



Market Monitoring Indices

1. Summary statistics for PJM system by hour/day/week/month/year.
 - 1.1. PJM system prices and loads: day ahead and real time markets.
 - 1.1.1. Average PJM load weighted price;
 - 1.1.2. Maximum PJM load weighted price;
 - 1.1.3. Components of load weighted prices;
 - 1.1.3.1. Energy
 - 1.1.3.2. Marginal losses
 - 1.1.3.3. Congestion
 - 1.1.4. Average PJM load;
 - 1.1.5. Maximum PJM load;
 - 1.1.6. Correlations between PJM prices and loads.
 - 1.2. PJM congestion.
 - 1.2.1. Maximum hourly congestion costs;
 - 1.2.2. Total congestion cost;
 - 1.2.3. Number of active constraints.
 - 1.3. PJM volumes.
 - 1.3.1. Total MW bid;
 - 1.3.2. Total MW self scheduled;
 - 1.3.3. Total bilateral contract MW;
 - 1.3.4. Hourly net imports and exports including all components.
2. Day ahead market
 - 2.1. Total hourly load
 - 2.2. Composition of load
 - 2.2.1. Fixed price bids
 - 2.2.2. Price sensitive bids
 - 2.2.3. Decrement bids
 - 2.3. Composition of supply offers
 - 2.3.1. Generation offers
 - 2.3.2. Increment offers
3. Aggregate relationships between day ahead and real time markets
 - 3.1. Hourly aggregate LMP comparisons
 - 3.2. Hourly aggregate load comparisons
 - 3.3. Hourly aggregate congestion comparisons
4. Comparative prices and loads for PJM and surrounding power markets:
 - 4.1. Forward prices for each system by market term;
 - 4.2. Forward price spreads by market term;
 - 4.3. Real time prices as available;
 - 4.4. Real time price spreads;
 - 4.5. Border prices
 - 4.6. Loads for each system as available;
 - 4.7. Net imports/exports between PJM and each system.

- 4.7.1. Real time
 - 4.7.2. Day ahead
 - 4.7.3. By interface
- 4.8. Curtailment volume / TLR events
- 5. Locational prices and loads.
 - 5.1. Bus locational marginal prices (LMPs);
 - 5.2. Aggregate LMPs;
 - 5.3. Bus LMPs less the PJM average price;
 - 5.4. Loads and generation by bus;
 - 5.5. The distribution of LMP rankings for each bus by bus price and by bus load/generation;
 - 5.6. Daily/weekly/monthly price-load comparisons:
 - 5.6.1. Maximum bus LMP by hour;
 - 5.6.2. Minimum bus LMP by hour;
 - 5.6.3. Average load LMP by zone, by aggregate load bus, for PJM;
 - 5.6.4. Average generation LMP by zone, by aggregate load bus, for PJM;
 - 5.6.5. Load/injections by bus, by zone, by aggregate buses, for PJM.
 - 5.7. Zonal LMPs
 - 5.7.1. Zonal daily LMP
 - 5.7.2. Highest bus LMP within zone;
 - 5.7.3. LMP ranking across zones.
 - 5.8. LMPs by jurisdiction
 - 5.9. Load Duration
 - 5.10. Load-weighted LMP
 - 5.11. Fuel and emission allowance cost adjusted load weighted LMP
 - 5.12. Marginal Resource Based Components of LMP
 - 5.12.1. Fuel
 - 5.12.2. Emissions
 - 5.12.3. VOM
 - 5.12.4. Adders
 - 5.12.5. Markup
 - 5.12.6. Adjustments
- 6. Congestion by hour/day/week/month/year by facility type/voltage/bus/zone/bus aggregates.
 - 6.1. Total congestion costs for period;
 - 6.2. Peak congestion costs;
 - 6.3. Percent of time with congestion;
 - 6.4. Constraint duration
 - 6.5. Frequency of individual constraints;
 - 6.6. Frequency of must run price cap implementation;
 - 6.7. Frequency of constraints without must run price cap implementation.
- 7. Transmission congestion and FTR revenue adequacy
- 8. Congestion comparisons between day ahead and real time markets

- 8.1. Total congestion costs for period;
- 8.2. Peak congestion costs;
- 8.3. Percent of time with congestion;
- 8.4. Frequency of individual constraints;
- 8.5. Frequency of must run price cap implementation;
- 8.6. Frequency of constraints without must run price cap implementation.
- 9. Offers and dispatch.
 - 9.1. Unit offer/supply curves;
 - 9.2. Maximum economic offer;
 - 9.3. Minimum economic offer;
 - 9.4. Company aggregate offer/supply curves;
 - 9.5. Aggregate PJM supply curves;
 - 9.6. Comparisons of unit offer/supply curves to historical offer curves;
 - 9.7. Comparisons of company offer/supply curves to historical supply curves;
 - 9.8. Comparisons of aggregate PJM supply curves to historical supply curves;
 - 9.9. Deviations from requested dispatch, by unit;
 - 9.10. Ramp rates by unit, by time period, by company.
 - 9.11. Comparisons of ramp rates by unit type, by company.
 - 9.12. Operational constraints on offers: start times; minimum run requirements; minimum down times; maximum starts.
 - 9.13. Start up costs.
- 10. Comparisons between day ahead and real time offers
- 11. Relationship between offers and LMPs
 - 11.1. Identification of units which set price;
 - 11.2. Identification of fuel type of marginal units;
 - 11.3. Frequency of individual units setting price;
 - 11.4. Frequency of generation owners setting price.
- 12. Demand Response
 - 12.1. Volume
 - 12.2. Price
- 13. Net Revenue
 - 13.1. By unit type
 - 13.2. By market/revenue source
 - 13.3. Fuel costs
 - 13.4. Net revenue adequacy
 - 13.5. Internal rates of return
 - 13.6. Total revenue per MWh
- 14. Operating Reserve
 - 14.1. Credits
 - 14.2. Charges
 - 14.3. Deviations
 - 14.4. Concentration
- 15. Regulation

- 15.1. Available regulation
- 15.2. Regulation offers
- 15.3. Regulation price
- 15.4. Aggregate regulation supply
- 15.5. Regulation adequacy
- 16. Synchronous Condensing
 - 16.1. Condenser bids;
 - 16.2. Condenser costs;
 - 16.3. Condenser credits;
 - 16.4. Total condenser MWs;
 - 16.5. Total spinning requirements.
- 17. DASR
 - 17.1. Volume
 - 17.2. Prices
 - 17.3. Market structure
- 18. FTR indices
 - 18.1. FTR Auction Market
 - 18.2. Long Term FTR Auction
 - 18.3. Monthly Balance of Planning Period FTR Auction
 - 18.4. Auction Revenue Rights (ARR)
 - 18.5. FTR Indices
 - 18.5.1. Total market volume offered and cleared;
 - 18.5.2. Total market revenue;
 - 18.5.3. Average clearing price;
 - 18.5.4. Path specific revenue and volume;
 - 18.5.5. Source specific revenue and volume;
 - 18.5.6. Sink specific revenue and volume.
 - 18.5.7. Constraint specific revenue and volume
 - 18.5.8. Direction (prevailing vs. counter flow) revenue and volume
 - 18.5.9. By physical entity vs. financial entity
 - 18.5.10. By trade types
 - 18.5.11. Revenue adequacy
 - 18.5.12. Value as hedge
- 19. Available capacity
 - 19.1. Total capacity resources;
 - 19.2. Total available capacity;
 - 19.3. Outage status by unit;
 - 19.4. Frequency of outages, by type, by unit, by time period;
 - 19.5. Comparisons of outages across units;
 - 19.6. Company summary outage frequency;
 - 19.7. Comparisons of outages across companies;
 - 19.8. Frequency of unit outages by time period, by demand conditions; by system/bus price.

- 19.9. Planned capacity
- 20. Capacity market (RPM)
 - 20.1. Company unit offers;
 - 20.2. Supply/demand balance;
 - 20.3. Market structure (Three pivotal supplier test)
 - 20.4. Market prices for each market;
 - 20.5. Avoidable costs;
 - 20.6. Avoidable project investment;
 - 20.7. Unit specific net revenues;
 - 20.8. Forced outage rates;
 - 20.9. Mitigation/offer caps;
 - 20.10. Exporting of units by company;
 - 20.11. Opportunity costs of exports;
 - 20.12. Capacity position by company.
- 21. Reliability
 - 21.1. Outage & availability factors
 - 21.1.1. By unit type
 - 21.1.2. By duty cycle
 - 21.1.3. By outage/cause type
- 22. Market structure by market
 - 22.1. Herfindahl Hirschman Index (HHI)
 - 22.1.1. Concentration ratios by hour;
 - 22.1.2. Incremental concentration ratios by hour;
 - 22.1.3. Concentration ratios by transmission defined markets within PJM;
 - 22.1.4. Concentration ratios by zone;
 - 22.1.5. Concentration ratios by interface.
 - 22.2. Three pivotal supplier (TPS) test results
 - 22.2.1. By constraint
 - 22.2.2. By zone
 - 22.2.3. By interval
- 23. Price-cost margins (Markup)
 - 23.1. Unit specific price-cost margins;
 - 23.1.1. Compare unit offers to unit costs
 - 23.2. Company price-cost margins;
 - 23.2.1. Compare unit price-cost margins by company.
 - 23.3. Price-cost margins for marginal units
 - 23.4. Aggregate price-cost margins