



FERC Technical Conference: Review of PJM's Compliance with FERC Wholesale Power Market Platform

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Key Lessons Learned To Date:

- PJM system worked as designed: New England ISO and PJM “bounded” the problem;
- Eastern Interconnection is one large synchronous motor—regional differences can take us just so far;
- Regional planning is key and can help “jump-start” regional efforts throughout the U.S. Simple coordination among companies is clearly not sufficient;
- We need to be wise about infrastructure investment---markets and LMP price signals are needed to ensure that the right infrastructure is built in the right locations.
- An incentive-based rate structure should complement the regional planning process.

- **FERC's Market Efforts Per the White Paper are on the Right Track:**
 - “The main thing is to keep the main thing, the main thing”
 - Correct mix of need for standardized attributes while respecting legitimate regional differences;
 - Focus on Regional Planning: A critical first step that promotes rational and competitive infrastructure;
 - RTO participation is critical to moving markets and rational planning forward.

- 1927 – One of the world's first power pools
- 1993 – PJM independent entity status
- 1997 – Real-Time Energy Market (cost-based)
- 1998 – Locational Marginal Pricing
- 1999 – Capacity Markets and FTR Auction
- 2000 – Regulation and Day-Ahead Markets
- 2002 – Allegheny Power Integration, Spinning Reserves Market, Blackstart and RTO Status
- To Date in 2003 – Annual FTR and FTR Options Auction

Element of White Paper	PJM Status
1. Regional Independent Grid Operation	Compliant
2. Regional Transmission Planning Process	Compliant
3. Fair Cost Allocation for Existing and New Transmission	Compliant
4. Market Monitoring and Market Power Mitigation	Compliant
5. Spot Markets to Meet Customers' Real-Time Energy Needs	Compliant
6. Transparency and Efficiency in Congestion Management	Compliant
7. Firm Transmission Rights	Compliant
8. Resource Adequacy Approaches	Compliant

PJM is compliant with this element.

- ✓ Received RTO status in December 2002:
 - Independence
 - Scope and Regional Configuration
 - Operational Authority
 - Short-term Reliability
- ✓ Sole Provider of Transmission Service
- ✓ Sole Administrator of Tariff
- ✓ Sole Authority for Interconnection Requests
- ✓ Interregional Coordination

PJM is compliant with this element.

- ✓ Region-wide Planning Process
- ✓ Technical Assessments of Regional Grid
- ✓ Support State Authorities
- ✓ Independent Assessments of Needs for:
 - Reliability (including deliverability assessment)
 - Economic
- ✓ Cost Recovery Mechanism for Regional Transmission Expansions

PJM is compliant with this element.

- ✓ Region-wide Transmission Rate – Regional State Committees to Analyze Postage Stamp or License Plate Rates
- ✓ Elimination of Multiple Border Rates
- ✓ Regional Pricing Policy for Costs of New Transmission Expansions

PJM is compliant with this element.

- ✓ Independent Market Monitor
- ✓ Market Power Mitigation Measures
- ✓ Tariff Limitations on Bidding Flexibility Where There is Local Market Power
- ✓ Additional Filing on Local Market Power Mitigation in Preparation
- ✓ Clear Market Rules Designed to Prevent Market Manipulation Strategies

PJM is compliant with this element.

- ✓ Transparent Spot Market
- ✓ Real-Time Market
- ✓ Detailed Market Rules in FERC-Approved Documents
- ✓ Day-Ahead Market Integrated with Congestion Management System
- ✓ Ancillary Services Markets

PJM is compliant with this element.

- ✓ Congestion Management System
 - Protects Against Manipulation
 - Uses the Grid Efficiently
 - Promotes Use of the Lowest Cost Generation

- ✓ Transparent Market Mechanisms with Efficient Price Signals to Manage Transmission Congestion

PJM is compliant with this element.

- ✓ FTRs Available to Customers of an RTO
Using Locational Marginal Pricing (LMP)
- ✓ Allocations of FTRs Per Existing Contracts
and Service Agreements
- ✓ FTR Auctions Not Mandatory

PJM is compliant with this element.

- ✓ Region-Specific Determination of How to Provide Sufficient Resources to Meet Demand
- ✓ States to Review Approach to and Level of Resource Adequacy Mix Through
 - Generation
 - Transmission
 - Energy Efficiency
 - Demand Response
- ✓ RTO / ISO May Operate Capacity Markets

Although we believe we meet the White Paper requirements, there are continual opportunities for improvement:

- Implement revised committee procedures to ensure issues are tracked and all stakeholders can participate in the proposal development process.
- Capacity market reform through coordinated Resource Adequacy Model process.
- Further enhance the existing state/PJM Board MOU process.
- Develop demand-response element of economic planning model.

- **Reliability Improved**

- Improved generation equipment performance by nearly 35 percent since market incentives were introduced in April 1997.
- Improved generating unit performance translates into consumer savings of about \$1.2 million on a hot summer day.

- **New Power Supply Attracted**

- Regional transmission planning process creates proper incentives to attract future generation.
 - More than 7,500 MW on line
 - 7,500 MW under construction
 - 26,000 MW under evaluation
- New generation results in \$775 million of associated transmission system upgrades.

- **Wholesale Energy Prices Reflect Market Efficiencies**
 - Wholesale prices dropped to \$35.33/MWH in 2002 from \$43.63/MWH in 2001 – 25% hotter in 2002.
 - Nine all-time peaks in summer of 2002 – peak load served at an average of \$150/MWh as compared to \$900/MWh on peak days in 2001 (savings of about \$10 million to wholesale energy customers).
- **Demand Response Empowered**
 - PJM's demand response programs enabling customers to manage their own electricity costs grew 300 percent in 2002.
 - The most active 2002 demand side management hour lowered prices by more than 12%.