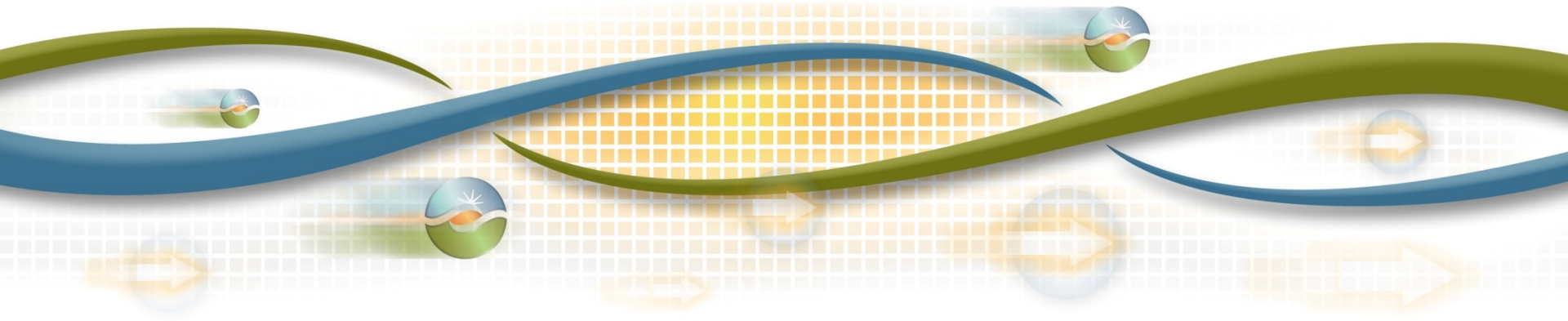




## Metering Rules Enhancements

### *Issue Paper and Straw Proposal*

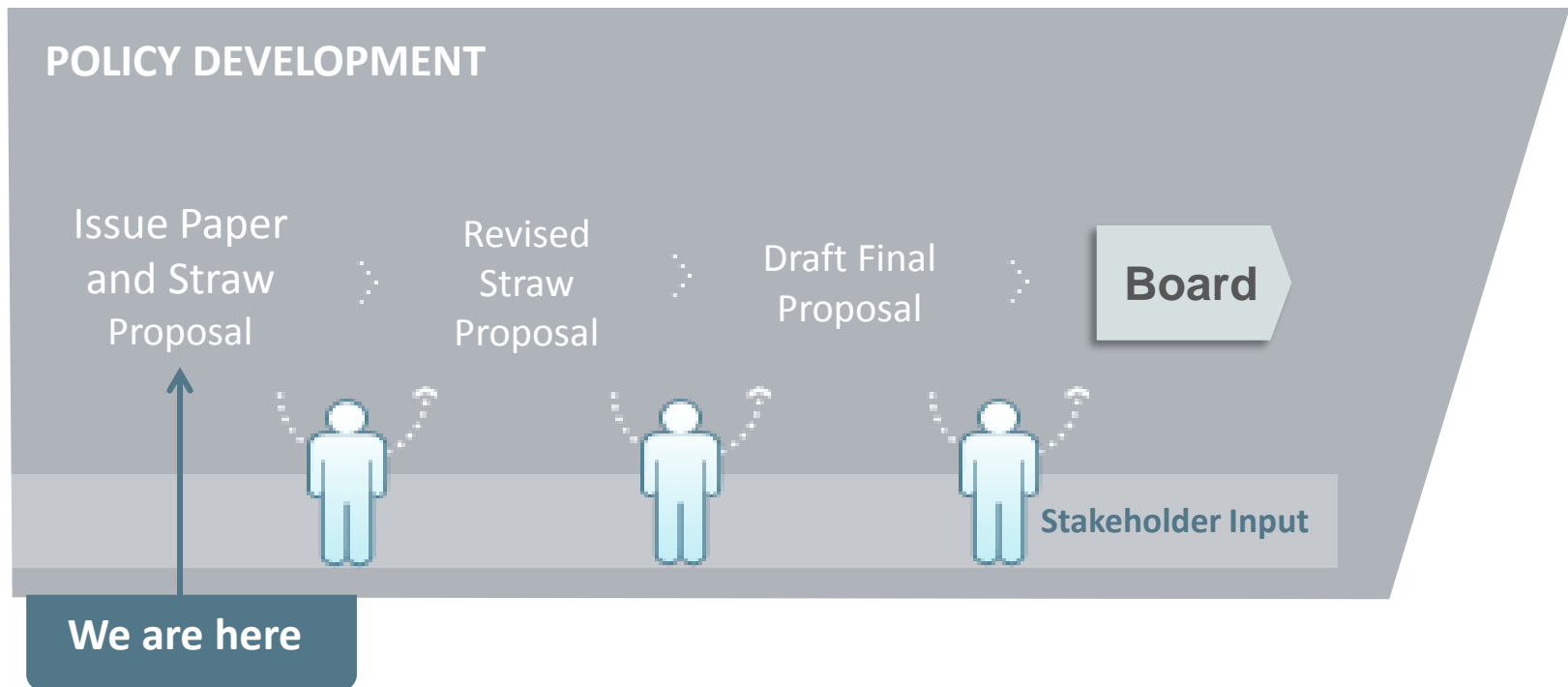
Stakeholder web conference  
March 3, 2016  
9:00 – 12:00 (Pacific Time)



# Agenda

<b>Time</b>	<b>Agenda Item</b>	<b>Speaker</b>
9:00-9:10	Introduction, Stakeholder Process	Kim Perez
9:10-9:20	Initiative purpose/objectives	Tom Flynn
9:20-10:00	Background	Glen Perez
10:00-10:50	Straw Proposal	Tom Flynn Jordan Curry
10:50-11:00	Next Steps	Kim Perez

# ISO Stakeholder Initiative Process



# Stakeholder process schedule

Step	Date	Event
Issue Paper and Straw Proposal	Feb 23, 2016	Post issue paper and straw proposal
	March 3, 2016	Stakeholder web conference
	March 17, 2016	Stakeholder comments due
Revised Straw Proposal	April 19, 2016	Post revised straw proposal
	April 26, 2016	Stakeholder web conference
	May 10, 2016	Stakeholder comments due
Draft Final Proposal	June 7, 2016	Post draft final proposal
	June 14, 2016	Stakeholder web conference
	June 28, 2016	Stakeholder comments due
Board Approval	August 31- September 1, 2016	Board of Governors meeting

# Initiative purpose/objectives

# An evolving industry is driving the need for continuous review of metering requirements and rules

- Through previous initiatives, ISO has made revisions to its metering requirements to accommodate changes in the energy landscape.

- Demand response
- Energy Imbalance Market
- Aggregations of distributed energy resources



Expanded use of  
Scheduling Coordinator  
Metered Entities  
(SCME)

- Through this initiative, ISO will propose further enhancements to accommodate additional change.
  - Integration of other balancing authority areas into the ISO
  - Advancements in metering technology and complex metering configurations

## Development of enhanced metering requirements necessitates balancing multiple objectives

- Reducing cost barriers to participate in the ISO market
- Accommodating new and complex metering configurations
- Integrating other BAAs into the ISO
- Leveraging local regulatory authority metering requirements
- Considering investments made in existing metering infrastructure
- Maintaining the quality and integrity of meter data used in market settlements

# Background on existing metering requirements



# ISO tariff defines two types of metered entities

- ISO Metered Entity (ISOME) and Scheduling Coordinator Metered Entity (SCME).
- ISOME and SCME each have their own specific tariff provisions which address
  - required metering equipment
  - operational certification
  - meter inspections
  - meter data processing to ensure Settlement Quality Meter Data (SQMD)

# ISO Metered Entities (ISOME)

- ISOMEs consist of:
  - Generators (other than a generator that sells all of its energy and ancillary services to the UDC or Small UDC in whose service area it is located);
  - Metered Subsystems (MSS);
  - UDCs and Small UDCs;
  - Participating resources and EIM participating resources that elect not to be SCME; and
  - Utilities that request to have their own Unaccounted for Energy (UFE) calculation.

# Scheduling Coordinator Metered Entities (SCME)

- The ISO tariff defines SCME as an entity that is:
  - A Generator, Eligible Customer, End-User, Reliability Demand Response Resource (RDRR), or Proxy Demand Resource (PDR) that is not an ISOME;
  - An EIM Entity; or
  - An EIM Participating Resource that elects to be a SCME with regard to some or all of the EIM Resources it represents.

# Settlement Quality Meter Data (SQMD)

- The ISO tariff defines SQMD as “Meter Data gathered, edited, validated and stored in a settlement-ready format for Settlement and auditing purposes.”
- ISO market settlement requires SQMD for generation, load and tie resources.
- The requirements for processing SQMD differ between ISOMEs and SCMEs.

# SQMD distinctions between ISOME and SCME

- ISOME — the ISO directly acquires the meter data from ISO certified meters and processes the SQMD. The ISO sets the standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters.
- SCME — the SC submits the SQMD from meters that meet the metering and metering process requirements of the applicable Local Regulatory Authority (LRA) and submits an annual self-audit report.

# SQMD and SCMEs

- If the SCME's LRA has not prescribed any certification criteria for the metering facilities, the certification criteria prescribed for ISOMEs in the metering BPM apply.
- All SCs that submit SQMD are required to perform an annual SC self-audit.
  - In this audit, the SC takes all the actions necessary to support an attestation that they have completed the audit and are processing their meter data in accordance with their requirements.

# Metering exemption requests

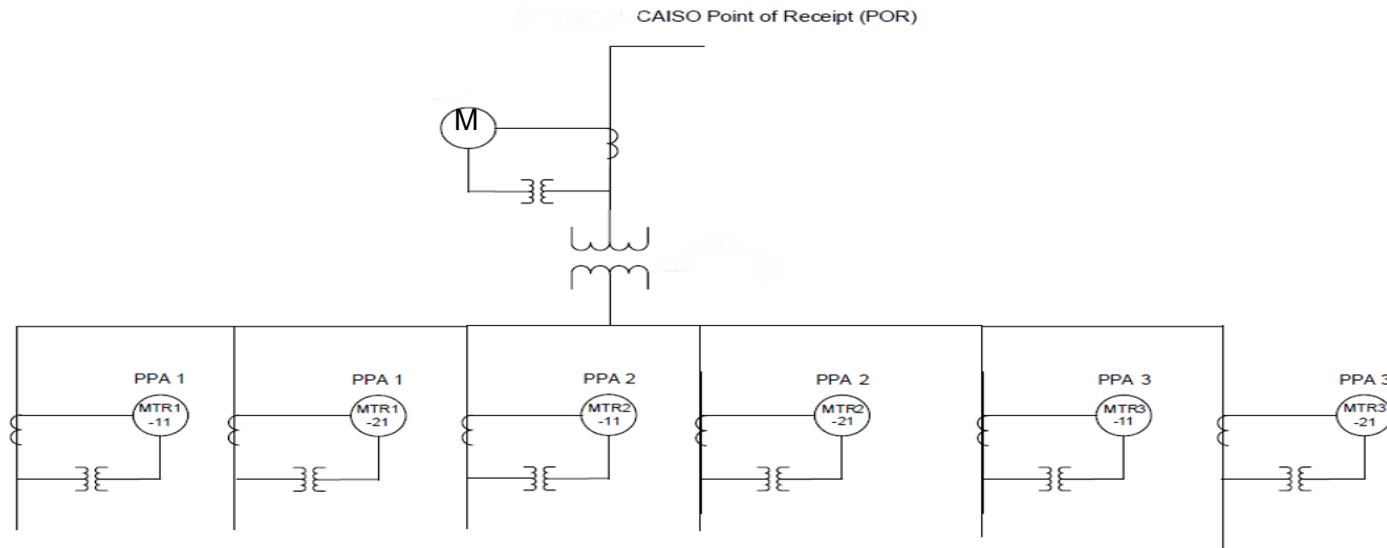
- The ISO has the authority to grant exemptions from certain ISO metering standards for ISOMEs.
- ISO receives many such requests from projects configured in a unique manner not contemplated in tariff.
- Significant expenditure of time and resources.
- Advancements in metering technology are creating new capabilities and configurations.
- Metering rules enhancements could eliminate need for some exemption requests.

## Typical features of projects submitting metering exemption requests

- Multiple resources with separate power purchase agreements.
- Shared equipment such as a transmission line and/or a transformer.
- Multiple meters are required for these resources to communicate with each other for the accurate calculation of the losses and to measure power delivered from each resource.



# Example of a metering exemption request



- All six meters on the low side of the transformer have to communicate with the high side meter M for the calculation of losses and their appropriate allocation.
- An exemption to the “raw and unedited data” requirement would have to be requested.

## Metering exemption requests and advancements in metering technology

- With advancements in metering technology, revenue meters are now capable of performing complex computations while still maintaining the accuracy and integrity of the data.
- These complex schemes currently require exemptions from ISO Tariff section 10.2.1.2 Format for Data Submission.
- These exemptions and the associated advancements in metering technology suggest the need to consider updating some of these metering rules.

# ISO Straw Proposal

# ISO's straw proposal to enhance its metering rules consists of three elements

1. Providing existing metered entities the option to retain current requirements, or to opt for items 2 and 3 below.
2. Allowing SCs the option to submit SQMD for all resources
3. SQMD Plan

# Summary of roles/obligations under Straw Proposal

ISOME	SCME	SQMD Plan
<p>ISO sets the standards and procedures for the registration, certification, auditing, testing and maintenance of revenue quality meters.</p>	<p>SC submits the SQMD from meters that meet the metering and metering process requirements of the applicable LRA.</p>	<p>SC provides SQMD Plan which meets the ISO minimum metering requirements.</p>
<p>Not required to provide SQMD plan; ensures compliance with ISO minimum metering requirements and LRA.</p>	<p>Provides SQMD Plan for any ISO metering minimum requirements not reflected in LRA requirements.</p>	<p>The ISO will reserve the right to perform audits and inspections on the implementation and use of each SQMD Plan. Any SQMD Plan that proves to be inadequate is subject to revision to ensure it produces SQMD.</p>
<p>Does not submit annual self-audit report. ISO has audit rights.</p>	<p>Submits annual self-audit report. ISO has audit rights.</p>	<p>Submits annual self-audit report. ISO has audit rights.</p>

## Proposal provides existing metered entities with option to retain current requirements

- This will allow existing metered entities, whether ISOME or SCME, to maintain compliance with their metering infrastructure and requirements without being required to change to new tariff requirements unless they elect to do so.
- Submission of an SQMD Plan would not be required for these existing metering entities.

## Proposal allows SCs the option to submit SQMD for all resources

- Acquire, process, and submit SQMD for generation resources they represent.
- Acquire, process, and submit SQMD for their load resources by following the requirements of an applicable LRA, or by calculating their load from qualified tie meters and internal generator meters.
- Process and submit SQMD for tie resources when the interchange checkout data is unavailable.

# Comparison of existing and proposed methods for submittal of SQMD

Note: This slide is a placeholder

At this point in the presentation the ISO will project the  
table found on page 11 of the February 23<sup>rd</sup> Issue Paper  
and Straw Proposal



## Proposal includes SQMD Plan requirement

- Requirement to submit a SQMD Plan applies to SCs that elect option to submit SQMD for selected resources.
- Provides SCs with the opportunity to demonstrate to the ISO that the meter data submitted to the ISO will be settlement quality.
- SQMD Plan requirement does not apply to ISOMEs and existing SCMEs.
- ISO will reserve the right to perform audits and inspections on the implementation and use of each SQMD Plan.

## Items that should be included in SQMD Plan

- Metering facility design
- Procedures used for installation, testing, calibration, maintenance and security
- Program for on-going monitoring and inspection
- Meter data process
- Communication systems and processes
- SC self-assessment procedures

# Next Steps

Request stakeholder comments by COB March 17<sup>th</sup>

Be sure to use comments template provided

Submit to comments mailbox:  
[initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)

Step	Date	Event
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Thank you!