

## Proposed scope of issues for potential policy resolution in 2016 and beyond (*continued*)

2. Additional PDR/RDRR enhancements – Explore dispatching DR to increase consumption (also see topic 1e)
3. Address remaining policy issues from the DERP initiative.
4. Evaluate the distinction between wholesale charging energy and station power.
5. Consider additional multiple use applications.
6. Examine alignment between distribution level interconnection and the ISO NRI process.
7. Consider open policy issues from CPUC demand response working groups.

# Related ISO activities

## Related ISO initiatives and activities are also addressing needed actions for DER

- ISO initiatives
  - Expanding metering and telemetry (DERP initiative)
  - Demand Response Registration System Customer Partnership Group
- Other activities under consideration to be addressed in the BPM Proposed Revision Request process
  - Telemetry adjustments to requirements related to accuracy, scan rate and 24/7 for DR participation.
  - Clarification concerning DRP contractual relationships with the end use customers, LSE, and UDC.

# Other items raised by Stakeholders

Subset – under discussion at working groups

## Responses to other items raised by stakeholders

- **LSE Aggregation:** considered removing DLA, awaiting pending Supreme Court review concerning FERC 745.
- **Registration of all LSEs in demand response system:** adding LSEs is dependent on 1) receiving request from the LSE, or 2) receiving formal notice by relevant LRA of jurisdictional LSEs for addition.
- **DLA calculation triggered in Real-time:** net benefits test is a real-time test and is applied appropriately.
- **Demand Response day-ahead discrete dispatch (RDRR) not available:** This feature creates market inefficiency and can cause re-dispatch. Policy decision made to not include this feature during the RDRR stakeholder policy development process.

# Next Steps

Request for stakeholder comments by May 29, 2015

Comments mailbox [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)

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