
AN ERCOT GLOSSARY AND PRIMER

COMING TO TERMS WITH ERCOT



AUGUST 2021

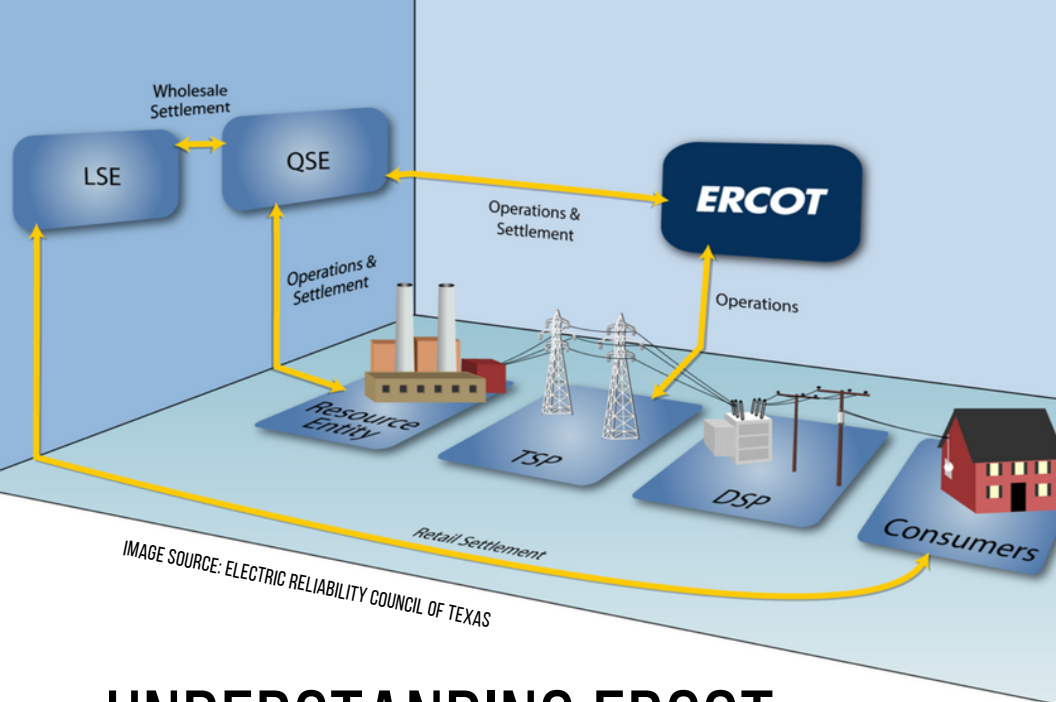


IMAGE SOURCE: ELECTRIC RELIABILITY COUNCIL OF TEXAS

UNDERSTANDING ERCOT

The Electric Reliability Council of Texas, also known as ERCOT, is the non-profit corporation that oversees the Texas electric power grid. The organization also has responsibility for settling transactions in the state's wholesale spot market for electricity. However, the term "ERCOT" is used loosely in other ways as well. For instance, "ERCOT" can describe the geographical footprint for retail electric deregulation in Texas. It sometimes also is used to describe the state's wholesale energy market.

What follows is a resource for understanding ERCOT as the non-profit corporation that oversees the Texas power grid. Included here is a glossary of relevant terms, plus information about the organization's history, its board composition and key ERCOT facts. The information presented here is drawn from publicly available sources, including the websites of the United States Energy Information Administration, the Public Utility Commission of Texas and ERCOT. Information also is drawn from State of the Market Reports of the Independent Market Monitor for the ERCOT Market.



ERCOT: THE BASICS

ERCOT is responsible for the reliable flow of power across 46,500 miles of transmission lines to more than 26 million customers in a region covering about 75 percent of the state's land mass. ERCOT facilitates operations of the wholesale electricity market, coordinates transmission planning, ensures a balance of supply and demand of power on the grid on an instantaneous basis, and manages congestion on transmission lines. It does not, however, own or operate generation resources or transmission infrastructure, nor is it responsible for ensuring resource adequacy.

ERCOT operates (as of 2021) on an approximately \$275.2 million budget, financed through a 55.5 cents per megawatt/hour System Administration Fee assessed on wholesale power. Stakeholders – representatives of electric generators, transmission companies, consumers and other interested market participants – set ERCOT policy and determine the rules by which the wholesale market operates with oversight from the Public Utility Commission of Texas.

The ERCOT organization functions both as the Independent System Operator for the transmission grid and a decision-making organization that creates rules for the wholesale electricity market.

As an independent system operator, ERCOT employs technicians and engineers at two control centers in the Austin area. Using complex computer

systems, these technicians manage the flow of electricity by continually ordering generators to increase or decrease the production of electricity, scheduling transmission outages, and operating markets for energy and certain kinds of standby capacity. Due to the physics of electricity, if demand for electricity cannot be balanced with generation supply at all times, blackouts can result. ERCOT technicians also must manage congestion on transmission lines by limiting, increasing or redirecting power flows. ERCOT also can order rolling outages to avoid a complete shutdown of the grid.

As a decision-making forum, ERCOT depends upon interested market participants to study, debate and ultimately recommend or reject complicated wholesale market rules. These stakeholders – men and women representing power generators, retail electric providers, transmission and distribution companies and customers – make recommendations to the full ERCOT board, which in turn makes decisions for the market. However, under legislation adopted in 2021, ERCOT rule changes do not become effective until approved by the Public Utility Commission of Texas.

The ERCOT organization was created in 1970, but has functioned as the Independent System Operator in Texas since 1996. The ERCOT ISO also provided the platform upon which the Texas electric utility industry made the transition to retail competition in 2002.

ERCOT QUICK FACTS

ERCOT ORGANIZATION

- ERCOT is responsible for the flow of power across 46,500 miles of transmission lines that connect to more than 710 generation units and that serve 26 million customers.
- ERCOT is neither a government agency, nor a private for-profit corporation. Technically, it is a non-profit corporation, although it remains under the oversight of the PUC.
- ERCOT facilitates operations of the wholesale electricity market, coordinates transmission planning, ensures that supply and demand are balanced at all times, and manages congestion on transmission lines. It also facilitates retail electric provider switching for 8 million premises in areas of Texas with retail electric deregulation.
- As of 2021, ERCOT operated on a \$275.2 million budget, which is provided through an indirect monthly charge on electric bills of 55.5 cents per 1,000 kWh.

ERCOT REGION

- The ERCOT region is one of ten electricity reliability regions in North America. The regions operate under the reliability and safety standards of the North American Electric Reliability Corporation.
- The ERCOT region covers about 75 percent of the land area of the state, including the urban load centers of Houston, Dallas, Fort Worth, San Antonio and Austin, as well as most of West Texas, portions of the Panhandle and the Rio Grande Valley.
- Electric utilities located outside the ERCOT market, but within Texas, are not subject to the state's 1999 law implementing retail electric deregulation.



ERCOT STAKEHOLDERS

COMMITTEE STRUCTURE

The most important decisions made by ERCOT stakeholders relate to the complicated rules governing the wholesale electricity market. These rules are known as “protocols.” Attempts to change ERCOT protocols typically begin with a work group or task force, which is comprised of interested stakeholders who make decisions by voting or through consensus. From there, suggested protocol changes go to the “Protocol Revision Subcommittee,” then to the “Technical Advisory Committee,” and finally to the full Board. However, changes to protocols are not effective until accepted by the Public Utility Commission of Texas.

THE ERCOT BOARD

The ERCOT Board is made up of 11 men and women, nine of whom are voting members. A selection committee made up of representatives selected by the governor, lieutenant governor and House speaker selects eight of the nine voting members. The ninth is the chief executive for the Office of Public Utility Counsel, a state agency. The OPUC executive is seated to represent the interests of residential and small commercial customers. Non-voting Board seats are reserved for the chief executive officer of ERCOT and the chairperson of the PUC. All ERCOT board members must be residents of Texas.

Prior to changes adopted by the 87th Texas Legislature in 2021, the ERCOT board was comprised of 15 members, including both industry representatives and board members independent of the industry.

ERCOT GLOSSARY

ANCILLARY SERVICES

Services provided by Resource Entities that ERCOT acquires to maintain system reliability minute-by-minute, 365 days per year. There are four main ancillary service products: Regulation Service-Up, Regulation Service-Down, Responsive Reserve Service, and Non-spinning Reserve Service. Load Serving Entities may self-schedule ancillary services or have them purchased on their behalf by ERCOT. ERCOT typically procures Ancillary Services in the Day-Ahead Market, although they sometimes become available in market closer to the Real-Time Market. **See also Day Ahead Market, Electric Reliability Council of Texas, Real-Time Market, Regulation Service-Up, Regulation Service-Down, Resource Entities, Responsive Re-serve Service and Non-Spinning Reserve Service.**

CAPACITY, DEMAND AND RESERVES REPORT

A biannual report from ERCOT containing a multi-year forecast of summer and winter peak electricity demand and expected generation resources, along with the calculation of Planning Reserve Margins. Compare with Seasonal Assessment of Resource Adequacy. **See also Planning Reserve Margin and Seasonal Assessment of Resource Adequacy.**

CAPACITY MARKET

An organizational structure for deregulated wholesale energy markets under which generators receive payments for maintaining available capacity of generation resources in addition to compensation for energy delivery. Under a capacity market, the more generation capacity companies make available to the market, the more money the generation company receives. Under a capacity market design, regulators set capacity targets. Moreover, under a capacity market, investment capital is recovered through capacity payments. This is in contrast to an "Energy-Only Market," wherein investment capital is recovered through excess energy payments. **See also Energy-Only Market.**

COMPETITIVE LOAD ZONE

A broad geographical zone within the ERCOT region. ERCOT has four competitive load zones — South, North, West and Houston — and within these zones retail electric customers are offered customer choice. The boundaries of Competitive Load Zones are based upon the boundaries in use when ERCOT switched in 2010 to a Locational Marginal Pricing market. Sometimes referred to as "congestion zones." **See also Locational Marginal Pricing, Congestion Zone.**

COMPETITIVE RENEWABLE

ENERGY ZONE

(CREZ) A geographical zone with boundaries set by the Public Utility Commission of Texas identifying areas with significant potential for renewable energy resources. Establishing CREZ accelerated transmission planning and construction to serve wind generators. Senate Bill 20, adopted by the Texas Legislature in 2005, established the CREZ system in Texas. **See Public Utility Commission of Texas.**

CONGESTION REVENUE RIGHTS

(CRR) Rights acquired by ERCOT market participants that serve as financial hedges against the extra grid costs that can accrue due to power line congestion. As per ERCOT: "A Congestion Revenue Right is a financial instrument that results in a charge or a payment to the owner, when the ERCOT transmission grid is congested in the Day Ahead Market" or in Real Time. **See also Day-Ahead Market.**

CONGESTION ZONE

See Load Zone.

CURRENT OPERATION PLAN

(COP) A tool employed by ERCOT to communicate expected system capacity. The COP indicates the expected operating conditions of generators and other types of resources. A COP describes whether the resource is expected to be on, off or out of service; the output limit of the resource; and how much Ancillary Services the resource is committed to supply. Current Operation Plans are developed by Qualified Scheduling Entities for each of its resources for each hour of the next seven operating days. **See also Ancillary Services and Qualified Scheduling Entity.**

DAY-AHEAD MARKET

(DAM) A voluntary, financially-binding forward market for energy, Ancillary Services and Congestion Revenue Rights that matches willing buyers and sellers, and that is subject to network security and other constraints. **See also Ancillary Services, Congestion Revenue Rights and Real-Time Market.**

DC TIE

A high voltage direct current transmission line that permits a controlled flow of energy while also functionally isolating the independent alternating current frequencies of each side. Several DC ties connect ERCOT with outside grids in the United States and Mexico.

ERCOT GLOSSARY

DEMAND RESPONSE

The ability of electricity customers to voluntarily curb their electric consumption at the direction of the power grid operator, in response to market prices or pursuant to other kinds of programs.

ELECTRICITY CONGESTION

The quality of a line segment on the ERCOT grid that has become potentially overloaded with electric power. Overloading can cause a wire to retain heat, stretch and come in contact with other wires or structures. This can lead to shorts, reduced system integrity and possible wire breakage.

ELECTRIC RELIABILITY COUNCIL OF TEXAS

(ERCOT) The quasi-governmental organization that manages the principal power grid in Texas.

EMERGENCY RESPONSE SERVICE

(ERS) Electricity service to electricity users that — as per advance agreement with those users — can be curtailed to avoid a system-wide outage. Customers that provide ERS receive payment in exchange for curtailing power usage.

ENERGY EMERGENCY ALERT

(EEA) An alert called by ERCOT when operating reserves drop below 2,300 megawatts or system frequency cannot be maintained above certain levels and durations. There are three levels of EEA, depending on the amount of operating reserves available to meet the electric demand on the system. **See Operating Reserves and Megawatt.**

ENERGY-ONLY MARKET

An organizational structure for deregulated wholesale electricity markets under which generators receive market payments only for the energy they produce. Investment capital is recovered through excess energy payments in energy-only markets. This is in contrast to a "Capacity Market," wherein investment capital is recovered through capacity payments. Texas operates a modified Energy-Only Market. **See also Capacity Market.**

FEDERAL ENERGY REGULATORY COMMISSION

(FERC) The federal agency that regulates interstate transmission of natural gas, oil and electricity. FERC monitors energy markets and conducts market abuse investigations. **See also North American Reliability Corporation.**

GIGAWATT

(GW) An electricity unit approximately equivalent to that required to power 200,000 homes during a hot summer day. A gigawatt equals 1,000 megawatts. **See Kilowatt and Megawatt.**

HEAT RATE

A measure of the efficiency of power plants that convert a fuel into heat into electricity. The heat rate is the amount of energy used by a thermal power plant to generate one kilowatt hour (kWh) of electricity. Heat rate is typically measured in British Thermal Units (BTU)/kWh). **See Kilowatt.**

HIGH SYSTEMWIDE OFFER CAP

(HCAP) A cap on certain wholesale energy offers in the ERCOT administered power market. ERCOT deploys either the HCAP or Low Systemwide Offer Cap, depending upon market conditions. In 2021, the HCAP was set at \$9,000 per megawatt hour. **See Low Systemwide Offer Cap and Peaker New Margin.**

INDEPENDENT MARKET MONITOR

(IMM) Established by a 2005 Texas statute, the ERCOT Independent Market Monitor is charged with identifying potential design inefficiencies in the ERCOT market and improper manipulation by power traders. The IMM reports to the Public Utility Commission of Texas. **See Public Utility Commission of Texas.**

INDEPENDENT SYSTEM OPERATOR

(ISO) An organization independent of any market participant that coordinates, controls, and monitors the operation of the electrical power system, usually within a single state, but sometimes encompassing multiple states. Regional Transmission Organizations typically perform the same functions as ISOs but cover a larger geographic area. **See also Regional Transmission Organization.**

KILOWATT

(KW) A unit of electricity equivalent to the draw of ten 100-watt lightbulbs. Electricity prices typically are measured in kilowatt hours. **See also Megawatt, Gigawatt.**

LINE LOSSES

Unrecoverable energy lost during the transformation and transmission of electricity. A certain amount of power is always lost during transmission, and the amount of this loss typically stands in direct proportion to the length of the transmission line. Voltage also is a factor. **See Voltage.**

LOAD

Anything that consumes electricity.

LOAD RESOURCE

(LR) An energy-consuming entity operating in the ERCOT Energy Market system that can adjust usage as Demand Response or as a load capable of providing Ancillary Services. **See also Ancillary Services and Locational Marginal Pricing.**

ERCOT GLOSSARY

LOAD SERVING ENTITY

(LSE) An entity that provides electric service to individual and wholesale customers. Inside ERCOT, LSEs include Retail Electric Providers and Non-Opt-In Entities. **See Load, Non Opt-in Entity and Retail Electric Provider.**

LOAD ZONE

A geographical grouping of loads in ERCOT that provides a regionalized price to deliver electricity to that group of loads. Load Serving Entities are settled on the Load Zone price, which is a weighted average of Locational Marginal Prices in that zone. There are 13 Load Zones in ERCOT: four Competitive Load Zones, four Non Opt-In Entity Load Zones and five Load Zones corresponding to DC ties that link ERCOT to other grids. **See also Competitive Load Zone, Load Serving Entity, Locational Marginal Pricing, Non Opt-In Entity and DC Tie.**

LOCATIONAL MARGINAL PRICING

(LMP) Also known as “nodal” pricing, a system whereby prices are set for generation resources at five-minute Settlement Intervals at thousands of separate geographical points, or nodes. Locational marginal pricing is a way for wholesale electric energy prices to reflect the value of electric energy at different locations, accounting for the patterns of load, generation, and the physical limits of the transmission system. Load Serving Entities are settled at a Load Zone price, calculated as the weighted average of the LMPs for each Load Zone for each settlement interval. **See also Load Serving Entities, Load Zone and Settlement Interval.**

LOW SYSTEMWIDE OFFER CAP

(LCAP) A cap on certain wholesale energy offers within the ERCOT administered power market. ERCOT enforces either the LCAP or High Systemwide Offer Cap, depending upon market conditions. In 2021, the LCAP was set at \$2,000/MWh. **See also High Systemwide Offer Cap and Peaker Net Margin.**

MARKET MANAGEMENT SYSTEM

(MMS) A computerized system at ERCOT that includes key applications in ERCOT’s Locational Marginal Pricing (nodal) market. **See Locational Marginal Pricing.**

MEGAWATT

(MW) A unit of electricity approximately equivalent to that needed to power 200 homes during a hot summer day. A megawatt is equivalent to 1,000 kilowatts. **See also Gigawatt and Kilowatt.**

NODAL

See Locational Marginal Pricing.

NODAL PROTOCOL

Rules adopted by the ERCOT board governing the Locational Marginal Pricing market. ERCOT's Nodal Protocols include a details process for assessment and adoption of Nodal Protocol Revision Requests. **See Locational Marginal Pricing and Nodal Protocol Revision Request.**

NODAL PROTOCOL REVISION

REQUEST

(NPRR) A request to make additions, edits, deletions, revisions, or clarifications to the Nodal Protocols. **See also Nodal Protocol, Protocol Revision Request.**

NON OPT-IN ENTITY

(NOIE) An entity within the ERCOT region that provides energy to the public and has not opted into the competitive retail market. NOIEs typically refer to electric co-operatives or municipally owned utilities.

NON-SPINNING RESERVES

(Non Spin) A category of ancillary service characterized by extra generating capacity not currently providing power to the system but that can be brought online within 30 minutes. Fast-start generators typically provide non-spinning reserve power. In general, the purpose of non-spinning ancillary services is to protect the system against unforeseen contingencies (e.g., unplanned generator outages, load forecast error, wind forecast error), rather than for meeting normal load fluctuations. In ERCOT, Non-Spinning Reserves must have the ability to come online within 30 minutes, and typically is deployed when load is larger than expected or to address transmission issues. **See also Ancillary Services, Load, Regulation Service-Down, Regulation Service-Up and Responsive Reserve Service.**

NORTH AMERICAN RELIABILITY

CORPORATION

(NERC) The organization that sets standards for the reliable operation and planning of electric systems nationwide, and enforces compliance with those standards. NERC draws its membership from the industry. Market segments represented within NERC include investor-owned utilities, rural electric cooperatives, power marketers and end-use customers. **See also Federal Energy Regulatory Commission.**

ERCOT GLOSSARY

NOTICE OF VIOLATION

(NOV) A notification that documents and communicates an alleged violation of an ERCOT protocol. **See Nodal Protocol and Protocol.**

OFFER CURVE

An economic concept, an offer curve describes the quantity of one type of product that an agent will offer for each quantity of another type of product. At ERCOT, an offer curve refers to a Qualified Scheduling Entity's offer to sell energy at or above a certain price and at a certain quantity. **See also Qualified Scheduling Entity, Proxy Curve and Operating Reserve Demand Curve.**

OPERATING RESERVE

The amount of additional generating capacity available on the system beyond that needed to ensure system reliability during any given moment calculated in real time. **See also Planning Reserve Margin and Reserve Margin.**

OPERATING RESERVE DEMAND CURVE

(ORDC) An automated system employed by ERCOT to calculate payment adders directed to generators. The ORDC works in conjunction with ERCOT's Real-Time Market power auction system. Generators collect ORDC payment adders by successfully offering power into the market during shortage conditions. The ORDC price adders are variable. As real time reserves diminish (eventually approaching blackout conditions), the size of the ORDC adder increases. The size of the ORDC payment theoretically correlates to the value that consumers place on preventing blackouts, known as the "Value of Lost Load." ERCOT implemented the ORDC on June 1, 2014. **See also Real-Time Market, Reserve Margins and Value of Lost Load.**

PEAK DEMAND

The amount of load consumption on a system during a moment when that consumption is highest. Peak Demand on the ERCOT system may be measured as a daily metric, seasonally, or annually and is measured in megawatts. **See also Megawatt.**

PEAKER

A generation unit that can come online or adjust output on short notice and in response to Peak Demand conditions. In Texas, peakers are typically natural gas units. **See Peak Demand.**

PEAKER NET MARGIN

(PNM) A calculation of the amount of net revenue a hypothetical peaking unit might have earned in a year, given real-time power prices and spot gas prices. ERCOT switches from enforcing the High Systemwide Offer Cap to the Low Systemwide Offer Cap when PNM surpasses a pre-set threshold (in 2021, that PNM threshold was \$315,000). **See also High Systemwide Offer Cap and Low Systemwide Offer Cap.**

PLANNING RESERVE MARGIN

A percentage figure that expresses the excess resource capacity available above forecasted peak demand to cover uncertainties in future peak electricity demand, generator availability and new resource supply. **See Peak Demand.**

PROTOCOL

A procedure or process used by ERCOT and market participants for the orderly functioning of the ERCOT system and nodal market. **See Locational Marginal Pricing and Nodal Protocol.**

PROTOCOL REVISION REQUEST

(PRR) Also called a Nodal Protocol Revision Request, a request to make additions, deletions, revisions, or clarifications to the Protocols. **See also Protocol, Nodal Protocol Revision Request.**

PROTOCOL REVISION

SUBCOMMITTEE

(PRS) An ERCOT stakeholder committee that considers Protocol Revision Requests; reports to Technical Advisory Committee. **See Protocol Revision Request, Protocol and Technical Advisory Committee.**

PROXY CURVE

An offer curve submitted by ERCOT into its Security-Constrained Economic Dispatch System on behalf of certain generating units that do not submit their own offer curves. **See also Offer Curve and Security Constrained Dispatch.**

PUBLIC UTILITY COMMISSION

OF TEXAS

(PUCT) The state agency with primary regulatory authority over electricity matters in Texas. The PUCT also oversees ERCOT. **See ERCOT and Transmission and Distribution Utility.**

QUALIFIED SCHEDULING ENTITY

(QSE) An entity operating within the ERCOT region that is authorized to submit bids and offers on behalf of Resource Entities or Load Serving Entities such as Retail Electric Providers. **See also Resource Entity, Load Serving Entity and Retail Electric Provider.**

ERCOT GLOSSARY

REAL-TIME CONTINGENCY

ANALYSIS

(RTCA) A process that evaluates the resulting flows on the transmission system under many different contingency scenarios.

REAL TIME CO-OPTIMIZATION

A pending change to the ERCOT system in which the system operator would merge its management of its Real-Time Market and its Ancillary Services market. Currently ERCOT operates a day-ahead market for stand-by power, and the real-time market to ensure grid stability on an ongoing basis. Changing to a Real Time Co-Optimization system will allow ERCOT to more efficiently deploy lower-cost energy on a real-time basis while reserving higher-cost generation units for standby capacity. **See also Ancillary Services, Day-Ahead Market and Real-Time Market.**

REAL-TIME ON-LINE RELIABILITY

DEPLOYMENT PRICE ADDER

(RTORDPA) A price adder that captures the impact of reliability deployments during a Security Constrained Economic Dispatch interval. **See Security Constrained Economic Dispatch and Settlement Interval.**

REAL-TIME MARKET

A wholesale energy market system characterized by the dispatch of generation resources in real time based on economics, resource availability and electricity congestion. **See Day-Ahead Market and Electricity Congestion.**

REGIONAL TRANSMISSION

ORGANIZATION

(RTO) An electric power transmission system operator that coordinates, controls, and monitors a multi-state electric grid. Under federal law, the transfer of electricity between states is considered interstate commerce, and electric grids spanning multiple states are therefore regulated by the Federal Energy Regulatory Commission. FERC initiated the voluntary creation of RTOs with FERC Order No. 2000, issued on December 20, 1999. The purpose of the RTO is to promote economic efficiency, reliability, and non-discriminatory practices while reducing government oversight. **See also Federal Energy Regulatory Commission.**

REGULATION SERVICE-DOWN

(Reg Down) A category of ancillary service, Reg Down is capacity that responds every four seconds, decreasing as necessary to fill the gap between energy deployments and actual system load. **See Ancillary Services, Non-Spinning Reserves, Regulation Service-Up and Responsive Reserve Service.**

REGULATION SERVICE-UP

(Reg Up) A category of ancillary service. Reg Up is capacity that responds every four seconds, increasing as necessary to fill the gap between energy deployments and actual system load. **See also Ancillary Services, Non-Spinning Reserves, Regulation Service-Down and Responsive Reserve Service.**

RELIABILITY AND OPERATIONS

SUBCOMMITTEE

(ROS) Reporting to the Technical Advisory Committee, the Reliability and Operations Subcommittee develops, reviews and maintains operating guides and planning criteria. **See also Technical Advisory Committee.**

RELIABILITY MUST-RUN

(RMR) A commitment made by the owner of an otherwise non-operating generation resource with cost compensation dictated by the ERCOT Protocols to operate the resource to maintain system reliability. RMR agreements are not intended to address long-term system needs. **See also Reliability Unit Commitment.**

RELIABILITY UNIT COMMITMENT

(RUC) A reliability instruction issued by ERCOT to a generation unit to provide additional capacity to assure reliability. Generation units receiving a RUC instruction are compensated at a formulaic rate based on the unit's verifiable costs. **See also Qualified Scheduling Entity and Reliability Must Run.**

RESERVE MARGIN

The additional generating capacity available on the system beyond that needed to ensure system reliability during a period of peak use. Policy makers typically express reserve margins as numerical percentages. For instance, a reserve margin of 10 percent suggests the availability of 10 percent more power capacity beyond that which is needed to fulfill all consumer needs when their usage is highest. **See also Reserve Margin Target.**

RESERVE MARGIN TARGET

The quantity of generation reserves deemed necessary to ensure the reliability of the ERCOT system. **See also Reserve Margin.**

ERCOT GLOSSARY

RESOURCE ADEQUACY

The ability of an electric system to reliably meet the demand for electricity by customers. When resource adequacy requirements are met, customers should expect that the electrical grid will continue to operate reliably – that is, without interruptions. This should be the case even during high heat days, or when power plants are shut down for maintenance.

RESOURCE ENTITY

(RE) An entity that either owns or controls a generation resource or a Load Resource. Most Generation Resource Entities must register with the Public Utility Commission of Texas. **See Load Resource and Public Utility Commission of Texas.**

RESPONSIVE RESERVE SERVICE

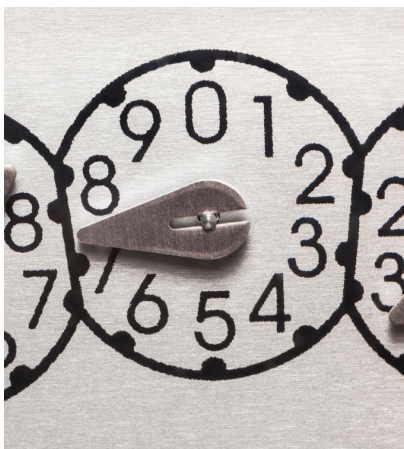
(RRS) A category of ancillary service. In general, the purpose of Responsive Reserve Services are to protect the system against loss of frequency arising from a sudden interruption of generation or transmission, rather than for meeting normal load fluctuations. In ERCOT, Responsive Reserve Service may be provided by on-line resources, quick start resources with the ability to come online within 10 minutes, and Load Resources equipped with devices that automatically interrupt the load following a frequency dip. **See also Ancillary Services, Non-Spinning Reserves, Regulation Service-Up, Regulation Service-Down.**

RETAIL ELECTRIC PROVIDER

(REP) A retail provider of electricity operating in areas of the state with retail electric competition. Unlike Transmission and Distribution Utilities, REPs are free of rate regulation, but are subject to customer protection regulations. **See Transmission and Distribution Utility.**

RETAIL MARKET SUBCOMMITTEE

(RMS) Reporting to the Technical Advisory Committee, the RMS serves as a forum for issue resolution in regards to retail market matters directly affecting ERCOT and ERCOT protocols. The RMS also monitors Public Utility Commission rulings as they apply to retail markets and retail market participants and to ensure that PUCT requirements are reflected in protocols. **See also Protocols, Public Utility Commission of Texas and Technical Advisory Committee.**



SEASONAL ASSESSMENT OF RESOURCE ADEQUACY

(SARA) An ERCOT-generated report that serves as an early indicator of the risk that the system operator may need to call an Energy Emergency Alert due to having insufficient operating reserves during seasonal peak electric demand periods. The SARA report relies on projected resource capabilities and peak demand forecasts similar to the Capacity Demand Reserves report. However, unlike the CDR, it incorporates scenario analyses of extreme weather, renewable energy performance, and generator outage trends to determine the expected amount of resource capacity available for operating reserves. **See also Capacity, Demand and Reserves Report, Energy Emergency Alert, Peak Demand and Reserve Margin.**

SECURITY-CONSTRAINED ECONOMIC DISPATCH

(SCED) A computerized system employed by ERCOT to dispatch generating units in an economically efficient manner. The SCED algorithm accounts for market conditions, price offerings and other factors, and then transmits electronic signals to generating units in order to dispatch them in an economically optimal manner. SCED is the central element of the Locational Marginal Pricing (or nodal) wholesale market, and it is intended to select the lowest-cost mix of generation resources that can meet customers' demand, consistent with reliability considerations and the state of the transmission grid. **See also Locational Marginal Pricing and Nodal.**

SETTLEMENT INTERVAL

The time period over which an Independent System Operator settles cost compensation amounts or deviations in generation. **See also, Independent System Operator and Locational Marginal Pricing.**

ERCOT GLOSSARY

STATE OFFICE OF

ADMINISTRATIVE HEARINGS

(SOAH) A state agency that conducts administrative hearings relating to regulatory matters. SOAH issues advisory orders for consideration by the Public Utility Commission of Texas and other state agencies. **See Public Utility Commission of Texas.**

SYSTEMWIDE OFFER CAP

The cap on the price for which generators can offer their electricity into the principal wholesale market overseen by ERCOT. ERCOT enforces either a High Systemwide Offer Cap or Low Systemwide Offer Cap, depending upon market conditions. **See High Systemwide Market Cap and Low Systemwide Offer Cap.**

TECHNICAL ADVISORY COMMITTEE

(TAC) An ERCOT stakeholder committee. TAC reports to the ERCOT board of directors, and is assisted by four subcommittees: the Protocol Revisions Subcommittee, the Reliability and Operations Subcommittee, Retail Market Subcommittee and the Wholesale Market Subcommittee. **See Protocol Revisions Subcommittee, Reliability and Operations Subcommittee, Retail Market Subcommittee and Wholesale Market Subcommittee.**

TRANSMISSION AND DISTRIBUTION

UTILITY

(TDU) A regulated electric utility that operates a transmission and distribution system but does not include a municipally owned utility or a cooperative. Also known as “wires companies” or “wires utilities,” TDUs are regulated by the Public Utility Commission of Texas. **See Public Utility Commission of Texas.**

VALUE OF LOST LOAD

(VoLL) The value of avoiding load-shedding events, or blackouts. ERCOT systems set VoLL on a daily basis at the High Systemwide Offer Cap. The Operating Reserve Demand Curve incorporates the Value of Lost Load. **See also Operating Reserve Demand Curve and High Systemwide Offer Cap.**

VOLTAGE

An electromotive force or potential difference expressed in volts.

WHOLESALE MARKET

SUBCOMMITTEE

(WMS) Reporting to the Technical Advisory Committee, WMS reviews issues related to the operation of the wholesale market in the ERCOT region. **See also Ancillary Services, Public Utility Commission of Texas and Technical Advisory Committee.**