Circuit Breaker

EPFSTF July 19, 2022 IMM



Circuit Breaker Concept

- The desire for a circuit breaker in energy market design is a recognition that there are market design problems in the energy market.
- The circuit breaker is intended to limit the effect of inefficient pricing on the market.
- Identified issues
 - Additivity of reserve penalty factors (ORDC)
 - Use of transmission constraint penalty factors (TCPF)
- The underlying issues should be addressed.
- A circuit breaker should target the specific issues identified, rather than applying a general price cap.

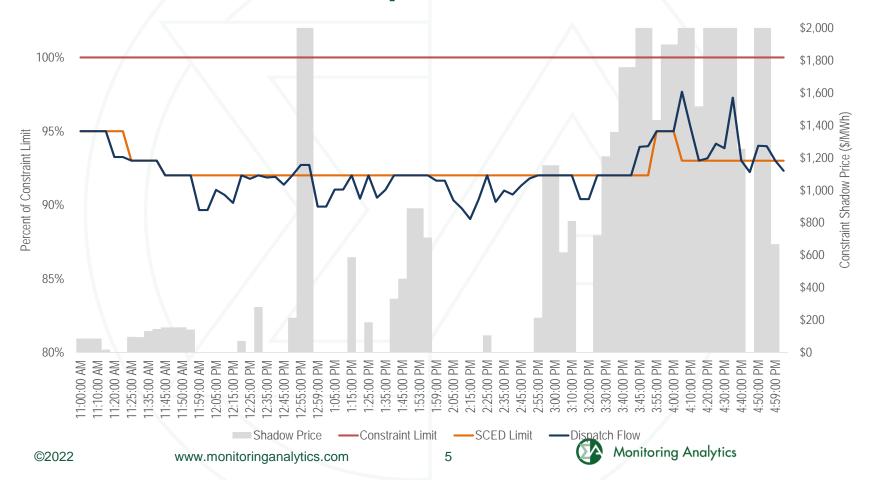
Problem with Price Caps

- A cap on overall LMP would suppress efficient pricing.
- LMPs resulting from cost-based offers using correct short run marginal costs including fuel costs should not be capped.
 - Address fuel cost policies
 - Address VOM in offer caps
 - Address market power in the natural gas market
- FERC Order 831 caps offers at the greater of \$1,000 per MWh or short run marginal cost up to \$2,000 per MWh.

Transmission Constraint Penalty Factor

- SCED prices at the TCPF when flows exceed the constraint limit in SCED, as reduced from the actual line limit by PJM.
- SCED Limit = Line Limit x Limit Control Percent
 - PJM should not use limit control percent under circuit breaker.
- When the actual or contingency flow is less than the line limit but above the line limit PJM enters in SCED, prices are artificially high.
- Under the circuit breaker, prices should be based on 100 percent of the line limit used in operations.

TCPF Example June 13, 2022



Circuit Breaker Trigger

- Triggers should be clear and not discretionary.
- Emergency actions should be a trigger.
 - Manual load dump
 - Voltage reduction
 - Call for demand side resources
- Catastrophic force majeure should be a trigger.
 - Same criteria as used for capacity performance

IMM Circuit Breaker Proposal

- Triggers
 - Emergency actions
 - Manual load dump
 - Voltage reduction
 - DR
 - Catastrophic force majeure
- Pricing changes
 - Only use one ORDC: RTO primary reserves
 - TCPF only sets price for constraints using 100 percent limit control

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