System-Level Market Power Mitigation

A Conceptual Design Proposal

Stakeholder Working Group

September 20, 2019

Agenda

Time	Item	Speaker
10:00 –10:15	Introduction	James Bishara
10:15 – 10:30	Background	Perry Servedio
10:30 – 12:00	Conceptual Design Proposal	
12:00 – 1:00	Lunch	
1:00 – 3:55	Other Considerations	Perry Servedio
3:55 – 4:00	Next Steps	James Bishara

Introduction

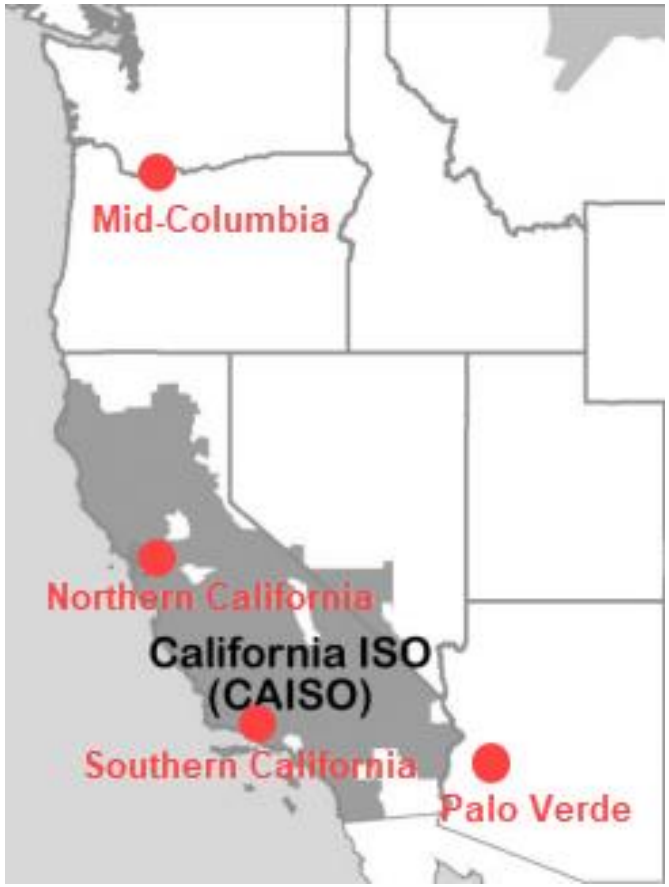
- Initial analysis indicated growing competitiveness concerns in CAISO markets
- Conceptual design proposal intended as a basis for discussing benefits and drawbacks of specific design elements
- Market Surveillance Committee to discuss system-level market power mitigation at their October 11 meeting
- CAISO management will brief the Board of Governors in November
  - Market Surveillance Committee will provide an opinion on the merits of this conceptual proposal as well as benefits and drawbacks of system-level market power mitigation in general

BACKGROUND

Background

- CAISO operates a organized competitive energy market where energy is priced based on marginal cost
- The CAISO market is part of a broader western interconnected system
- Suppliers located in constrained and uncompetitive areas could artificially raise prices above marginal costs
- CAISO markets currently protect against suppliers exercising market power on a local level (and at a balancing area level for energy imbalance market entities)
- Local market power mitigation follows general market power mitigation design principles

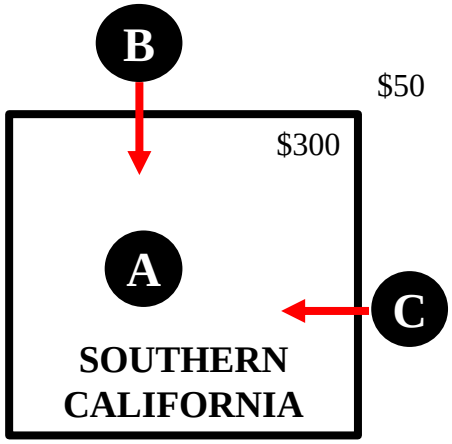
CAISO relationship to the broader western interconnected system



General market power mitigation design principles

- Suppliers in constrained areas *could* exercise market power on demand in constrained areas if those areas are uncompetitive
- Market design should provide effective measures against the exercise of market power when there are opportunities for suppliers to exercise market power
- Market design should not discourage robust market participation and long-term forward contracting
- General market power mitigation designs reflect these principles by
  - Identifying a constraint or constrained area
  - Testing supplier concentration in the constrained area
  - Mitigating resources within the constrained area

General local market power mitigation design



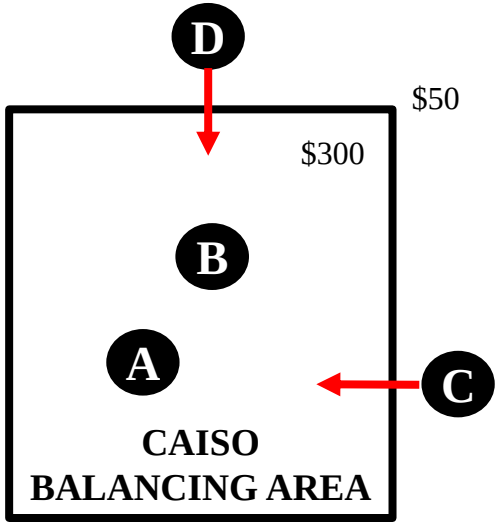
- Resources in constrained areas could exercise market power on demand in the constrained area.
  - Supplier **A** could provide relief on transmission into southern California
  - Supplier **B** and **C** cannot provide relief on transmission into southern California
- If an area is constrained and pivotal supplier test in that area fails, mitigate resources in that area
  - If uncompetitive, mitigate supplier A

CONCEPTUAL DESIGN PROPOSAL

Overview of conceptual design proposal

- Extends general market power mitigation design principles to the CAISO balancing area
- Only mitigates suppliers in constrained and potentially uncompetitive areas
- Only applies mitigation to the real-time market

Conceptual design extends general market power mitigation design principles to the CAISO balancing area

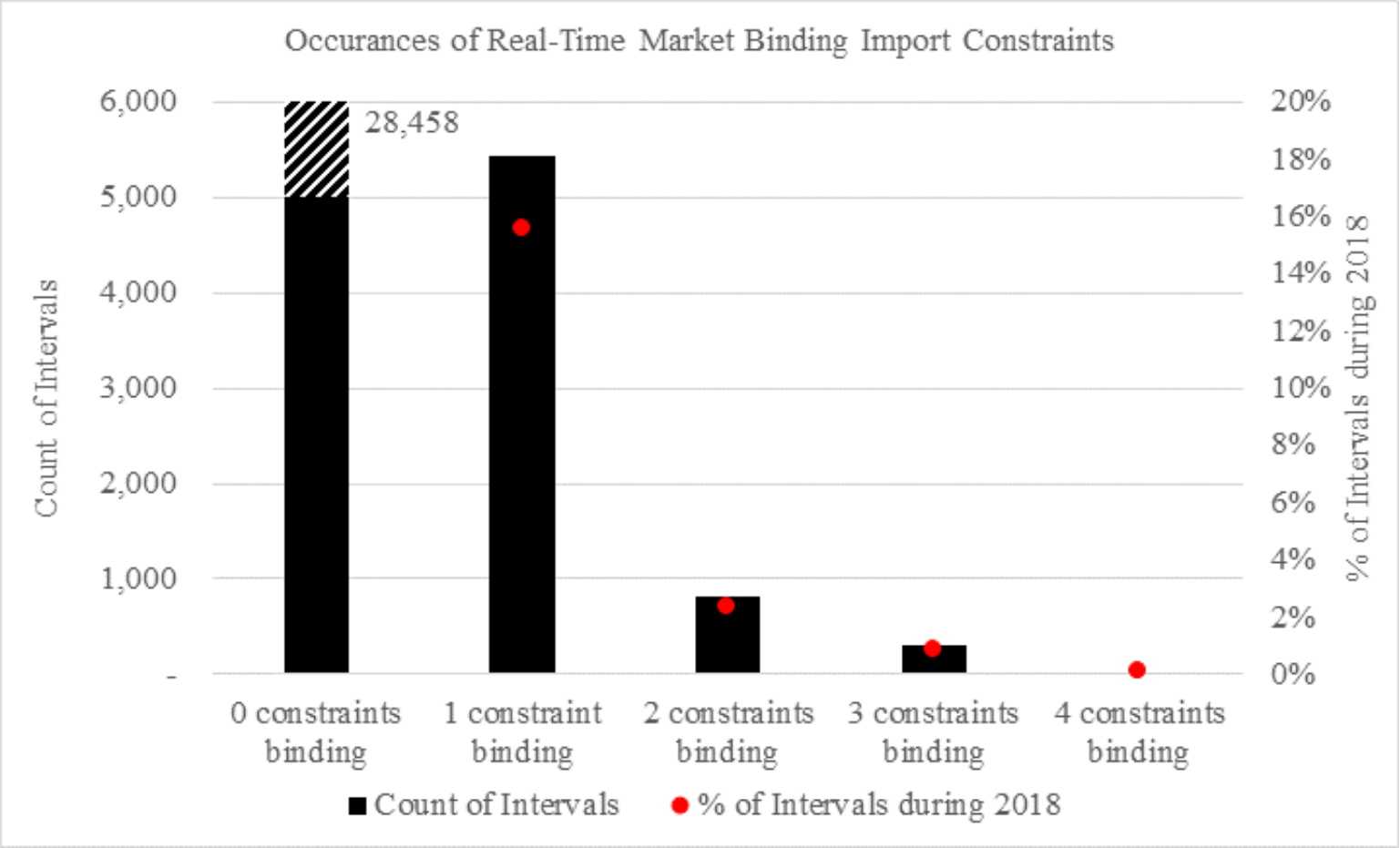


- Suppliers in constrained areas could exercise market power on demand in the constrained area.
  - Resource **A** or **B** could provide relief on intertie scheduling limits
  - Resource **C** and **D** cannot provide relief on the constrained intertie scheduling limits
- If an area is constrained and pivotal supplier test in that area fails, mitigate resources in that area
  - If uncompetitive, mitigate supplier A and supplier B

Determine when the CAISO balancing area is import constrained

- Losing access to competitive west-wide supply on major interties conceivably negatively impacts competitive conditions
- It is extremely unlikely that all interties will be simultaneously constrained
- A reasonable approach is to consider the CAISO balancing area import constrained when its three major interties are simultaneously constrained
  - For example, Malin, NOB, and Palo Verde simultaneously binding

Major three interties were simultaneously binding in one interval in the real-time market in 2018



Only apply system-level market power mitigation to the real-time market

- Avoid instances of unnecessary or inappropriate mitigation which may discourage supply and demand participation in the day-ahead market
- Structural limitations make the real-time market susceptible to suppliers exercising market power at a system-level
  - Consumers pay for an amount of power determined by the CAISO's forecast, rather than by bidding for it
  - There is no mechanism for a non-physical entity to apply competitive pricing pressure on physical suppliers
- These same structural limitations do not exist in the day-ahead market

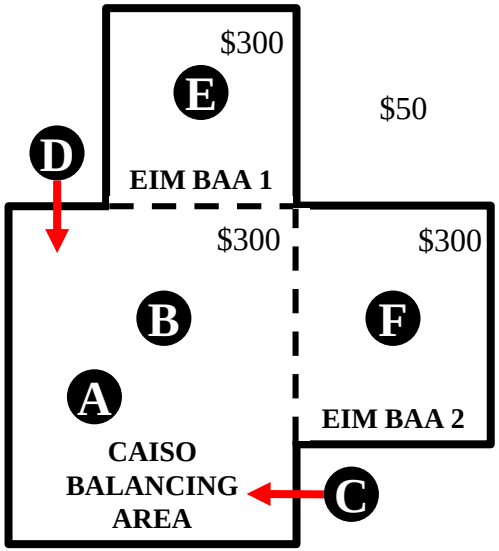
Only apply system-level market power mitigation to the real-time market

- The day-ahead market still features a local market power mitigation process even though the day-ahead market allows for demand participation
  - Demand generally bids at aggregated locations which makes it difficult to aggressively target power purchases near granular constraints
- Demand participation in the aggregate would be effective at a system-level
- CAISO would monitor market results before deciding whether to extend the design to the day-ahead market

Conceptual design proposal considers interactions with the energy imbalance market

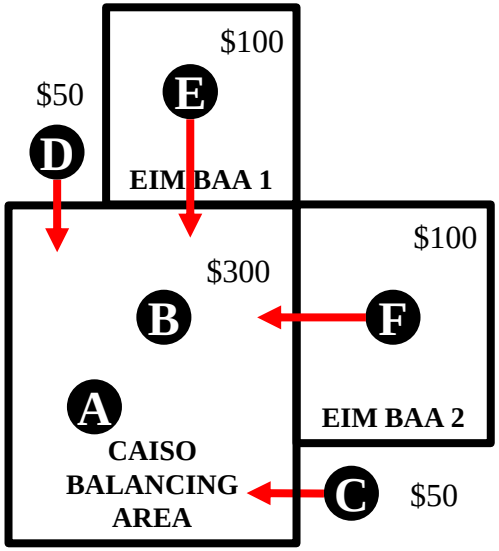
- The proposal is limited to conditions where a subset of all of the interties are simultaneously binding
- There exists a scenario where system-level market power mitigation will be triggered while demand still has access to energy imbalance market transfers
- Under this condition, the CAISO balancing area may be price converged with other balancing areas participating in the energy imbalance market
  - A competitiveness test must evaluate the entire constrained area
  - If the competitiveness test fails, offers in the entire constrained area must be mitigated

CAISO considers itself import constrained, but energy imbalance market transfer constraints are **not binding**



- The competitiveness test evaluates the aggregate supply and demand in the CAISO balancing area and the converged energy imbalance market balancing areas
- Mitigate the supply offers in the entire constrained footprint (**A**, **B**, **E**, and **F**)

CAISO considers itself import constrained, but energy imbalance market transfer constraints **are binding**



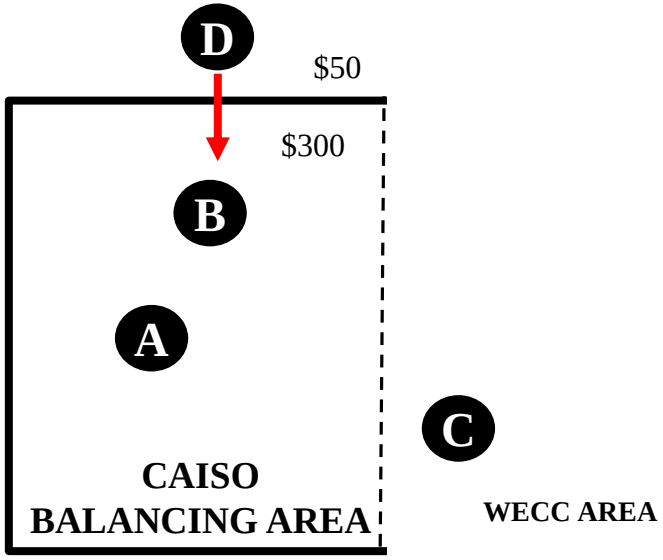
- Evaluate and potentially mitigate only the resources in the CAISO footprint (**A** and **B**) as a constrained area.

OTHER CONSIDERATIONS

Can the CAISO be uncompetitive when import constraints are not binding?

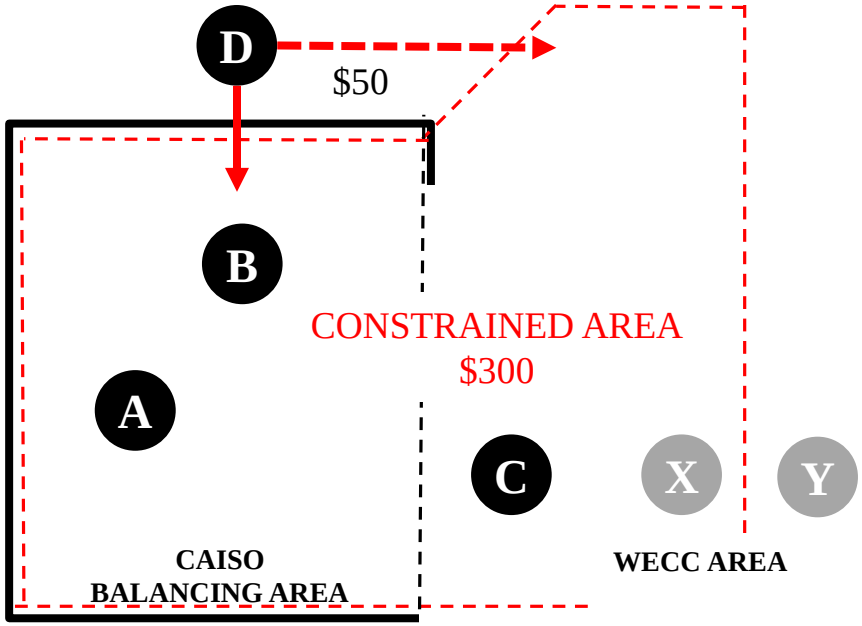
- Could the CAISO simply evaluate offers into its market to determine whether it should mitigate, rather than consider whether the balancing area is import constrained?
- Should the CAISO consider itself import constrained when there is a lack of import bids?

If an import constraint is not binding, CAISO is converged to the broader western interconnection along the unconstrained edge



- Expectation that the CAISO price generally converges with a broader western energy trading hub price if it is unconstrained

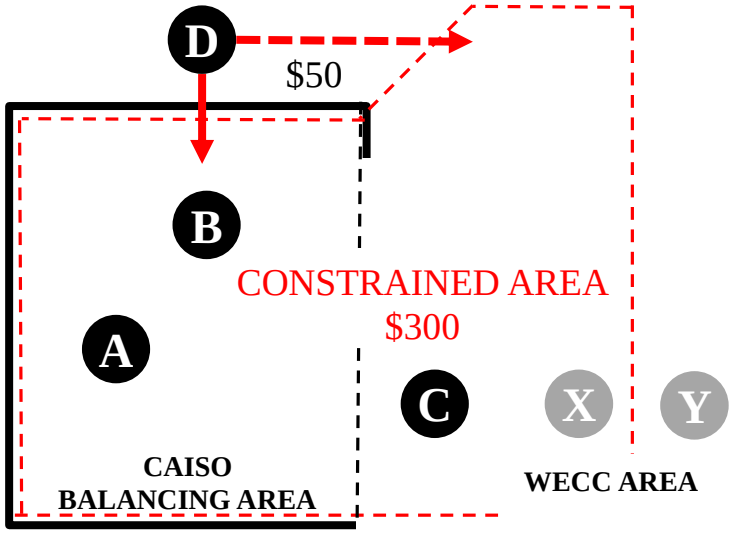
A true competitiveness test is theoretically possible, but unworkable



Can the CAISO achieve positive market outcomes by mitigating the suppliers participating in its market?

- The necessary first question is whether we **assume** the CAISO balancing area is converged with an uncompetitive portion of the western interconnection?
- If we assume it is competitive, the CAISO's conceptual proposal stands, and it would not make sense to mitigate import offers
  - Design does not mitigate supply offers in competitive areas because those suppliers cannot exercise market power
- If we assume it is uncompetitive, any measures the CAISO alone could take are not likely to have positive market outcomes

Potential measures the CAISO could take and likely market outcomes



- Assume the CAISO balancing area is converged with an uncompetitive portion of the western interconnection
- Potential mitigation measures
  1. Mitigate internal supply offers
  2. Mitigate internal and import supply offers
  3. Mitigate internal and import resource adequacy supply offers

Is the western interconnection competitive?

- If the western interconnection is competitive, it is not appropriate for the CAISO to mitigate unless import constrained and the constrained area is found uncompetitive
  - Design does not mitigate import supply offers because those suppliers cannot exercise market power
- If the western interconnection is not competitive, any measures the CAISO alone could apply are not likely to have positive market outcomes
  - Under these circumstances, it would be the purview of the Federal Energy Regulatory Commission to address the uncompetitive west-wide conditions

CONCLUSIONS AND NEXT STEPS

Conclusions

- Unless import constraints are actually binding, the CAISO balancing area is part of a broader constrained area within the western interconnection
- Under this circumstance it would be unworkable for the CAISO to test the true supply competitiveness and incomplete for the CAISO to only evaluate offers in its own area
- If CAISO assumes the broader western interconnection is uncompetitive, any measures the CAISO alone could take are not likely to have positive market outcomes

Conclusions

- Conceptual design proposal follows general market power mitigation design principles
  - Effective measure against the exercise of market power
  - Does not discourage robust market participation and long-term contracting
- Conceptual design proposal is practical to implement by modifying and extending existing market functionality
- Design can be expanded to the day-ahead market in the future if the market does not behave as economically presumed

Next Steps

Milestone	Date
Stakeholder comments due	October 9, 2019
Market Surveillance Committee	October 11, 2019
Board of Governors (Briefing)	November 13-14, 2019

Please submit written comments over today's discussion to initiativecomments@caiso.com.

All material for this effort is available on the ISO website at: http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx.