

PJM Real-Time Energy Market

PJM State & Member Training Dept.

Objectives



Students will be able to:

- Identify the process and procedures for participating in the Real-Time Energy Market

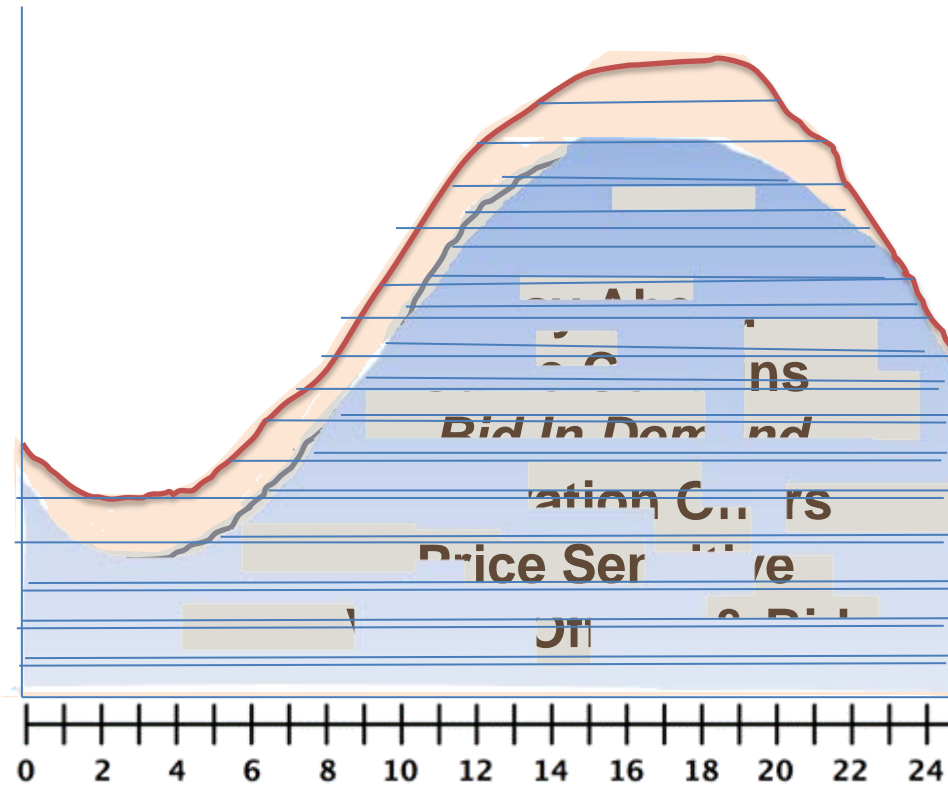
Real Time (Balancing) Market

- The balancing market is the real-time energy market in which the clearing prices are calculated every five minutes based on the actual system operations security-constrained economic dispatch
- The balancing settlement is calculated based on deviations between day-ahead scheduled quantities and real time operations (two-settlement process)
- Net capability is verified through normal operational data and/or summer or winter net capability testing
- The Real-time Energy Market allows generators and demand resources to alter* their bids for use in the Real-time Energy Market:
 - during the Generation Rebidding Period: Results of the Day-ahead Energy Market until 1415
 - Starting at 1830 (typically after the second resource commitment is completed) and up to 65 minutes prior to the start of the operating hour

Transition from Day-Ahead to Real Time

- Day-Ahead results are posted at 13:30
- Rebid period is 13:30-14:15 & begins Real Time Settlement
- Second commitment to ensure that there is enough generation to meet the real-time load forecast
- Gives units not picked up in day ahead the opportunity to change their offers/parameters
- Reliability Analysis begins at 14:15
- Committed units will be notified by phone

Reliability Analysis (RA)



- Re-bid period closes at 14:15
- For the RA, focus is reliability
- Analysis includes:
 - Updated offers
 - Unit availabilities
 - PJM load forecast
 - DASR Objectives

Balancing Market Timelines – Intraday Offers

- Resources that are opted-in to intraday offers may make changes beginning at 18:30 the previous day up to 65 minutes before the operating hour
 - Changes may be made to MW and Price values on the Schedule Offer Updates page in Markets Gateway
 - Changes may be made to Startup, No-load, Notification Time, and Min Runtime in the Schedule Detail Updates page in Markets Gateway
 - Dual-fuel units may make changes to schedule availability on the Availability Update page in Markets Gateway
 - If a unit must change fuel to remain online, they must choose another available schedule

Balancing Market Timelines – Unit Hourly Updates

- Unit Hourly Updates may be changed during the operating day for the current hour or future hours
 - Any changes that are made during the current hour will be prorated to reflect the change only for the remainder of the hour
 - Any changes that are made for future hours in the current operating day will be fully reflected for that hour
 - Unless directed by PJM, actual changes made to a unit's output must be verbally coordinated or indicated via PJM tools prior to the change

Unit Hourly Updates

- The Unit Hourly Updates page is used to submit real-time changes to unit statuses and MW operating information
- Changes made to the unit data using the Unit Hourly Updates web page supersede all
 - Schedule data (Schedule web pages)
 - Weather curve data (Unit Detail web page)
 - Unit limits (Unit Detail web page)



Unit Hourly Updates – Commit Status

- **Economic:** Unit is available and offered into the market for PJM to schedule
- **Must Run:** Indicates that the generating unit is self-scheduling
 - Unit MUST be committed
 - The unit is committed at economic min and allowed to move up to Economic Max
 - **Note:** To fix output, make economic min and max the same value
- **Emergency:** Entire unit is placed in “Max Emergency” category and will not be scheduled unless PJM calls for max emergency generation
- **Unavailable:** Unit is out of service and will not be scheduled
 - **Note:** Must have a corresponding outage ticket in eDART if a capacity resource

Unit Hourly Updates – Fixed Gen

- **Fixed Gen:** This field should be set to yes if a generation resource intends to remain “fixed” or otherwise not follow PJM real-time dispatch
 - The field is not used by the Day-Ahead market



Questions?

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The Member Community is PJM's self-service portal for members to search for answers to their questions or to track and/or open cases with Client Management & Services