Mitigating Locational Market Power

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INTRODUCTION

What limits should be imposed on the offer prices of generators possessing local market power?

- One right answer is that, absent shortage conditions or opportunity costs, real-time offer prices should reflect short-run marginal costs.
- PJM's current mitigation procedures for locational market power are consistent with this principle.

INTRODUCTION

Another right answer to limiting generator offer prices is that the revenues of generation needed to maintain reliability must, over the appropriate horizon, recover not only its short-run marginal costs but all of its going-forward operating costs.

- If new investment is required, new generation must recover not only its going-forward operating costs but also its return of and on investment.

INTRODUCTION

A third answer is that the bid cap should not:

- Undermine the incentive of the generation owner to reduce either incremental costs or avoidable operating costs.
- Undermine the ability of the generation operator to reflect appropriate opportunity costs in its offer price (as in the case of an energy-limited resource).
- Interfere with price signals during shortage conditions.

How then should we address situations in which offer prices capped at short-run incremental cost do not recover the going-forward avoidable operating costs of needed capacity?

Some of the alternatives include:

- ICAP payments
- Uplift/make-whole payments
- Ancillary service revenues
- Proxy bid caps that exceed incremental costs
- Allow uneconomic generation capacity to exit until prices based on real-time load response recover going forward costs.

ALTERNATIVES — ICAP

Bid caps triggered by congestion and tied to short-run marginal cost combined with ICAP payments have some limitations as a solution to the problem:

- Marketwide ICAP payments would only by coincidence be sufficient to maintain the economic viability of generation in load pockets.
- Locational ICAP payments can provide a mechanism to keep needed generation in operation in a load pocket but if there is locational market power in the energy market, a locational ICAP market would merely shift the market power problem from the energy market to the ICAP market.

Another approach would be to combine bid caps tied to short-run marginal costs with uplift payments that would make the generator whole for its going-forward costs. This approach also has several limitations:

- No opportunity for demand-side resources to compete with load pocket generation.
- Make-whole payments will likely undermine the incentive of the generator to reduce its costs.
- Uplift-based compensation system may not provide any mechanism for generation or transmission entrants to compete with incumbent generation.
- Uplift-based system will undermine forward contracting incentives by load, as load with forward hedges will still pay uplift.

It is also possible that ancillary service revenues might be sufficient to make generators whole with respect to their going-forward costs.

- Absent locational ancillary service requirements, these revenues would provide the required revenues only by coincidence.
- If locational ancillary service requirements exist and it is appropriate to model these requirements with a downward sloping demand for ancillary service capacity, a competitive outcome may be feasible but these circumstances may exist only in a few local markets.

PROXY BID CAPS

A final approach would be for congestion to trigger bid caps that exceed the current short-run marginal cost of generation but are designed to allow the generation owner to recover its going-forward costs.

- Offers of mitigated units could set LMP prices.
- Offers of mitigated units would still be constrained by competition with demand-side resources and generation.
- Elimination of uplift would permit forward contracting and generation and transmission entrants could compete with incumbent generation in forward markets.
- The bid cap could be indexed to fuel prices and perhaps to other general cost indexes but would not vary with the costs of the incumbent generators.

PROXY BID CAPS

One potential limitation of this approach is that wholesale market prices would not equal short-run incremental cost, but this may not be a critical limitation in these circumstances.

- If the generation resource has market power, this means that the generator has few good substitutes and that an increase in the offer price would not materially change the dispatch.
- While the energy price paid by net loads would exceed short-run incremental cost, this would be offset by reduced uplift payments if uplift costs are borne by loads.

PROXY BID CAPS

Regardless of the mitigation strategy, determination of whether market power exists and analysis of the amount of capacity to be mitigated is a significant inquiry.

- There could be an unacceptable potential for the exercise of market power even if no single supplier is "pivotal."
- Long-term obligations to supply load may mitigate what would otherwise be an unacceptable potential for the exercise of market power.
- Assessment of "pivotal" suppliers and the potential for the exercise of market power needs to take account of both energy and ancillary service demand.

FINANCIAL ALTERNATIVES

Market power mitigation does not necessarily need to be based on bid caps. An alternative approach would be to assign financial obligations to generators potentially possessing market power. These financial obligations could include:

- A forward sale of a block of energy at a price that is indexed to a fuel cost index and a general cost index.
- An option contract entitling the holder to buy a block of energy at a price indexed to fuel and general cost indexes.
- An FTR that obligates the generator to pay the FTR holder the difference between the LMP price at the generator's location and a location outside the constrained area.
- The assignment of the option contract would require a payment or would reduce the sale price of the generation.

FINANCIAL ALTERNATIVES

If financial mitigation mechanisms can be put in place prior to divestiture, they can have a number of potential advantages.

- Financial obligations that are independent of unit status cannot be circumvented through physical withholding.
- There is no need for a proxy bid cap.
- Generators subject to financial mitigation are free to manage unit availability as they see fit, and they absorb the financial consequences in covering their financial obligations.
- The financial instruments can be auctioned and the sales revenues credited against the stranded costs of the divesting utility.

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