Harvard Electricity Policy Group

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PJM Member Options for Energy Supply

Future Contracts

Self-scheduled own resources

Bilateral Transactions

PJM Day Ahead Market

PJM Real-Time Energy Market

Retail Load Profile True-up

Customers

Industrial

Residential

Other Buyers
Energy Market Mechanisms

- The PJM Market supports a variety of financial contracts that are physically feasible but are separate from the physical spot market.
- The separation of these financial contracts from the physical dispatch allows the markets to support reliable power system operations.
  - Day-ahead Energy Market
    - Creates a set of financially binding schedules that are physically feasible
    - Virtual Demand Bids and Supply Offers
    - External transactions may submit separate Day-ahead financial energy profile
  - Financial Transmission Rights
  - Financial Energy Contracts
Anatomy of a Financial Bilateral Transaction

Load and generation implicitly pay congestion by paying (receiving) LMP
Transactions explicitly pay congestion by paying (receiving) LMP difference

Net Congestion Result between D and A
LMP (D-A)

Calculated Congestion
LMP [(D-C)+(C-B)+(B-A)] = LMP (D-A)
Transmission System Congestion

Transmission system congestion occurs when available, low cost supply cannot be delivered to the demand location due to transmission limitations.

Types of Transmission Limits
- Thermal Limits
- Voltage Limits
- Stability Limits

System Operator Control Actions
- System Reconfiguration
- Transaction Curtailments
- Re-dispatch Generation/Load
• MISO and PJM staff are developing an interregional coordination procedure.
  – Ensures smooth transition to markets by coordinating TLR procedures with LMP-based congestion management.
  – Provides interim method to ration transmission utilization between regions.
  – Implementation in May 2003.