System-level market power

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CAISO
Market Design Policy

Stakeholder Working Group
July 15, 2019

Agenda

Time	Topic	Presenter
9:00 – 9:05 AM	**Welcome**	Jimmy Bishara
9:05 – 9:30 AM	**Introduction/Background**	Perry Servedio
9:30 – 12:00 PM	**Discussion on options for consideration:** 1. Resource adequacy provisions and bilateral capacity contracting 2. Load-serving entity energy procurement and hedging 3. System-level market power mitigation process 4. Enhanced ISO market scarcity pricing provisions	Perry Servedio Perry Servedio Brittany Dean Brittany Dean
12:00 – 1:00 PM	Lunch Break	
1:00 – 3:50 PM	Stakeholder presentations and discussion	DMM, NRG, SCE, WPTF, and PG&E
3:50 – 4:00 PM	**Next Steps**	Brittany Dean

Goal of working group meeting:

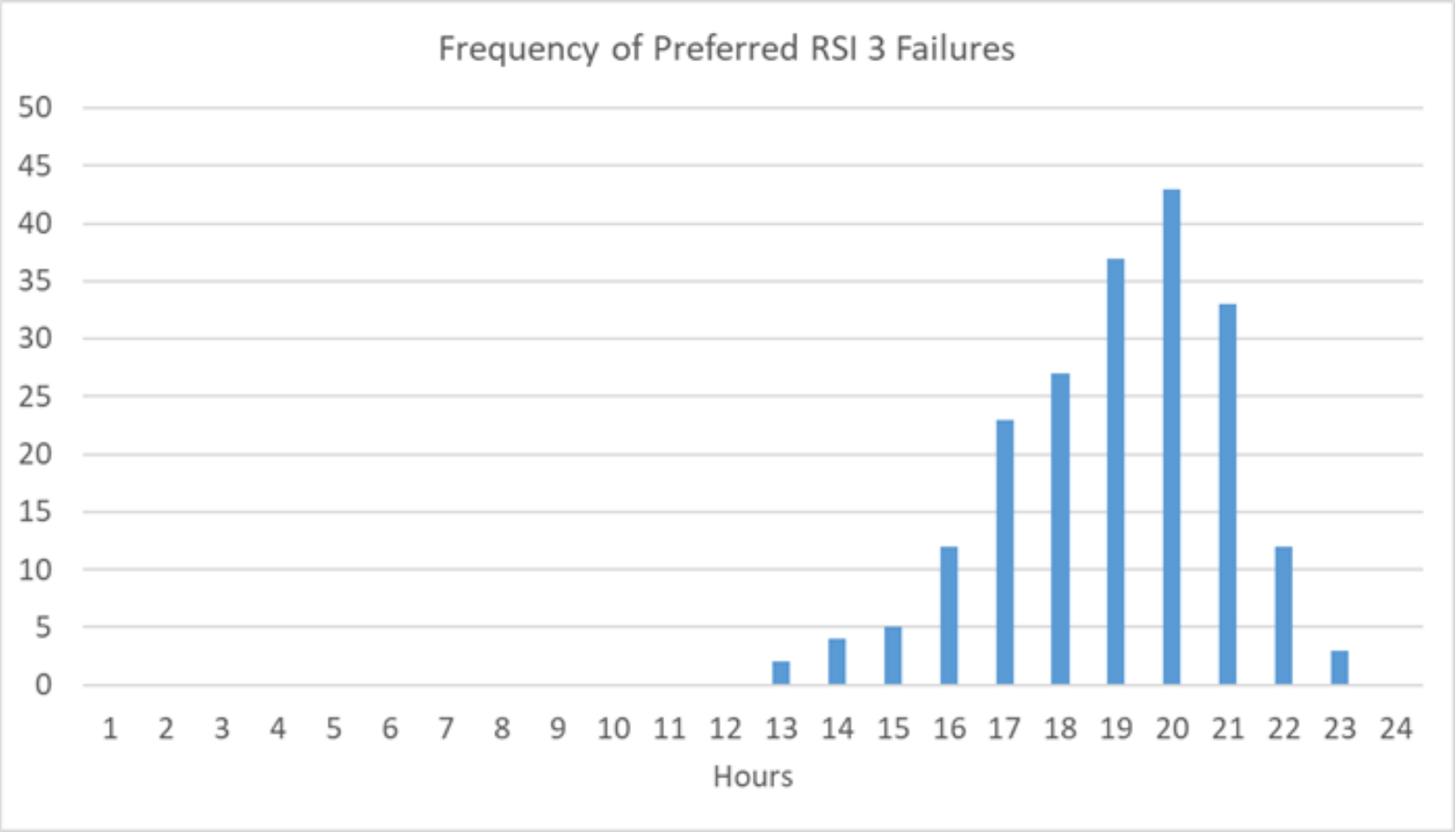
Given that the ISO and DMM's analyses indicate at least some level of system-level uncompetitiveness, continue stakeholder discussions on appropriate next steps

BACKGROUND

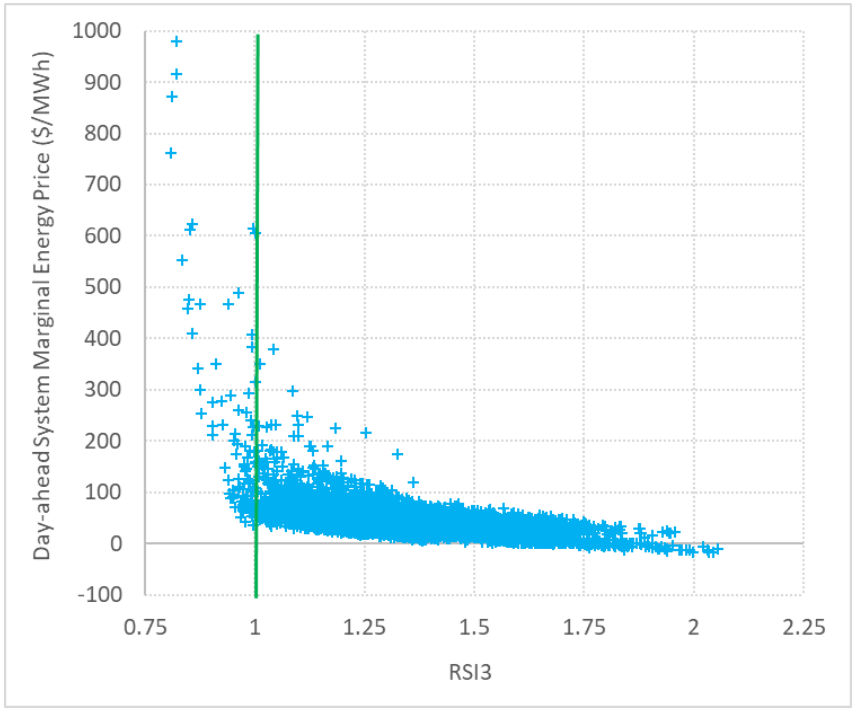
CAISO's analysis shows a relatively small number of hours that the ISO balancing area is not competitive at the system level

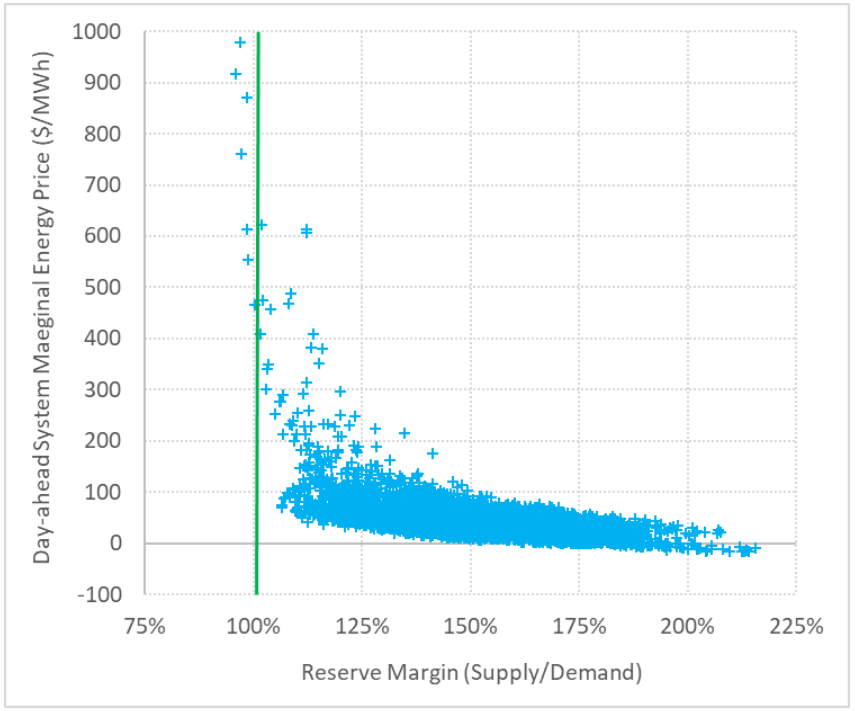
- Analysis uses "residual supply index" test to evaluate competiveness
  - Evaluates whether load can be met without the three largest suppliers
- The ISO balancing area failed the test at the system level in about 2% of hours in 2018
- Department of Monitoring metrics show highest price-cost markup in peak hours

Failures generally occur during the net load peak hours when supply is extremely tight

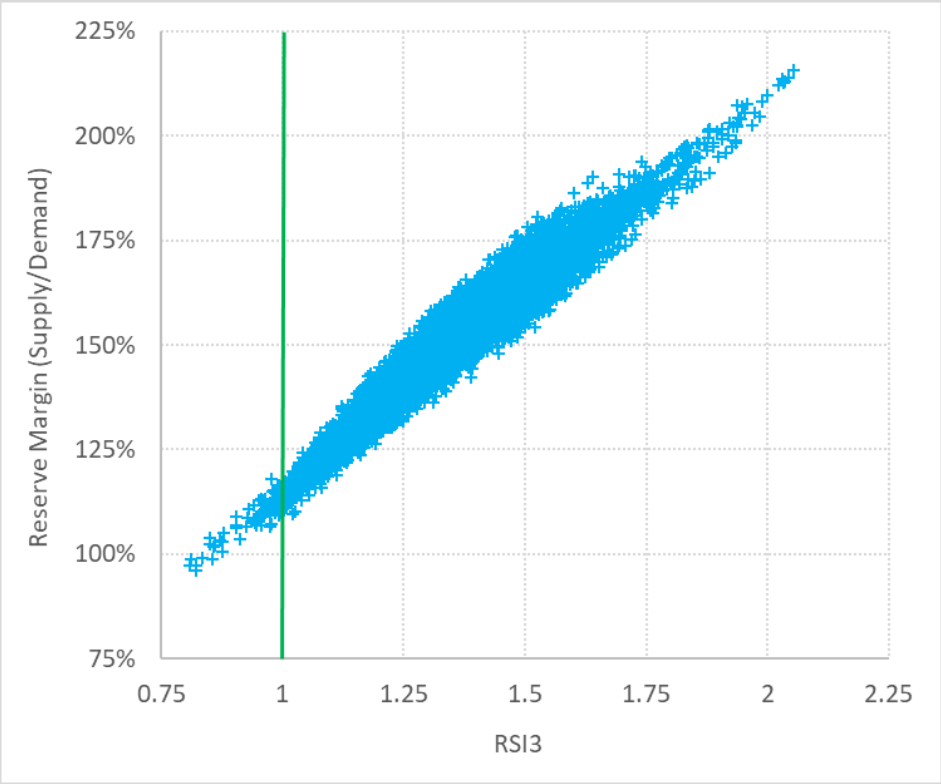


In hours that the structural test fails, prices can be very high or very low, however our highest prices occur when supply reserves are extremely low

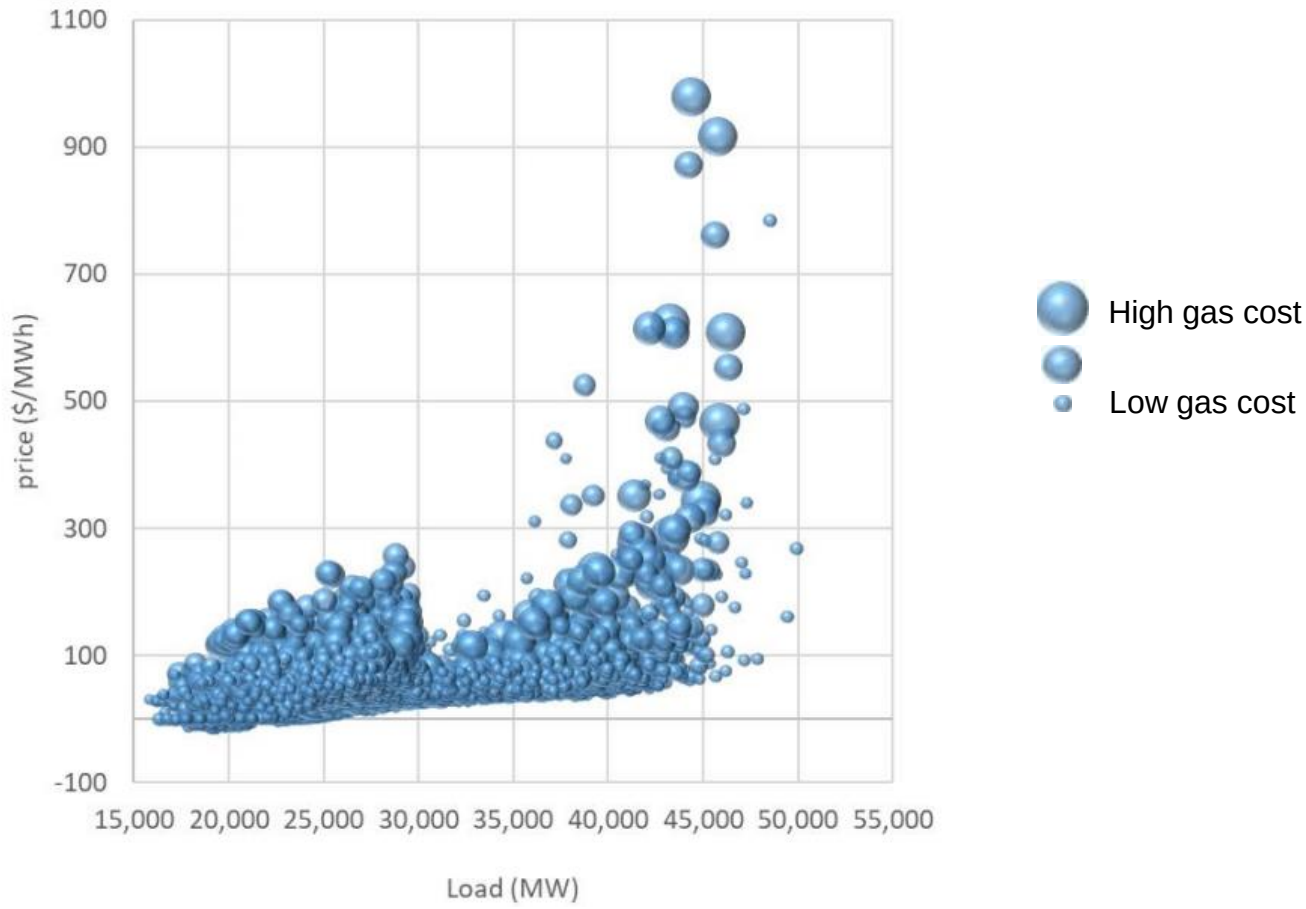




Structural uncompetitive conditions occur when supply reserves are lowest. Marginal improvements in reserve margins would likely improve structural conditions

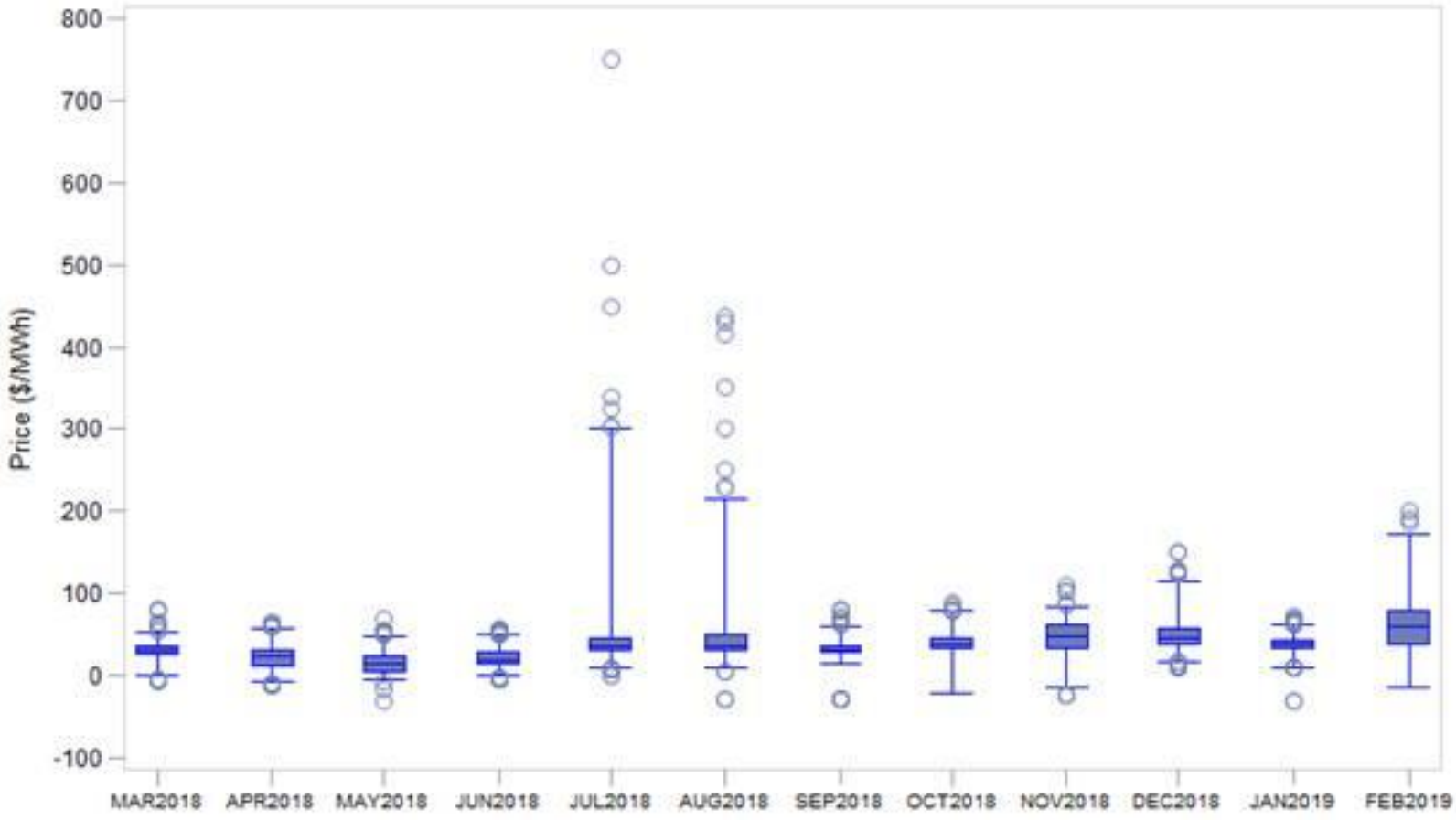


Market prices correlate with high natural gas prices

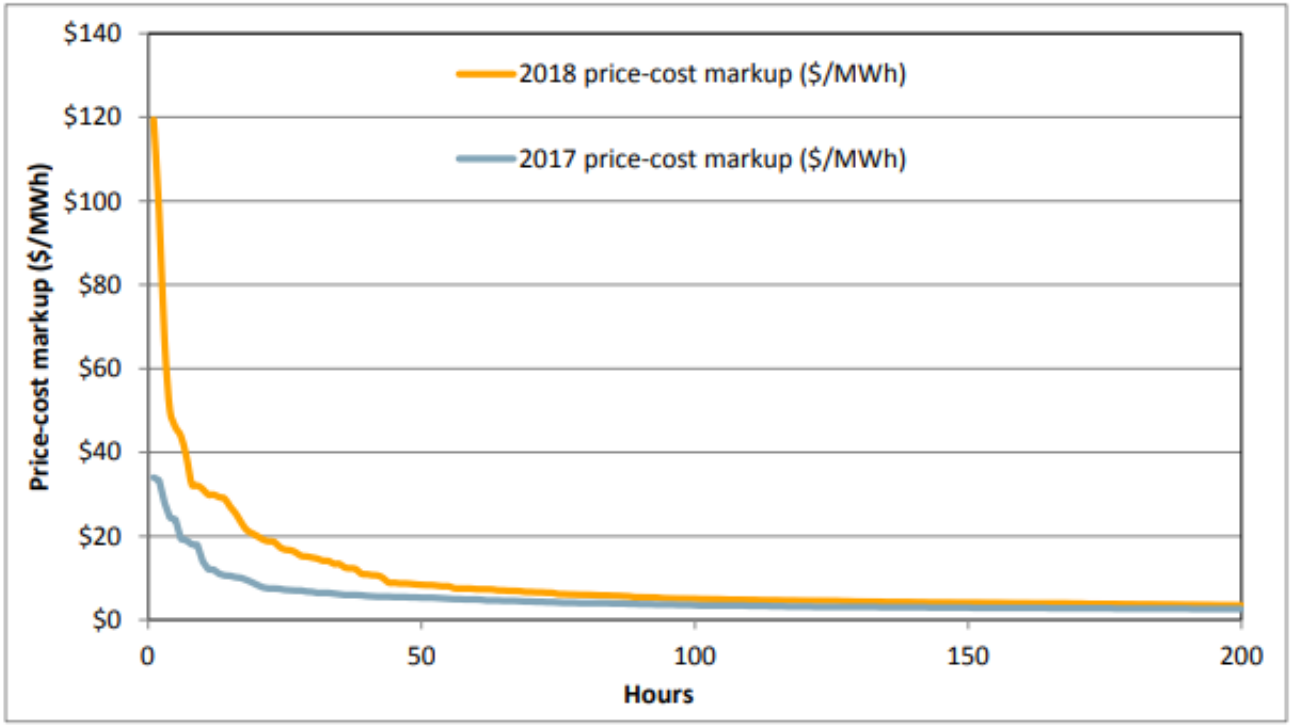


Import suppliers rarely set high prices and do not set prices at the bid cap

Prices set by import supply



Increased hourly price-cost markups from 2017 to 2018



2018 DMM's Annual Report on Market Issues and Performance
http://www.caiso.com/Documents/2018AnnualReportonMarketIssuesandPerformance.pdf

OPTIONS FOR CONSIDERATION

A number of measures could address system market concerns

- Load-serving entity energy procurement and hedging
  - Increased fixed-price forward energy contracting to hedge exposure and incent aggressive supply bidding
- Current contemplated RA changes and recent CPUC rulings may provide more resources to address tight supply conditions
- Enhanced ISO market scarcity pricing provisions
- System-level market power mitigation process
  - Develop a screen for uncompetitive conditions and estimation of import short-run marginal costs

LOAD-SERVING ENTITY CONTRACTING DECISIONS

Forward contracting mitigates incentives to exercise market power in spot markets

- Fixed price energy contracts hedge load in spot markets and diminish incentives to exert market power
- Resource adequacy import contracts that include energy price provisions would limit high priced imports

CONTEMPLATED RESOURCE ADEQUACY CHANGES AND RECENT CPUC RULINGS

Contemplated resource adequacy changes and recent CPUC rulings may provide more resources to address tight supply conditions

- Contemplated resource adequacy changes better align RA counting provisions with operational needs
  - Provide more resources during net load peak hours
    - Potentially provide more competition for the market
- CPUC issued integrated resource planning procurement track ruling proposed the following:
  - Extension of once through cooling (OTC) unit retirement dates beyond 2020
  - 2,000 MW of new resource procurement
  - Authorizes SCE to seek 500 MW of existing capacity to be placed under resource adequacy contract

ENHANCED ISO MARKET SCARCITY PRICING PROVISIONS

Enhanced ISO market scarcity pricing provisions

- Recent DMM metrics show higher markups appear during tight supply
- ISO market scarcity pricing provisions are intended to incentivize resources bidding marginal costs even during times of tight supply
  - Resources earn the scarcity price which is greater than the resource's bid
  - Incentives may be different for imports
- Scarcity pricing rarely triggers in the day-ahead market
  - Would improvements to scarcity pricing provisions diminish incentives to submit bids above marginal costs?

SYSTEM-LEVEL MARKET POWER MITIGATION PROCESS

Implementation considerations

- Significant policy development and implementation effort
  - Import default energy bid design
  - Likely significant system changes
  - Applying a system level RSI test may require a separate market pass, which may have feasibility challenges or prevent implementation of other market features

Determining a default energy bid for imports would be a challenging part of the design

- Imports come from a variety of sources and generator characteristics are not known
- A single import can come from more than one generation source
- CAISO does not have the information to estimate costs for individual imports

Potential options for determining import default energy bids

- Calculate a generic import default energy bid that represents the highest marginal cost of supply in WECC
  - Generic import default energy bid could be modeled after recently developed hydro default energy bid
  - Capture the highest cost gas unit, highest cost hydro unit depending on which source was marginal
- Subject only resource adequacy imports to mitigation to mitigate disincentive for offering imports during tight supply periods
  - Resource adequacy imports are registered in advanced so costs could be calculated

Includes three components where each component could represent the greatest marginal cost based on a hypothetical resource in the WECC

Potential formulation:

DEB = MAX (Gas Floor, Short-Term, Long-Term)

Where,

Gas Floor = (Peaker Heat Rate * GPI) * 1.1

Short-Term = MAX (DA Index, BOM Index, MA Index) * Mult

Long-Term/Geographical = MAX (DA Index, BOM Index, MA Index+1, MA+2…)*1.1

Would mitigation only apply when the CAISO BAA is import constrained?

- Can there be system market power if the CAISO is not import constrained?
  - Supply conditions are getting tighter throughout the west
  - Would higher prices attract more supply?

Next Steps

- Continue discussion on appropriate measures with Market Surveillance Committee at August 19 meeting
- Plan to brief the Board of Governors on determination of next steps to address system market power concerns
  - Market Surveillance Committee to provide written opinion on appropriate response
  - Tentatively planned for November 2019

Stakeholders may submit written comments by August 5 to

initiativecomments@caiso.com