Congestion Revenue Rights Performance Update

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CRR Enhancements and Policies Implemented in 2019

**Analysis Phase. Nov 2017:**
Understand the drivers to guide the policy discussion

**Phase 0. First half of 2018.**
Enhance ISO processes under existing Tariff requirements

**Phase 1A. 2019 Annual process:**
Additional reporting requirements for transmission outages
Elimination of non-delivery paths

**Phase 1B. 2019:**
Pro-rata funding for CRRs on a constraint by constraint basis
Capacity released in annual allocation reduced from 75% to 65%
The overall CRR volume cleared in auctions has decreased
The reduction of CRR volume happened mainly for the low and zero prices CRRs.
The volume of constraints binding in the CRR auctions have decreased, but it is largely in the nodal-group constraints.
Overall trend of auction revenues has not changed significantly.
On average auction shortfall has improved modestly with the changes implemented in 2019.
How should the sell-type CRRs be considered in the auction shortfall metric?

- Prior to 2019, an existing CRR could be sold only by buying a counter-flow position. Afterwards, CRRs can be sold explicitly.
- Prior to 2019, CRR holders could buy counter-flow positions by bidding for non-delivery paths. Afterwards, CRRs for non-delivery paths cannot be bought.
- Either of these CRRs may have negative auction revenues.
- Money collected from buy CRRs will fund the payments to sell CRRs. Sell CRRs release capacity into the auction and enable the release of buy CRRs.
- Sell CRRs will reduce the gross auction revenues.
An auction shortfall based on the gross revenues related to buy CRRs will show a more meaningful outcome
Implementation of pro-rata funding has eliminated CRR revenue shortfall and increased revenues to LSEs by $122 Million.
CRR deficits have impacted all types of CRRs in the market, with the largest impact on the monthly CRRs auction.
Pro-rata funding has an impact on a large set of constraints
Conditions leading to reversal of settlements at the constraint level

• The estimated Integrated Forward Market (IFM) flow is based on shift factors (SF) and injections from control variables in the SCUC (market) side of the optimization problem

• Only control variables with SF over 2% will contribute to the IFM estimated flow

• When control variables (such as default load aggregated point (DLAPs)) have SF below 2%, their flow contribution will not be accounted for in IFM flow estimated for CRRs; if they have positive contributions, that will not offset the negative flows

• CRR deficit from a constraint can exceed the CRR notional value when the estimated IFM flow is in opposite direction to the CRR flow
Pro-rata funding has an impact on all CRR portfolios and may degrade the CRR portfolios value.
Loop flows may be a factor in the level of deficits observed in certain constraints, but it is not the main driver.

Loop flows are dynamically estimated as part of the IFM solution; they are not set in advance.
CRR deficits have generally accrued on many different constraints; the top constraint with deficits is San Bernardino Devers.
Overall, the pro-rata funding has reduced the CRR value by 28 percent.
The netting rule for pro-rata funding has led to different valuations of the same CRR depending on what portfolio they are part of.

Largest bubble size reflects a deficit of $320K
About 60 percent of CRRs were allocated CRR deficit of less than $1
About 65% of CRRs had a pro-rata adjustment of less than 10% of its value