Market Operations Task Team
Meeting Notes
October 31, 2002

Discussion Summary

The Market Operations Team (MOT) met the morning of October 31st. Discussion focused form of the capacity market, market participation by non-dispatchable resources, the penalty paper, calculation of energy clearing prices and updating the MDWG topic task table.

Discussion Notes

1. Capacity Markets:

    a. Mike Wissink provided a oral review of practices in other ISO/RTOs

    b. Participation in capacity markets requires pre-qualification, e.g.,
        i. AGC capability for regulation
        ii. Frequency responsive reserve for spin

    c. Need to look at current practices
        i. NYISO may be applicable because they address locational issues.
        ii. PJM does not consider location. Do they allow capacity import? If so, what transmission requirements?
        iii. NWPP practice for reserve requirements?
        iv. CAISO MD02?
    d. Objective function issues:
        i. Optimization between energy and capacity markets – sequential & iterative or simultaneous?
        ii. Ren Orans to write paragraph describing an appropriate objective function.

2. Non-Dispatchable Resources:

    a. Non-dispatchable resources include wind, fixed block output (e.g. run of ditch), etc. whose common feature is an inability to respond to dispatch signal.
        i. The big concern is application of penalties for inability to forecast or inability to respond.
        ii. Wind developers have proposed a certified forecasting mechanism providing best information day-ahead with update to real-time.
        iii. Non-dispatchable resources are price takers, if they meet standards for their type of resource, are penalties avoided?

iv. Concern was expressed about regulation/reserve burden of variable output resources
    1. As a percentage of total supply, does variability have a significant cost impact?
    2. Is the variability greater that that of variable loads? How are they handled?

v. The sense of the team was that the resource can be given a choice whether to bid or not.
    1. If the resource bids it would have to meet standards and risk penalties for non-performance.
    2. If the resource chose not to bid, it would be a price taker.
    3. Tom Foley and Jim Hansen to draft description of approach.

3. <u>Penalties:</u>
    a. Imbalance penalties
        i. What needs to be defined now?
            1. Concept of a two stage test
            2. Nature of application
                a. Scale mismatch between day-ahead and real-time
                b. Frequency of occurrence.
        ii. What can be defined later?
            1. Actual trigger levels and $ values
            2. Could be placed in attached schedules to make more tariff more adaptable.
        iii. Ren Orens to generalize Linc Wolverton's draft

    b. Failure to Perform by selected A/S bidders – general approach described in Market Operation Template
        i. Don't get paid for service not provided
        ii. Pay cost of replacing undelivered service
        iii. Repetitive failure can result in disqualification
        iv. Probationary performance requirements before reinstatement of qualification to supply.

    c. Dynamic schedules make adjustments up to real time. Should there be a dead band allowed for such adjustments? Ron Schellberg to draft discussion of issue.

4. <u>Energy Clearing Prices</u>:

    a. Reviewed possible states of activity for energy market as shown in Table 2 – purpose of the day's discussion was to better understand

Method 2 applicable to clearing only congestion in day-ahead market.

b. Concept as developed thus far is an objective function that minimized the absolute value of revenue exchanged to clear congestion. This brings the solution down to the "feasibility frontier" but does not search for the minimum value on surface. Don't get paid for service not provided
    i. Need further clarification of method and its impacts.
    ii. Examples sent out by Ray Brush cover two different methods for setting the energy price under the "clear only congestion" method.
    iii. Does this method apply only day-ahead? (see Table 1 for options.) If so does it create an unintended arbitrage of price spread between day-ahead and real-time?
    iv. General discussion about the nature clearing price auctions under the usual ISO implementation.

Table 1
Application of Methods

	Balanced Schedules	Unbalanced Schedules
Method #1 Security Constrained Dispatch	Day-Ahead Real-Time	Day-Ahead Real-Time
Method #2 Minimal Redispatch	Day-Ahead (Real-Time?)	Not Applicable

Table 2
Energy Market Activity States

	State #1: Congestion Clearing For Balanced Schedules	***State #2: Trade Among Balanced Schedules***	***State #3: Resource Long Unbalanced Schedules***	***State #4: Resource Short Unbalanced Schedules***
Nature of Schedules Submitted to RTO West	Resources must be submitted to cover full load	Resources must be submitted to cover full load	Resources must be submitted to fully cover load	Resources *need not* be submitted to fully cover load
Inc/Dec Bids	From resources covering loads in schedules	From resources covering loads in schedules	From (1) resources covering load in schedules and (2) other resources offering energy	From (1) resources covering load in schedules and (2) other resources offering energy
Day-Ahead Resource Adequacy	Matched by schedule requirements	Matched by schedule requirements	Resources greater than load scheduled	If resources less than load scheduled then: • Load curtailments? • Must offer obligations?
Type of Redispatch	Minimal redispatch occurs to clear congestion	Security constrained dispatch minimizes the cost to serve the next increment of load at each node	Security constrained dispatch minimizes the cost to serve the next increment of load at each node	Security constrained dispatch minimizes the cost to serve the next increment of load at each node
Redispatch Changes to Schedules With Inc/Dec Bids *(willing buyers & sellers)*	Only sufficient to clear congestion with trades among who those who submitted inc/dec bids	As necessary to produce beneficial trades among those submitting inc/dec bids	As necessary to produce beneficial trades among those submitting inc/dec bids	Subject to resource adequacy procedures, as necessary to produce beneficial trades among those submitting inc/dec bids
Redispatch Changes to Schedules Without Inc/Dec Bids	None	None	None	None (?)