

NPRR 821 Elimination of the CRR Deration Process

May 2017



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CRR Deration Process

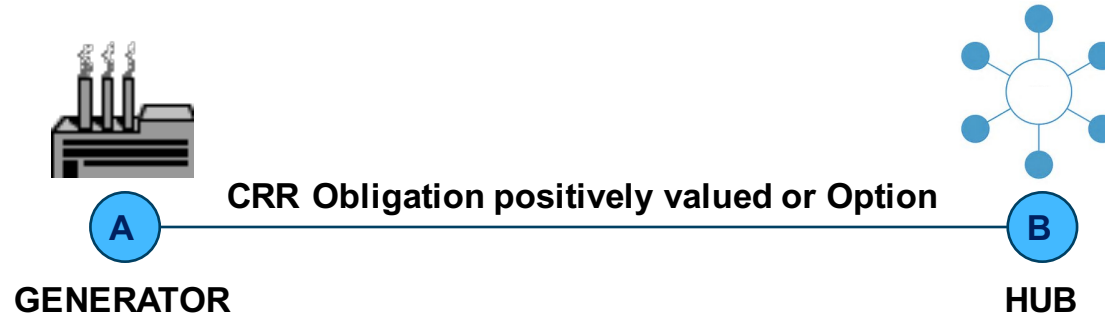
- **The deration settlement mechanism was introduced in order to deter inefficient market activity**
 - Addresses the ability for related positions to influence outcomes at the expense of market efficiency
- **Applies to CRR PTP Options with a Resource Node at its sink or source and positively valued CRR PTP Obligations with a Resource Node (RN) at its sink or source**
- **The deration price for a CRR path is determined at the constraint level**
 - It is product of the Deration Factor (DRF), Day-Ahead Shadow Price, and the CRR's positive Day-Ahead Shift Factor impacts and is performed for each constraint
 - $DRF = MW \text{ oversold} / \text{prevailing direction flow on the constraint}$ (see appendix)
- **The derated amount is subtracted from the CRR Target Payment**
- **Hedge Values can keep you whole**
 - Designed to ensure target payment for 'hedge' activity
 - Hedge Value dependent on resource type at source and sink and the day-ahead SPP



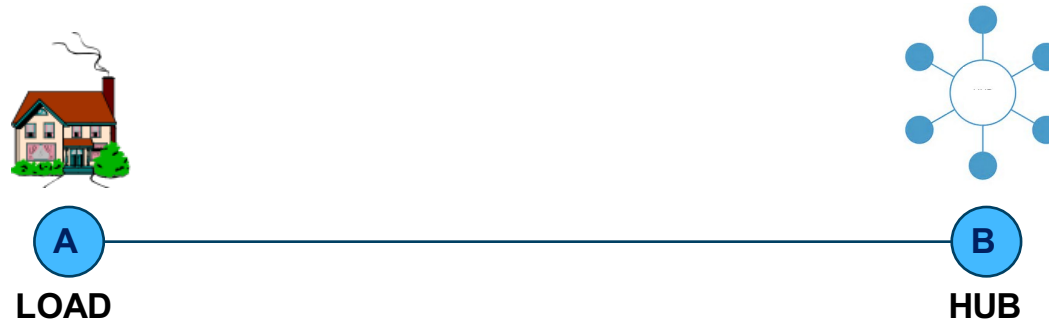
The deration process is only applied to certain CRRs with a Resource Node at its source or sink

CRR Deration Process


Deration Eligible




Deration Excluded





The CRR deration process raises market equitability and efficiency issues

CRR Deration Process Problem List

- **William W. Hogan: “The details for CRR obligation settlements remind of the admonition never to look at how sausage is made. What is going on here, why, and what are the incentives?”** -ERCOT Energized Conference Austin, TX May 2, 2008
- **CRR holders do not cause un-modeled or forced outages, but yet pay for the full value of the CRR that is forfeited through the deration process**
- **It is not equitable that certain CRRs involving RNs are subject to the deration process while CRRs involving only Hubs and Load Zones are not**
- **The deration process is clearly unreasonable as a mitigation tool, as it can impact entities that do not hold an open Day-Ahead Market position**
- **The settlement of the product formerly known as ‘Real-Time Options’ is no longer being honored due to its replacement product (i.e. PTP Obligations with Links to an Option) being subject to the deration process**
 - Today, if a Non-Opt-in Entity purchases a PTP Obligation in the DAM and owns an offsetting CRR Option, then the PTP Obligation will settle in Real-Time as an option. That said, the deration process leaves these instruments exposed to deration settlement in the DAM



Eliminating CRR deration delivers numerous market benefits

Elimination of the CRR Deration Process

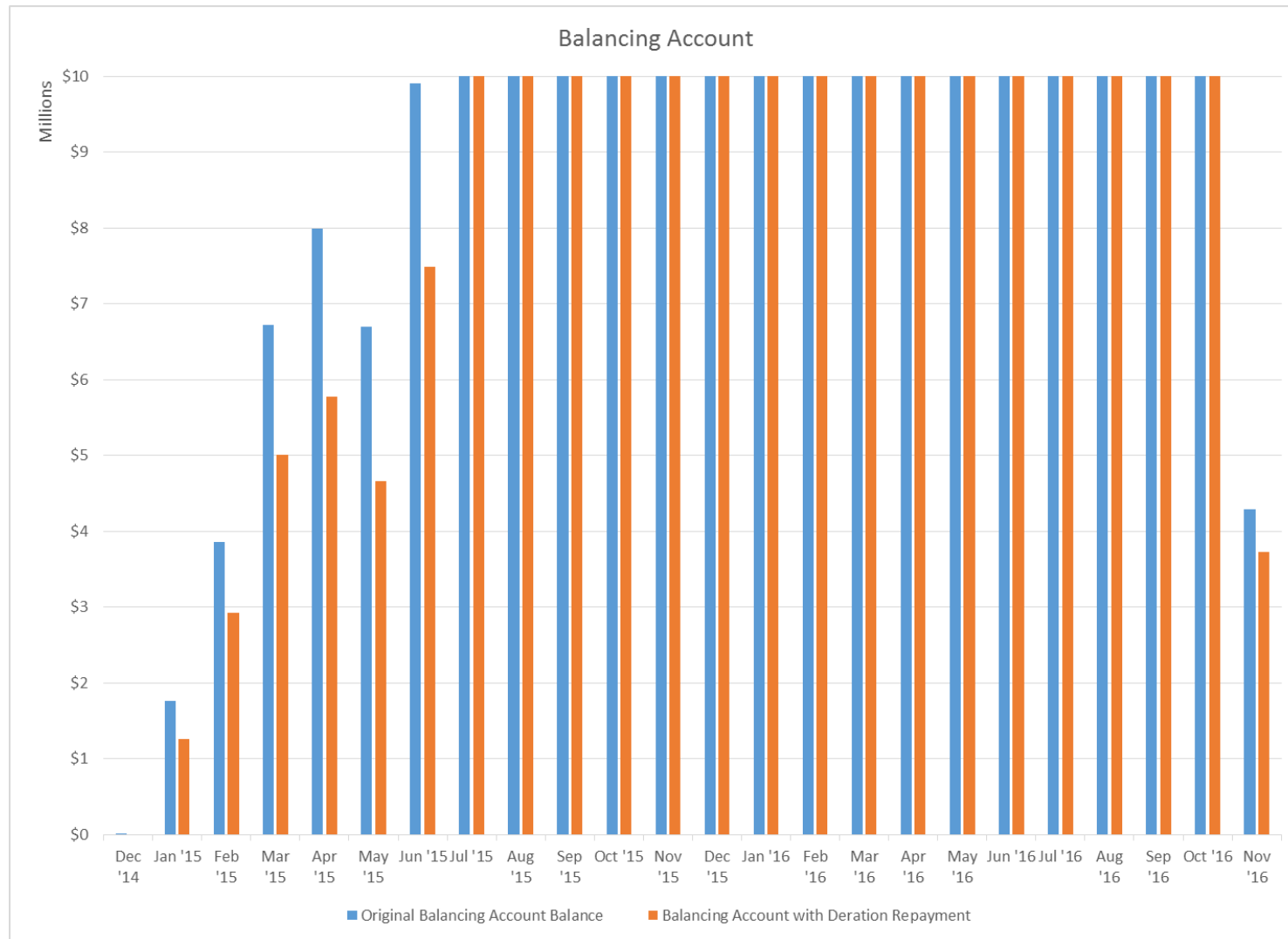
- **Addresses previously stated market equitability issues**
- **Moves toward a more fully funded CRR product**
 - By eliminating the deration process market hedges for generation to Hub would be honored in the same manner as Load Zone to Hub
 - ERCOT's backtest demonstrated CRR Target Payments were satisfied by available funds in the CRR Balancing Account
 - In other words, the uplift concern is absorbed by the CRR BA

Source: ERCOT Deration Change Effect presentation, <http://www.ercot.com/calendar/2017/1/27/116920-CMWG>



ERCOT's backtest demonstrated that available funds in the CRR BA were able to fund CRR Target Payments

Impact of Eliminating Deration on the CRR BA



Source: ERCOT Deration Change Effect presentation, <http://www.ercot.com/calendar/2017/1/27/116920-CMWG>



Appendix

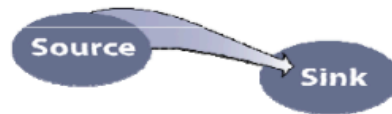
CRR Deration Process

Calculation of Deration Factor

If a Constraint C, has both a positive DASP (Day Ahead Shadow Price) and CRRSFTVIOL:

Calculate Deration Factor per Constraint for each Operating Hour of the Operating Day:

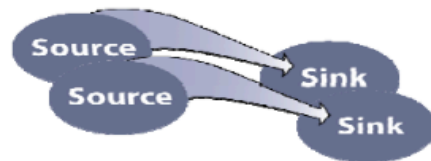
$$DRF_{<C>} = CRRSFTVIOL_{<C>} / CRRPOSTOT_{<C>}$$



CRRSFTVIOL
CRR SFT Violated Amount – the MW amount by which the constraint is oversold for the Operating Hour.

Calculate only CRR Total Positive Impact per Constraint for each Operating Hour of the Operating Day:

$$CRRPOSTOT_{<C>} = \sum_{SKSP} \sum_{SRSP} \text{Max} (0, DAWASF_{<SRSP>}_{<C>} - DAWASF_{<SKSP>}_{<C>}) * PTPSRSKTOT_{<SRSP>}_{<SKSP>}$$



PTPSRSKTOT
Point to Point Source and Sink Total – the total DAOBL, DAOBLR, OPT, and OPTR for all CRR Owners for a source and sink Settlement Point pair, for the Operating Hour.

Slide 197

Source: ERCOT Training Slide (http://www.ercot.com/content/wcm/training_courses/68/CRR___WKSHP__V2.pdf)