



MARKET MONITORING AND RESOURCE ADEQUACY CONSTRUCT

RAM/CRMWG
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Capacity Market Issues

- Time/percent of commitment
 - Relationship between number of years out and supply-demand balance
 - Farther out is forecast obligation, higher probability of market being “short” (demand > supply)
 - Object should not be to make market short
 - Object should be to reflect reasonably current market conditions
 - Proposal: Forecast load obligation one year ahead
 - Consistent with current reserve margin calculations
 - Inclusion of new resources
 - Can participate in meeting forecast obligation
 - Bilateral forwards could be used
 - Could use percent of forecast obligation farther forward
 - If the capacity market works, new capacity will receive the appropriate incentives regardless of the exact forecast period
 - Forecast error is a function of number of years out



Capacity Market Issues

- Number of intervals
 - Proposal: One interval per year
 - Capacity obligation is an annual concept
 - Auction based transfer price addresses load shift issues
- Market design
 - Central ISO procurement
 - ISO is never buyer/never takes a market position
 - ISO never incurs financial obligation to any party
 - ISO incurs no credit requirements



Capacity Market Issues

- Offer requirements
 - All load obligations are bid, by definition
 - Proposal: All resources must be offered
 - All capacity offers linked to specific units
 - Performance risk of unit remains with unit owner
 - Bilaterals are purely financial - Contracts For Differences (CFD)
 - No sales of capacity credits - capacity credits do not exist
 - No tracking of capacity credits
 - No sales of capacity credits not linked to specific units
 - No speculative positions
- Measure of capacity
 - Unforced capacity
- Load management
 - Included (ALM concept)



Capacity Market Issues

- CDR/Offer Cap
 - Proposal: Offer cap = 1 x CDR
 - Proposal: Supplier penalty = 1 x CDR
 - CDR should be updated to reflect current market conditions
 - Regular updates of CDR
 - Potential locational differences in CDR based on locational cost differences, if supported, e.g. labor, land and resource costs
 - A load penalty is not relevant in a central procurement auction
 - Only potential relevance is measure of scarcity
- Determination of total RTO resource requirement
 - RTO planning process
 - Participant input
 - States input



Capacity Market Issues

- Auction structure
 - Formal structure
 - Relevance of maximum offer price
- LSE price
 - Central auction clearing price
- LSE transfer price
 - Central auction clearing price prorated by days
 - Load shift carries capacity obligation
 - If load shifts after 60 days, 305 days of obligation shift (365-60)
 - Cost of load obligation = $(305/365) * \text{clearing price} * \text{MW load}$
- Reconfiguration auction
 - Bilaterals
 - Basis for requirement?
 - Should not set clearing price
 - Thin “market”



Capacity Market Issues

- Shortage of supply
 - Shortage of resources will be reflected in price duration curve in energy market
 - Could be reflected in CDR/maximum offer price for auction



Market Power

- Market power
 - Market power endemic to capacity markets
 - Ex ante, enforceable market power screens required
 - Market power screen should define maximum offer price for capacity



Market Power Screen

- Offer price cannot exceed marginal cost of capacity
- Marginal cost of capacity includes:
 - Short run variable costs of providing capacity over annual obligation period
 - Supply side
 - Demand side
 - Opportunity costs
 - Sale of firm energy out of relevant market
 - Cost of interrupting load/business process
 - Annual going forward costs of maintaining units in market net of expected revenues from other sources including energy markets, ancillary services and operating reserves
 - Annual carrying costs of new capacity net of expected revenues from other sources including energy markets, ancillary services and operating reserves



Market Power Screen

- Maximum offer price for new units can be modified to reflect scarcity for a specified supply/demand balance
- Result is upward sloping supply curve of capacity
- Price results from interaction with demand (forecast load obligation)
- Price increases as market tightens
- Price decreases as excess supply increases