



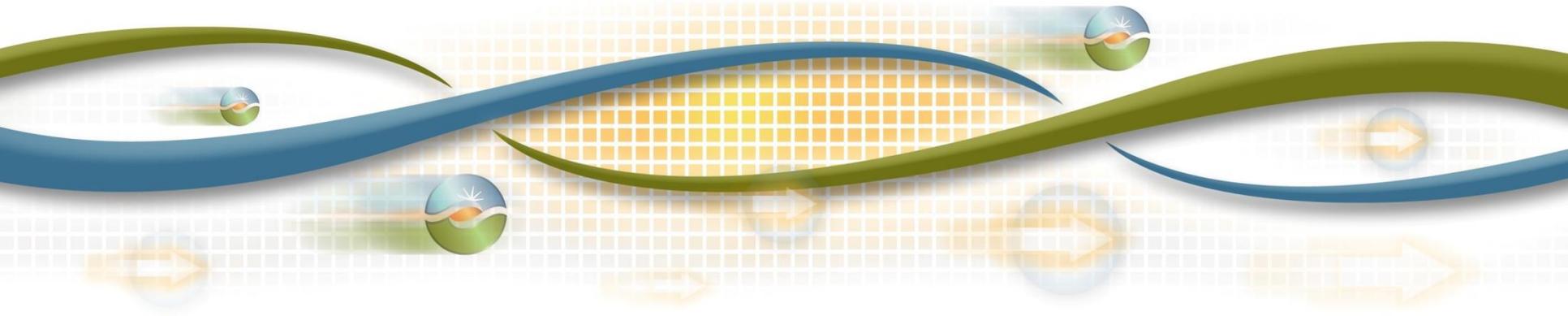
# Commitment Costs and Default Energy Bid Enhancements – Cost Offer Framework

April 20, 2017

Cathleen Colbert

Sr. Market Design and Regulatory Policy Developer

Market and Infrastructure Policy



# April 20 working group agenda

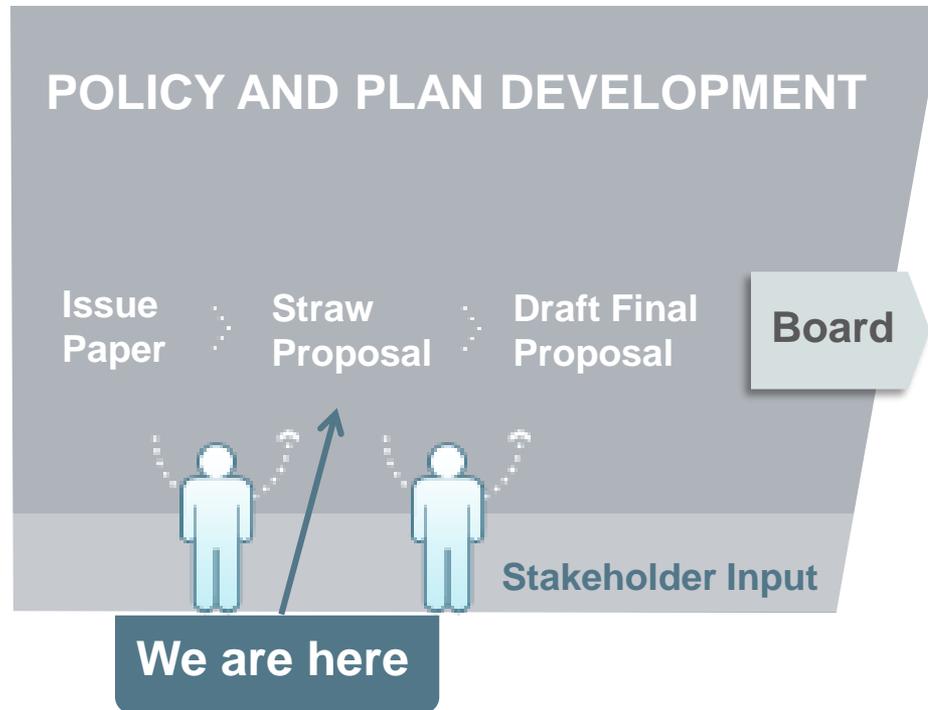
Time	Topic	Presenter
9:00 – 9:05	Welcome	Kimberli Perez
9:05 – 9:15	Introduction	Cathleen Colbert
9:15- 9:45	Background	Cathleen Colbert
9:45 – 12:00	External Stakeholder Presentations <ul style="list-style-type: none"><li>• EDF Energy</li><li>• APS</li><li>• NRG</li><li>• Open to attendees</li></ul>	Various Speakers
12:00-1:00	Lunch	Cathleen Colbert
1:00 – 1:30	Department of Market Monitoring	Keith Collins
1:30 – 5:00	Examples and Open Discussion	Cathleen Colbert

# EIM Categorization

- This initiative will affect the real-time market
- The EIM is an extension to the real-time market
- This initiative is EIM related
- EIM Governing Body – E2 classification (Advisory)  
“For a policy initiative proposing changes to generally applicable real-time market rules or rules that apply to all ISO markets, the matter goes to the Board for approval; however, the EIM Governing Body has the option to provide advisory input.”

<http://www.caiso.com/Documents/GuidanceforHandlingPolicyInitiatives-EIMGoverningBody.pdf>

# ISO policy initiative stakeholder process



# INTRODUCTION

# Commitment Costs and Default Energy Bid Enhancements - Introduction

- Initiative to address stakeholder concerns with ISO's market design features impacting bidding flexibility
- Goal: evaluate ISO's bidding flexibility design and assess whether modifications should be pursued
- Bidding Flexibility includes design features that:
  - Balance both:
    - Suppliers ability to submit economic prices reflecting their willingness to provide energy at a given price
    - Market's ability to protect against vulnerability
  - Ensure mitigated prices are reasonable reflections of suppliers' cost expectations

# Summary of Issues for April Workshop

Production cost expectations may not be appropriately valued →

Out of Scope

1. Limitations might exist due to commitment cost market power mitigation where commitment cost mitigation may be overly restrictive
2. Limitations might exist where the market power protections are insufficient where exceptional dispatch mitigation may not be restrictive enough

3. Limitations might exist due to reference level design for commitment costs and energy costs where reference levels exclude price impact of externalities
4. Limitations might exist due to reference level design for commitment costs reference levels may not reasonably reflect cost expectations

In scope of working group meeting

## Issue that mitigated price or maximum commitment cost level may not reasonably reflect cost expectations

- Stakeholders expressed that there are several limitations that may result in them not reflecting their cost expectations for a unit
- Limitations could impose a larger price risk on the supplier to potentially incur losses than the supplier would have been willing to assume
- Some stakeholders communicated that they have seen mitigated prices or maximum commitment cost levels that did not adequately reflect their incremental production costs
  - Overly restrictive commitment cost bid caps
  - Undervalued default energy bids

# Proposed principles under competitive conditions

- Competitive forces provide market power protection based on profit-maximizing incentives to submit offers for suppliers' expectation of production costs
- Under competitive conditions, suppliers should be able to offer price at which they are willing to sell the good based on their asset valuation
  - Can include additional valuation of asset outside of its expected production costs such as monetized risks (e.g. “cash out”)
  - Other factors that contribute to willingness to sell

# Proposed principles under uncompetitive conditions

- Market must protect consumers against exercise of market power and only mitigate when test shows potential to exercise market power
- Under uncompetitive conditions, supply offers should be mitigated to price levels that are a reasonable reflection of suppliers' cost expectations
  - Potentially monetized risks that result in negative reliability externalities might need to be priced to manage merit order based on needs
  - Currently do not see cause for monetized risks only impacting supplier to be included in cost formulation – cost of business
  - Could be different than incurred costs

# BACKGROUND

# Supply offer components

	Cost type	Description	Select details
Energy costs	Variable energy cost	\$/MWh for each MW segment above minimum load (Pmin)	<ul style="list-style-type: none"> <li>Hourly energy market based bid</li> <li>Can update bids until T-75.</li> <li>Mitigated when fails LMPM to DEB (cost bid)</li> </ul>
	Minimum load cost	\$/MWh for operating and producing energy at its minimum load (Pmin)	<ul style="list-style-type: none"> <li>Minimum load cost based bid</li> <li>Daily bid in day-ahead and real-time markets</li> <li>Proxy costs for setting cap and generating bids</li> </ul>
Commitment costs	Start-up cost	\$/run hour (event) \$/start (event) of the resource or configuration	<ul style="list-style-type: none"> <li>Start-up cost based bid</li> <li>Daily bid in day-ahead and real-time markets</li> <li>Proxy costs for setting cap and generating bids</li> </ul>
	Transition cost	\$/transition (event) of the configuration	<ul style="list-style-type: none"> <li>Transition cost based bid</li> <li>Daily bid in day-ahead and real-time markets</li> <li>Proxy costs for setting cap and generating bids</li> </ul>

# Bidding rules design with market based and cost based offers by component - Today

- **Variable cost** refers to costs that **vary with changes in MWH output** (hourly value)
- **Fixed cost** refers to **short-term fixed costs** for event-based commitment costs of a generating or non-generating resource incl. participating demand response (daily values)
- **Long-term fixed costs**, going forward fixed costs or overhead such as salaries while a cost of business are not short-term costs for power production but instead capacity costs. These costs may be amortized into the market based offers reflecting willingness to sell.

Type	Sub-type	Market Based Offer	Cost Based Offer
Energy	Variable Cost	<b>X</b>	
MLC	Variable Cost		<b>X</b>
	Fixed Cost		
TC	Fixed Cost		<b>X</b>
SUC	Fixed Cost		<b>X</b>

# Non-exhaustive list of electricity market operators responsibility to operate the markets

- Support suppliers submitting market based offers if no market power concerns exist limited by “circuit breaker” offer cap
- Test for suppliers ability to adversely impact the market (increase energy prices or uplift payments)

CAISO only supports market based offers for the variable energy cost curve in the supply bids

Type	Sub-type	Market Based Offer	Cost Based Offer
Energy	Variable Cost	<b>X</b>	
MLC	Variable Cost		<b>X</b>
	Fixed Cost		
TC	Fixed Cost		<b>X</b>
SUC	Fixed Cost		<b>X</b>

# Non-exhaustive list of electricity market operators responsibility to operate the markets

- Replace market based offers with cost based offers if potential to exercise market power is detected
- Validate and refer suspected artificial cost based offers to deter false or artificial offers inflating energy prices or uplift

CAISO uses capped commitment cost based offers ATC and replaces energy market based offer with default energy bids (mitigated price)

Type	Sub-type	Market Based Offer	Cost Based Offer
Energy	Variable Cost	<b>X</b>	<b>Mitigated Price</b>
MLC	Variable Cost	-----	<b>X</b>
	Fixed Cost		
TC	Fixed Cost		<b>X</b>
SUC	Fixed Cost		<b>X</b>

- Produce least cost, security constrained solution

# Overview of cost based framework

- Cost based offers include:
  - Mitigated energy price
  - Maximum allowable minimum load cost
  - Maximum allowable start up cost
  - Maximum allowable transition cost
- ISO calculates for gas and uses MF values for non-gas
- ISO generates these cost based offers for RA resources that fall under the bid insertion rule
- ISO exempts select units from mitigation on its energy market based offers to the mitigated price, they are:
  - Participating load
  - Demand response resources
  - Non-generator resources

# Evaluation of gas fired units cost based treatment where ISO administratively calculates estimate

## Advantages:

- Delivered gas price information updated daily
- Allows control of the cost components and data inputs

## Disadvantages:

- Limited flexibility for relevant cost inclusion
- Potentially overly restrictive assumptions include:
  - No need to balance gas-electric rules
  - One Fuel Type per Unit
  - One Procurement Location
  - One Shipper
  - One Price as Proxy
  - Next Day Price as Proxy
  - Suppliers weigh storage opportunity costs

# Evaluation of gas fired units cost based treatment approach through the Master File RDT submissions

## Advantages:

- Sufficient flexibility for relevant cost inclusion
- SC registers cost values based on relevant costs which could factor in more complex cases such as:
  - Need to balance gas-electric rules
  - Blend of fuel costs for fuel switching
  - Blend of procurement locations
  - Blend of shipping rates
  - Expected delivered gas price (forecasting with awareness of multiple gas days)
  - Need to weigh storage opportunity costs

## Disadvantages:

- Limited control on cost components and no control on data inputs
- Restricted to MF approval timeline (up to one week turn around)
  - Forces use of forecasting and would include risks due to cost uncertainty
  - Not able to update expectations with more timely information not

# Next Steps

Stakeholders are asked to submit written comments on the March and April workshops May 1<sup>st</sup> to [InitiativeComments@caiso.com](mailto:InitiativeComments@caiso.com).

The compressed turn around time is so that the ISO can review and evaluate comments prior to submitting its MSC presentations for the May 5<sup>th</sup> meeting.

Next workshop will be May 23, 2017