



# CRR Auction Efficiency

Policy Phase - Stakeholder Working Group

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# Improvements to date

1. Break-even analysis for interties
2. Break-even analysis for internal transmission elements
3. Nodal group constraint enforcement
4. Internal outage process improvements
5. CRR clawback rule modifications

# Action plans

## Two parallel action plans

### **a) *Process, business rules, and operational guidance***

- i. Enhance BPMs by April
- ii. Enhance desktop procedures by March auction
- iii. Enhance market performance metrics by April
- iv. Enhance BAA interactions by June

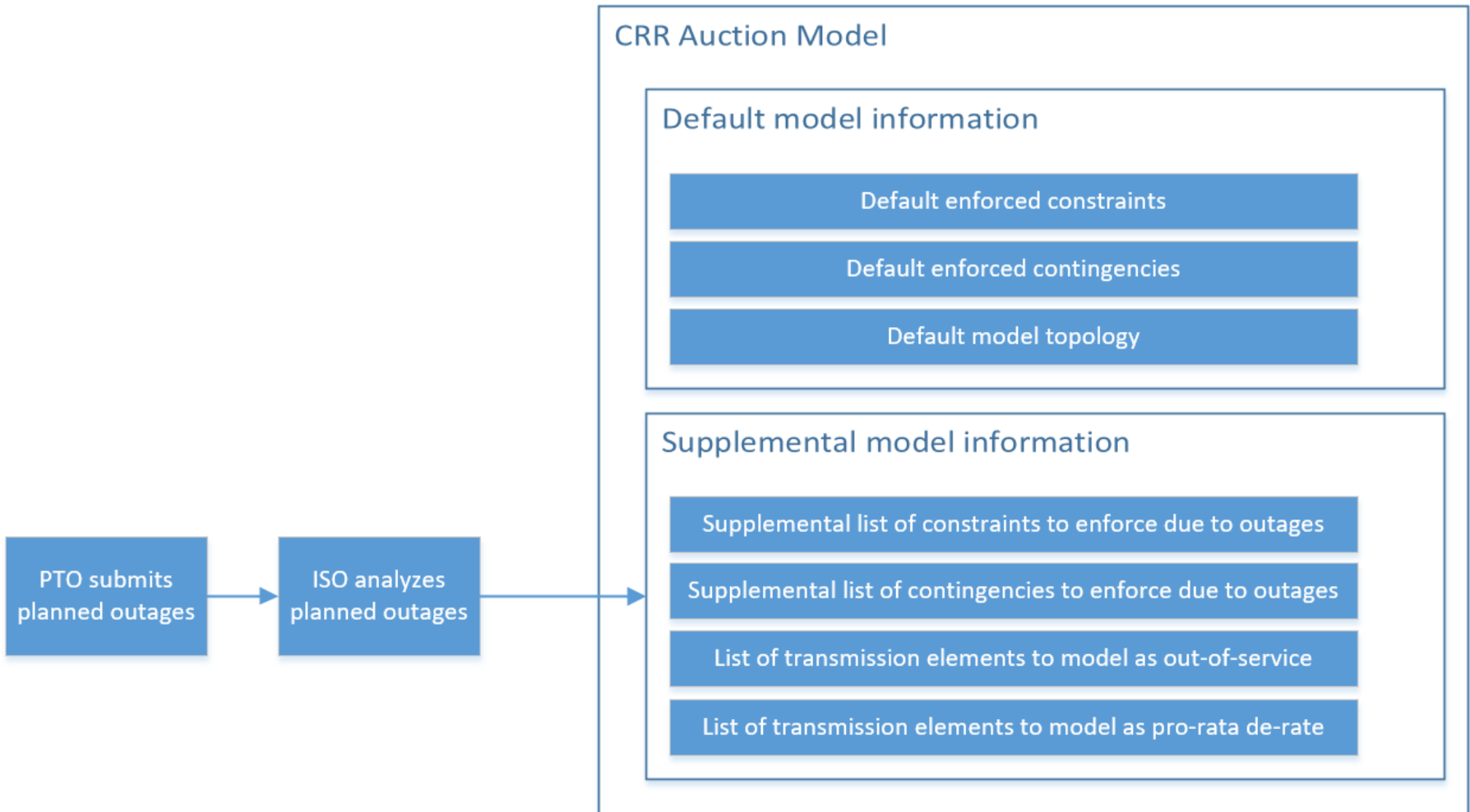
### **b) *Structural matters and market design rules***

- i. Parallel stakeholder process to develop long-term solutions
- ii. Target July BOG meeting
- iii. Monthly auction changes as soon as feasible
- iv. Annual auction changes in time for 2020 auction

Process, business rules, and operational guidance

# DISCUSSION

# Background on CRR auction set-up



# Process, business rules, and operational guidance

## **Observed issues fall into a few buckets**

- Constraint enforcement
  - Monitored elements unbounded
  - Nomograms unbounded
- Contingency enforcement
  - Less contingencies modeled in CRR than experienced in the day-ahead market
- Outage modeling
  - Deficiencies driven by <10 day duration outages

# Process, business rules, and operational guidance

## *Related to all buckets*

Item	Action	Issues Addressed
1	Notify each PTO of its historical outage submittal performance and ISO expectations of PTO compliance with current tariff requirements.	Due to lack of outage information: <ul style="list-style-type: none"><li>• ISO does not have required information to perform its analysis.</li><li>• Many binding constraints are not currently enforced in the CRR auction.</li><li>• Many binding nomograms are not currently enforced in the CRR auction.</li></ul>
2	Regular reporting in market performance reports of PTO outage submittal performance.	<ul style="list-style-type: none"><li>• Non-binding constraints may be due to lack of contingency enforcement in the CRR auction.</li></ul>

# Process, business rules, and operational guidance

## ***Related to constraint enforcement***

Item	Action	Issues Addressed
3	Continue review of default enforced constraints list and potentially expand to more facilities.	Many binding constraints are not currently enforced in the CRR auction.
4	Formalize a process to update the CRR default enforced constraints list based on day-ahead market results.	Many binding constraints are not currently enforced in the CRR auction.  Many binding nomograms are not currently enforced in the CRR auction.
5	Enhance CRR outage process to identify and define nomogram constraints in the monthly CRR auction timeframe.	Many binding nomograms are not currently enforced in the CRR auction.
6	Incorporate changed procedure-based constraint enforcement within the monthly CRR auction timeframe.	Many binding nomograms are not currently enforced in the CRR auction.



# Process, business rules, and operational guidance

## ***Related to constraint enforcement***

Item	Action	Issues Addressed
7	Review outage coordination practices and operating agreements with neighboring balancing authorities.	Neighboring BAA's take outages that impact our interface limits in the CRR auction.
8	Enhance operating procedures related to external outage information and the CRR process.	Neighboring BAA's take outages that impact our interface limits in the CRR auction.
9	Identify where external outage information is available in advance and utilize this information to appropriately enforce interface constraints in the CRR auction.	Neighboring BAA's take outages that impact our interface limits in the CRR auction.

# Process, business rules, and operational guidance

## ***Related to contingency enforcement***

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9	Identify where external outage information is available in advance and utilize this information to appropriately enforce interface constraints in the CRR auction.	Neighboring BAA's take outages that impact our interface limits in the CRR auction.

# Process, business rules, and operational guidance

## *Related to contingency enforcement*

Item	Action	Issues Addressed
10	Review and expand the default contingency enforcement list for the CRR auction.	Non-binding constraints in the CRR model may be due to lack of contingency enforcement in the CRR auction.
11	Stress test the CRR auction model to determine if there is a higher maximum number of enforceable contingencies. Pursue technology enhancements to increase the contingency capability, if necessary.	Non-binding constraints in the CRR model may be due to lack of contingency enforcement in the CRR auction.
12	Review and expand contingency enforcement criteria related individual outages.	Non-binding constraints may be due to lack of contingency enforcement in the CRR auction.

# Process, business rules, and operational guidance

## *Related to outage modeling*

Item	Action	Issues Addressed
13	<p>Review and enhance CRR outage modeling criteria.</p> <p>Enhance criteria to better model transmission outages, regardless of duration, on historically congested paths.</p> <p>Enhance criteria to better model transmission outages, regardless of duration, associated with enforcement of nomograms.</p> <p>Enhance constraint definitions to better capture impact of outages of less than 10 day duration in the CRR auction.</p>	<p>Many outages contributing to revenue insufficiency had durations of less than 10 days</p>

# Process, business rules, and operational guidance

- Potential impacts:
  - CRR BPM
  - CRR desktop procedures
  - Outage Management BPM
  - Outage management desktop procedures
  - Operations agreements with neighboring BAAs
  - MQRI public metrics

Objectives and potential scope

# DISCUSSION

# Initiative objectives

1. Minimize net payment deficiency in the CRR auction
2. Maintain market efficiencies associated with ensuring all market participants have the opportunity to obtain congestion hedges



# Solution space

- No policy changes
- Monthly granularity annual auction
- Limit source-sink pairings associated with hedging physical deliveries
- Limit eligible injections/withdrawals on electrically equivalent nodes in CRR model
- Create constraint reserve prices
- Allow only aggregate locations for sources and sinks to ease liquidity
- Cost-causation based allocation of revenue deficiency to participating transmission owners
- Day-ahead volumetric de-rates of CRRs
- Require full funding of CRRs among all CRR holders



## Solution space (cont'd)

- Rework the balancing account into two: allocation balancing account and auction balancing account, require full funding among participants in each balancing account
- Model daily granularity in CRR auction, award only CRRs feasible on all days
- Award daily granularity CRRs
- Eliminate auction as we know it, replace with swap market of limited hubs, allow swap pool to take acceptable market price risk
- Eliminate auction as we know it, replace with swap market of limited hubs
- Eliminate auction as we know it, replace with nodal swap market
- Eliminate auction as we know it and have only an allocation process for the full capacity

Stakeholder comments and 2018 tentative schedule

# **NEXT STEPS**

# 2018 CRR Auction Efficiency process schedule

Milestone	Date
Working group	December 19
<i>Stakeholder comments</i>	<i>January 4, 2018</i>
<b>Straw Proposal</b>	January
MSC discussion	February
Working group	February
<b>Revised Straw Proposal</b>	March
Working group	April
<b>Draft Final Proposal</b>	May
<b>ISO Board of Governors</b>	July

# Stakeholder comments

- Request written comments on today's discussion by close of business January 4
- Submit to comments mailbox: [initiativecomments@caiso.com](mailto:initiativecomments@caiso.com)

Thank you!