



Activities of the Market Monitoring Unit 2006

PJM Market Monitoring Unit
January 22, 2007

Background

By order issued March 10, 1999, the Federal Energy Regulatory Commission (“FERC” or “Commission”) accepted the Market Monitoring Plan filed by PJM as part of the PJM Tariff to be effective April 1, 1999.¹ The Commission found the ability of the Market Monitoring Unit (“MMU”) to effectively and broadly monitor and investigate the PJM Market to be essential in view of its contemporaneous decision to approve market-based pricing authority on offers to sell energy in PJM.² This report is posted pursuant to Section VII.C of the Plan.

Activities

The MMU’s primary objectives, as defined in Section I of the Market Monitoring Plan, are to:

(1) monitor and report on issues relating to the operation of the PJM Market, including the determination of transmission congestion costs or the potential of any Market Participant(s) to exercise market power within the PJM Region; (2) evaluate the operation of both pool and bilateral markets to detect either design flaws in the PJM Market operating rules, standards, procedures, or practices as set forth in the PJM Tariff, the PJM Operating Agreement, the PJM Reliability Assurance Agreement, The Reliability Assurance Agreement-South, the Reliability Assurance Agreement-West, the PJM Manuals, or PJM Regional Practices Document or to detect structural problems in the PJM Market that may need to be addressed in future filings; (3) evaluate any proposed enforcement mechanisms that are necessary to assure compliance with pool rules; and (4) ensure that the monitoring program will be conducted in an independent and objective manner. The Plan also prescribes reporting procedures that PJM will use to inform governmental agencies and others concerning its market monitoring activities.³

Section III of the PJM Market Monitoring Plan states:

The Market Monitoring Unit shall be responsible for monitoring the following:

- A.** Compliance with the PJM Market Rules.
- B.** Actual or potential design flaws in the PJM Market Rules.
- C.** Structural problems in the PJM Market that may inhibit a robust and competitive market.
- D.** The potential for a Market Participant to exercise market power or violate any of the FERC Market Rules.

Paragraph 2 of FERC’s “Policy Statement on Market Monitoring Units”⁴ states:

¹ 86 FERC ¶ 61,247 (1999) (“March 10 Order”).

² Id. at n.4 (citing Atlantic City Elec. Co., 86 FERC ¶ 61,248 (1999)).

³ PJM Open Access Transmission Tariff, Attachment M, “PJM Market Monitoring Plan”.

⁴ 111 FERC ¶ 61,267 (2005).

In order to achieve the stated purpose of enhancing the competitive structure of the ISO/RTO markets, MMUs perform several valuable tasks:

- To identify ineffective market rules and tariff provisions and recommend proposed rule and tariff changes to the ISO/RTO that promote wholesale competition and efficient market behavior.
- To review and report on the performance of wholesale markets in achieving customer benefits.
- To provide support to the ISO/RTO in the administration of Commission-approved tariff provisions related to markets administered by the ISO/RTO (e.g., day-ahead and real-time markets).
- To identify instances in which a market participant's behavior may require investigation and evaluation to determine whether a tariff violation has occurred, or may be a potential Market Behavior Rule violation, and immediately notify appropriate Commission staff for possible investigation.

The MMU performs economic analysis and monitoring of all the PJM markets including the Day-Ahead Energy Market, the Real-Time Energy Market, the Daily Capacity Market, the Interval, Monthly and Multimonthly Capacity Markets, the Regulation Market, the Spinning Reserve Market and the Annual, Monthly and Balance of Planning Period Auction Markets in Financial Transmission Rights (FTRs).

The ongoing market analysis and monitoring form the basis for all MMU activities, which can be categorized as monitoring of market participant behavior; market analysis submitted to FERC in formal proceedings; participation in FERC proceedings; provision of data to FERC; market analysis in the form of published and internal reports; recommendations regarding PJM market rules; participation in PJM committees and working groups; support of PJM in the administration of Commission-approved tariff provisions; industry briefings and presentations; and other activities.

The MMU posts all public reports, presentations and market messages and selected data on the PJM web page at this address: <http://www.pjm.com/markets/market-monitor/market-monitor.html>.

Monitoring

In its "Policy Statement on Market Monitoring Units," the Commission listed as one of the valuable tasks performed by market monitoring units: "To identify instances in which a market participant's behavior may require investigation and evaluation to determine whether a tariff violation has occurred, or may be a potential Market Behavior Rule violation, and immediately notify appropriate Commission staff for possible investigation."⁵ The PJM Market Monitoring Plan provides that, in addition to informing Commission staff, the MMU may "Engage in discussions with Market Participants regarding issues relating to their possible violations of the FERC Market Rules, in order to understand such issues and to attempt to resolve informally such issues or other issues

⁵ 111 FERC ¶ 61,267 (2005) at 2.

with Market Participants.”⁶ In fulfilling this role in 2006, the MMU monitored participant behavior and discussed relevant matters with FERC staff and with market participants. In addition, the MMU received and investigated confidential complaints. Additional details on most of these issues cannot be provided based on rules governing confidentiality.

A confidential complaint can reveal flaws in existing rules or procedures. The MMU then publicly proposes rule modifications while maintaining market participant confidentiality. In 2006, as a result of complaints regarding ramp availability, the MMU reviewed rules governing automated denials of ramp reservations and analyzed 16 months of related data. At the May 31, 2006 MIC meeting, the Market Monitor presented the analysis and recommended changes to the ramp reservation rules to improve the efficiency of and enhance the competitiveness of ramp use. Based on the MMU’s recommendations and a joint effort with PJM, rule changes were endorsed by the MIC and MRC and rule changes were implemented via modifications to PJM manuals.

FERC Activities

In its “Policy Statement on Market Monitoring Units,” the Commission stated that “MMUs perform an important role in assisting the Commission in enhancing the competitiveness of ISO/RTO markets.” In fulfilling this role in 2006, the MMU:

- Participated in FERC Office of Enforcement meetings for market monitors;
- Participated in bimonthly conference calls with the Office of Enforcement regarding current issues;
- Calculated and provided common RTO market metrics to FERC;
- Briefed FERC staff on the *2005 State of the Market Report* on March 8, 2006;
- Communicated regularly with FERC on market issues and attended ad hoc meetings at FERC;
- Provided data in response to requests from FERC’s Office of Enforcement;
- Met with Susan Court and FERC staff regarding proposed changes to PJM’s Market Monitoring Plan;
- Participated in a FERC conference on “Presentations on the Role of RTO/ISO Market Monitors” on May 18, 2006 (Docket No. AD06-7);
- Filed a supplemental affidavit as part of PJM’s Reliability Pricing Model (RPM) settlement materials in Docket Nos. ER05-1410 and EL05-148. In addition, the Market Monitor participated extensively in settlement negotiations, including settlement conferences and caucus meetings during June, July, August and September. The Settlement Agreement was filed September 29, 2006. On December 22, 2006 the Commission approved the settlement, with conditions;
- Filed an affidavit in Docket No. EL06-90 as part of PJM’s answer to PPL’s complaint regarding offer capping and real-time LMPs; and
- Participated in visits by FERC Commissioners and staff to PJM.

⁶ PJM Open Access Transmission Tariff, Attachment M, Section IV.C.1.

Reports⁷

In its “Policy Statement on Market Monitoring Units,” the Commission included as one of the valuable tasks performed by market monitoring units: “To review and report on the performance of wholesale markets in achieving customer benefits.”

The *2005 State of the Market Report*, published on March 8, 2006, fulfilled both the tariff reporting requirements and the criteria listed in the Commission policy by providing a comprehensive analysis of the markets within PJM and an assessment of the competitiveness of each market. The report also provides recommendations regarding retention and enhancement of market rules.

The MMU posts market data at <http://www.pjm.com/markets/market-monitor/data.html> to enhance market transparency.

The MMU wrote the following in 2006:

- “PJM Energy Prices – 2005: Response to Howard M. Spinner Paper” (April 21, 2006);
- “Marginal Fuel Information for Eastern PJM” (July 26, 2006);
- “Letter to the Editor” (Public Utilities Fortnightly, August 2006) in response to Howard Spinner’s June 2006 article;
- “Assessment of PJM Load Response Programs” (August 29, 2006);
- “Analysis of the Three Pivotal Supplier Test: March 1 through May 31, 2006” (September 8, 2006);
- “Analysis of the Combined Regulation Market: August 1, 2005 through July 31, 2006” (October 18, 2006);
- “Analysis of the Three Pivotal Supplier Test: March 1 through August 31, 2006” (October 18, 2006); and
- “Activities of the Market Monitoring Unit 2005” (December 29, 2006).

In response to requests from government agencies, the MMU prepared the following:

- Monthly reports on the ComEd, AEP and Dominion control zones;
- Six reports and a letter on the expected impacts of the proposed merger of PSEG and Exelon for the New Jersey Board of Public Utilities:
 - PSEG/Exelon Merger Sensitivity Analyses Revised (February 9, 2006);
 - PSEG/Exelon Merger Sensitivity Analyses (February 17, 2006);
 - PSEG/Exelon Merger Sensitivity Analyses (March 1, 2006);
 - PSEG/Exelon Merger Sensitivity Analyses (April 19, 2006);
 - PSEG/Exelon Merger Sensitivity Analyses (April 21, 2006);
 - PSEG/Exelon Merger Sensitivity Analyses (July 24, 2006); and
 - MMU Reply Letter to Exelon & PSEG July 24, 2006 Letter (August 1, 2006);

⁷ Public reports by the MMU are posted at <http://www.pjm.com/markets/market-monitor/reports-2005.html>.

- Responses to data requests as part of the Department of Justice’s Civil Investigative Demand in connection with the proposed merger of PSEG and Exelon; and
- Reports on congestion for the Virginia State Corporation Commission and the North Carolina Utilities Commission agreed to as part of AEP’s and Dominion’s applications to transfer functional control of transmission facilities to PJM (Virginia Case Nos. PUE-2000-00550 and PUE-2000-00551 and North Carolina Docket No. E-22, Sub 418). The reports (May 1, June 30 and December 29, 2006) included information on transmission constraints in Virginia and North Carolina and associated congestion costs, plus LMPs by bus (location) with the congestion component identified.

Recommendations Regarding PJM Market Rules

The Commission identified the first of several valuable tasks performed by market monitoring units as: “To identify ineffective market rules and tariff provisions and recommend proposed rule and tariff changes to the ISO/RTO that promote wholesale competition and efficient market behavior.”⁸ As part of this task, the MMU participates in committees and working groups to provide expertise and assist the RTO and its members in evaluating and designing effective market rules.

Attachment M, Section IV.C.2 gives the Market Monitoring authority to take additional action, including to “Recommend to the appropriate entity (including, if and as appropriate, PJM committees, the PJM Board, or the Commission) modifications to the PJM Market Rules. This recommendation may be made in the form of a written or oral report to the appropriate entity.”⁹

During 2006, the MMU presented information and analysis to PJM Committees on the following topics:

- Reliability Pricing Model Avoidable Cost Rate Development for the RPM Stakeholder Workshop;
- Proposed tariff revisions clarifying the definition of associated units for the Market Implementation Committee (MIC) and Markets and Reliability Committee (MRC);
- Proposed revisions to the Market Monitoring Plan for the Tariff Advisory Committee (TAC), Combined meeting of the Electricity Markets and Reliability Committees (EMC/RC) and Members Committee (MC);
- Proposed definition of total fuel-related costs for pumped storage hydro plants for the Cost Development Task Force (CDTF), MIC, MRC and MC;
- Proposed inclusion of long term service agreements in variable operation and maintenance (VOM) expense definition for the CDTF, MIC, MRC and MC;
- Proposed modification of terminology for Spinning Reserves for the CDTF, MIC, MRC and MC;

⁸ 111 FERC ¶ 61,267 (2005) at 2.

⁹ PJM Open Access Transmission Tariff, Attachment M, Section IV.C.2.

- Operating Reserve rules for the Reserve Markets Working Group (RMWG);
- Unit parameter details and parameter-limited schedules for the RMWG;
- *2005 State of the Market Report* for the MRC;
- Data posting practices for the MIC;
- Loop flows for the MIC;
- Ramp rules for the MIC;
- Proposed revisions to Black Start Tariff Section 6.4 for the MIC and MRC;
- Combustion Turbine cost offer development for 180 Day Report Working Group;
- Analysis of combined Regulation Market for the MIC and MRC;
- Measures of price convergence for the RMWG; and
- Analysis of PJM interfaces for the MIC.

Presentations are available on PJM's website at <http://www.pjm.com/markets/market-monitor/presentations.html>.

Representatives of the MMU also regularly attended MC meetings and periodically provided reports on MMU activities and issues to the MIC and MRC.

The MMU chairs the Market Monitoring Advisory Committee (MMAC) and the CDTF.

The CDTF meets at the request of its members or the MMU. The CDTF met on May 12, 2006 and discussed issues related to cost development, including fuel costs for pumped storage hydro plants, variable operations and maintenance cost development, and synchronous and non-synchronous reserve costs. The CDTF proposed updating the CDTF manual to change terminology for spinning reserves, to include long term service agreements in variable operation and maintenance (VOM) expense and to add a definition for fuel costs for pumped storage hydro plants. The MMU presented the proposals to the MIC, MRC and MC, each of which approved the changes.

The annual meeting of the MMAC was held in December 2006 and the members reviewed the proposed monitoring plan for the next year and recommended changes and additions.

Industry Briefings and Presentations

As part of its reporting role, the MMU provided briefings and presentations to industry groups. The MMU shared the results of its analyses, experience and knowledge regarding competitive markets, market monitoring and market power mitigation.

During 2006, the MMU provided:

- State of the Market Report briefings and presentations to industry press, FERC staff, the Organization of PJM States, Inc. (OPSI) and state commission staffs.

- Briefings on monitoring practices to electricity professionals, including groups from Korea, China, Russia, New Zealand, Cornell University, University of Oslo, NYISO and California ISO.
- Meetings and conference calls with state regulators, state consumer advocates, Congressional staff, the Department of Justice, the Organization of PJM States, Inc. (OPSI) to answer questions and discuss a range of topics including monitoring, mergers, capacity markets and PJM market specifics.
- Presentations at industry conferences:
 - “Market Monitors: Dealing with Bad Guys, Bad Rules, or Both? What Powers Should They Have and How Should They Be Exercised?” – Harvard Electric Policy Group (HEPG);
 - “The Competitiveness of PJM Markets” - Virginia Regulatory Conference;
 - “Electricity Reform Round Table” – 29th International Association for Energy Economics (IAEE) International Conference;
 - “Convergence Bidding Tutorial & Panel Discussion” – California ISO;
 - “The Competitiveness of PJM Markets” – Illinois Commerce Commission Electric Policy Committee Meeting;
 - “Market Monitoring in PJM” – Edison Electric Institute (EEI) Transmission and Design School;
 - “From California to the New York Islands: Resource Adequacy, Capacity Market, and Energy-Only Market Developments” – McDermott Will & Emery Energy Conference;
 - “Factors Contributing to Wholesale Electricity Prices” - Moving Toward Greater Reliance on Wholesale Energy Markets, sponsored by the Institute for Regulatory Policy Studies (IRPS);
 - “Market Monitoring in PJM” – Institute of Public Utilities (IPU) 38th Annual Regulatory Policy Conference; and
 - “Emerging Evidence on Electricity Markets” - IPU 38th Annual Regulatory Policy Conference.

Support of PJM in the Administration of Commission-Approved Tariff Provisions

The Commission, in its “Policy Statement on Market Monitoring Units,” listed one of the valuable tasks performed by market monitoring units: “To provide support to the ISO/RTO in the administration of Commission-approved tariff provisions related to markets administered by the ISO/RTO (e.g. day-ahead and real-time markets).”¹⁰ Based on its independent evaluation of the operation of markets and analysis of market competitiveness, the MMU often provides support to PJM in the administration of Commission-approved tariff provisions. In addition to participation in committees and working groups (see above), in 2006 the MMU:

- Posted market messages regarding clarification of or compliance with PJM Market Rules or related communications;

¹⁰ 111 FERC ¶ 61,267 (2005) at 2.

- Assisted PJM in testing and implementing the three pivotal supplier test and scarcity provisions;
- Provided loop flow data and graphs to the Market Services Division;
- Met with generators, suppliers and individual member companies regarding RPM implementation;
- Provided internal presentations for employees on scarcity pricing; an overview of unit participation factors (UPFs) and their use in calculating two market metrics - markup and fuel-cost-adjusted LMPs; and optimization of SAS code;
- Participated in meetings with PJM and member companies to discuss market issues, e.g. the impact of the difference between the trading day for gas and electricity;
- Testified before the New Jersey Board of Public Utilities regarding the proposed merger of PSEG and Exelon; and
- Collaborated on proposals for data posting practices.

Other Activities

In 2006 the MMU participated in the Economic Infrastructure Surveillance Group (EISG) and the Harvard Electric Policy Group (HEPG).

A member of the MMU made a presentation to college-bound students at Northeast High School on career opportunities in engineering.

The Market Monitor was interviewed by journalists from The Star-Ledger, Reuters, the Baltimore Business Journal, The Christian Science Monitor and The New York Times.

In April 2006, Elsevier Ltd published the book Electricity Market Reform: An International Perspective, which included a chapter titled “The PJM Market” by Joseph Bowring, PJM’s Market Monitor.