



Monitoring Analytics

Activities of the Market Monitoring Unit 2007

**Independent Market Monitor for PJM
March 18, 2009**

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 for offers to sell energy in PJM.² This report is posted pursuant to Section VI.C of the Plan, as effective in 2007, which directs the MMU to “prepare a detailed public annual report about the Market Monitoring Unit’s activities, subject to protection of confidential, proprietary and commercially sensitive information and the protection of the confidentiality of ongoing investigations and monitoring activities.”

Activities

The MMU’s primary objectives, as defined in Section I of the Market Monitoring Plan, are to “objectively monitor, investigate, evaluate and report on the PJM Markets, including, but not limited to, structural, design or operational flaws in the PJM Markets or the exercise of market power or manipulation in the PJM Markets.

The Plan also prescribes reporting procedures that PJM will use to inform governmental agencies and others concerning its market monitoring activities.³

Section IV.B of the PJM Market Monitoring Plan states:

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

1. Compliance with the PJM Market Rules.
2. Actual or potential design flaws in the PJM Market Rules.
3. Structural problems in the PJM Market that may inhibit a robust and competitive market.
4. The potential for a Market Participant to exercise market power or violate any of the FERC Market Rules, or the actual exercise of market power or violation of the PJM or FERC Market Rules.

¹ Atlantic City Electric Company, et al., 86 FERC ¶ 61,247(1999).

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

³ OATT, Attachment M § IV.H & I

5. PJM's implementation of the PJM Market Rules or operation of the PJM Markets, as further set forth in Section IV.C.
6. Such matters as are necessary to prepare the reports set forth in Section VI.

The MMU performs economic analysis and ongoing 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, RPM base and incremental auctions, 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, including market power mitigation and related activities; 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; industry briefings and presentations; and other activities.

The MMU posts all public reports, presentations and market messages and selected data on the Monitoring Analytics web page at this address: <http://www.monitoringanalytics.com>.

Monitoring

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 with Market Participants."⁴ In fulfilling this role in 2007, 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.

⁴ PJM Open Access Transmission Tariff, Attachment M, Section IV.D.

FERC Activities

In 2007, the MMU:

- Participated in FERC Office of Enforcement meetings for market monitors;
- Participated in conference calls with the Office of Enforcement regarding current issues;
- Calculated and provided common RTO market metrics to FERC;
- Briefed FERC staff on the *2006 State of the Market Report* on April 10, 2007;
- 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;
- Provided an affidavit to PJM for use in support of its filing on March 12, 2007 in Docket No. ER07-508-000 of proposed amendments to demand side response provisions in the tariff and operating agreement and assisted PJM's Legal department with the response to a FERC deficiency letter regarding the filing;
- Participated as a panelist in a FERC conference on "Review of Market Monitoring Policies" on April 5, 2007 (Docket No. AD07-8-000);
- Filed comments regarding demand side response and market monitoring in response to FERC's Advanced Notice of Proposed Rulemaking in Docket No. AD07-7-000 (September 14, 2007); and
- Filed answers to FERC data requests on June 12, 2007 pursuant to the May 18, 2007 order in Docket Nos. EL07-56-000 and EL07-58-000 (consolidated), regarding allegations that PJM had violated Attachment M of the PJM Tariff. On July 10, 2007 the MMU submitted additional documents and a memorandum in response to PJM's June 12 and July 2 filings. The MMU filed a response to PJM's August 2, 2007 Settlement Offer on August 22, 2007. On September 20, 2007 FERC issued an order instituting settlement procedures and the Market Monitor participated extensively in the settlement negotiations from September through December. The Settlement Agreement was filed December 19, 2007.

Reports⁵

The *2006 State of the Market Report*, published on March 8, 2007, fulfilled the tariff reporting requirements by providing a comprehensive analysis of the markets within

⁵ Public reports by the MMU are posted at <http://www.monitoringanalytics.com>.

PJM and an assessment of the competitiveness of each market.⁶ The report also provided recommendations regarding retention and enhancement of market rules.

The MMU posts market data at <http://www.monitoringanalytics.com> to enhance market transparency.

The MMU released the following documents in 2007:

- “Activities of the Market Monitoring Unit 2006” (January 22, 2007);
- “Preliminary Market Structure Screen Results- 2007/2008 Auction”(February 2, 2007);
- “Preliminary Market Structure Screen Results -2008-2009 Auction”(April 2,2007);
- “Prepared Statement of Joseph E. Bowring, PJM Market Monitor, FERC Technical Conference, Review of Market Monitoring Policies AD07-8-000, (April 5, 2007);
- “Analysis of the Three Pivotal Supplier Test: March 1 through December 31, 2006” (May 7, 2007);
- “Preliminary Market Structure Screen Results -2009-2010 Auction”(July 7, 2007);
- “Analysis of the Three Pivotal Supplier Test: March 1, 2006 through March 31, 2007” (August 16, 2007);
- "Analysis of the 2007 – 2008 RPM Auction" (August 16, 2007);
- “Preliminary Market Structure Screen Results- 2010-2011 Auction” (October 1, 2007);
- “Analysis of the Three Pivotal Supplier Test: March 1, 2006 through June 30, 2007” (November 19, 2007);
- “MMU Response to Mirant Complaint re RPM Auction” (November 29, 2007);
- “Analysis of the 2008-2009 RPM Auction” (November 30, 2007); and
- “MMU White Paper: PJM Demand Side Response Program” (December 4, 2007).

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

- Report to the Virginia State Corporation Commission: Congestion in the Dominion Service Territory in Virginia (July 24, 2007);
- Report to the North Carolina State Corporation Commission: Congestion in the Dominion Service Territory in North Carolina. (July 24, 2007);
- Written testimony in support of PJM’s participation in the BG&E rate case (Case No. 9099) before the Maryland Public Service Commission (March 30, 2007) and subsequent oral testimony (April 19, 2007);

⁶ OATT. Attachment M § VII.A (revised effective August 1, 2008, to become § VI.A).

- A report to the Maryland Public Service Commission answering questions about the *2006 State of the Market Report* (October 12, 2007); and
- Reports on congestion for the Virginia State Corporation 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. The reports (July 16, July 19 and December 31, 2007) included information on transmission constraints in Virginia and associated congestion costs, plus LMPs by bus (location) with the congestion component identified.
- Report on congestion for 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 (North Carolina Docket No. E-22, Sub 418). The reports (July 16, July 19 and December 31, 2007) included information on transmission constraints in North Carolina and associated congestion costs, plus LMP's by bus (location) with the congestion component identified.

Recommendations Regarding PJM Market Rules

Attachment M, Section IV.D provides "if the Market Monitoring Unit detects a design flaw or other problem with the PJM Markets, the Market Monitoring Unit may initiate and propose, through the appropriate stakeholder processes, changes to the design of such market. In support of this function, the Market Monitoring Unit may engage in discussions with stakeholders, State Commissions, PJM Management, or the PJM Board; participate in PJM stakeholder meetings or working groups regarding market design matters; publish proposals, reports or studies on such market design issues; and make filings with the Commission on market design issues." ⁷During 2007, the MMU presented information and analysis to PJM Committees on the following topics:

- Analysis of combined Regulation Market for the Market Implementation Committee (MIC) and the Markets and Reliability Committee (MRC);
- Market Monitoring Report to the MC (June 14, 2007);
- Proposed modifications to Cost Development Guidelines for regulation cost-based offers for the MIC;
- Proposed tariff revisions clarifying the definition of associated units for the MRC, TAC and Members Committee (MC);
- Unit parameter details and parameter-limited schedules for the Reserve Markets Working Group (RMWG);
- *2006 State of the Market Report* for the MRC and the Public Interest and Environmental Organization User Group (PEIOUG);

⁷ OATT, Attachment M, Section IV.D.

- Analysis of interfaces currently exempt from offer capping for the MIC;
- RPM results for the 2007/2008 and 2008/2009 base residual auction for the MIC and for the 2009/2010 base residual auction for the MRC;
- Scarcity pricing topics for the Scarcity Pricing Stakeholder Group (SPSG);
- Scarcity and mitigation for the MRC;
- Replacing MMU discretion in the RPM tariff with objective, factual criteria for the MIC and alternative approaches and proposed tariff language for the RPM Compliance Filing Process stakeholder group (RPM CFP);
- Mitigation in the RPM incremental auctions for the RPM Working Group (RPMWG);
- Three pivotal supplier test, including review of PJM's implementation for the MIC and Three Pivotal Supplier Task Force (TPSTF); examples, theory and application for the MRC and TPSTF; regulation market examples for the TPSTF and a review of the definition of market power and market power mitigation for the TPSTF;
- Market Monitoring Report to the MC (August 2, 2007); and
- Market Monitoring Report to the MC (September 27, 2007).

Presentations are available on Monitoring Analytics website at <http://www.monitoringanalytics.com>.

Representatives of the MMU also regularly attended MC meetings. At the 2007 Annual Meeting the MMU was asked to give a report at each MC meeting. MMU reports began at the June meeting and provided current information and MMU analysis of markets and auctions.

The MMU chairs the Market Monitoring Advisory Committee (MMAC) and through Spring 2007, chaired the CDTF.

The CDTF meets at the request of its members or the MMU. In 2007, the CDTF met on February 28, March 26 and April 13 to discuss issues related to cost development, focusing on costs for regulation. The CDTF proposed updating the CDTF manual to modify the calculation of cost-based offers for regulation. The MMU presented the proposal to the MIC. The proposal was presented by the PJM Markets Division to the MRC where it was approved without opposition.

The annual meeting of the MMAC was postponed pending a FERC ruling on the Settlement Filing regarding the details of the relationship between PJM and the MMU.

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 2007, 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 the United States Energy Association (USEA), the French regulatory commission (CRE), Singapore's Energy Market Company and California ISO;
- Meetings and conference calls with state regulators, state consumer advocates, industrial customer coalitions, Midwest ISO and the Organization of PJM States, Inc. (OPSI) to answer questions and discuss a range of topics including monitoring, capacity markets and PJM market specifics; and
- Presentations at industry conferences:
 - "PJM's Challenge—Scarcity Pricing in the Context of Least Cost, Security Constrained Dispatch" – Center for Research in Regulated Industries (CRRI), 26th Annual Eastern Conference;
 - "Markets and Market Monitoring" – EUCI course "In-Depth Introduction to Electricity Markets";
 - "Ensuring the Independence of Market Monitors" – Institute of Public Utilities (IPU) 39th Annual Regulatory Policy Conference; and
 - "The RPM Capacity Market Construct" Testimony at the Illinois Commerce Commission hearing on long term resource adequacy.

Implementation of Mitigation and Related Activities

In addition to participation in committees and working groups (see above), in 2007 the MMU:

- Posted market messages regarding clarification of or compliance with PJM Market Rules or related communications;
- Analyzed implementation of and results from the three pivotal supplier test;
- Participated in meetings and conference calls with individual member companies regarding RPM implementation, including avoidable costs, net revenue, mitigation, and avoidable project investment recovery;
- Conducted RPM Avoidable Cost training and assisted with RPM review sessions for members;

- Participated in meetings with PJM and member companies to discuss market issues, e.g. outage rules, DSR;
- Drafted parameter limited schedule matrix;
- Implemented the FTR Forfeiture Rule (OA Schedule 1, Section 5.2.1(b));
- Verified submitted black start costs and communicated with market participants;
- Determined qualification for FMU/AU status and communicated with market participants;
- Calculated and posted RPM proxy unit default values for offer capping;
- Calculated and posted results of PMSS for RPM auctions;
- Reviewed and verified participant ACR submissions;
- Reviewed RPM auction results for market power.

Other Activities

In 2007, the MMU participated in the Economic Infrastructure Surveillance Group (EISG) and the Harvard Electric Policy Group (HEPG).

In November 2007, Joseph Bowring submitted a chapter titled “The Evolution of PJM’s Capacity Market” for the book Competitive Electricity Markets, published by Elsevier Ltd in 2008.