

MARKET MONITORING ISSUES

MIWG
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PJM West Market Power Analysis

- MMU analyzed facilities comprising likely interface between AP and PJM
- Goal: to determine if generating units should be exempt from cost capping when required to control for constraints on the interface consistent with the exemption for the east, central and west interfaces in PJM as specified in the OA



PJM West Market Power Analysis

- Pruntytown-Mt. Storm 500 KV for the loss of Hatfield-Black Oak 500 KV
- Control available from units owned by two companies (89%)
 - Distribution factors > 5%
 - HHI = 4,084
 - Distribution factors > 10%
 - HHI = 4,308
- Bedington-Black Oak 500 KV for the loss of Pruntytown-Mt. Storm
- Control available from units owned by three companies (84%)
 - Distribution factors > 5%
 - HHI = 2,726
 - Distribution factors > 10%
 - HHI = 4,308



PJM West Market Power Analysis

- Doubs 500 KV T1 for the loss of Doubs-Brighton 500 KV
- Control available from units owned by one company (100%)
 - Distribution factors $> 5\%$
 - HHI = 10,000



PJM West Market Power Analysis

- Conclusions
 - No AP-PJM interface transmission facilities for which there is adequate competition to permit waiver of the cost-capping rule
 - Situation is more complex than that examined by Joskow-Frame
 - Consider designing rule that would permit waiver of cost-capping under certain conditions
 - Ownership structure of units which can be used to control for constraints
 - HHI measures
 - Other measures



Cost Capping New Units: Issues

- Issues associated with cost capping new units in PJM
- Incentives to build
- Local market power
- Ability to capture monopoly rents
- Ability to capture scarcity rents
- Available alternatives to new unit
 - Potential entry
 - Transmission
 - Load shedding
- Value of alternatives
- Distinction between new and existing units
- Available alternatives to cost capping rule
 - Market approaches (measure of competitive price)
 - Non-market approaches (RMR contracts)



Day Ahead Cost Capped Units

- Units which are cost-capped in the day ahead market may be unavailable in real time due to forced outage
- Risk for generation owner
- Incentives to operate
- Obligation of capacity resources



Day Ahead Cost Capped Units

- Proposal 1: Hold unit harmless from risk only if total MWh from unit owner in real time are less than total MWh from unit owner in day ahead market
 - $S(\text{DA MW}) < S(\text{RT MW})$
- Proposal 2: Hold unit harmless only if no replacement MW from unit owner
- Proposal 3: Hold unit harmless only if owner's net profit is reduced as a result of comparing replacement costs for tripped unit with additional net revenues from unit(s) not taken in day ahead market but which run in real time or could run profitably in real time. Unit held harmless to the point of equal net profits.
 - Unit 1: $(\text{Purchase Price}) * \text{MW}$
 - Units 2 to n: $S(\text{Price-Cost}) * \text{MW}$
- Proposal 4: Hold unit harmless only if market price $>$ offer price



Day Ahead Cost Capped Units

- Incentive Issues
- No special rule: High LMP \Rightarrow
 - High replacement costs
 - High incentive to return
 - High incentive to run more units
- With special rule: High LMP \Rightarrow
 - High replacement costs only if RT MWH $>$ DA MWH
 - Disincentive to run more units
 - $(\text{LMP} - \text{cost}) * \text{MW}$ for additional units $>$ $\text{LMP} * \text{MW}$ for cost capped unit
 - Reduced incentive to produce additional MW
- Are relevant units only those which can control constraint in real time or all unit owner units?



Day Ahead Cost Capped Units

- Incentive Issues
- Are relevant units only those that can control constraint in real time or all unit owner units?
- Units may be cost capped in day ahead market and not cost capped in real time (no need for units that control constraint in real time)
- Unit owner may not own additional units that can control constraint but does own units which generate additional MWh



Day Ahead Cost Capped Units

- Additional factors
- Withholding capacity to cover risk of non performance via high offers in day ahead market already addresses issue
- Incentives are relevant because the definition of a forced outage may be ambiguous