



# Market Power Mitigation and Price Formation

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# The Role of Market Power Mitigation

- Mitigation provisions are intended to ensure that the markets operate competitively and efficiently to achieve the benefits of competition.
  - ✓ This is necessary to ensure prices remain “just and reasonable” as required under the Federal Power Act
- Market power mitigation measures in MISO and most other RTOs only address *local* market power.
  - ✓ They trigger only when a supplier can increase prices in a transmission-constrained area (i.e., a load pocket).
  - ✓ They do not trigger when withholding may contribute to high prices market wide.
- Market power mitigation measures do nothing to hinder efficient price formation during shortages or tight market conditions.



## Market Objectives in Load Pockets

- Markets should establish transparent price signals that accurately reveal the marginal value of resources in load pockets.
- These signals are necessary not only to provide incentives for new investment, but also to retain existing generation.
- It is critical to recognize that *new investment is not always necessary in a load pocket*.
  - ✓ Some load pockets have a surplus of capacity that is owned by a limited number of suppliers (one supplier in some cases).
  - ✓ In such cases, the markets should not signal the need for new investment.



# Economic Signals in Load Pockets

- The value of resources in load pockets derives from:
  - ✓ Relieving binding transmission constraints – reflected in LMPs; and
  - ✓ Providing capacity needed to satisfy local planning requirements in the load pocket.
- Some centralized markets are missing the second component, resulting in incentives that are incompatible with the planning needs of the RTO.
  - ✓ Incompatible incentives are evidenced by: lack of new investment, some existing suppliers not undertaking prudent maintenance, and/or suppliers retiring units that are needed.
  - ✓ When this capacity is needed for reliability, out-of-market contracts (system support resource or “SSR” contracts in MISO) are necessary.
  - ✓ To avoid reliance on SSR contracts, the markets must fully reflect the reliability needs satisfied by capacity in the load pocket.



# Alternative Sources of Economic Signals in Load Pockets

The following are alternative market design elements to signal the value of capacity in the load pocket include (in rough order of desirability):

## 1. Location-specific operating reserve markets

- ✓ Operators often have capacity requirements for load pockets that are satisfied in the commitment process (in the absence of locational operating reserves).
- ✓ Making them market requirements would price this service and allow efficient shortage pricing in the load pockets.
  - Shortages exist when the reserve requirements cannot be met – energy prices should reflect the value of the foregone reserves.
  - Generators need not raise their offer prices to achieve efficient shortage pricing in the load pocket.
- ✓ The lack of historical investment in transmission and generation in some of these areas could cause this signal very strong initially.



## Alternative Sources of Economic Signals in Load Pockets (cont.)

### 2. Locational capacity markets

- ✓ Example: locational ICAP requirements in New York City.
- ✓ The signal resulting from this process is not as potentially volatile as from locational operating reserve markets.
- ✓ It can be combined with the locational reserve markets.

### 3. Unit-specific RMR contracts

- ✓ This is the least transparent alternative.
- ✓ It does not establish an efficient economic signal for all capacity in the load pocket, which provide comparable reliability value to the system.
- ✓ It is the least likely to motivate efficient new investment.



## Alternative Sources of Economic Signals in Load Pockets (cont.)

4. Relatively loose market power mitigation measures
  - ✓ Example: PUSH provisions in New England.
  - ✓ This is not a reliable means to achieve efficient prices signals. Depending on the competitive conditions in the area, prices may be:
    - *Too high* – when suppliers have market power and the loose mitigation allows them to exercise it to raise prices excessively; or
    - *Too low* – when suppliers don't have market power and the lack of shortage pricing results in inefficiently low prices during shortages.
  - ✓ If the RTO has local operating reserve markets and associated shortage pricing, and/or local capacity markets, loose mitigation is both unnecessary and harmful.



# Mitigating Locational Market Power

- Even after structural mitigation (divestiture, transmission expansion, etc.), market power concerns may still justify “behavioral” mitigation that restrict a supplier from exercising market power.
- Behavioral mitigation measures should adhere to the following principles:
  - ✓ Mitigation should not affect participants bidding competitively – including causing suppliers to bid or generate below their marginal cost;
  - ✓ Mitigation should not artificially limit price movements – particularly during times of shortage; and
  - ✓ When possible, mitigation should be applied prospectively.
- Unit-specific offer caps are the most effective mitigation measures.
  - ✓ The offer cap restricts suppliers’ ability to economically withhold resources, while allowing the market to clear as usual.
  - ✓ The unit that is mitigated still receives the market clearing price – it is not intended to be punitive.



# Mitigating Locational Market Power

- Unit-specific offer caps are applied automatically in the Midwest ISO. Before they are applied, we determine that:
  - ✓ A supplier is offering substantially above its marginal cost or submitting unjustified physical parameters (i.e., the conduct test); *and*
  - ✓ Its conduct will substantially affect market results (i.e., the impact test) in a constrained area.
- Unit-specific offer caps will not prevent efficient pricing as long as:
  1. The conduct and impact tests are satisfied; and
  2. Prices are set by demand or at the value of the operating reserves when the system is in shortage (a.k.a., op reserve shortage pricing), or by the value of violated constraints (a.k.a., transmission shortage pricing).
- Unit-specific offer caps also do not hinder efficient arbitrage of prices between adjacent markets.



## Properly Designed Mitigation will be Applied Infrequently

- The conduct and impact framework ensures that mitigation will only be applied when a supplier may actually be exercising market power.
- The following figure summarizes the mitigation that occurred in MISO's day-ahead and real-time energy markets in 2013.
- Real-time NCA and BCA energy mitigation is relatively infrequent in MISO, occurring in less than 1 percent of the hours in real time.
  - ✓ When mitigation occurs, less than 200 MW are mitigated on average.
- The levels in 2013 were higher than previously because much tighter mitigation is now being applied in voltage/local reliability (VLR) areas.
  - ✓ There are two significant VLR areas in the recently integrated MISO South region.
- In sum, market power mitigation both theoretically and empirically does not adversely affect price formation in the MISO or NYISO markets.
  - ✓ In fact, it protects price formation by preventing price spikes that are not a competitive reflection of true supply and demand conditions.



# Automated Market Power Mitigation in 2013

