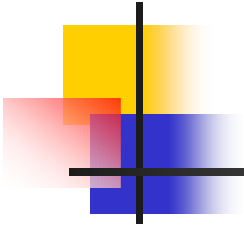


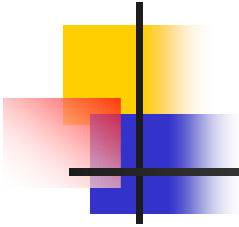
Market Surveillance Committee Activities—September 2004

By
Frank Wolak
Chairman of the ISO Market Surveillance
Committee



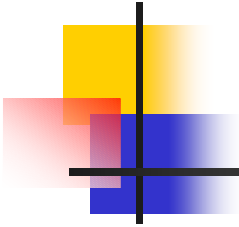
Four Opinions in Progress

- Trading Hubs Solution to the Seller's Choice Contracts and Virtual Bidding under LMP Market Design
- Alternative Market Designs that Avoid Seller's Choice Problem
- Existing Transmission Rights (ETCs) under full network model
- Local Market Power Mitigation for Energy, Ancillary Services and Residual Unit Commitment Capacity Under LMP Market Design



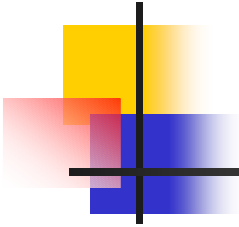
Trading Hubs and Seller's Choice Contracts

- Trading Hubs would be defined based on nodes contained in existing congestion zones--NP15, SP15 and ZP26
 - Trading hub prices computed as average of nodal prices
 - All contract deliveries occur as inter-SC trades at trading hub
- Major issues to be resolved
 - Generation nodes versus load nodes to define hubs
 - Methodology to compute weights—(quantity-weighted or simple average)
 - Frequency weights are changed—(daily, monthly, and annually)
 - Consistency with CRR definition and allocation process
- Crucial issue to solving seller's choice contract problem
 - Make contract deliveries physically feasible
 - Can only deliver to a location in network (in total) as much energy as is actually produced at that same location in network
 - Trading hub solution works only to the extent it meets this goal



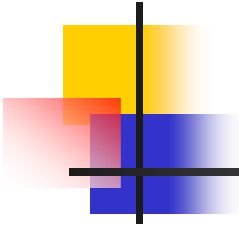
Virtual Bidding under LMP

- FERC has ordered CAISO to implement virtual bidding at start of LMP market
- Major issues associated with implementing virtual bidding
 - Should it be at all nodes in network or only at trading hubs
 - New York ISO only allows it at zonal level
 - PJM allows virtual bidding at all node in network
 - How to limit potential market power problems associated with virtual bidding
- MSC thoughts/recommendations on this issue thus far
 - Virtual bidding can improve market efficiency by allowing financial arbitrage of price differences for like products with little, if any, reliability consequences
 - Virtual bidders must post financial bonds similar to what is necessary when a firm purchases similar financial instruments such a future contracts or shares of a stock using margin account
 - Virtual bidders should also have total MWh position limits on the outstanding amount of virtual trades
 - If virtual bidding is restricted to trading hubs then ISO should ensure that hub definitions are as similar as possible across their various uses
 - Delivering seller's choice contracts
 - Point where virtual bidding is allowed
 - Load aggregation points (LAPs) used to determine price loads pay for spot energy purchases



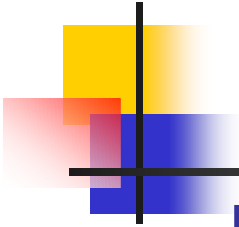
Existing Transmission Rights (ETCs) in Full Network Model

- ISO will no longer hold out full ETC capacity in day-ahead scheduling process
 - ETC holder will only be allocated capacity scheduled in day-ahead market
 - Additional ETC capacity requests will be handled in subsequent ISO markets with no financial consequences to ETC holders
 - ISO will reserve sufficient CRR capacity from full network model to keep ETC holders financially harmless
- Important issues relating to honoring ETC contracts
 - Precisely how were ETC contracts honored during pre-ISO regime to help for determining whether contractual rights are being honored
 - Quantifying market efficiency benefits of proposed approach to honoring ETCs
 - Long-start units more likely to be dispatched in day-ahead market
 - Strong incentives for ETC holders to schedule more capacity in day-ahead market
 - How to determine amount of CRR capacity to allocate to ISO to hold ETC holders financially harmless



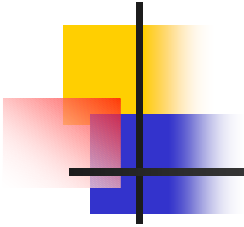
Alternative Market Design that Avoids Seller's Choice Contracts Problem

- Seller's choice contract problem is avoided by CAISO not setting LMPs
 - ISO's Transitional Alternative Pricing and Settlement (TAPAS) runs full network model to determine day-ahead dispatch but does not set nodal prices
 - Zonal prices based on either weighted-average of LMPs or through a zonal price-setting process
- TAPAS proposal involves incurring virtually all of the set-up costs of the proposed LMP market, but does not take advantage of many of the benefits of an LMP market
- Several MSC members believe an approach that requires significantly less up-front costs is available
 - During first two years, California market had relatively good market performance
 - Significantly more Reliability Must-Run (RMR) units available during this period
 - CAISO operators have recently expressed an interest in more RMR units under LMP market design
 - California now has substantial level of forward contracts to protect loads
 - Major problem that lead to June 2000 to June 2001 meltdown no longer exists
 - CPUC is implementing resource adequacy policy that involves buying energy where it can be consumed
- Proposed solution--Designate enough RMR units to operate existing zonal market at April 1998-December 1999 reliability levels



Local Market Power Mitigation

- CAISO revising its local market power mitigation (LMPM) mechanism under an LMP market
 - System-wide AMP for imports
 - Implementing an LMPM mechanism for RUC
- MSC thoughts/recommendations on these issues
 - MSC has long felt that AMP for imports or even system-wide AMP does not limit the exercise of market power and may even enhance the ability of suppliers to exercise market power
 - AMP makes it costly for suppliers to bid low because reference prices depend on level of accepted bids
 - AMP does very little to prevent high prices current price cap, input costs and limits on bid conduct test
 - AMP likely to chase away imports at the time the California really needs them
 - Given level of forward contracts held by California loads, it may be more important to attract supply to state than limit prices and encourage reliability problems
 - LMPM for RUC capacity is necessary given local market power possessed by many RUC suppliers
 - ISO's proposed conditions for mitigating bids for RUC capacity should address these market power concerns
 - Setting bid reference levels creates same perverse bidding incentives as those that exist for AMP
 - Two possible solutions to setting mitigated bid levels
 - RUC capacity bids are fixed for an entire year
 - Mitigated RUC capacity is a price-taker in the RUC price-setting process
 - Similar to proposed approach in Texas Nodal market



Other MSC Activities

- Ongoing research on performance of California ISO's energy and ancillary services markets
 - Extent of unilateral market power possessed by major suppliers to California market
 - Measuring market inefficiencies in California market
 - Comparing California market performance to other US and international markets
- Participation in CPUC proceedings
 - Bushnell and Wolak participated in April 2004 direct access hearing
 - Bushnell and Wolak will participate in upcoming installed capacity conference