

ROUNDTABLE DISCUSSION ON ANCILLARY SERVICES MARKET DESIGN

Regulation Market Enhancements for the New England Markets

- **Implementation of the Proposed Regulation Market (PRM) is long overdue and should not be delayed because of other ASM issues.**
 - **Pre-SMD regulation market contained features included in the PRM**
 - **Urgency to implement SMD prevented full implementation existing features of the regulation market.**
 - **Some Participants urged FERC to implement all features of the regulation market as soon as possible**
 - **FERC ordered ISO-NE to provide quarterly status report on regulation market development efforts**

Regulation Market Enhancements for the New England Markets

- **Implementing ASM in Phases is strongly supported by Participants (98% vote)**
 - **Allows PRM to be implemented in 2005 in Phase I while allowing additional time to resolve other ASM issues in Phase II**
 - **PRM will encourage quick response regulation giving ISO needed control to maintain inter-pool tie flow and system regulation in response to changing power system conditions**

- **PRM as proposed should be implemented in 2005 - incremental changes to this market can be made in the future as required.**

Re-Offer Period

OBJECTIVE - Mitigate Fuel and Operational Risk Exposure

- All Resources Can Re-Offer Incremental Energy Offers During Re-Offer Period
- Subject to mitigation, real-time dispatch and market settlement will be based on incremental energy offers in market system at close of re-offer period
- Only incremental energy offer Price/Quantity Pairs for full capability ranges can be changed during the re-offer period for resources clearing in DAM

UNDER SMD

- Price/Quantity Pairs entered for full 24 hour period rather than hourly
- Dual-fueled units lost ability to have both fuels recognized in real time markets on the same day - resource clearing in DAM cannot enter changes during re-offer period for price or differing fuel types

Re-Offer Period

FEATURES

- Day Ahead resource commitment not revised by submitted re-offers.
- Day Ahead obligations must still be satisfied by either actually generating or by buying from the Real-Time Markets.
- Net Commitment Period Compensation (NCPC) would be modified to remove all Day Ahead components from the real time calculation.
- Simple software change that will allow generating resources greater flexibility in pricing - can be easily undone if market issues dictate.

Re-Offer Period

- Preserve rule that resources are not eligible to set price at economic minimum (EcoMin)
- Dual units that re-submit into the market system a more readily available but higher priced secondary fuel would have to submit price pairs for all hours and not just the hours in which they clear in DAM
- This could require these resources to submit a self-schedule for the hours in which they cleared the DAM to meet their schedule, consume the fuel committed for purchase and to avoid having an energy deviation if the day-long price change results in the resource not being in merit in the Real Time Market.

External Transactions Setting LMPs

- Currently the market rules prohibits external transactions from setting the Real Time Energy Clearing Price
 - Externals are committed on an hour long basis and therefore have been deemed inflexible
 - The ISO, however, only commits these resources when they forecast them to be of value for the entire hour
 - The result is a seam where the highest priced resource may be external and that price is not reflected in the internal markets

- Phase 1 of the Ancillary Services Market will change this
 - Externals, if in merit, will set the Real Time Energy Clearing Price
 - This will end the different treatment of internal and external resources, eliminating a seam that distorts the market
 - The change will be made as part of Phase 1 of the Ancillary Services Market with implementation in October 2005

Demand Participation in Markets

- **Principles:**
 1. **Resource Parity**
 2. **Functional Equivalence**
 3. **Independent Payment for Distinct Products**

- **Practical Market Design and Evolution**
 1. **Capacity – Reliably meet Peak Demands**
 2. **Reserve – Effectively address Contingencies**
 3. **Energy – Efficiently set Prices**

Demand Resources

- Reiterate: demand is a market resource
- Accommodate “technical” aspects of DR
- Embrace pilot projects and special studies
- Initially, allocate costs as “market development”
- Provide DR a place at the table
- FERC and ISO leadership is critical

Demand Response

- Some end-use customers have the capability to provide same benefit to system as do supply-side resources
- Current “programs” recognize only a portion of this benefit – all recognize some portion of the energy benefit; some programs recognize the capacity benefit
- Demand-response participation in the day-ahead market and in the provision of ancillary services is conspicuous in its absence
- All customers that have the capability to provide services that are functionally equivalent to supply-side services should have the opportunity to realize:
 - Energy value
 - Capacity value
 - Ancillary service value
- Equilibrating the opportunities must be a top market priority

Reserve Market Design

- *“Provide price signals that encourage efficient provision of system and locational operating reserves”*
 - Must carefully consider how this market will interact with, supplement, overlap, complement, or require modification of other markets designed to help achieve this same objective (e.g., LICAP)
 - Proper choices must be made for the type/quantity/location of reserves purchased in the forward auction (including proper adjustments for transmission upgrades and generation changes), the benchmark capacity/cost (if any), price-setting mechanism, market monitoring, etc.
 - Most important decision may be on the proper adjustments for revenues between the Locational ICAP Market and the Locational Forward Reserve Market
- *“Improve market pricing during supply shortage conditions”*
 - Must carefully determine and justify the level of the Reserve Constraint Penalty Factors that will be used to produce shortage prices
 - Is the potential to double the energy clearing prices \$2,000/MWh when short of TMSR appropriate or efficient? What level is needed by the market(s)? How will RCPF levels affect other markets?
- *“Enable demand to participate directly”*
 - Direct participation by demand resources in these markets is important
 - “Asset Related Demand” must be carefully designed so as not to undo the carefully chosen eligibility requirements for Special Case Nodal Pricing (5MW - No aggregation) supported by NEPOOL and approved by the Commission.

Reserve Market Design

- Proper design reveals the cost of operator decisions to obtain required levels of reserves.
 - ISO proposal fails to price resources committed by the system operator to obtain reserves.
- Proper design compensates those that actually provide the required services.
 - ISO proposal fails to pay some resources committed to provide reserves.
- Proper design bases economics of forward pricing on expectations of real time pricing.
 - Pricing in ISO Forward Reserve Market is driven by penalty considerations, not real time prices.
- Operating commitments for reserves will dampen price signals in both the Real-Time Reserve and Energy Markets.

Day-Ahead Reserve Market

- All reserves needed are purchased.
- All resources selected to provide reserves are compensated.
- Links economics of real-time operations to day-ahead decisions.
- Market mechanism for selection and pricing is consistent with ISO operating practice.
- All resources able to compete on equal footing.
- Eliminates bulk of RMR Operating Reserve Costs.

Reserve Market Design

- Design Criteria
 - In scarcity, energy and reserves have equivalent value
 - Product and price cascading
 - Reserve service has value in non-scarcity conditions
 - Market pricing must reflect operational decisions
 - Locational, temporal
- Current proposal advances the cause
 - Portfolio plus bilaterals
 - Demand participation
 - Improved scarcity pricing
 - Improved locational treatment
- Key issue is how we take the next step
 - Providing non-scarcity valuation
 - Pricing daily reserve commitment decisions
 - Linking real-time providers with real-time payment