

PJM Glossary¹

A

Actual Load	The Load Serving Entity's total load per Electric Distribution Company zone, as determined through meter readings and EDC load profiling methods.
Adjacent System or Adjacent Control Area	Any control area directly interconnected with another control area.
Agent	An entity appointed by a PJM member to do business in PJM on behalf of the member.
Aggregate	A group of more than one individual bus into a pricing node (pnode) that is considered as a whole in the Energy Market and other various systems and Markets within PJM.
Alternating Current	An alternating current is the movement of an electric charge that periodically reverses direction. This is compared to the flow of electric charge in direct current, which moves in only one direction. Electric power is delivered to homes and businesses through alternating current.
Analog Control	A signal which, with respect to time, varies continuously in proportion to the measured quantity.
Ancillary Services	Ancillary services help balance the transmission system as it moves electricity from generating sources to ultimate consumers. PJM operates several markets for ancillary services: the Synchronized Reserve Market, the Non-Synchronized Reserve Market, the Day-ahead Scheduling Reserve Market and the Regulation Market. There are also several other nonmarkets for ancillary services such as black start service and reactive service.
Annual Demand Resources	Demand Resources which can be called on an unlimited number of times any day of the delivery year, unless on an approved maintenance outage.
Area Control Error (ACE)	A measure of the imbalance between sources of power and uses of power within the PJM RTO. The ACE calculation uses the difference between scheduled and actual net interchange plus the PJM RTO frequency bias contribution.
Area Regulation Signal	A signal generated by the PJM Control Center and sent to the plants, stations and/or PJM members scheduled to provide regulation to change generation quickly to keep PJM's area control error within allowable limits. It is used to control for small fluctuations in load.
Auction Revenue Rights (ARR)	Entitlements allocated annually to Firm Transmission Service Customers that entitle the holder to receive an allocation of the revenues from the Annual FTR Auction.

¹ PJM Glossary, available at https://www.pjm.com/Glossary#index_D (accessed May 30, 2023).

Automatic Generation Control (AGC)	Equipment that automatically adjusts a Control Area's generation to maintain its interchange schedule plus its share of frequency regulation.
Available Flowgate Capability	A measure of the flow capability remaining on a Flowgate for further commercial activity over and above already committed uses. It is defined as TFC less Existing Transmission Commitments (ETC), less a Capacity Benefit Margin, less a Transmission Reliability Margin, plus Postbacks and plus Counterflows. (NERC definition)
Available Transfer Capability (ATC)	The amount of energy above "base case" conditions that can be transferred reliably from one area to another over all transmission facilities without violating any pre- or post-contingency criteria for the facilities in the PJM Control Area under specified system conditions.
B Balancing Authority	The responsible entity that integrates resource plans ahead of time, maintains Demand and resource balance within a Balancing Authority Area, and supports Interconnection frequency in real time. [See NERC definition]
Balancing Authority Area	The collection of generation, transmission, and loads within the metered boundaries of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area.
Balancing Energy Market	Matches the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s) with the load within the electric power system(s).
Balancing Operating Reserves	<p>Generation and demand response resources that operate as requested by PJM are guaranteed to recover the costs of their offer amounts through balancing operating reserve credits that are charged to market participants. Accounting for these "make-whole" costs is performed on a daily basis, for both the Day-Ahead Energy Market and the Real-Time Energy Market.</p> <p>Balancing operating reserve costs are out of market and as such are not included in the pricing signals that are visible and transparent to the entire market. When these "uplift" payments are charged to the market, they are not predictable and cannot be hedged on a forward basis.</p>
Base Offer Segment	The buy or sell offer segment of a resource or virtual transaction that can consist of up to 10 MW/price pairs that are monotonically increasing.
Base Residual Auction (BRA)	The difference between the forecasted operating cost for a specific generating unit with a limited number of run hours and the forecasted future locational marginal price at which the generator could run not violating the limitations. It is the

	value associated with the lost opportunity to produce energy during a higher valued period of time.
Basepoint Behind-the-Meter Generation	The desired megawatt output sent to a resource. Generation that is physically located behind the retail meter and does not participate in the wholesale market as a generation resource.
Bilateral Transaction	An agreement between two entities (one or both being PJM Members) for the sale and delivery of a service.
Black Start Service	Black Start Service enables Transmission Providers and Transmission Owners to designate specific generators called Black Start Units whose location and capabilities are required to re-energize the transmission system following a system-wide blackout.
Black Start Unit	A Black Start Unit is a generating unit that has equipment enabling it to start without an outside electrical supply or a generating unit with a high operating factor (subject to Transmission Provider concurrence) with the demonstrated ability to automatically remain operating, at reduced levels, when disconnected from the grid.
Blackout (System Shutdown)	A power outage (also power cut, blackout or power failure) is a short- or long-term loss of the electric power to an area. In other words, the lights go out at homes and businesses in the impacted area. This system shutdown can be brought on by an emergency-forced outage in the generation, transmission or distribution system serving the area.
Board of Managers	<p>The 10 members of the PJM Board of Managers are responsible for maintaining PJM's independence and, by exercising their prudent business judgment, ensuring that PJM fulfills its business obligations and legal and regulatory requirements.</p> <p>The Board also is responsible for ensuring that PJM maintains the reliability of the power grid and operates a robust, competitive and non-discriminatory electric power market, preventing any market participants from having undue influence over the operation of PJM.</p>
Board of Managers	The PJM Board is the Board of Managers of PJM Interconnection.
Bulk Electric System	Includes individual generation resources larger than 20 MVA or a generation plan with aggregate capacity greater than 75 MVA that is connected via a step-up transformer(s) to facilities operated at voltages 100 kV or higher. (See NERC definition)
Bus	A point of interconnection to the system where power produced becomes available for transmission. Also, an electrical conductor that serves as a common connection for two or more electrical circuits.

C

Capacitor	An electronic component that stores an electric charge and releases it when required. A capacitor is a device for storing large quantity of electric charge. When connected to the power system, capacitors will provide reactive power and thereby increase the voltage on the system.
Capacity	System capacity is the total amount of electricity resources available to use if needed. Throughout the year, PJM must have enough resources, plus an additional reserve, to supply the greatest amount of electricity used in one hour.
Capacity Benefit Margin (CBM)	The portion of PJM's emergency import capability that is deducted from Total Transfer Capability to determine Available Transfer Capability. CBM is reserved to import capacity assistance from external areas under emergency conditions. CBM allows a system to reduce its installed generating capacity below that which may have otherwise been required if transmission interconnections did not exist.
Capacity Emergency Transfer Limit (CETL)	Capacity Emergency Transfer Limit (CETL) is the capability of the transmission system to support deliveries of electric energy to a given area experiencing a localized capacity emergency as determined in accordance with the PJM Manuals.
Capacity Emergency Transfer Objective (CETO)	The amount of electric energy that a given area must be able to import in order to remain within a loss of load expectation of one event in 25 years when the area is experiencing a localized capacity emergency.
Capacity Factor	The ratio of the total energy generated by a generating unit for a specified period to the maximum possible energy it could have generated if operated at the maximum capacity rating for the same specified period, expressed as a percent.
Capacity Interconnection Rights	The rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection where the generating facilities connect to the Transmission System.
Capacity Performance Resource	A generating unit, demand resource, or energy efficiency resource that has obligated itself to deliver electricity whenever PJM determines it is needed to meet power system emergencies.
Capacity Resource	A generating unit, demand resource, energy efficiency resource or aggregate resource that has obligated itself to deliver electricity or reduce load whenever PJM determines it is needed to meet power system emergencies.
Capacity Transfer Rights (CTR)	A method of allocating the economic value of transmission import capability that exists into a constrained Locational Deliverability Area (LDA) to Load Serving Entities (LSEs).

Carrying Charges	Typically the cost of the time value of money associated with a project (i.e., allowance of funds used during construction). It also may include other short-term costs such as costs associated with storing a physical commodity, holding a financial instrument over a defined period of time, insurance or interest charges on borrowed funds.
Charging Current	The current that flows into a capacitor when a voltage is first applied.
Circuit	A system of conductors and its component parts through which an electrical current flows or is intended to flow.
Circuit Breaker	A circuit breaker is a switching device capable of starting, carrying and stopping electrical currents under normal circuit conditions. It also can start and carry currents for a specified time and stop currents under specified abnormal conditions such as a short circuit.
Coincidental Peaks	The unrestricted load of a zone, LSE, or end-use customer, coincident with one of the five highest loads used in the weather normalization of the PJM seasonal peak. 5 CP values are used in the allocation of the PJM and zonal normalized peaks.
Combined Cycle	An electric generating technology in which electricity and process steam are produced from otherwise lost waste heat exiting from one or more combustion turbines. The exiting heat is routed to a conventional boiler or to a heat recovery steam generator for use by a conventional steam turbine in the production of electricity. This process increases the efficiency of the electric generating facility.
Combustion Turbine	A generating unit in which a combustion turbine engine is the prime mover for an electrical generator. It is typically used for peak shaving operation due to quick response capability.
Congestion	A condition that arises on the transmission system when one or more restrictions prevents the economic dispatch of electric energy from serving load.
Congestion Cost	The price that represents the inability to use the least expensive generation to meet the electricity demand due to transmission limitations. Congestion Cost is one of the three components of Locational Marginal Pricing.
Consensus Based Issue Resolution (CBIR) Process	A group structured problem-solving process in which stakeholders develop, and agree to support a proposal in the best interest of the whole; used at all levels of the stakeholder process, including on complex, multiparty issues. The process allows various stakeholders to work together to develop a mutually acceptable solution.
Contingency	An event, usually involving the loss of one or more elements that affects the power system at least momentarily.

Contract Path	A specific contiguous electrical path from a Point of Receipt to a Point of Delivery for which transfer rights have been contracted.
Control Area (Balancing Authority)	An electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common generation control scheme is applied. PJM operates as one control area.
Control Zone	One or more transmission zones or multiple contiguous Zones as defined in PJM manuals.
Converter	Any device for changing alternating current to direct current, or direct current to alternating current.
Coordinated Transaction Scheduling (CTS)	CTS transactions are interchange transactions between neighboring RTOs/ISOs designed to increase scheduling efficiencies across the seam using forward pricing information. Transactions leverage the differences in price projections, thereby resulting in price convergence and efficiency in flow direction.
Cost of New Entry	Averaged revenue required (\$/MW-year) to build a reference combustion turbine in a specific area of PJM.
Cost-Based Offers	Offers that shall not exceed the variable cost of producing such energy or other service, as determined in accordance with the Cost Development Guidelines. Cost based offers are used by PJM to schedule generation in cases in which structural market power is found to exist.
Critical Energy Infrastructure Information (CEII)	The Federal Energy Regulatory Commission (FERC) defines Critical Energy Infrastructure Information (CEII) as specific engineering, vulnerability, or detailed design information about proposed or existing critical infrastructure (physical or virtual) that relates details about the production, generation, transmission, or distribution of energy; could be useful to a person planning an attack on critical infrastructure; is exempt from mandatory disclosure under the Freedom of Information Act; and gives strategic information beyond the location of the critical infrastructure.
Current Curtailment	An electric current is the movement of an electric charge. A reduction in transmission service or generation as a result of system reliability conditions.
Customer Account	PJM accounts are one or multiple accounts belonging to a single PJM member allowing the member to separate transactional activity and PJM business tool access. When a PJM member chooses to set up multiple accounts, these are often referred to as subaccounts. If a member creates separate accounts, PJM settlements calculations, invoicing and reporting would follow based on the activity in each account, though financial settlement is still accomplished through a single net payment to or from the member for each

	invoice period. Each account has a unique account name, account short name and account numerical identifier.
D	
Daily Unforced Capacity Obligation	An LSE's daily assignment in megawatts of the Zonal Unforced Capacity Obligation. Calculated as the LSE's Obligation Peak Load in the zone/area * the Final Zonal RPM Scaling Factor * the Forecast Pool Requirement for an LSE in a zone/area.
Day-Ahead Demand	The fixed and/or price-sensitive demand bids cleared in the PJM Day-Ahead Energy Market (financial hedge).
Day-Ahead Energy Market	A day-ahead hourly forward market in which PJM market participants may submit offers to sell and bids to buy energy. The results of the Day-Ahead Energy Market are posted daily by 1:30 p.m. and are financially binding. The Day-Ahead Energy Market is based on the concept of Locational Marginal Pricing and is cleared using least price security-constrained unit commitment and dispatch programs.
Day-Ahead Scheduling Reserve (DASR) Market	Voluntary, offer-based market for 30-minute (supplemental) reserves that can be provided by both Generation and Demand Resources. Clears the Day-Ahead 30-minute Reserve Requirement, and is co-optimized with the Day-Ahead Energy Market.
DCS	Disturbance Control Standard (DCS) is the NERC DCS measures the ability of a control area to return Area Control Error either to zero or to its initial value following the loss of a large generating unit.
Dead (De-energized)	Free from any electrical connection to a voltage source and from an electric charge; not having a potential different from that of ground.
Decrement Bids	An hourly bid, expressed in MWh, to purchase energy in the PJM Day-Ahead Energy Market if the Day-Ahead LMP is less than or equal to the specified bid price. This bid must specify hourly quantity, bid price and location (Transmission Zone, Hub, Aggregate, Interface or single bus).
Delivery Year	The 12 months beginning June 1 and extending through May 31 of the following year. Delivery Year may also be referred to as Planning Year or Planning Period.
Demand (Load)	Demand is the usage or consumption of electricity on a power system. Demand is generally expressed in kilowatt-hours or megawatt-hours.
Demand Bid (Fixed)	An hourly bid, expressed in MWh, that may be submitted into the Day-Ahead Energy Market to purchase a certain amount of energy at Day-Ahead LMP. Fixed Demand Bids must specify hourly quantity and location (transmission zone, aggregate or single bus).

Demand Bid (Price-Sensitive)	An hourly bid, expressed in MWh, that may be submitted into the Day-Ahead Energy Market to purchase a certain amount of energy at Day-Ahead LMP only if the Day- Ahead LMP value is less than or equal to the specified bid price. Price-sensitive Demand Bids must specify hourly quantity, bid price and location (transmission zone, aggregate or single bus).
Demand Resource	A resource with a demonstrated capability to provide a reduction in demand or otherwise control load. A Demand Resource may be an existing or planned resource.
Demand Resource Factor (DR Factor)	One of the parameters used to determine the Unforced Capacity value of demand resources in the capacity market. The DR Factor is calculated by PJM, approved and posted by Feb. 1 prior to the Base Residual Auction.
Demand Resource Modification (DR Mod)	 Transaction used by PJM to track an increase or decrease of the nominated value of the demand resource in a party’s resource portfolio in the Capacity Exchange tool.
Demand Response	Program that allows end use customers to reduce their electricity usage during periods of higher power prices. In exchange, end-use (retail) customers are compensated through PJM members known as Curtailment Service Provider for decreasing their electricity use when requested by PJM.
Demand Side Management	Demand Response and Energy Efficiency measures by end-use (retail) customers.
Demand Side Response	A change in electricity usage by a customer in response to price or an emergency event affecting grid reliability.
Direct Current	A direct current is the movement of an electric charge from negative to positive that flows in only one direction. This is compared to an alternating current, which periodically reverses direction.
Disconnect Switch	A mechanical switching device used for changing the connections in a circuit or for isolating a circuit or equipment from a voltage source.
Dispatch Rate	The control signal, expressed in dollars per megawatt hour, calculated and transmitted continuously and dynamically to direct the output level of all generation resources dispatched by PJM in accordance with the Offer Data.
Dispatchable Generation	Generation that can follow dispatch instructions between economic minimum and economic maximum.
Distribution	Distribution is the final stage of delivering electricity to an end user. A distribution system steps down electricity from the higher voltage levels on the transmission system to deliver it directly to homes or businesses.

Distribution Factor	The term is generally applied to the percentage of power flowing on Element A that will be picked up (or backed down) on Element B as a result of an outage on Element A or a shift on generation.
Dynamic Reserves	<p>Used during system restoration to ensure the system will remain stable following the loss of the largest energy contingency.</p> <p>Dynamic reserve consists of two components:</p> <ul style="list-style-type: none"> • Reserve on generators available via generator governor action during a frequency disturbance • System load with under-frequency relay protection enabled
Dynamic Schedule	A telemetered value that is updated in real time and used to adjust the interchange schedule in the Automatic Generation Control/Area Control Error equation. Commonly used for generation or load to or from another Control Area.
Dynamic Transfer	The provision of the real-time monitoring, telemetering, computer software, hardware, communications, engineering, energy accounting (including inadvertent interchange), and administration required to electronically move all or a portion of the real energy services associated with a generator or load out of one Balancing Authority Area into another.
E Eastern Interconnect Data Sharing Network (EIDSN)	A network for the sharing of operating reliability data, including both Supervisory Control and Data Acquisition (SCADA) and synchrophasor data, among appropriate entities to promote the reliable and efficient operation of the Eastern and Quebec Interconnections.
Economic Demand Response	Ability for end-use customer to participate in the wholesale energy and ancillary service markets through a Curtailment Service Provider which it is economic for them to participate in the market(s).
Economic Dispatch	The short-term determination of the optimal output of generation facilities, to meet the system load, at the lowest possible cost, subject to transmission and operational constraints.
Economic Generation	Units producing energy at an offer price less than, or equal to, LMP.
Economic Maximum Generation	The highest incremental MW output level a unit can achieve while following economic dispatch.
Economic Minimum Generation	The lowest MW output level a unit can achieve while following economic dispatch.

Electric Cooperative	A business jointly owned by its customers and operated as a pooled resource; engaged in the generation, transmission, and/or distribution of electric energy.
Electric Utility	An electric utility is an entity involved in the generation, transmission or distribution of electricity for sale and for use by the general public. An electric utility can be investor owned, cooperatively owned or government owned such as a municipal system.
Electrical Energy	The generation or use of electric power by a device over a period of time, expressed in kilowatt-hours (kWh), megawatt hours (MWh) or gigawatt hours (GWh).
Emergency Demand Response	A commitment to reduce load or consume electricity only up to a certain level when PJM needs assistance under expected emergency conditions (also called Load Management).
Emergency Maximum Generation Limit	The maximum output of energy a generating unit can produce and still maintain a stable level of operation.
Emergency Minimum Generation Limit	The least amount of energy a unit can produce and still maintain a stable level of operation.
End-Use (Retail) Customer	One of PJM's defined sectors for voting purposes.
Energy	Broadly defined, energy is the ability to do work. Electrical energy is produced by a generator, which converts other forms of energy into electrical energy that is then transmitted through the electric transmission and distribution systems. It is measured in kilowatt-hours and megawatt-hours.
Energy Imbalance Service	Used to supply energy for mismatch between scheduled delivery and actual loads that have occurred over an hour.
Energy Management System	Energy Management System (EMS) provides real-time monitoring of operational information for all critical electrical equipment - information that is central to reliable operation of the bulk power system.
Energy Management System (EMS)	Energy Management System
Energy Market	An energy market is a type of spot market in which energy is sold or purchased for immediate delivery. Because electricity is a commodity that is consumed the same moment it is produced, by its nature, energy is delivered immediately upon sale or purchase. PJM's energy market functions at a wholesale level. These energy markets operate every day and participants in the market establish a price for electricity by matching supply (what generators want to sell) and demand (what utilities and customers want to buy). Utilities and competitive retailers that purchase energy from a wholesale market resell it to final consumers at retail rates or prices.

Energy Market Opportunity Cost	Energy Market Opportunity Cost is the value associated with an externally imposed environmental run-hour restriction on a generation unit. Examples would include a limit on emissions for the unit imposed by a regulatory agency or legislation, a direct run hour restriction in the operating permit, or a heat input limitation defined by a regulatory decision or operating permit.
Equivalent Demand Forced Outage Rate (EFORd)	A measure of the probability that generating unit will not be available due to a forced outages or forced deratings when there is a demand on the unit to generate.
Equivalent Demand Forced Outage Rate (EFORd-5)	An EFORd determined based on five years of outage data through Sept. 30 prior to the Delivery Year.
Equivalent Forced Outage Factor (EFOF)	The equivalent forced outage factor is the proportion of hours in a year that a unit is unavailable because of forced outages.
Equivalent Load	The sum of a Market Participant's net system requirements to serve its customer load in the PJM Region, plus its net bilateral transactions.
Equivalent Planned Outage Factor (EPOF)	The proportion of hours in a year that a unit is unavailable because of planned outages.
Event Analysis	Utilization of a systematic approach to analyze an event which had negative consequences, with the goal of finding the causal factors of the event and develop recommendations to prevent a of the event.
Exempt Wholesale Generator (EWG)	Independent power facilities generating electricity for sale in wholesale power markets that do not meet the size, efficiency or ownership requirements for Qualifying Facility status. The Federal Energy Regulatory Commission determines EWG status.
Exports	The sum of all external transactions where PJM is the Point of Receipt.
Extended Summer Demand Resources	Demand Resources which can be called on as many times as needed from 10 a.m. to 10 p.m. any day from June through October and the following May of that delivery year.
External Resource	A generation resource located outside the metered boundaries of the PJM RTO.
External Transaction	An energy transaction between two parties in which the path of the energy crosses a PJM RTO border.
Extra High Voltage (EHV)	This refers to 345kV and above on the PJM system.

F

Fault	A physical condition that results in the failure of a component or facility of the transmission system to transmit electrical power in a manner for which it was designed.
Federal Energy Regulatory Commission	The Federal Energy Regulatory Commission (FERC) is an independent regulatory agency within the U.S. Department of Energy. The FERC regulates the transmission and wholesale sales of electricity in interstate commerce. The FERC also administers accounting and financial reporting regulations and conduct of jurisdictional companies.
Final Zonal RPM Scaling Factors	A factor applied to an LSE's Daily Obligation Peak Load for purposes of calculating an LSE's Daily Unforced Capacity Obligation.
Financial Transmission Right	A Financial Transmission Right (FTR) is a financial instrument awarded to bidders in the FTR Auctions that entitle the holder to a stream of revenues (or charges) based on the hourly Day Ahead congestion price differences across the path.
Firm Transmission Service	A transmission service that is intended to be available at all times to the maximum extent practicable, subject to an emergency, an unanticipated failure of a facility, or other event beyond the control of the owner or operator of the facility or of PJM.
First Contingency Basis	Operation of the bulk power electric supply system in the PJM RTO in a manner intended to protect against the consequences of the failure or malfunction of any single bulk power facility, such that prior to a contingency occurring - The loading on all such bulk power facilities is maintained within normal continuous ratings, and - Voltages are maintained at predetermined normal schedules at all load levels; and such that - Immediately following any single facility malfunction or failure - The loading on all remaining facilities can be expected to be within emergency ratings, - System stability is maintained, and - An acceptable voltage profile is maintained.
Fixed Resource Requirement	An alternative method for an eligible load-serving entity to meet a fixed resource requirement with its own capacity resources as opposed to having PJM procure capacity resources on the load-serving entity's behalf in RPM auctions.
Fixed Resource Requirement (FRR) Capacity Plan	An FRR entity's advance commitment of capacity resources to satisfy their unforced capacity obligation and any specific locational or product-type resource requirements for a delivery year.
Forced Transmission Outage	An immediate removal from service of a Designated Transmission Facility.

Forecast Pool Requirement	The PJM installed reserve margin expressed in unforced capacity terms. The FPR is applied to a peak load forecast in order to establish the level of unforced capacity (UCAP) that will provide an acceptable level of reliability.
Frequency Bias	The Balancing Authority's obligation to provide or absorb energy to assist in stabilizing frequency. If frequency goes low, each Balancing Authority is asked to contribute a small amount of extra generation in proportion to its system's established bias value.
Frequency Disturbance	A system frequency deviation from normal as a result of a generation/load imbalance.
Frequently Mitigated Unit (FMU)	A unit that was offer-capped for more than a defined proportion of its real-time run hours in the most recent 12-month period. FMU thresholds are 60 percent, 70 percent and 80 percent of run hours. Such units are permitted a defined adder to their cost-based offers in place of the usual 10 percent adder.
FTR Auction	A PJM-administered market for FTRs in which PJM market participants may submit offers to sell and bids to buy on-peak, off-peak or 24 hour FTRs. FTRs awarded in these auctions can have a term of one calendar month, three calendar months, one year or three years.
Fuel Cost	The cost of the fuel used by each unit expressed in \$/MBTU. When multiplied by the incremental heat rate (MBTU/MWh), the incremental fuel cost (\$/MWh) results.
Full Requirements Service	This is a term used by EDCs typically entails a commitments to supply all the customer's wholesale load requirements.
G Generation	Generation describes both the process of producing electrical energy from other forms of energy (e.g., a power plant burning coal or a windmill turning moving air into energy) as well as the amount of electrical energy produced, which is usually expressed in kilowatt-hours (kWh) or megawatt-hours (MWh).
Generation Dispatcher	Member personnel who participate in the real-time operations of the PJM system by dispatching generation and performing other generation-related real-time duties as found on the PJM Generation Dispatcher Task List
Generation Offer	Schedules of MW offered and the corresponding offer price.
Generation Owner	One of PJM's defined sectors for voting purposes. See Operating Agreement for qualifications.
Generator	A machine that converts different forms of energy into electrical energy. A generator or power plant might burn coal, capture the sun's energy through solar panels, convert

	<p>moving air into electricity through windmills or transform the movement of water into energy as hydroelectric power. PJM has a diverse generation fuel mix that includes nuclear power, natural gas, fossil fuels coal and renewable generation such as wind and solar.</p>
Generator Operator	<p>The entity that operates generating Facility(ies) and performs the functions of supplying energy and Interconnected Operating Services. (NERC definition)</p>
Gigawatt	<p>A gigawatt is a unit of power that is equal to one billion watts or 1,000 megawatts. One gigawatt of electricity generated would power between 800,000 and one million homes.</p>
Gigawatt-hour	<p>A gigawatt-hour is a unit of measurement used to describe the amount of electricity produced or consumed. One gigawatt-hour is equal to one billion watt-hours or 1,000 megawatt hours.</p>
Grid	<p>An electrical grid is an interconnected network of generation, transmission and distribution elements that delivers electricity from suppliers to consumers.</p>
H	
Hertz (Hz)	<p>Electricity system frequency is measured in Hertz (Hz). Frequency measures 60 Hz in U.S. electric markets and 50 Hz in those in Europe.</p>
Hub	<p>A group of more than one individual bus into a regional pricing node (pnode) developed to produce a stable price signal in the Energy Market and other various systems and Markets within PJM.</p>
Human Performance	<p>How people do what they do in order to accomplish goals and achieve results. The goal of Human Performance is to reduce the frequency of human error and prevent human errors from becoming negative events.</p>
I	
Immature Unit	<p>A unit having between zero and five full calendar years of operating experience for reliability calculations.</p>
Imports	<p>The sum of all external transactions where PJM is the Point of Delivery. Capacity imports from external units must be certified as deliverable using firm transmission and non-recallable by any external party.</p>
Inadvertent Interchange	<p>The difference between net actual energy flow and net scheduled energy flow into or out of a Control Area.</p>
Increment Offers	<p>An hourly offer, expressed in MWh, to sell energy into the PJM Day-Ahead Energy Market if the Day-Ahead LMP is greater than or equal to the specified offer price. This offer must specify hourly quantity, offer price and location (Transmission Zone, Hub, Aggregate, Interface or single bus).</p>

Incremental Auctions	First, Second and Third Incremental Auctions allow for capacity suppliers to purchase replacement capacity and for PJM to adjust previously committed capacity levels due to reliability requirement increases or decreases.
Incremental Capacity Transfer Rights	A method of allocating the economic value of transmission import capability into a constrained locational deliverability area (LDA) to eligible transmission facility upgrades.
Incremental Cost	The incremental energy cost is the cost per MWh to produce all of the energy segments above the economic minimum level. It is calculated by summing the cost of each segment of energy in the unit's incremental cost curve up to the generation level. This cost is a dollar per hour (\$/MWh) rate.
Inframarginal Unit	A unit that is operating, with an accepted offer that is less than the clearing price.
Installed Capacity (ICAP)	A MW value based on the summer net dependable capability of a unit and within the capacity interconnection right limits of the bus to which it is connected.
Installed Reserve Margin	Percentage value used to establish the level of installed capacity resources that provide an acceptable level of reliability.
Instantaneous Reserve Check	Instantaneous Reserve Check (IRC) is a PJM survey to obtain the actual current available reserve on the system. It is an activity performed and recorded daily at morning and evening shifts by dispatch in conjunction with generator owners.
Interconnection Reliability Operating Limit (IROL)	A System Operating Limit that, if violated, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Bulk Electric System.
Inter-Control Center Protocol (ICCP)	An industry standard protocol used to communicate real-time data between control centers. PJM uses this to send and receive operations analog data measurements and digital measurements.
Interface	A group of more than one individual bus into a proxy pricing node (pnode) developed for transactions into or out of the RTO in the Energy Market and other various systems and Markets within PJM.
Internal Bilateral Transaction (IBT)	A transaction for the physical transfer of energy between two parties in which the path of the energy remains inside the PJM RTO borders. Internal Bilateral Transactions (IBTs) for energy are reported to PJM by participants using the PJM InSchedule tool.

J

Joint and Common

MISO and PJM Interconnection have developed complementing system operations and a robust, non-

	<p>discriminatory wholesale electricity market to meet the needs of all customers and stakeholders within both regions. The market was developed through an open stakeholder process, designed to serve residents regardless of whether they reside in states with bundled or unbundled retail rates.</p>
Joint-Owned Unit	<p>A generating unit owned by two or more member systems whose output is dispatched as a pool resource, with each owner receiving a share of output for billing purposes on the percentage of ownership.</p>
K Kilowatt	<p>A kilowatt is a unit of power that is equal to 1,000 watts. The power output of many electric motors or heaters is typically expressed in kilowatts.</p>
Kilowatt-hour	<p>Monthly electricity bills for residential consumer shows the kilowatt-hours that were used. One-thousand kilowatt-hours equals one megawatt-hour.</p>
L Limited Demand Resources	<p>Demand Resources which can be called on during weekdays (other than NERC holidays) from noon to 8 p.m. up to 10 times from June through September.</p>
Load (Demand)	<p>Load is the overall usage or consumption of electricity on a power supply. Load is generally expressed in kilowatt-hours or megawatt-hours.</p>
Load Curtailment	<p>Completely or partially reducing consumer electricity consumption.</p>
Load Management	<p>A resource with a capacity commitment to reduce load when dispatched by PJM. A demand response resource may be an existing or planned resource.</p>
Load Management Subzone	<p>A collection of zip codes within a transmission zone where any one location on the demand response registration is located within a zip code. Those within these locations should respond to the PJM dispatch signal, unless otherwise notified by PJM. Registrations based on residential and small commercial direct load control programs not having operational capability to respond to a transmission subzone dispatch signal. These do not need to respond to a transmission subzone dispatch signal, unless instructed by PJM requesting all direct load control related registrations.</p>
Load Pick-up Factor	<p>The amount of load (expressed in terms of percent of generator rating) that a generator can pick up without incurring dynamic frequency decay below a level at which generators will trip due to under frequency relaying (i.e., usually 57.5 Hz). Used during the system restoration process.</p>
Load Serving Entity	<p>A Load Serving Entity (LSE) is any entity (or the duly designated agent of such an entity), including a load</p>

aggregator or power marketer that (a) serves end-users within the PJM Control Area, and (b) is granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Control Area.

Locational Constraints	Localized capacity import capability limitations within the PJM footprint that are caused by transmission facility limitations or voltage limitations that are identified for a Delivery Year in the PJM Regional Transmission Expansion Planning Process prior to the Delivery Year Base Residual Auction.
Locational Deliverability Area (LDA)	Sub-regions within PJM used in evaluating locational constraints. LDAs include transmission zones, sub-zones and combination of zones.
Locational Marginal Price (LMP)	Locational Marginal Price (LMP) is defined as the marginal price for energy at the location where the energy is delivered or received. For accounting purposes, LMP is expressed in dollars per megawatt-hour (\$/MWh). LMP is a pricing approach that addresses Transmission System congestion and loss costs, as well as energy costs.
Locational Price Adder	A component of the Resource Clearing Price that represents the additional price value of capacity resources located in a constrained LDA.
Locational Reliability Charge	Fee applied to each LSE that serves load in PJM during the delivery year. Equal to the LSEs Daily Unforced Capacity Obligation multiplied by the applicable Final Zonal Capacity Price.
Long-Term Firm Point-to-Point Transmission Service	Firm Point-to-Point Transmission Service with a term of one year or more.
Loss of Load Probability (LOLP)	The probability of system load exceeding available capacity over a defined period of time.
Losses	The power that is lost as dissipated heat when power flows in transmission lines and transformers.
Loss-of-Load expectation (LOLE)	Loss-of-load expectation (LOLE) defines the adequacy of capacity for the entire PJM footprint based on load exceeding available capacity, on average, only once in 10 years.
Lost opportunity cost (LOC)	In general, lost opportunity costs are the foregone revenues resulting from 1) following PJM's dispatch instructions to provide some type of service or 2) due to reliability or transmission constraints. Lost opportunity costs are calculated for generating units participating in many PJM markets.

M

Manual Load Dump	The removal of electric load from a system by manually opening circuit breakers. Also known as load shedding.
Marginal Losses Cost	The price that represents the power lost when power moves across the transmission system. Marginal Losses Cost is one of the three components of Locational Marginal Pricing (LMP).
Market-Clearing Price (MCP)	The price that is paid by all load and paid to all suppliers for the service received or provided.
Marketer	An entity that has the authority to take title to electrical power generated by itself or another entity and re-market that power at market-based price.
Markets Operations Center (MOC)	The equipment, facilities and personnel used by or on behalf of a market participant to communicate and coordinate with PJM in connection with transactions in the PJM Energy Market or the operation of the PJM RTO.
Mature Unit	A unit that has at least five years of operating experience for reliability calculations.
Megawatt	A megawatt is a unit of power equaling one million watts (1 MW = 1,000,000 watts) or one thousand kilowatts (1 MW = 1,000 KW). To put it in perspective, under non-severe weather conditions, one MW could power roughly 800 to 1,000 average-sized American homes.
Megawatt-hour (MWh)	A megawatt-hour is a unit of measurement used to describe the amount of electricity produced or consumed. It is equal to 1 million watt-hours or 1,000 kilowatt-hours.
Member	Any entity that has completed an application and satisfies the requirements of the PJM Operating Agreement to conduct business with PJM including Transmission Owners, Generating Entities, Load Serving Entities and Marketers.
Metered	Refers to facilities or market entities that are within the PJM RTO.
Metered Value	A measured electrical quantity that may be observed through telemetering, supervisory control and data acquisition (SCADA) or other means.
Mileage	Mileage is the summation of movement requested by the regulation control signal a resource is following. It is calculated for the market hour and on a five minute basis for each regulation control signal (i.e. RegA and RegD).
Minimum Offer Price Rule (MOPR)	Provision that imposes a minimum offer screening process to determine whether an offer from a new resource is competitive and prevents market participants from

submitting uncompetitive, low new entry offers in RPM Auctions to depress auction clearing prices artificially.

Monitoring Analytics Monitoring Analytics was established in 2008, created by spinning off the Market Monitoring Unit of PJM Interconnection. Monitoring Analytics continues to serve as the Independent Market Monitor for PJM under a long-term contract. Monitoring Analytics also has extensive experience producing reports on a variety of market topics.

Monthly Energy Reconciliation Load (Energy) Reconciliation Billing - Billing for the difference between the hourly load responsibility initially reported to PJM and the actual hourly load. Hourly Load responsibilities including load reconciliation quantities are reported by EDCs using the PJM InSchedule tool.

Mothballed Unit A mothballed unit is a generating unit placed on inactive status for a defined amount of time (ex. one-to-two years). This unit would be deactivated but not retired.

Must-Run Generation Generation designated to operate at a specific level and not available for economical dispatch. Also referred to as fixed generation.

N

Net Capability The number of megawatts of electric power that can be delivered by an electric generating unit of a System under conditions and criteria specified by Manual 21. Net Capabilities for all units are determined for both summer and winter operating conditions.

Net Energy & Ancillary Services (E&AS) Offset Value representing historical energy revenue and tariff-defined ancillary services revenue (\$/MW-year) for a reference combustion turbine which is used to offset the value of Cost on New Entry (CONE) in order to determine the net value of CONE (Net CONE).

Net Interchange (energy) Gross import volume less gross export volume in MWh.
Net Tie Flow (Telemetered) Summation of the flows on all ties between PJM and neighbors. Flows into PJM RTO are positive (+); out of PJM are negative (-).

Network Integration Transmission Service Allows a Transmission Customer to integrate, plan, economically dispatch and regulate its network resources to serve its network load in a manner comparable to that in which the transmission provider utilizes its Transmission System to serve its Native Load Customers. Network Integration Transmission Service also may be used by the Transmission Customer to deliver non-firm energy purchases to its network load without additional charge.

Network Service Peak Load (NSPL) A load's contribution to the zone's metered annual peak load.

New Entry Pricing New entry pricing allows planned generation resources that satisfy the requirement criteria to recover the amount of

	their initial BRA cost-of-entry-based offer for up to two additional consecutive delivery years.
Nominated DR Value	The nominated DR value is the installed capacity load reduction that is committed to respond during a pre-emergency or emergency load management event. The value cannot exceed the customer's Peak Load Contribution.
Non-Coincident Peak	Non-coincident Peak is a transmission zone's, load-serving entity's or end-use customer's peak load during a stated period of time, whether or not it occurs at the same time as the overall system peak.
Non-economic Generation	Units producing energy at an offer price greater than the LMP.
Non-Firm Point-to-Point Transmission Service	Point-to-Point Transmission Service under the Tariff that is reserved and scheduled on an as-available basis and is subject to curtailment or interruption. Non-Firm Point-to-Point Transmission Service is available on a stand-alone basis for periods ranging from one hour to one month.
Non-PJM-Designated Transmission Facilities	The transmission facilities within the PJM RTO that are not designated for PJM operation. These are also referred to as Local Non-designated Transmission Facilities.
Non-retail Behind the Meter Generation	Behind the Meter Generation that is used by municipal electric systems, electric cooperatives, and electric distribution companies to serve load.
North American Electric Reliability Corporation	The North American Electric Reliability Corporation (NERC) operates as an electric reliability organization to improve the reliability and security of the bulk power system in North America. To achieve that, NERC develops and enforces reliability standards; monitors the bulk power system; assesses future adequacy; audits owners, operators, and users for preparedness; and educates and trains industry personnel. As the Electric Reliability Organization, NERC is subject to audit by the U.S. Federal Energy Regulatory Commission and governmental authorities in Canada.
O Obligation Peak Load	The summation of the peak load contributions (PLCs) of end-use customers that an LSE is responsible to serve in a zone on an operating day.
Off Peak	Off-peak is a period of time when consumers typically use less electricity: normally weekends, holidays or times of the day when many businesses are not operating. PJM typically considers New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day off-peak; as well as weekend hours and weekdays from 11 p.m. to 7 a.m.
Off-Cost	Out of merit dispatch operation that may necessitate the need for expensive resources to come online or economic

	resources to decrease their output to relieve a transmission constraint.
Offer Data	Generator data including availability, operational limits, cost data, etc. specified for submission to the PJM Interchange Energy Market that is necessary to schedule and dispatch generation resources to meet the reliability and security of the Transmission System in the PJM RTO.
On-Peak	On-peak is a period of time when consumers typically use more electricity -- normally on weekdays, when many businesses are operating. PJM typically considers weekdays from 7 a.m. to 11 p.m. on-peak, except for the following holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.
Operating Day	The daily 24-hour period beginning at midnight EPT for which transactions on the PJM Interchange Energy Market are scheduled.
Operational Flow Order (OFO)	Mechanism to protect the operational integrity of the natural gas pipeline.
Outage	An outage has multiple meanings in PJM. First, an outage is a short- or long-term loss of electric power to an area. Planned intervals of time when either transmission lines or power plants are temporarily brought out of service for maintenance are also known as outages.
Outage Transfer Distribution Factor (OTDF)	The electric power transfer distribution factor (PTDF) with a specific system facility removed from service (outage). The OTDF applies only for the post-contingency configuration of the systems under study.
P	
Parameter Limited Schedules	Schedules containing pre-determined limits that could be imposed on the parameters in generation offers when certain operational circumstances exist. Cost based offers are parameter limited. Price based offers can be parameter limited or not.
Peak Demand	An end-use customer's contribution to the zone's weather normalized summer peak load, as determined by the zone's Electric Distribution Company.
Peak Load Contributions (PLCs)	An end-use customer's contribution to the zone's weather normalized summer peak load, as determined by the zone's Electric Distribution Company.
Peak Season	Peak Season is defined to be those weeks containing the 24th through 36th Wednesdays of the calendar year. Each such week begins on a Monday and ends on the following Sunday, except for the week containing the 36th Wednesday, which ends on the following Friday.

Peak Season Maintenance	Planned outages and maintenance outages during the Peak Season.
Peak-Period Equivalent Forced Outage Rate Peak (EFORp)	A measure of the probability that a generating unit will not be available due to forced outages or forced deratings when there is a demand on the unit to generate during the defined critical peak hour periods.
Percentage Internal Resources Required	Determines the amount of resources located in an LDA that must be committed to an FRR Capacity Plan.
Performance-Based Regulation (PBR)	This PJM market structure aligns compensation with the actual performance and benefits each resource provides to the power system. Resources are provided compensation for their accuracy, speed and precision of response in providing regulation service to the system.
Phase Angle Regulator (PAR)	A power system transformer that has tap changing capability and can change the phase angle across the transformer and thereby increase or decrease power flow.
Phasor Measurement Unit	A phasor measurement unit (PMU) measures the electrical waves on an electricity grid to determine the health of the system. In power engineering, these are also commonly referred to as synchrophasors and are considered one of the most important measuring devices in the future of power systems.
PJM Control Center	The equipment, facilities, and personnel used by PJM to coordinate and direct the operation of the PJM RTO and to administer the PJM Interchange Energy Market, including facilities and equipment used to communicate and coordinate with the Market Participants in connection with transactions in the PJM Interchange Energy Market or the operation of the PJM RTO.
PJM Electronic Reporting Compliance System (PERCS)	A PJM Tool used by Member TO for data and evidence submittals.
PJM Environmental Information Services, Inc. (PJM-EIS)	PJM Environmental Information Services, Inc. (PJM-EIS), a wholly-owned subsidiary of PJM Technologies, Inc., was formed to provide environmental and emissions attributes reporting and tracking services to its subscribers in support of renewable portfolio standards and other information disclosure requirements that may be implemented by government agencies. PJM-EIS owns and administers the Generation Attribute Tracking System (GATS).
PJM Interchange Energy Market	The regional competitive market administered by PJM for the purchase and sale of spot electric energy at wholesale in interstate commerce and related services established in the PJM Operating Agreement.
PJM Interchange Net Interchange (Spot Market Energy Settlements)	Net Interchange (Spot Market Energy Settlements) - Net Interchange for use in PJM Spot Market settlements is the difference between a participant's total energy resources

(including both generation and purchased energy) and its total energy demand (including both load and energy sale obligations). Net interchange for this purpose is calculated separately for the day-ahead energy market and the real-time energy market.

PJM Manuals	The instructions, rules, procedures and guidelines established by PJM for the operation, planning, and accounting requirements of the PJM RTO and PJM Interchange Energy Market.
PJM Monitored Facilities	Those facilities above 100kV which are both monitored in the PJM EMS and included in the LMP calculations for congestion management.
PJM Region	PJM Region represents the aggregate of all the PJM transmission zones.
PJM Reliability Facilities	Those facilities above 100kV which are monitored as part of the NERC BES set of facilities but are not included in the LMP calculations for congestion management.
PJM RTO	The control area recognized by NERC that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.
PJM Settlement, Inc.	PJM Settlement, Inc., a subsidiary of PJM Interconnection, LLC, provides member settlement transaction activities for those participating in PJM's markets. The subsidiary acts as a counterparty to members' pool transactions and provides a clearly defined legal standing to collect unpaid balances of a member if the member should declare bankruptcy. All current PJM members are also members of PJM Settlement, Inc. PJM Settlement, Inc. is a Pennsylvania nonprofit corporation that has a service agreement with PJM to provide and retain services, including PJM staff support.
Planned Demand Resource	A Demand Resource that does not currently have the capability to provide a reduction in demand or to otherwise control load, but that is scheduled to be capable of providing a reduction or control on or before the start of the Delivery Year for which the resource is to be committed.
Planned Outage	The scheduled removal from service, in whole or in part, of a generating unit for inspection, maintenance or repair with approval of PJM.
Planned Transmission Outage	Any transmission outage scheduled for the performance of maintenance or repairs or the implementation of a system enhancement which is planned in advance for a pre-determined duration and which meets the notification requirements for such outages as specified by PJM.

Planning Period	The 12 months beginning June 1 and extending through May 31 of the following year. Planning Period may also be referred to as Planning Year or Delivery Year.
Planning Year	The 12 months beginning June 1 and extending through May 31 of the following year. Planning Year may also be referred to as Planning Period or Delivery Year.
PMAX	Maximum real power (WATTS) that can be achieved by a resource.
Point(s) of Delivery (POD)	Point(s) on the transmission provider's transmission system where capacity and energy transmitted by the transmission provider is made available to the receiving party.
Point(s) of Receipt (POR)	Point(s) of interconnection on the transmission provider's transmission system where capacity and energy are made available to the transmission provider by the delivering party.
Point-to-Point Transmission Service	The reservation and transmission of capacity and energy on either a firm or non-firm basis from the Point(s) of Receipt to the Point(s) of Delivery.
Pool-Scheduled Resource	This is a resource that the seller has turned over to PJM for scheduling and control.
Pool-Wide Average EFORD	Average of the forced outage rates based on five years history, weighted for unit capability and expected time in service, attributable to all units that are planned to be in service during the Delivery Year.
Posted Path	Any control area to control area interconnection; any path for which service is denied, curtailed or interrupted for more than 24 hours in the past 12 months; and any path for which a customer requests to have ATC or TTC posted (defined in FERC Order 889).
Power	Power is the rate at which energy is transferred, used or transformed. It is measured in watts.
Power Transfer Distribution Factor	A measure of the responsiveness or change in electric loading on system facilities due to a change in electric power transfer from one area to another. Power transfer distribution factor is expressed in percent (up to 100 percent) of the change in power transfer in the pre-contingency configuration of a system under study.
Price Node (Pnodes)	A single point or subset of points where a physical injection or withdrawal of energy is modeled and for which a locational marginal price (LMP) is calculated and used for financial settlements.
Price Responsive Demand (PRD)	PRD provider with End-use customers that will commit to only consume a certain amount of electricity when energy prices are high and therefore cap the amount of capacity required.

Primary Reserve Reserve capability that can be converted fully into energy within 10 minutes from the request of PJM. The Primary Reserve Requirement is met with Synchronized Reserves and Non-Synchronized Reserves.

pseudo tie A time-varying energy transfer that is updated in Real-time and included in the Actual Net Interchange term (NIA) in the same manner as a Tie Line in the affected Balancing Authorities' Reporting ACE equation (or alternate control processes). (As defined by NERC)

Q

QMAX Maximum reactive power (VAR) that can be achieved by a resource

Qualifying Transmission Upgrade (QTU) A proposed enhancement or addition to the Transmission System that may be offered into the Base Residual Auction if such upgrade increases the Capacity Emergency Transfer Limit (CETL) into an LDA by a megawatt quantity certified by PJM.

R

Ramp Rate The rate, expressed in megawatts per minute, at which a generating unit can change output level.

Reactive Limitations The maximum power flow possible into or through some particular part of the system to maintain post contingency system bus voltage within operating criteria.

Reactive Power The product of voltage and the out-of-phase component of alternating current. Reactive power, usually measured in VARs, is produced by capacitors and overexcited generators and absorbed by reactors and other inductive devices.

Reactive Service Reactive Service maintains transmission voltages within acceptable limits. Generators whose active energy output is altered at the request of PJM for the purpose of maintaining reactive reliability are credited hourly for lost opportunity costs if their output is reduced or suspended and credited in accordance with balancing operating reserve credit calculations if their output is increased. Generators operating as synchronous condensers for the purpose of maintaining reactive reliability at the request of PJM are credited for each hour (or partial hour) of condensing.

Real Power The maximum power flow possible into or through some particular part of the system to maintain post contingency system bus voltage within operating criteria.

Real-Time Energy Market The real-time energy market is a balancing market in which the clearing prices are calculated every five minutes based on the actual system operations security-constrained

economic dispatch. The Real-Time Energy Market is based on the concept of Locational Marginal Pricing and is settled based on actual hourly (integrated) quantity deviations from day-ahead scheduled quantities and on real-time prices integrated over the hour.

Recallability	The right of a transmission provider to interrupt all or part of a transmission service for any reason, including economic, that is consistent with Federal Energy Regulatory Commission policy and the transmission provider's transmission service tariffs or contract provisions.
Redispatch Cost	The cost to increase and/or decrease output from generation to manage transmission congestion.
RegA-Regulation Control Point	The regulation signal point that is used for traditional regulating resources with physical characteristics that limit ramp rate. This regulation signal takes into account the RTO frequency and tie error.
RegD-Dynamic Control Point	Used for regulating resources with no physical characteristics that limit ramp rate. This signal is derived from the same algorithms as the RegA, however, the main difference is the use of a dynamic time constants that allow for faster cycling.
Regional Transmission Expansion Planning (RTEP) Process	PJM's comprehensive annual process that examines the three interrelated components of electric power system reliability: load, generation, and transmission. The RTEP Process employs a range of planning study tools and methodologies to analyze and assess each component to ensure that reliability remains firm. The RTEP process is designed to meet established reliability criteria, keep markets robust and competitive, and ensure stable operations.
Regulation	The capability of a specific resource with appropriate telecommunications, control and response capability to increase or decrease its output in response to a regulating control signal to control for frequency deviations.
Regulation Market Capability Clearing Price (RMCCP)	The Capability Clearing Price for regulation is the five-minute jointly co-optimized regulation price to reserve megawatts. It is set by finding the difference between the Regulation Market Clearing Price (RMCP) and the Regulation Market Performance Clearing Price (RMPCP).
Regulation Market Clearing Price (RMCP)	The price of supplying the last megawatt of Regulation needed to satisfy the Regulation Requirement. The RMCP is calculated every five minutes through joint co-optimization of Regulation, Synchronized Reserve, Non-Synchronized Reserve and energy to achieve the lowest cost alternative. The RMCP is used with the Regulation Market Performance Clearing Price to calculate the Regulation Market Capability Clearing Price.
Regulation Market Performance Clearing Price (RMPCP)	The Performance Clearing Price for regulation is the 5 minute jointly co-optimized regulation price to move megawatts. It is calculated as the highest adjusted performance offer from

the set of cleared resources. In settlements, five-minute RMPCPs are hourly integrated and used in the calculation of Performance Credits.

Regulation Signals	Signals generated by PJM control center and sent to controllable entities to adjust generation or consumption quickly to keep PJM's Area Control Error within allowable limits. PJM employs two types of regulation signals. The Reg A, or traditional, signal is typically followed by regulating resources with physical characteristics that limit ramp rate. The Reg D, or dynamic, regulation signal is faster than Reg A and is typically followed by regulating resources with no physical characteristics that limit ramp rate.
Reliability Must Run (RMR)	Reliability Must Run (RMR) refers to a generating unit that is slated to be retired by its owners but is needed to be available for reasons of reliability. Typically, it is requested to remain operational beyond its proposed retirement date until transmission upgrades are completed.
Reliability Pricing Model (RPM)	PJM's capacity market design that includes a series of auctions to satisfy the reliability requirements of the PJM region for a Delivery Year.
Reliability Principles and Standards	The principles and standards established by NERC or ReliabilityFirst Corporation to define, among other things, an acceptable loss of load due to inadequate generation or transmission capability.
Reliability Requirement	Target level of capacity resources (in megawatts) required to meet to PJM Reliability standards and principles.
Renewable Portfolio Standard	A renewable portfolio standard is a regulation or law that requires a defined amount of energy to be delivered from renewable resources. Many states within the PJM service area have renewable portfolio standards.
Reserved Capacity (aka Reserved Transmission Capability)	The maximum amount of capacity and energy that the Transmission Provider agrees to transmit for the Transmission Customer over the Transmission Providers Transmission System between the Point(s) of Receipt and the Point(s) of Delivery. Reserved capacity is expressed in terms of whole megawatts on a 60-minute interval (commencing on the clock hour) basis.
Reserves	Capacity that currently is not being used but that can be quickly available for the unexpected loss of generation.
Resource Clearing Price	A locational and product-specific clearing price paid to a resource that clears in an RPM Auction.
Resource Specific Benefits Factor	Each resource providing Reg D is assigned a unique benefits factor that translates a fast-moving resource's megawatts into traditional (Reg A) megawatts or effective megawatts. The benefits factor of Reg A resources is always equal to 1. Effective megawatts reflect the rate of substitution between

	resources following the different regulation signals. Resource specific benefits factors are used in regulation market clearing and pricing.
Retail Customer	The end use customer that purchases electricity from a state licensed distribution company or a state licensed alternate supplier at a retail rate.
Retail Load Responsibility	A type of energy transaction in the PJM InSchedule tool between a Load Serving Entity serving retail load and the EDC (Electric Distribution Company) for the applicable service territory. The Retail Load Responsibility (RLR) transaction is used to report the hourly real-time MWh of load responsibility for the LSE and includes losses.
Retail Market	End-use customers purchase electricity through a retail market. In some retail markets, there may be only one choice of an electric distribution company in an area through which customers can purchase electricity, while other markets may have multiple choices.
Retail System User Right of First Refusal (ROFR)	An end-user of electric energy within the PJM RTO. Right of First Refusal (ROFR) means that incumbent transmission owners have the right to construct, own and propose cost recovery for any new transmission project that is located within their service territory and approved for inclusion in a transmission plan developed through FERC guidelines. The FERC has stated in Order 1000 that it is unjust and unreasonable to grant incumbent transmission providers a federal right of first refusal with respect to certain transmission projects because doing so may result in the failure to consider more efficient or cost-effective solutions to regional needs and, in turn, result in the inclusion of higher-cost solutions in the regional plan.
RTO Unforced Capacity Obligation	Represents the net amount of unforced capacity megawatts cleared in Delivery Year RPM Auctions on behalf on LSEs.
RTO Weather Normalized Summer Peak	The sum of the Zonal Weather Normalized Summer Coincident Peaks.
S Secondary Reserve	Reserve capability that can be converted fully into energy within a 10- to 30-minute interval following the request of PJM. Equipment providing Secondary Reserve need not be electrically synchronized to the power system.
Secondary Transmission Provider (Reseller, or Secondary Provider)	Any customer who offers to sell transmission capacity it has purchased (defined in Standards and Communication Protocols for OASIS).
Sector	One of five divisions of the Members Committee, which are: the Generation Owners Sector, Other Suppliers Sector, Transmission Owners Sector, Electric Distributors Sector, and End-Use Customers Sector.

Self-Scheduled Resource	A generating resource that is turned on by the operating company and committed into the energy market by the operating company. Self-scheduled resources are also known as "running for company."
Shadow Price	The constraint shadow price represents the incremental reduction in congestion cost achieved by relieving a constraint by 1 MW. The shadow price multiplied by the flow (in MW) on the constrained facility during each hour equals the hourly gross congestion cost for the constraint.
Shared Reserves	An agreement between PJM and NPCC (includes ISO-NE, NY-ISO, IESO, and New Brunswick) to assist the opposite pool in faster recovery from a sudden loss of generation or energy purchase than it would otherwise have achieved without outside assistance.
Short-Term Firm Point-to-Point Transmission Service	Firm Point-To-Point Transmission Service under Part II of the PJM RTO Open Access Tariff with a term of less than one year.
Sink	The balancing authority (BA) in which the load is located for an interchange transaction. (This will also be a receiving balancing authority for the resulting interchange schedule.)
Solar Magnetic Disturbance	Events that occur on the earth as a result of solar activity. The sun emits a stream of charged particles that flow to Earth and disturb Earth's magnetic field causing unwanted flows and possible damage in electrical transmission systems.
Source	The balancing authority (BA) in which the generation is located for an interchange transaction. (This will also be a sending balancing authority for the resulting interchange schedule.)
Spot Market Energy	Energy bought or sold by Market Participants through the PJM Interchange Energy Market at Locational Marginal Prices.
Static Var Compensator (SVC)	A static Var compensator is an electrical device for providing fast-acting, reactive power compensation on high voltage electricity transmission networks.
Substation	A substation changes energy from one amount of voltage to another, often in the direction of a higher voltage to a lower voltage. A high-voltage transmission line will connect to a substation to move electricity into a low-voltage distribution system on its way to consumers.
Summer Peaking Zone	A system whose maximum one-hour load during the period of June through September exceeds its winter peak.
Surge	A transient variation of current, voltage, or power flow in an electric circuit.
Synchronized Reserve Market	Real-time market for the purchase and sale of Synchronized Reserve, with the purpose of recovering Area Control Error after a resource loss, large tie errors and under frequency conditions. Resources must have capability that can be

converted fully into energy within 10 minutes or customer load that can be removed from the system within 10 minutes of the request from the PJM dispatcher, and must be provided by equipment electrically synchronized to the system. Resource-specific offers are optimized in ASO to determine hourly commitments of inflexible Synchronized Reserves. In real time, the remaining RTO reserve needs are optimized simultaneously with energy to calculate a clearing price for Synchronized Reserve every five minutes based on current system conditions. The five-minute prices are averaged to calculate the hourly Synchronized Reserve Market Clearing Price that is used in settlements.

Synchronous Condenser	A synchronous machine that operates without mechanical load to supply or absorb reactive power for voltage control purposes.
System Operating Limit (SOL)	The value (such as MW, MVAR, amperes, frequency or volts) that satisfies the most limiting of the prescribed operating criteria for a specified system configuration to ensure operation within acceptable reliability criteria. System Operating Limits are based upon certain operating criteria.
T	
Telemetering	The process by which measurable electrical quantities from substations and generating stations are instantaneously transmitted using telecommunication techniques.
Tie Line	A circuit connecting two or more Control Areas or systems of an electric system.
Transformer	An electromagnetic device for transforming energy from one circuit to another of different voltage levels as in alternating current system.
Transmission Constraints	Limitations on a transmission line or element that may be reached during normal or contingency system operations.
Transmission Facilities	Facilities within the PJM Region that have been approved by or meet the definition of transmission facilities established by FERC; or have been demonstrated to the satisfaction of the Office of Interconnection to be integrated with the PJM Region transmission system and integrated into the planning and operation of the PJM Region to serve all of the power and transmission customers within the PJM Region.
Transmission Loading Relief	A NERC procedure developed for the Eastern Interconnection to mitigate overloads on the transmission system by allowing reliability coordinators to request the curtailment of transactions that are causing parallel flows through their system.
Transmission Owner	A member that owns or leases, with rights equivalent to ownership, Transmission Facilities. Taking transmission service is not sufficient to qualify a Member as a Transmission Owner.

Transmission Reliability Margin	The amount of total non-simultaneous transfer capability necessary to ensure that the interconnected transmission network is secure under a reasonable range of system conditions.
Transmission Service Request	A request made by a participant for transmission service over PJM designated facilities. Typically the request is for either short-term or long-term service, over a specific path for a specific megawatt amount. PJM evaluates each request and determines if it can be accommodated, responding back to the requesting party in a time frame outlined in the PJM transmission tariff.
Transmission System	The facilities owned, controlled or operated by the transmission provider within the PJM RTO that are used to provide Transmission Service.

U

Unaccounted for capacity	The capacity reported on the load and capacity printout, minus the calculated operating capacity, minus scheduled capacity not available in 30 minutes. This is the amount of capacity that is reported available at the time of the instantaneous reserve check (IRC), but cannot be accounted for based on system conditions at the time of the IRC.
Unavailable Capacity	Generation that is out of service due to forced, maintenance or planned outages.
Unconstrained Posted Path	Any posted path not determined to be a constrained posted path (defined in FERC Order 889).
Unforced Capacity (UCAP)	The MW value of a capacity resource in the PJM Capacity Market. For generating unit, the unforced capacity value is equal to installed capacity of unit multiplied by (1- unit's EFORd). For demand resources and energy efficiency resources, the unforced capacity value is equal to demand reduction multiplied by Forecast Pool Requirement.
Up-To-Congestion (UTC) transaction	An Up-To Congestion (UTC) transaction is a bid in the Day-Ahead Market to purchase congestion and losses between two points. The UTC bid consists of a specified source and sink location, MW quantity and a "bid spread" that identifies how much the market participant is willing to pay for a congestion and loss position between the source and the sink.

V

Variable Resource Requirement Curve	An administratively determined demand curve (defining prices for various levels of resource procurement) for the PJM Region or an LDA that is used in an RPM Auction.
Voltage	If the flow of electricity through a wire was like the flow of water through a pipe, voltage is akin to the difference in water pressure between two points in the pipeline. It is measured in volts.

Voltage Reduction	A means to reduce customer demand by lowering voltage on the distribution side of the system.
W Watt	A watt is a unit of power that measures the rate at which energy is transferred or converted. A 100 watt light bulb, for example, is rated to consume 100 watts of power when turned on.
Weekday Period	The period of the week that begins at 0800 on Monday and ends at 2200 on Friday.
Weekend Period	The period of the week that begins at 2200 on Friday and ends at 0800 on Monday.
Wheeling	The contracted use of electrical facilities of one or more entities to transmit electricity for another entity.
Wheel-through	An energy transaction flowing through a transmission grid whose origination and destination are outside of the transmission grid.
Wholesale Customer	An entity that purchases electric energy for resale, or uses transmission service for such transactions, within the PJM RTO.
Wholesale Load Responsibility	A type of energy transaction in the PJM InSchedule tool between a Load Serving Entity serving wholesale load and the EDC (Electric Distribution Company) for the applicable service territory. The Wholesale Load Responsibility (WLR) transaction is used to report the hourly real-time MWh of load responsibility for the LSE and includes losses.
Wholesale Market	Like other commodities, electricity is bought and resold multiple times before being delivered to the end-use customer. These transactions form the wholesale electricity market. Suppliers that sell electricity to retail consumers or other large-scale consumers purchase energy through the wholesale market. PJM operates a competitive wholesale market for electricity in the region PJM serves.
Winter Peak Period	The period from December 1 through February 29 of the Planning Period.
Winter Peaking Zone	A system whose reduced winter peak is greater than its maximum one-hour load during the period of June through September.

Z

Zonal Capacity Price	The price charged to an LSE for their unforced capacity obligation in a zone based on the results of RPM Auctions for the Delivery Year.
Zonal CTR Credit Rate	The rate applicable to zonal Capacity Transfer Rights allocated to LSEs in the zone expressed as (\$/MW of unforced capacity obligation).
Zonal CTR Settlement Rate	The rate applicable to zonal Capacity Transfer Rights allocated to LSEs in the zone expressed as (\$/MW of CTRs).
Zonal Unforced Capacity Obligation	A zone's assignment in megawatts of the RTO Unforced Capacity Obligation for the Delivery Year.
Zone	A transmission owner's area within the PJM Region.