



California ISO

# Price Formation Enhancements

Working Group Session #5

09/27/2023

## Housekeeping reminders

- This call is being recorded for informational and convenience purposes only. Any related transcriptions should not be reprinted without ISO's permission.
- These collaborative working groups are intended to stimulate open dialogue and engage different perspectives.
- Please keep comments professional and respectful.
- Note: The ISO encourages any verbal or written agreements to comments made during this working group session.
- You may also send your question via chat to either Brenda Corona or to all panelists.

## Instructions for WebEx



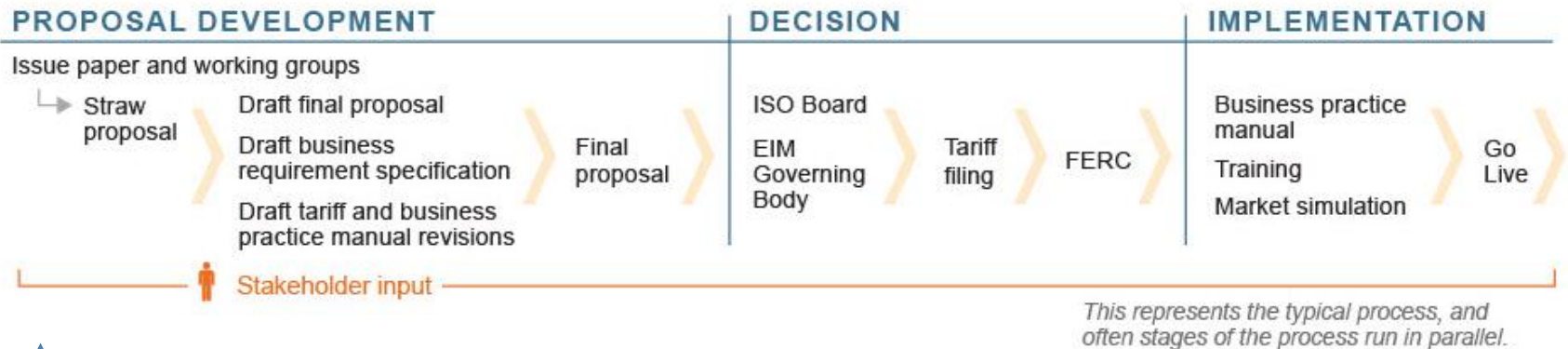
- The “raise hand” icon is located in the lower tool bar. You will hear a beep tone when you are un-muted; at that time please state your name, and question. Attendees dialed in on the phone only press #2 will hear a notification when you are un-muted; at that time please state your name and question.
- WebEx platform will **LOCK** and mute you if you mute yourself once you have finished your question. Do not mute yourself until you have completed your question or comment.
  - Polling App: *Slido* you can select the answer to the question.
  - Attendees will see questions on right screen above the chat window.



# Today's Working Group Agenda

Time	Topic	Presenter
9:00 – 9:05	Welcome, Today's Agenda, Stakeholder Process Overview	Brenda Corona
9:05 – 9:15	Today's Goals / Next Session	Juan Buitrago
9:15 – 10:00	Discussion Paper Overview	Juan Buitrago
10:00 – 10:55	Problem Statement Formulation / Example Problem Statements	Juan Buitrago
10:55 – 11:00	Next steps	Brenda Corona

# ISO Policy Initiative Stakeholder Process



Stakeholder meetings, working groups and workshops may occur throughout the stakeholder process.

We are here

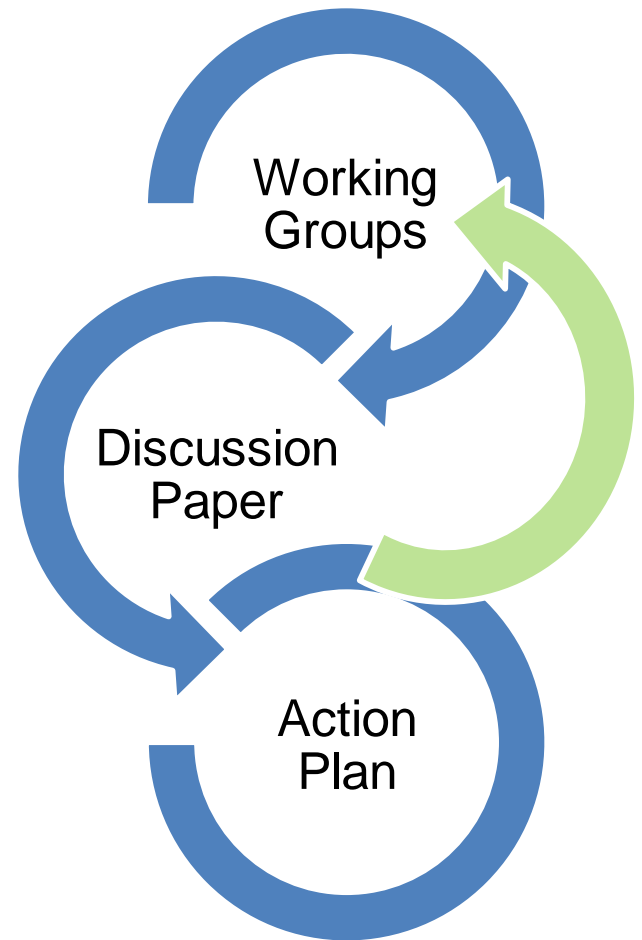
- Working groups will inform the Phase 1 straw proposal
- The ISO will take notes and produce reports of each of our working group meetings.

# Working Group Deliverables

**Action Plan:** A bridge between the working groups and a straw proposal, the Action Plan will inform the policy direction for Price Formation Enhancements Phase 2 stakeholder initiative.

**The action plan will recap all perspectives shared in the working group process and identify the policy direction/basis of the straw proposal**

You will have an opportunity to provide written comment on the Action Plan



# Goals of Today's Working Group Session

The Working Group structure is meant to embrace flexibility to allow organic and robust conversation on the topics at hand – it is still key for us to drive towards solutions collaboratively

- **Conclude conversation on the history and context of the current BAA-Level Market Power Mitigation (MPM) construct as it exists today**
- **Review of Price Formation Discussion Paper**
  - Evolution of the Discussion Paper/Working Group Process
  - Guiding Principles
  - Theme/Topic areas identified. Are there new areas for discussion?
    - Scope items identified for problem statement formulation. Are there new scope items for discussion
- **Problem Statement Formulation**
  - Illustrative example
  - Workshop

## BAA-Level Market Power Mitigation discussion cont'd

- **We received several questions/comment via Slido at the end of the last session the need more detail**
  - More details on the MPM tests
    - Energy Imbalance Market BPM – 11.3.5
    - Market Operations BPM – 6.5, 7.4
    - Market Instruments BPM – Appendix Attch D



# BAA-Level Market Power Mitigation discussion cont'd

- **We would like to represent/respond to the following comments, but felt these outside of the level set conversation**
  - Still uncomfortable how to clearly evaluate potential pros/cons between grouping v individual (Problem Statement formulation)
  - Written paper with data to articulate the history and how MPM was formed (what data?)
  - Analysis on how the current BAA-level MPM is performing today would be helpful to understand whether improvements are needed. (Problem Statement Formulation)
  - With broader participation in WEIM [do] the structural issues (BAA-Level MPM addresses) still apply as they did during the “early days” that were referenced?



California ISO

# Price Formation Enhancements Discussion Paper

# Price Formation Enhancement Discussion Paper Overview

- **Evolution of the Discussion Paper**
  - Reflect Discussion and decisions from WG process
  - Iterative, living document
  - Revision Tracking for transparent record
  - Action Items to maintain momentum
  - Feedback/comments on each iteration
    - As well as the layout and proposed evolution of Discussion Paper

# Price Formation Enhancement Discussion Paper Overview

- **Working Group process**

- Identify areas of challenge/opportunity within scope of policy initiative
- Form Problem Statements
  - Root cause related to intended market outcomes
- Illustrate/Justify problem statements
  - Explore current market constructs meant to address
  - Develop methodology for analysis
- Determine Action Items
  - Align on priorities
  - Serve as bridge to policy development

# Price Formation Enhancement Discussion Paper Overview

- **Guiding Principles**

- PFE Principles will continue to evolve and be developed throughout the working group
- Serve as a reference for initial problem statement development
  - Facilitate problem statement comparison, prioritization, and assessment of potential trade-offs

# Price Formation Enhancement Discussion Paper Overview

- **Guiding Principles**
  - Efficiency
  - Simplicity
  - Transparency
  - Feasibility

# Price Formation Enhancement Discussion Paper Overview

- **Guiding Principles**

- **Efficiency:** dispatch on offered prices will minimize actual system production costs
- **Simplicity:** market rules apply consistently and indiscriminately
- **Transparency:** sufficient information exists to make competitive bidding decisions
- **Feasibility:** the market can resolve within prescribed timelines (operational feasibility), consideration of implementation timelines
- Accuracy
- Effectiveness
- Competition

# Price Formation Enhancement Discussion Paper Overview



- **Guiding Principles – what scope items come to mind when you think of these principles as it relates to PFE?**
  - Accuracy
  - Effectiveness
  - Competition



# Price Formation Enhancement Discussion Paper Overview

## Theme/Topic Areas

- How to reflect the value of reliability in prices during scarce conditions
- How and when to enact and end scarcity pricing
- Out of Market actions
- Scarcity Pricing's competitiveness with bi-lateral transactions occurring during scarce conditions
- Compatibility with pricing and RA in broader West and other markets to signal voluntary supply
- BAA-Level Market Power Mitigation
- Which other themes should be considered for discussion in a dedicated Working Group session?

# Price Formation Enhancement Discussion Paper Overview

## **How to reflect the value of reliability in prices during scarce conditions**

- Determining the Value of Lost Load (VOLL) and its applicability
- Using dynamic demand curves and penalty mechanisms
- Incentives to ensure accurate Day-Ahead schedules
- Balancing price incentives with consumer protection

# Price Formation Enhancement Discussion Paper Overview

## **How and when to enact and end scarcity pricing**

- Mechanisms to signal scarce conditions are eminent
- Incorporating a mechanism to avoid prolonged periods of scarcity pricing.
- Ensuring resilience to triggering scarcity pricing at inappropriate times

# Price Formation Enhancement Discussion Paper Overview

## Out of Market actions

- How operator's out of market actions impact real-time prices
- Considering tools used by other ISOs such as Reliability Deployment Price Adders (RDPA)
- Factoring other reliability actions such as the Strategic Reserve Resources, load biasing, etc.

# Price Formation Enhancement Discussion Paper Overview

## Scarcity Pricing's competitiveness with bi-lateral transactions occurring during scarce conditions

- Review scarcity pricing levels and methodologies in other markets
- Should ISO scarcity pricing design provide competitive market
- How EDAM/WEIM can attract bi-laterally attained supply
- How to address potentially reduced liquidity and availability of bi-lateral supply with propagation of regional markets within WECC

# Price Formation Enhancement Discussion Paper Overview

## Compatibility with pricing and RA in broader West and other markets to signal voluntary supply

- How different RA programs and bidding rules across the regional market footprint might influence market outcomes
- Factoring that CAISO is only BAA to co-optimize energy and AS, and how this will impact prices in CAISO BAA vs others.
- Factoring in potential seams issues with other markets during tight system conditions
- Future coordination with other markets

# Price Formation Enhancement Discussion Paper Overview

## BAA-level MPM

- Ensure design does not create over-mitigation impacting competitive market conditions for supply participation.
- Benefits and costs of current BAA-Level MPM construct and comparison to alternatives used in other markets
- Mechanism to designate the grouping, and subsequent sequencing of, potential DCPA solution.
- Ensuring potential group DCPA solution would not result in failures for a BAA that would not have occurred with today's current design

# Themes in Discussion Paper

slido

Are there additional themes that should be added to the PFE Working Group conversation?



Are there additional scope items you feel should be added into any of the following theme/topic areas for further discussion with the working group.

- How to reflect the value of reliability in prices during scarce conditions
- How and when to enact and end scarcity pricing
- Out of Market actions
- Scarcity Pricing's competitiveness with bi-lateral transactions occurring during scarce conditions
- Compatibility with pricing and RA in broader West and other markets to signal voluntary supply
- BAA-Level Market Power Mitigation



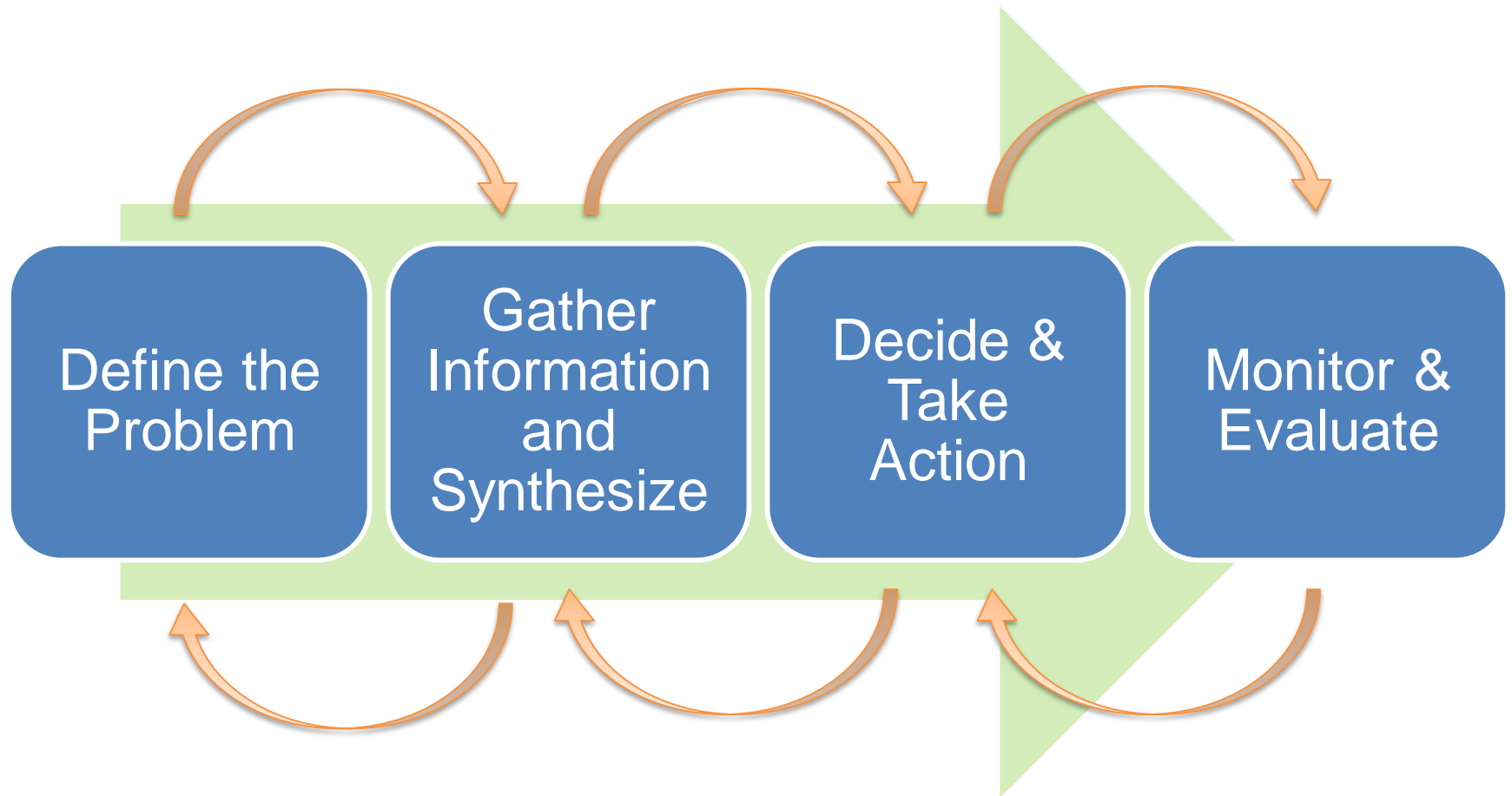
California ISO

# PFE Example Problem Statements

## How a problem is defined influences how it is solved

- There may be many ways to define a problem when there is
  - More than one relevant policy
  - More than one principle trade-off
  - More than one impacted market outcome or function
- Stakeholders will have different perspectives and experiences that can illustrate potential root causes of a problem
- Working groups are a collaborative process to build problem statements

# Problem statement development is an iterative process



# How to build a Problem Statement

**What's a problem statement?** An issue or challenge related to CAISO market policy or processes that impacts market outcomes.

## What makes a good problem statement?

- Identify a root cause in terms of existing market design policy or processes
  - If the root cause is not known:
    - Explore how current ISO market policy and processes reflect principles and support market objectives
    - Determine how these policies and processes may not meet their intended goals
- Determine possible trade-offs associated with principles
- Illustrate how problems create a measurable impact on market outcomes

# Problem Statement Terms and Definitions

- **Market functions:** Functions or outcomes of a regional centralized electricity market that reflect the role of the CAISO as an independent system operator. These might include:
  - Reliability
  - Operational cost recovery
  - Competition
- **Principles:** Describe *how* market design policy achieves a market outcome. These might include:
  - Efficiency
  - Transparency
  - Feasibility

# Problem Statement Terms and Definitions

- **Policy or process:** Describe an existing CAISO market policy or process that supports market outcomes. These might include:
  - Scarcity pricing
  - Co-optimization of ancillary services with energy
- **Root cause:** Describes the failure of an existing policy to help achieve market outcomes. These might include:
  - Lack of sufficient data or processes
  - Existing policies not longer accommodate shifting market conditions/regionalization

# Problem Statement Workshop

- The purpose of this exercise is to familiarize the group with the process of problem statement development
- The following examples reflect real stakeholder comments, but today's discussion is meant for illustrative purposes only
- Outcomes of today's discussion will not be reflected in the Discussion paper
- Stakeholders are encouraged to:
  - Submit their own problem statements
  - Build on existing discussions by suggesting salient problem statement elements



Workshop example stakeholder comments

# EXAMPLES

## Problem Statement Formulation – Example 1

The CAISO may need to re-evaluate administrative pricing for energy and ancillary services during periods of curtailed demand.

**Draft Problem Statement:** During periods of curtailed demand, consumers may have been willing to pay more than the administratively set scarcity price cap.

- Root cause is identified
- Principles: Efficiency; prices should reflect consumers willingness to avoid involuntary curtailment
- Market outcome: reliability

## Problem Statement Formulation – Example 2

**Draft Problem Statement:** Energy storage resource bids/DEBs are limited to a bid cap of \$1000/MWh even when the cap is raised to \$2000/MWh, which disincentivates these resources from delivering at bid cost.

- Root cause is identified as energy storage bid caps
- Possible principles: Efficiency; bids do not accurately reflect opportunity costs and therefore fail to provide the necessary price signals
- What's the market outcome?

Do any draft problem statements come to mind for the group to consider?

- To be discussed further in thematic sessions
- To be included in revised discussion paper

## Next steps

### **Revised Discussion Paper**

- Please provide feedback via comment tool
- Incorporating feedback from this session and comments

### **Revise Working Group schedule**

- To be posted to initiative page
- Prepare presentations on scope items

### **PFE Working Group Session #6**

- Tentatively October, 11<sup>th</sup>, 2023
- Fast Start Pricing
  - Level Set – History and Background for informed discussion
  - Framework of basic scope to receive feedback

## For reference

- Visit initiative webpage for more information:  
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Price-formation-enhancements>
- If you have any questions, please contact Brenda Corona at [bcorona@caiso.com](mailto:bcorona@caiso.com) or [isostakeholderaffairs@caiso.com](mailto:isostakeholderaffairs@caiso.com)



- *Energy Matters* blog provides timely insights into ISO grid and market operations as well as other industry-related news

<http://www.caiso.com/about/Pages/Blog/default.aspx>.

Listen to a short video and see the slides tracing WEIM's evolution and the expected benefits for California and the West from expanding into the day-ahead timeframe [on the ISO's YouTube channel](#)

Read a recent article featured in the blog:



September 25, 2023  
*Markets, Leadership*

### Evolution of the WEIM

At the ISO's August 30 forum on an Extended-Day Ahead Market, Elliot Mainzer, the California Independent System Operator's president and CEO, made a brief presentation in his closing remarks illustrating the evolution of the ISO's Western Energy Imbalance Market (WEIM) since its launch in 2014.

[READ MORE](#)

The complex block contains a central graphic with a blue background, overlaid with a white line graph and a bar chart. At the bottom of the graphic, the word "MARKET" is written in white, followed by three white arrows pointing upwards and to the right. To the right of the graphic is a text block with a date, a category, a title, a paragraph of text, and a link.

- Subscribe to [Energy Matters blog monthly summary](#)