Market Power During Periods of Scarcity

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The presenter's views do not necessarily represent the views the Federal Energy Regulatory Commission.

Pricing Philosophy Near and During Operating Reserve Shortages

- Generator offers should reflect marginal cost
 - Offers mitigated if generator is deemed to have market power
 - Offers are not mitigated otherwise
- Operator actions taken to avoid operating reserve shortages would ideally be reflected in the energy price
- Set energy and ancillary service prices based on administrative pricing rules during operating reserve shortages that are broadly consistent with load valuation

Mitigation Rules

- Two basic steps
 - Identify resources that have market power
 - Require resources with market power to bid at "reference cost"
- Two general methods for identifying resources with market power
 - Structural test (three pivotal supply)
 - Conduct and impact test
- Reference cost estimate of variable operating cost
 - Estimate by either system operator or market participant
 - Based on cost fundamentals (fuel cost, heat rate) and/or historic bids or historic energy prices (lowest quartile)

Mitigation Rules (cont'd)

- Structural test (three pivotal supplier test)
 - Assess whether three suppliers are jointly pivotal in constrained area
 - Mitigation rules either only mitigate pivotal suppliers (PJM) or all suppliers that can impact the price of a 'non-competitive' constraint subject to mitigation (California ISO)

Conduct & Impact thresholds

- Resources bids are mitigated to reference levels if bid and impact exceed pre-determined thresholds
- Two types of thresholds
 - chronically constrained areas have more stringent thresholds
 - transient constraints have less stringent thresholds

Accounting for Operator Actions to Avoid Reserve Deficiency

- Concern: some actions that system operator takes to avoid reserve deficiencies may suppress the energy price and therefore disrupt price signals
- Example operator actions
 - Deploying "emergency" demand response
 - Temporary voltage reduction
 - Emergency purchases
- Rules dictating when operator action can occur (before or during reserve deficiency) differ by market

Administrative Pricing During Operating Reserve Shortages

- Once the market is experiencing an operating reserve shortage, administrative pricing rules set the energy and ancillary services prices
- Rules may distinguish between
 - Reserve product experiencing the deficiency
 - Magnitude of the deficiency
 - Location of the reserve deficiency (local or system-wide)
- Can be thought of as the price above which the system operator will stop attempting to resolve the deficiency

Administrative Pricing Example

First	Product	Location	Shortage Amount (MW)	Shortage Cost (\$)	
	Regulation	NYCA	0 to 25	\$80	
	Regulation	NYCA	>25 to 80	\$180	
Last	30 Minute Total	West	ALL	\$200	
	30 Minute Total	East	ALL	\$225	
	30 Minute Total	u	ALL	\$250	
	Transmission	ALL	0 to 5	\$350	
	Regulation	NYCA	>80	\$400	
	10 Minute Total	West	ALL	\$650	
	10 Minute Spinning	West	ALL	\$1,150	
	Transmission	ALL	> 5 to 20	\$1,175	Regulation
	10 Minute Total	East	ALL	\$1,175	10 Minute Total
	10 Minute Total	u	ALL	\$1,225	10 Minute Spinning
	10 Minute Spinning	East	ALL	\$1,700	30 Minute Total
	10 Minute Spinning	Ц	ALL	\$1,775	Transmission
	Transmission	ALL	>20	\$4,000	