



Decision on congestion revenue rights auction efficiency proposal

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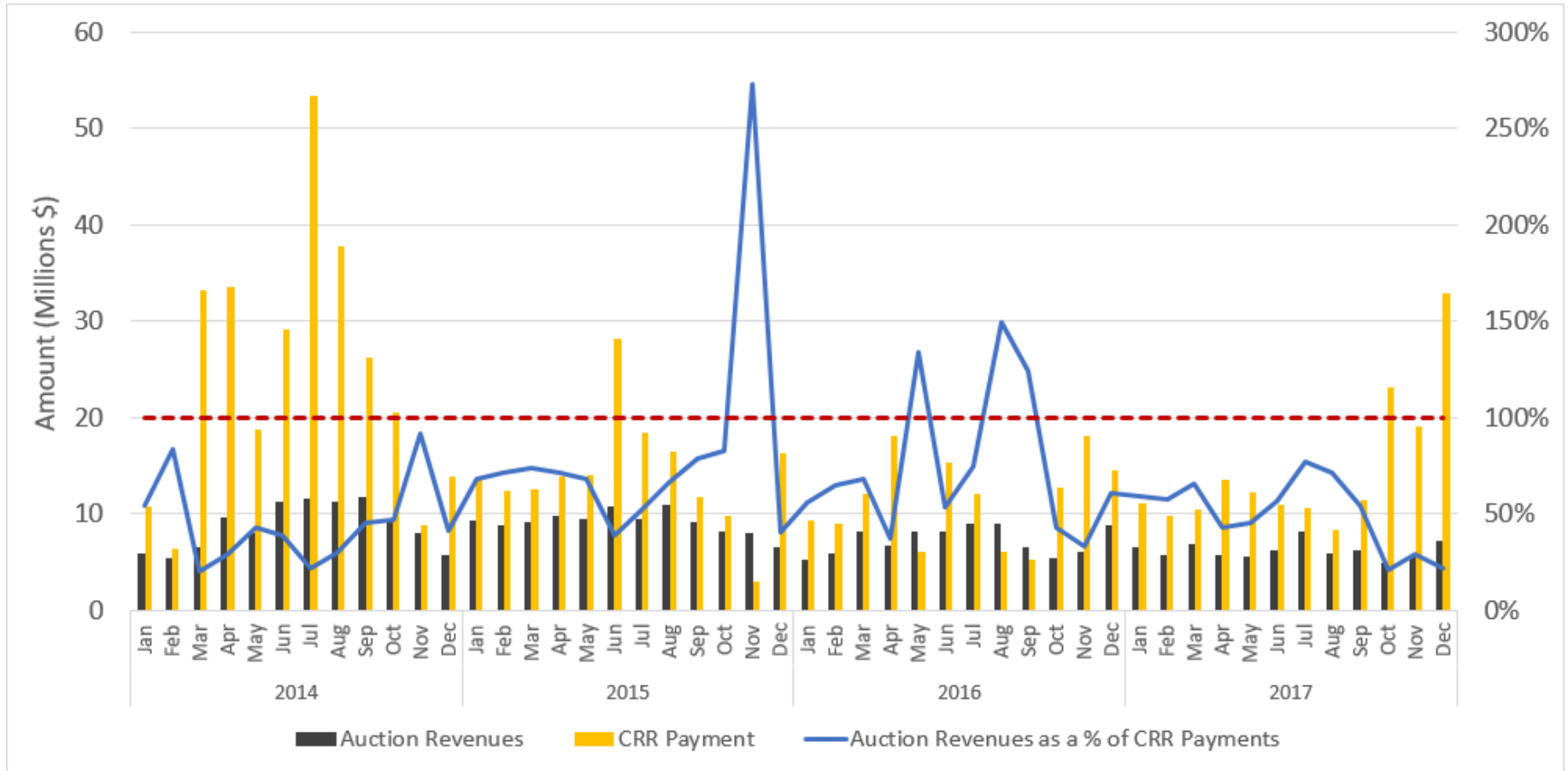
Congestion revenue rights are a fundamental element of competitive wholesale energy markets

- Entitle holders to a payment or charge based on the differences, due to congestion, of the day-ahead energy prices between two locations
- Facilitate participation in the market by providing all market participants the ability to hedge congestion costs associated with supply delivery
- Support forward energy markets by equitably distributing available transmission capacity among load-serving entities, generation marketers, and financial intermediaries

Congestion revenue rights are a fundamental element of competitive wholesale energy markets

- Congestion revenue rights associated with available transmission are first allocated to load-serving entities, then the remaining available transmission is auctioned to all other market participants
- FERC recognizes financial transmission rights play a key role in ensuring open access to firm transmission service by providing a congestion hedging function
- All ISO/RTOs have a mechanism that allows all market participants to hedge congestion cost risk

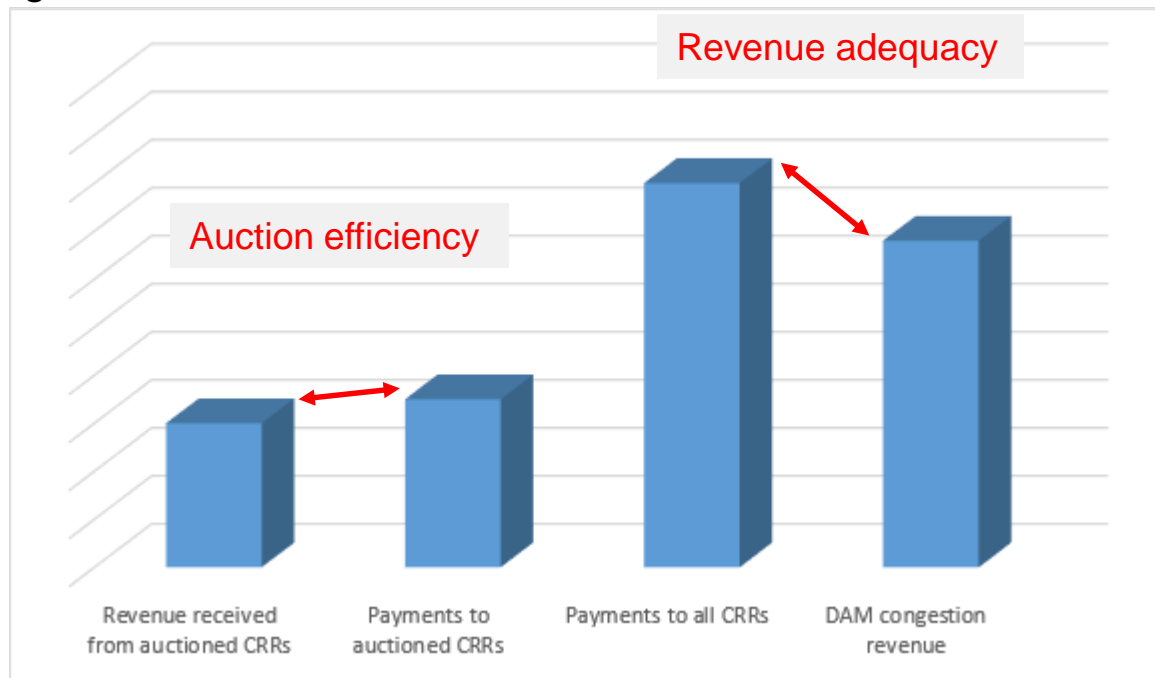
Sustained auction payment deficiencies signal potential flaws in the auction design



Auction revenues versus congestion revenue rights payments

Management conducted extensive analysis to understand drivers of auction inefficiency

- High percentage of congestion revenue rights clear at a very low price
 - Lack of liquidity results in uncompetitive prices
- Day-ahead market is more constrained than the congestion revenue rights market due to lack of timely outage information
 - Approximately half of outages submitted too late for use in the congestion revenue rights model



Management is conducting a multi-tracked initiative to address auction efficiency issues

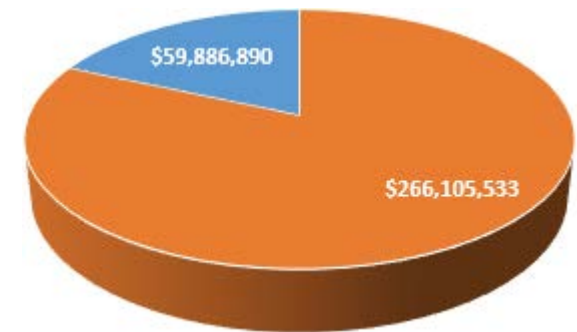
- Track 0 – Process improvements implemented under current tariff authority
- Track 1a – Today's proposal for near-term enhancement to 2019 auction
 - Requires early decision for the ISO to implement by this summer
- Track 1b – Continue stakeholder process to develop additional enhancements for 2019 auction
 - June Board decision
 - Settlements enhancements to be implemented by January
- Track 2 – Consideration of additional changes for 2020

Management proposes two near-term enhancements to address congestion revenue rights auction efficiency

- Limit the allowable source and sink pairs in the auction to correspond to supply delivery
 - Existing rules allow market participants to purchase congestion revenue rights from any node to any other node
 - Approximately half of awarded congestion revenue rights volume have unique source and sink combinations
 - 1,264,500 possible source and sink combinations will be reduced by 92 percent
- Require planned outages to be submitted prior to annual allocation and auction process
 - Existing rules do not require transmission owners to submit transmission outages in time to be modeled in the annual allocation and auction process
 - Mitigates the release congestion revenue rights in excess of the expected available transmission capacity

Allowing congestion revenue rights sourcing and sinking at non-delivery locations is major driver of auction revenue shortfall

- 81 percent of auction payment deficiencies associated with sources and sinks not directly associated with hedging supply delivery
- Congestion revenue rights with non-delivery source and sink locations sell for 38 cents on the dollar
- Congestion revenue rights with delivery source and sink pairs sell for 74 cents on the dollar



Auction Revenue Shortfall
(Delivery pair vs. Non-Delivery pair)

Proposal provides auction benefits by concentrating auction activity onto sources and sinks associated with hedging supply delivery

Congestion revenue rights awarded in the annual process routinely exceed the amount of transmission capacity available in the monthly process

- The ISO currently releases 75% of transmission capacity in its annual process
- Each month, the ISO models the system with known outage information: new constraints, contingencies, outages, and de-rates
- Congestion revenue rights awarded in the annual process routinely exceeds these new limitations in the monthly process

Earlier outage reporting will improve the annual allocation and auction model by aligning the release of congestion revenue rights with available transmission capacity

Stakeholders are divided on the proposal to limit the allowable source and sink pairs in the auction

- Concerned the proposal will hinder a participant's ability to manage its congestion exposure
- Concerned that the proposal will not eliminate auction payment shortfalls, just shift it to different pairs
- DMM, SCE, and SVP do not support because solution does not result in a market design where “willing counterparties” transact
- Several other stakeholders support the proposal finding that it provides enhancements that will improve auction efficiency

Most stakeholders support the proposal to require earlier outage reporting

- Transmission owners concerned proposal will increase cost of transmission maintenance
 - Management proposing to move outage reporting requirement up from October 15th to July 1st
 - Concerned that accurate information will not be available by July 1 deadline
 - ISO should use existing October 15 outage information instead

Management recommends the board approve the congestion revenue rights auction efficiency proposal

- Maintains all market participants' ability to obtain congestion revenue rights to hedge supply delivery
- Aligns congestion revenue rights market with its core purpose of hedging supply delivery
- Concentrates auction activity onto sources and sinks associated with hedging supply delivery to increase valuations relative to eventual payouts
- Decreases auction payment deficiencies due to over-allocated transmission in the annual process

Management is pursuing further enhancements for the 2019 auction process to be brought to the board for approval in early summer

- Additional policy options being considered for the 2019 auction process include:
 - Limiting the auction to willing buyers & sellers
 - Partial funding of CRRs
 - Reducing amount of CRRs released in annual process