



California ISO

Congestion Revenue Rights (CRR) Clawback Modification

Draft Final Proposal

May 16, 2016

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1 Introduction

During the intertie liquidity workshop held last year, two items were identified that could address real-time intertie liquidity: (1) modifications to congestion revenue rights (CRR) clawback rules and (2) exempting FMM export bids from transmission access and measured demand uplift charges. This initiative focuses on modifications to the CRR clawback rule. The appropriateness of market charges for FMM export bids will be addressed in a separate initiative if prioritized through the annual market initiatives catalog process to be held in Q4.

The rebidding of day-ahead import/export schedules into the FMM is beneficial for real-time intertie liquidity. When bidding incremental imports and exports into the FMM, scheduling coordinators must secure external transmission prior to the start of the 15-minute market (FMM). During the workshop, stakeholders highlighted that determining if or how to include this incremental transmission cost into their real-time energy bid was difficult. However, for day-ahead schedules that are rebid into the FMM, the external transmission is already procured and compensated by the payment for the day-ahead schedule. Day-ahead imports which are reduced through an FMM bid provide downward flexibility and day-ahead exports which are reduced through an FMM bid provide upward flexibility. This flexibility can be bid into the FMM without incurring an additional transmission charge external to the ISO.

The CRR clawback rule, under Section 11.2.4.6 of the ISO tariff, treats a day-ahead intertie award that is reduced in real-time as a “virtual award.” If the flow impact of the real-time reduction to a day-ahead intertie award exceeds 10% of the transmission capacity, then 100% of the market participant’s CRR revenues from that path are subject to the clawback rule. The ISO proposes conditions by which a schedule change between day-ahead and real-time will not be considered a “virtual award”, thereby, not subjecting the change to the CRR clawback rule procedures.

In developing this proposal for import and export exemptions and in consultation with the Department of Market Monitoring, the ISO believes it is no longer appropriate to exempt convergence bids at default load aggregation points and trading hubs from the CRR clawback rule procedures.

The ISO is not proposing any changes to the CRR clawback rule procedures. The ISO is only proposing modifications to which transactions are considered “virtual awards” and therefore subjected to the CRR clawback rule procedures. The two modification are: (1) import and export changes that meet certain conditions are no longer subject to the rule and (2) convergence bids at default load aggregation points and trading hubs are no longer exempt from the rule.

2 Stakeholder process and timeline

The ISO plans to present its proposal developed through this initiative at the June 2016 Board of Governors meeting. The current schedule for the policy stakeholder process leading up to this Board of Governors meeting is below.

Item	Date
Post Draft Final Proposal	May 16, 2016
Stakeholder Conference Call	May 23, 2016
Stakeholder Comments Due	June 3, 2016
Board of Governors Decision	June 28-29, 2016

Table 1 - Schedule for CRR Clawback Modification Stakeholder Initiative

3 Changes to straw proposal

Remove HASP reversal rule from the bidding rule criteria. In the straw proposal, the ISO recommended that an import (export) must pass the HASP reversal rule in addition to bidding into the real-time market at or below (above) the day-ahead LMP. The intent was to address instances where implicit virtual bidding is implemented by not tagging the day-ahead schedule. However, the HASP reversal rule only evaluates if the day-ahead schedule has been tagged through the hour ahead scheduling process, not if the schedule is ultimately tagged prior to the operating hour. As a result the ISO will not include passage of the HASP reversal rule in the proposal because it increases implementation complexity without addressing instances where a day-ahead schedule is not tagged after the HASP. The current CRR clawback calculations do not use final e-tags when evaluating the flow impact. The ISO is not proposing any change to the current calculation of the CRR clawback amount by using final tagged imports/exports versus 15-minute market schedule. The ISO and DMM will monitor for instances where imports and exports are not tagged consistent with FMM awards.

Bidding rule in the event of day-ahead price corrections. The bidding rule requires imports (exports) to be bid into the real-time market at or below (above) the day-ahead LMP in order to not be considered a virtual award and subject to the CRR clawback process. PG&E requested that the ISO clarify that in the event of a day-ahead prices correct, the original day-ahead LMP would be used for determine if the import/export was a virtual award and not the updated day-ahead price. The price that will be used is the original day-ahead LMP.

4 Congestion revenue rights (CRR) clawback rule

The CRR clawback rule was developed to mitigate concerns that a market participant could utilize convergence bids to increase payments from their CRR portfolio. In addition, there was concern that import/export transactions could also be used for “implicit” virtual bidding. This led to schedule changes of imports/exports being included in the CRR clawback rule and the development of the hour ahead scheduling process (HASP) reversal rule to incentivize e-tagging prior to the start of the real-time market.

Several stakeholder questioned the overall purpose of the CRR clawback rule which was approved by FERC as part of the convergence bidding design. These stakeholders’ comments highlight the difficulty with differentiating or determining the intent underlying the import or export schedule change. There are lots of valid reasons and there are potential nefarious reasons (increasing CRR payments). The objective of the CRR clawback rule is to have an upfront and transparent settlement rule versus evaluating the scheduling coordinator’s intent each time an import or export has a schedule change.

The relevant tariff section for the CRR clawback follows with the current language that will need to be modified highlighted in yellow.

11.2.4.6 Adjustment of CRR Revenue Related to Virtual Awards

*In accordance with this Section 11.2.4.6, the CAISO will adjust the revenue from the CRRs of a CRR Holder that is also a Convergence Bidding Entity whenever either of the following creates a significant impact on the value of the CRRs held by that entity: the CRR Holder/Convergence Bidding Entity submits Virtual Bids; **or the CRR Holder/Convergence Bidding Entity reduces in the RTM an import or export awarded in a Day-Ahead Schedule.** As set forth in Section 11.32, the CAISO will also adjust the revenue from the CRRs of a CRR Holder (regardless of whether the CRR Holder is also a Convergence Bidding Entity) where the Scheduling Coordinator representing that CRR Holder reduces in the RTM an import or export awarded in a Day-Ahead Schedule.*

*(a) **For purposes of this Section 11.2.4.6 and the definition of Flow Impact, any reduction by a Scheduling Coordinator submitting Schedules on behalf of an entity that is a CRR Holder to an import or export Schedule in the RTM will be treated as a Virtual Award.** For each CRR Holder subject to this Section 11.2.4.6, for each hour, and for each Transmission Constraint binding in the IFM or FMM the CAISO will calculate the Flow Impact of the Virtual Awards awarded to the*

*Scheduling Coordinator that represents the CRR Holder, **excluding Virtual Awards at LAPs and generation Trading Hubs.** For the purposes of calculating the CRR adjustments as specified in this Section 11.2.4.6.4, the CAISO will include nodal MW constraints that the CAISO applies to Eligible PNodes in the IFM pursuant to Section 30.10.*

(b) The CAISO will determine the peak and off-peak hours of the day in which Congestion on the Transmission Constraint was significantly impacted by the

Virtual Awards awarded to the Scheduling Coordinator that represents the CRR Holder. Congestion on the Transmission Constraint will be deemed to have been significantly impacted by the Virtual Awards awarded to the Scheduling Coordinator that represents the CRR Holder if the Flow Impact passes two criteria. First, the Flow Impact must be in the direction to increase the value of the CRR Holder's CRR portfolio. Second, the Flow Impact must exceed the threshold percentage of the flow limit for the Transmission Constraint. The threshold percentage is ten (10) percent of the flow limit for each Transmission Constraint.

(c) For each peak or off-peak hour that passes both criteria in Section 11.2.4.6(b), the CAISO will compare the Transmission Constraint's impact on the Day-Ahead Market value of the CRR Holder's CRR portfolio with the Transmission Constraint's impact on the FMM value of the CRR Holder's CRR portfolio, as applicable.

(d) The CAISO will adjust the peak or off-peak period revenue from the CRR Holder's CRRs in the event that, over the peak or off-peak period of a day, the Transmission Constraint's contribution to the Day-Ahead Market value of the CRR Holder's CRR portfolio exceeds the Transmission Constraint's contribution to the FMM value of the CRR Holder's CRR portfolio, as applicable. The amount of the peak period adjustment will be the amount by which the Transmission Constraint's contribution to the Day-Ahead Market value of the CRR Holder's CRR portfolio exceeds the Transmission Constraint's contribution to the FMM value of the CRR Holder's CRR portfolio for the peak-period hours that passed both criteria in Section 11.2.4.6(b), as applicable. The amount of the off-peak period adjustment will be the amount by which the Transmission Constraint's contribution to the Day-Ahead Market value of the CRR Holder's CRR portfolio exceeds the Transmission Constraint's contribution to the FMM value of the CRR Holder's CRR portfolio for the off-peak period hours that passed both criteria in Section 11.2.4.6(b), as applicable.

All adjustments of CRR revenue calculated pursuant to this Section 11.2.4.6 will be added to the CRR Balancing Account.

5 Import/Export schedule changes

Convergence bids are cleared according to their economic bids in the day-ahead market and then automatically liquidated at the FMM price. This allows the market participant to be settled based upon the difference between the day-ahead price and the FMM price. Virtual supply is paid the day-ahead price and charged the FMM price. Virtual demand is charged the day-ahead price and paid the FMM price.

An "implicit" virtual bid using imports and exports can be constructed to replicate virtual supply and virtual demand settlement. In the day-ahead, a market participant submits an economic bid to schedule an import. The import clears the day-ahead market. The market participant then

re-bids the import into the real-time market at a high price, for example the \$1000 bid cap. This bid will have an extremely high probability of not clearing the FMM which will reduce the import schedule to zero. This bidding strategy allows the import to replicate virtual supply settlement.

A similar bidding strategy allows an export to replicate virtual demand settlement. In the day-ahead, a market participant submits an economic bid to schedule an export. The export clears the day-ahead market. The market participant then re-bids the export into the real-time market at a low price, for example the (\$150) bid floor. This bid will have an extremely high probability of not clearing the FMM and reduce the export schedule to zero.

If a market participant rebids its import into the real-time market with an economic bid equal to or less than the day-ahead price, it is not appropriate to consider this an “implicit” virtual bid because there is no guarantee that the day-ahead import schedule will be reduced in the FMM. Only in the event that system conditions have changed from the day-ahead, such that the import is no longer economic to balance real-time supply and demand would the import schedule be reduced. The same logic can be applied to a day-ahead export.

The ISO proposes to modify the CRR clawback rule as follow:

- If import bid \leq day-ahead price, then the import is not considered a virtual award
- If export bid \geq day-ahead price, then the export is not considered a virtual award
- If an import/export bid/self-schedule in real-time market is less than the day-ahead schedule, then the difference shall be still subject to CRR clawback rule.

For example, assume a 100MW import cleared the day-ahead market at an LMP of \$50.00. The scheduling coordinator then submits into the real-time market a three segment bid curve: segment 1 from 0MW to 50MW as a self-schedule, segment 2 from 51MW to 75MW at \$40.00, and segment 3 from 76MW to 100MW at \$55.00. If the real-time market clears at 75MW, 25MW will still be considered a virtual award because its bid price exceeded the IFM LMP. If the bid price of segment 3 was \$49.99, then there would be no virtual award if the real-time market cleared less than 100MW.

Another approach to replicate convergence bidding settlement is for a market participant to not submit an e-tag for the day-ahead schedule. This concern was partially addressed by the HASP reversal rule which eliminates all profit from schedule changes if the day-ahead schedule is not tagged through the HASP process. This ensures that the market participant has procured external transmission necessary to deliver the day-ahead schedule prior to clearing the FMM. However, the rule does not consider if the final schedule is ultimately tagged after HASP which is how this approach to implicit bidding is implemented. As a result, the ISO is not including passage of the HASP reversal rule as a criteria in determining if an import or export schedule change is considered a virtual award. However, a scheduling coordinator could meet the bidding criteria, but not tag its FMM awards, in which case the schedule change would not be considered a virtual award. The ISO and DMM will monitor for instances where imports and exports are not tagged consistent with FMM awards.

6 Trading hubs and load aggregation points

Currently convergence bids cleared on trading hubs and load aggregation points are not included in the flow impact used to determine if the 10% threshold is reached. The market optimization clears bids at the aggregation point and manages congestion using the shift factor of the aggregation point to constraints. Thus, bids at aggregation points can cause constraints to bind resulting in congestion. The ISO believes that the CRR clawback rule should not differentiate between a convergence bid at an aggregation point and at an individual node when calculating the flow impact of a CRR holder since both can impact congestion.

Several stakeholders questioned including convergence bids on trading hubs and load aggregation points in the CRR clawback rule given their current exemption. These stakeholders highlight that there is liquidity at these aggregation points which reduces the likelihood that virtual bids at these points could impact a participant's CRR holdings. As DMM illustrated in their comments¹ on the straw proposal, there have been instances where the flow impact from a virtual bid on an aggregation point has increased the CRR portfolio of the convergence bidder. The ISO does not believe aggregation points and individual nodes should be treated differently when determining the flow impact on a scheduling coordinator's CRR portfolio. After the initial implementation of convergence bidding, the ISO held a subsequent data release stakeholder process. The data release process approved the release of market model information including shift factors, load distribution factors, and generation distributions factors which enables the market participant to more accurately replicate the ISO market model for their purposes, including evaluating virtual bids at aggregation points.

Additionally, a stakeholder suggested that if the CRR clawback rule now includes the load aggregation points that under and over scheduling of load should also be consider a virtual award. The ISO does not believe needs to be addressed through the CRR clawback. In the event that a load serving entity seeks to increase its CRR holdings value, this may result in CRR revenue inadequacy. If there is a revenue shortfall, these costs are recovered through the CRR balancing account which is allocated to measured demand. This allocation offsets the gains from the under/over scheduling of load in the day-ahead market. In addition, the ISO believes that the allocation of other uplift costs incentivizes accurate scheduling in the day-ahead market by load serving entities.

7 Next Steps

The ISO plans to discuss this draft final proposal with stakeholders during a stakeholder conference call to be held on May 23rd. The ISO requests comments from stakeholders on the proposed Congestion Revenue Rights Clawback Modifications. Stakeholders should submit written comments by June 3rd to intiativecomments@caiso.com.

¹ See Figure 1 in DMM comments which are posted at <http://www.caiso.com/Documents/DMMComments-CRRClawbackRuleModification-StrawProposal.pdf>