Scarcity and Mitigation

MRC
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- Framework for understanding proposals on competition, scarcity and market power
- Competitive offer is short run marginal cost
  - Risk
  - Opportunity cost
  - Scarcity pricing
- Market power is the ability to increase/decrease market clearing price above/below competitive price level
  - Market structure permits participant behavior with an impact on market performance

- If all units charge short run marginal cost how do units cover fixed costs?
  - Baseload units
  - Peaking units
- Does market design have to include market power?
- Goal of market design:
  - Provide incentives for investment
  - Market design is sustainable over multiple generations of investment
  - Rely on competition and not market power

- Essential features of wholesale power markets:
  - Level of capacity is determined external to market
  - Level of capacity is based on a reliability target
  - Energy market does not determine equilibrium level of investment
  - Actual investment in capacity greater than would occur from such equilibrium
  - Result is lower prices in energy market
- All solutions require managing prices and revenues

- Capacity markets
  - Payment based on peaking unit fixed costs
  - Include links to other markets via net revenue offset
- Scarcity pricing
  - When demand is close to supply
  - Demand includes a measure of operating reserves
  - Competitive price under scarcity conditions is greater than marginal cost
  - Works with capacity markets
  - Works without capacity markets

- Scarcity pricing without capacity markets:
  - Prices are managed including the level of the offer cap and the duration of prices at the cap
  - Goal: level of net revenues consistent with fixed costs and new investment
  - Requires close management in order to achieve desired result – difficult problem
  - Results: very high prices; volatility; risk; risk premium

- Scarcity pricing with capacity markets:
  - Prices are managed including the level of the offer cap and the duration of prices at the cap
  - Tight integration with capacity markets via net revenue offset
  - Performance incentives
  - Price management easier with capacity market backup
  - Shifts revenues and incentives to energy market

- Results of appropriate scarcity pricing:
  - Appropriate incentives
  - Competitive behavior
  - Market power is not required
  - Least cost solution
- Appropriate incentives
  - Level consistent with investment costs and risks
  - Only when there can be a response that solves the issue

- Market power mitigation in PJM - aggregate
  - No mitigation in aggregate energy market
  - Overall competitive pressures
  - Actual prices equal short run marginal cost based on actual offers
- Market power mitigation in PJM – local
  - Part of initial1996 PJM filing
  - Network constraints create local markets
  - When local markets are not competitive, offer caps are set at competitive level: short run marginal cost

- Three pivotal supplier (TPS) test
- Definition of structural market power
- Only offer cap when there is structural market power
- Only offer cap when offers are not competitive
- Real time mitigation that reflects actual market conditions, exactly as seen by operators
- PJM is only RTO with this capability
- FMU/AU adders

- Scarcity pricing – aggregate/regional
  - Stages of scarcity pricing required
  - Clear definitions linked to levels of reserves
  - Clear link to dispatch and operations
  - Nodal signals required
  - Day ahead market definition of scarcity pricing
    - Market power issues
    - Virtual offer issues
  - Redefine links to capacity market
    - Net revenue offsets – granularity/timing
    - Performance measures – match energy market incentives

- Scarcity pricing – local
  - Definition
  - Link to local reserve levels
  - Local market power does not mean scarcity
  - More difficult issues than aggregate scarcity – not a simple mechanical definition
  - Interaction with transmission investment

- Scarcity pricing – local
  - Risk of market power/wealth transfer without response
  - Lumpy markets
  - Goal is to manage prices/incentives for investment
  - Incentives only appropriate when a responsive solution is possible
  - Goal is to ensure competitive outcomes

- Definition of local market power
  - Actual implementation of TPS test should be improved
  - Day ahead market TPS issues
  - Real time market TPS issues
  - TPS test is a reasonable test of structural market power

- PJM filed the MMU's 2006 State of the Market Report on April 27, 2007 to fulfill requirement of scarcity/local market power settlement
- PJM filed on June 8, 2007 in response to protests
  - Clear process will be defined
  - MMU will have role

- Issues
  - No clearly defined role for MMU in process
  - Brattle study regarding market power. Draft study not shared with MMU.
  - MMU will respond to Brattle report
  - MMU will make more detailed proposals regarding scarcity and market power rules
  - MMU will provide data and analysis for members as requested

