



Role and Organization of Independent Market Monitors in the United States

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- All ISOs under jurisdiction of the U.S. Federal Energy Regulatory Commission (FERC) are required to have an Independent Market Monitor (IMM).
- The formal mission of all FERC jurisdictional IMMs is:
 - *To provide independent oversight and analysis of the ISO Markets for the protection of consumers and market participants by the identification and reporting of market design flaws, potential market rule violations, and market power abuses.*
- IMMs provide regulators and market participants with:
 - Greater transparency on market performance.
 - Level playing field for all participants
 - Confidence that the ISO's market is operating fairly and efficiently.
 - Better understanding of the impact of market rules and proposed changes.

Core functions of independent market monitors (IMMs) under FERC Order 719

1. Review and report on the performance of wholesale markets, including quarterly and annual reports.
2. Evaluate existing and proposed market rules, and provide recommendations.
3. Notify Federal regulators when:
 - A market participant has engaged in conduct that may require investigation and sanction.
 - The ISO have not have followed approved market rules or engaged in other questionable behavior.
4. IMM may develop/review cost-based bids used in market power mitigation.

IMMs have no authority to make/approve market rules or impose sanctions.

Ensuring the independence and effectiveness of the market monitor

- IMM is independent from:
 - Market participants
 - ISO management/Board
 - Regulatory entities
- Role and responsibilities of IMM specifically defined in ISO rules:
 - Established process for providing recommendations and interacting with ISO and regulators.
 - IMM retains discretion to focus on issues of most importance.
 - IMM does not need to provide recommendations on all policy issues.
- IMM must be provided adequate resources
 - Budget to hire/retain highly qualified staff
 - Access to market/operational data and information
 - Monitoring infrastructure (people, data, software, knowledge)

Ensuring the independence – and credibility – of the independent market monitor.

- All IMM's are overseen administratively by ISO Boards, but are charged with providing independent analysis and recommendations to the ISO, regulators and stakeholders.
- All ISOs are required by Federal regulators to maintain IMM's independence and provide IMM with needed resources and information.
- ISO Board or management selects IMM, but the IMM rarely changes after being selected.
- Federal regulators provide ongoing oversight of the independence of IMM and ISO interactions.
- Some ISO's have an external market advisor or committee that also provides review and recommendations on market issues.
- Stakeholders also provide informal oversight of IMM and may submit complaints to ISO and/or regulator.

IMM role in market design review and recommendations

- Participates in some internal ISO teams/meetings in order to (1) better understand issues/proposals and (2) provide informal input.
- Provides informal and formal verbal and written comments and recommendations as part of the public stakeholder process.
- IMM is often the only entity (besides ISO) that can provide detailed quantitative analysis of market issues and proposed rule changes.
- Discusses market design issues with ISO and regulators in non-public meetings.
- Submits formal comments and recommendations to ISO Board and regulators on ISO management's final proposals.
- May submit formal referrals of major market design flaws not being addressed by ISO to regulators (may be *public* or *non-public*).

Building and maintaining an effective monitoring system

- IMM should have access to all data that the system operator has.
 - Frequently used data should be automatically stored in special data system designed for market monitoring and analysis.
 - Other data may be need to be provided on special request and/or in non-standard format.
- Manual actions taken by system operator are very important to record and provide on routine basis.
- IMM needs access to ISO staff to obtain detailed information and explanations of market software, operating practices, etc.
- IMM should have access to version of actual market software that can be used to “re-run” the market with different inputs.

Building and maintaining an effective monitoring infrastructure requires time (years) and requires a combination of skilled staff, data, software and market/operational knowledge.

Market monitoring structures

- External to ISO (PJM, MISO, NYISO)
 - Contract to serve as IMM awarded to private consulting company.
 - Contract awarded/renewed by ISO on 3 to 4 year cycles.
 - MISO/NYISO have fixed price budget for core monitoring (with additional work requested/authorized by ISO paid based on hourly consulting fees).
 - PJM has cost-based budget based directly on staffing, etc.
- Internal to ISO (CAISO, ISO-NE, SPP)
 - Administratively overseen by ISO Board oversight committee (2 to 3 members).
 - Cost-based budget (based on staffing levels) approved annually.
 - Major IMM leadership positions (director, managers) require approval of ISO Board's oversight committee.
 - IMM staff adhere to ISO company standards unless exception is warranted (compensation, human resources, code of conduct, etc.)

Potential pros/cons of different monitoring structures

- External and internal IMM both ultimately depend on ISO for budget and staff compensation (subject to oversight from regulator).
- Internal IMM may have more access and closer relationship with ISO leadership/staff – but this can create perception of less independence.
- Internal IMM depend on ISO more for information technology support -- but this is generally much more efficient and cost-effective.
- Most ISOs with internal IMM also have external market advisors which also provide review and recommendations on market rules and performance.
- Internal IMM are subject to audit by regulatory agency and the ISO's own internal audit/compliance unit.

Other organizational approaches have been effectively employed in other countries (e.g. separate monitoring units set up by governments)

Keys to effective IMM organizational structure

- IMM that are either external and internal to the ISO can be highly independent and effective with appropriate rules, processes and oversight.
- Formal and informal oversight of IMM by multiple entities can help ensure the independence, credibility and effectiveness of the IMM (e.g. regulators, market advisory committees, stakeholders, etc.)
- The IMM is only as independent as its leadership.
- Continuity of IMM staff is very important for to building up/maintain the informational infrastructure, knowledge and skills needed for effective market monitoring.
- Succession issues – how can IMM leadership change over time as needed while maintaining continuity of IMM staff and organization?

Market power (vs manipulation)

- Market power involves conduct designed to raise prices by using dominant or pivotal position:
 - in overall energy market or
 - a reliability requirement/constraint.
- Market power usually exercised by
 - high priced supply bids
 - limiting supply offered (directly or indirectly)
- Market power is best mitigated through clear *ex ante* market rules
- IMM plays important role in identifying market power and designing effective rules.

Market manipulation often involves ...

- False or misleading information
 - False outages or supply limits
 - Inaccurate resource characteristics (e.g. unit start-up or minimum run times),
 - Infeasible supply bids (supply that cannot be delivered)
 - False market information (e.g. supply limits or costs)
- Multiple actions
 - Bidding/scheduling to take advantage of false information
 - Changing bids after ISOs reliability unit commitment process is completed.
- Multiple markets
 - Unprofitable trades in one market to profit in different market

Examples of market manipulation

- Increasing bid cost recovery (uplift) payments by increasing unit minimum operating levels and minimum run hours.
- Infeasible schedules or bids
 - Schedule/sell excessive energy from resources/locations which ISO must “buy back” at low prices.
- Publicizing false supply limitations to increase bilateral futures prices.
- Cross market manipulation
 - Increasing or decreasing ISO market prices at a loss in order to profit from bilateral market trades tied to ISO prices.
 - May involve bilateral trades for current day or futures prices.
- Financial congestion revenue rights
 - Creating or eliminating congestion to increase profit from congestion revenue rights.

Preventing and sanctioning market manipulation

- Establishing clear *ex ante* market rules and expectations can help to deter and sanction manipulation.
 - Physical supply limitations vs market bids/offers
 - Feasibility of schedules/bids
 - Rules for changing bids
 - Taking advantage of software gaps/errors
- General rules prohibiting manipulation/gaming also important
 - Potential manipulation should be referred by IMM to regulatory/legal entities for detailed investigation/sanctions
- Bilateral market information is often important to identify manipulation.