Gas and Electricity Glossary

Abandoned well — A gas well that is not in use because it was originally a dry hole or because it has ceased to provide gas in economic quantities.

Advanced Metering Infrastructure (AMI) — An integrated system of smart meters, communications networks, and data management systems that enables two-way communication between utilities and customers

Aggregator — An entity that contracts with multiple end-use customers and combines their loads into one block of demand in wholesale markets (either for the purpose of serving that load with supply, or, in electricity markets, for providing a block of load management resources).

An entity that collects smaller packages of gas from producers and markets them in larger packages.

Allocation — The methodology used to assign a percentage of revenue requirement to each customer class, or to each rate component, during ratemaking.

The priority system used by a pipeline to distribute gas service among customers when available capacity is less than nominated volumes.

Alternating current (AC) — An electric current that reverses its direction in a conductor at regular time intervals.

Alternative fuel vehicle — A vehicle that can operate on a fuel other than gasoline or diesel fuel.

Amps — Short for ampere, the unit of measure commonly used to express the rate of current flow in an electric circuit.

Ancillary services — The services in addition to electric supply that are required to deliver electricity to end users and to maintain system reliability. These include automatic generation control (also known as frequency regulation), reserves, voltage support, and black start.

Apparent power — The amount of power that comprises both real and reactive power, measured in volt-amps (VA), kilovolt-amps (kVA), or megavolt-amps (MVA).

Aquifer — A geologic formation containing water. Natural gas often is found in the presence of aquifers.

As-available service — See **interruptible service**

Associated gas — Natural gas found in contact with or dissolved in crude oil.

At-risk construction — A pipeline expansion or new construction that accepts (on behalf of its owner) the risk of attaining enough revenue to cover costs and a sufficient profit (as opposed to a project that has an agreement from regulators to allow it to recover sufficient revenues in rates from existing customers).

Automatic meter reading (AMR) — The process of collecting meter data remotely through a communications system that sends the data through an automated system.

Backhaul — A transaction in which gas is delivered upstream of the point at which it was received into the system. Since gas cannot physically move both ways in a pipe, backhaul service is a paper transaction rather than actual physical movement of gas.

Backup generator — A generating unit that is used only when the primary source of power is unavailable.

Balancing — The act of matching volumes of gas received by a pipeline or LDC to the volumes of gas removed from the pipeline or LDC at the delivery point (which can include volumes consumed by an end-use customer).

The act of matching volumes of electricity delivered into the grid or removed from the grid to the volume of electricity scheduled in the day-ahead or intra-day market.

Balancing account — A regulatory convention in which costs and/or revenues associated with certain utility, pipeline, or electric transmission line expenses are tracked for future regulatory review.

Balancing authority — An entity responsible for scheduling electric supply to match forecasted demand, maintaining supply/demand balance within a specific region called the Balancing Authority Area, and maintaining frequency within acceptable tolerances at interconnections with other areas.

Balancing power — See **imbalance energy**

Baseload — Natural gas or electric usage that is constant across a period of time (such as a day, a week, a month or a year).

Generating units that run all 24 hours of the day.

Basis differential — The difference in price between an index and the cash price of the same commodity. Often basis is used to refer to the difference in price between an index based at a trading hub and the cash price at another physical location.

Battery — A device that converts chemical energy directly to electric energy from substances contained within one or more battery cells.

Bid week — The period near the end of each month when the bulk of contracts for monthly gas supply for the following month are finalized.

Bilateral contract — A private agreement between two parties.

Biofuel — Liquid fuel produced from biomass feedstock.

Biomass — Organic non-fossil material of biologic origin such as plant matter or animal waste.

Black start — Generation that can start up without energy from the grid.

Blackout — The loss of power to a portion of the electric distribution or transmission system.

British thermal unit (Btu) — The quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit.

Broker — A third party that earns a profit by matching a buyer and a seller of commodities such as gas or electricity. Unlike marketers, brokers do not take ownership of the commodity.

Bundled service — Gas or electric sales service and distribution service packaged together in a single transaction. Usually provided by the gas or electric utility, which, on behalf of its customers, buys supply and delivers it to the customer.

Burnertip — The point where gas is consumed.

Butane — A liquid component of natural gas that is typically extracted at a processing plant and soldseparately.

Bypass — The purchase and transport of natural gas by an end user through a direct connection to an interstate pipeline rather than the LDC (thereby avoiding LDC charges).

CAISO — The California ISO, a system operator providing services to large portions of California and some parts of other western states.

Cap rock — An impermeable rock layer that prevents natural gas from escaping out of a trap.

Capacitor — A device that stores electrical charge and is used to improve power factor and/or help with voltage regulation.

Capacity — The maximum electric power output of a generating unit (measured in MW) or themaximum amount of power that lines or equipment can safely carry.

Electric generation that is available in a specific region or market to ensure reliability.

The maximum amount of natural gas that can be produced, transported, stored, distributed, or utilized in a given period of time.

Capacity brokering — The assignment of rights to receive firm gas transportation service.

Capacity factor — The ratio of actual energy produced by a generating unit over a period of time to the energy that would have been produced had the unit run at its rated capacity for the full period of time.

Capacity payment — A payment for making electric generation capacity available to another party or to the market.

Capacity release — The right (authorized by FERC Order 636) of a firm transportation holder to assign that capacity on a temporary or permanent basis to a third party.

Capital — Money expended for long-term assets.

Carbon dioxide (CO2) — A by-product of fossil fuel combustion and also an impurity sometimes found in natural gas. Carbon dioxide is a significant greenhouse gas.

Centralized generation — Generation connected to the high voltage electric transmission grid.

Certificate case — Regulatory proceeding held to approve or deny construction of new facilities requested by utilities.

Circuit — A complete path through which electricity travels; comprises a source of electron flow, a conductor, and load.

Circuit breaker — A device that interrupts electricity flow to a circuit by isolating the circuit from the source of electricity.

Citygate — The point at which gas is received into the LDC distribution system.

Coal — A combustible fossil fuel that is a mineral solid consisting mostly of carbonized vegetable matter found in underground deposits and used as fuel.

Coal gas — Also known as manufactured gas, coal gas is a combustible fuel produced by burning coal.

Coalbed methane — Natural gas produced from a coal seam or coal bed.

Cogeneration — The use of fuel to produce electricity as well as another product such as steam or hot water.

Collections — The act of getting customers to pay their bills.

Combined-cycle gas turbine (CCGT) — A power plant that uses a gaseous fuel to drive two types of turbines in succession: first a combustion turbine fueled by the gas and then a steam turbine fueled by steam created from water heated with the waste heat from the combustion turbine.

Combined heat and power (CHP) — A plant designed to produce both heat and electricity from a single fuel source.

Combustion turbine (CT) — A technology for generation that uses air and gaseous fuel to drive a gas turbine, also known as a single-cycle gas turbine.

Commercial customer — An end user that uses power or gas to create a service. Sometimes also used by electric utilities to refer to manufacturing customers smaller than a certain size (commonly smaller than 500 kW).

Commodity — Anything that is bought and sold in a highly competitive market. Commodities typically have many buyers and sellers, are very liquid, and subject to fluctuation in price according to supply and demand.

Electric or gas supply.

Complaint case — A regulatory proceeding held to evaluate a complaint that a utility failed to properly follow regulatory rules.

Compressed natural gas (CNG) — Natural gas that is compressed to a pressure around 3,000 to 3,600 pounds per square inch (psi) for use in vehicles and other applications. CNG must be stored in high-pressure vessels.

Compressor station — A facility that propels gas through transmission lines or into storage by increasing the pressure of the gas stream.

Compressor — Machinery in a compressor station that is used to increase the pressure of natural gas on a pipeline system.

Condensate — Light liquid hydrocarbons typically recovered from a natural gas stream at the wellhead. Condensate mostly consists of pentanes and heavier hydrocarbons.

Conductor — A material that allows electrons to move easily from one atom to another, thereby facilitating electric flow. Typically used to describe a wire that conducts electricity in any part of the electrical grid.

Confirmation — The notification received by a customer from a pipeline indicating how much of a specific nomination has been scheduled to flow.

Congestion — A condition that occurs when the amount of requested transactions across an electric transmission path exceeds the physical capacity of that path.

Congestion cost — The cost to a market participant who utilizes a congested path.

Congestion management — The process of allocating electric transmission capacity, or setting a price for use of that capacity, when congestion occurs.

Control area operator — The entity that performs system operations in a specific region, also called a system operator.

Co-op — See **rural electric co-op**

Core customers — Gas residential and small commercial customers who lack alternatives to gas service.

Cost of capital proceeding — The regulatory process that sets the authorized return on debt and return on equity for a utility company. The authorized returns are used in the ratemaking process for the utility.

Cost-of-service regulation — A regulatory methodology that allows utilities to charge rates designed to collect revenues equivalent to their cost of service plus a reasonable rate of return on their capital investments.

Cost of service (COS) — The total amount of money including return on invested capital, operation and maintenance costs, administrative costs, taxes, and depreciation expense required to provide a utility service.

Counterparty — One of the participants in a contract.

Creditworthiness — An evaluation of a customer's or trading partner's ability to financially perform its contractual obligations.

Cubic foot (Cf) — A common gas volume measurement. The amount of gas required to fill a volume of one cubic foot under stated conditions of temperature, pressure, and water vapor.

Current — The rate of flow of electrons through a conductor commonly measured in amperes (amps).

Current transformer (CT) — A device used in metering that allows inexpensive meters to measure large amounts of electricity. A CT reduces the current flowing to the meter by a specific ratio so the meter is not exposed to the larger amount of current actually moving in the electrical system.

Curtailment — Cutting gas service to customers when supply is not sufficient to meet demand.

Cutting a scheduled electric transmission service when line capacity is not sufficient to carry the scheduled flow.

Cutting scheduled deliveries to the grid from a power plant due to system physical conditions.

Cushion gas — A volume of gas that must always be present in a storage field to maintain adequate pressure to cycle gas.

Customer charge — A fixed monthly amount paid by a customer regardless of actual demand or consumption.

Customer choice — The ability of an end-use customer to choose its gas or electricity supplier.

Customer class — A group of end users with similar characteristics; used to segment customers for the purpose of setting rates.

Cycling — Injecting and withdrawing gas from storage.

Debt — Money that is borrowed and must be paid back.

Debt/equity ratio — The percent of capital funded through debt compared to capital funded through equity.

Decoupling — A regulatory methodology that removes the impact of throughput or usage on some or all of a utility's revenues. Decoupling removes some or all revenue risk by tracking revenues that differ from authorized revenues and adjusting future rates so that utilities receive, and customers pay, only the authorized amount.

Deliverability — The amount of natural gas a well, field, pipeline, or distribution system can supply in a given period of time.

Delivery point — The location on a pipeline or transmission system to which gas or electricity is transported.

Delta configuration — A way of connecting three-phase electric lines, achieved by connecting three independent transformer or generator windings head to toe (end to end).

Demand — The total amount of electricity used at any given moment in time, usually measured in kW or MW.

Demand charge — For a gas pipeline or storage facility, the portion of a transportation or storage rate that reserves space on the facility and is paid regardless of whether service is taken or not. Also known as a reservation charge.

The portion of an electric end-user charge that is based on the maximum demand recorded over a specified period of time (typically 15 minutes).

The portion of a gas end-user charge that is based on the maximum contractual quantity the customer is authorized to use.

Demand curve — A graph showing demand plotted across time.

Demand side management (DSM) — The act of reducing energy usage or moving energy use from peak to off-peak periods to reduce overall energy costs.

Deregulation — The process of decreasing or eliminating government regulatory control over industries and allowing competitive forces to drive the market.

Direct current (DC) — An electric current that flows in one direction only.

Dispatch — The act of a system operator ordering a generating unit to come on line at a specific output level.

Dispatch stack — A list, typically in order from least cost to highest cost, of power plants scheduled to run at a specific point in time in order to match supply to electric demand.

Distributed generation (DG) — Generation located at an end-use customer's facility or in very close proximity to the facility on the distribution system.

Distribution — The delivery of electricity from the transmission system to the customer meter over medium- and low-voltage lines (typically with a voltage of 50 kV or lower).

The delivery of natural gas from the transmission pipeline to the customer meter through medium- to low-pressure lines typically operating at pressures at or below 60 pounds per square inch (psi).

Distribution substation — A substation located on the distribution system, usually where the transmission grid meets the distribution system or where distribution voltage is reduced from a primary feeder to a secondary feeder.

Divestiture — The selling of assets by a regulated utility as part of deregulation.

Downstream — Commercial gas operations or facilities that are closer to the customer; typically used to refer to gas distribution operations or facilities.

Dry gas — Natural gas that doesn't contain liquid hydrocarbons.

Economic demand response — Programs that offer end-use customers the opportunity to modify their electric usage in response to price signals or other economic rewards.

Electric co-op — See **rural electric co-op**

Electrical power — The rate of work that can be accomplished by electricity; commonly measured in units of watts, kilowatts, or megawatts.

Also commonly used to refer to electricity in general.

Electricity — The flow of electrons through a conductor.

Electronic bulletin board (EBB) — An electronic service that provides information about a pipeline's rates, available capacity, etc., and on which third parties can bid for capacity.

Emergency flow order (EFO) — An order by a pipeline to users of natural gas to balance supply delivered into a pipeline with supply withdrawn from the pipeline, in order to maintain the integrity of the system.

End user — The ultimate consumer of gas or electricity.

Energy — The capacity for performing work. On the electrical system this is defined as demand over time measured in kWh or MWh. On the gas system, energy is measured in units of british thermal units (Btus) or joules.

Energy efficiency — The act of using less electricity to perform the same amount of work or to get the same end value.

Energy services company (ESCO) — A company that provides services to end users relating to their energy usage. Common services include energy efficiency and demand side management.

Enhanced oil recovery (EOR) fields — Reservoirs in which secondary recovery techniques are used to extract oil.

ERCOT (Electric Reliability Council of Texas) — The independent system operator providing system operations to large parts of Texas.

Ethane — A liquid component of natural gas that is typically extracted at a processing plant and sold separately. Some ethane may be left in the natural gas stream to boost the energy content of the gas.

Equity — Money that is invested by shareholders, typically through purchase of stock.

Exploration — The process of finding natural gas.

Expense — Money expended on short-term assets or other non-capital expenditures.

Fault — A failure or interruption in an electrical circuit.

Federal Energy Regulatory Commission (FERC) — A federal agency of the U.S. government that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines as well as licensing hydropower projects.

Federal power agency — An agency of the U.S. government that markets the output of electric generating units owned by the federal government.

Feeder line — An electrical distribution line or a gas distribution pipe that carries supply to another line rather than to an end user.

Feedstock — Raw material such as natural gas used to manufacture chemicals.

Financial services company — An entity that provides risk management and financing services.

Financial transmission right (FTR) — A right to receive financial compensation for congestion costs on a specific electric transmission path.

Firm service — The highest priority transportation or storage service that is the last to be interrupted in times of shortage.

Firm supply — Gas or electric supply acquired in a contract that requires the supplier to pay liquidated damages in the event the supplier fails to deliver.

Forward market — A market in which delivery of the item purchased is at some future point in time. In electric markets, the delivery is at least two days away from the day of purchase.

Fossil fuel — Any fuel created by the decomposition of organic matter, including natural gas, oil, and coal.

Four-wire service — A three-phase service from the utility to a customer that has three-phase wires connected at a common point at the transformer plus a ground.

Frequency — How often the direction of flow reverses in an AC circuit, commonly measured in Hertz (Hz).

Fuel cell — A device that converts chemical energy directly to electric energy from a fuel source that is external to the cell.

Fuel oil — A liquid or liquefiable by-product of crude oil, heavier than gasoline and naphtha, burned as a fuel.

Futures contract — A supply contract between a buyer and seller whereby the buyer is obligated to take delivery and the seller is obligated to provide delivery of a fixed amount of commodity at a predetermined price and location. Futures are bought and sold through an exchange.

Gas Industry Standards Board (GISB) — An industry group comprising pipelines and created by the FERC whose mission is to standardize operating and scheduling procedures nationwide. Now part of the North American Energy Standards Board (NAESB).

Gas marketer — The middleman between a gas supplier and an end user. A marketer takes title to the gas supply and resells it to end users.

Gathering system — A system of small pipelines that collects gas from individual wells for delivery to a mainline system.

Generating unit — A combination of connected generators and other equipment that produces electric power. Synonymous with power plant.

Generation — The creation of electricity by transforming other forms of energy to produce electrical current (amperage) to flow.

The amount of energy produced in a given amount of time, expressed in kWh or MWh.

Generator — The part of a power plant that converts the mechanical power of a spinning shaft to electricity. Often the term is used to indicate the whole power plant including the source of mechanical power.

Generator operator — Entity that owns, maintains, and operates generating units.

Geothermal — Heat extracted from reservoirs in the earth.

Global warming — The warming of the earth's atmosphere due to increased concentrations of greenhouse gases.

Green power — Electricity generated using renewable fuels, usually excluding large hydro power.

Greenhouse gas — A gas that is transparent to solar radiation but blocks infrared radiation. This allows solar energy into the Earth's atmosphere, but prevents long-wave radiant energy from leaving. The net result is to trap absorbed radiation thus warming the Earth's surface. Greenhouse gases include water vapor, carbon dioxide, nitrous oxide, methane, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride.

Grid — Usually used to describe the interconnected electric transmission system, although sometimes used with distribution (distribution grid) to describe the distribution system.

Heat rate — The amount of fuel required to generate a specified amount of electricity, usually expressed in terms of Btu/kWh or MMBtu/MWh.

Heating value — The amount of energy content contained within a specific volume of natural gas. Commonly measured in units of Btu per Mcf.

Hedge — The initiation of a transaction in a physical or financial market to reduce risk.

Henry Hub — A pipeline interconnect in Louisiana where a number of interstate and intrastate pipelines meet. The standard delivery point for the NYMEX (CME) natural gas futures contract.

High voltage direct current transmission lines (HVDC) — Transmission lines that use DC power instead of AC, with a voltage of 200 kV or higher.

Homogenous products — Products that the customer sees as basically the same.

Horizontal drilling — Gas or oil drilling technique in which the well bore is horizontal when it penetrates the reservoir.

Hub — A physical location where multiple gas pipelines interconnect and where buyers and sellers can make transactions.

A physical location where multiple electric transmission lines interconnect and where buyers and sellers can make transactions.

Hybrid meter — A meter that combines a rotating disk-based mechanical counter with a solid-state register.

Hydro power — Electricity generated by water falling across a water turbine.

Hydrocarbon — Chemical compound containing carbon and hydrogen.

Imbalance — The discrepancy between the amount of energy a customer contracts to transport or consume and the actual volumes transported or consumed.

The discrepancy between the amount of electricity an entity schedules to deliver into or receive from the grid and the actual amount the entity delivers or receives.

Imbalance energy — Power bought or sold by the electric system operator during an operating hour to keep the system supply in balance with demand.

Impermeable rock — Rock that does not allow gas or fluid to migrate through it.

Incentive ratemaking — A form of ratemaking that rewards utility shareholders for achieving goals set by the regulator.

Independent power producer (IPP) — A generation company that is not part of a regulated vertically integrated utility company. IPPs typically sell much of their output under a long-term bilateral contract.

Independent system operator (ISO) — An independent entity that provides system operation functions including managing system reliability and transmission access; and also facilitates markets such as real-time energy and, in some cases, day-ahead energy and/or capacity.

Index — A calculated number designed to represent the average price of gas bought and sold at a specific location.

A calculated number designed to represent the average price of electricity bought and sold at a specific location during a specified period of time.

A published number used as a reference to determine a contractual sales price.

Induction meter — A mechanical meter with a rotating disk counter and dial register.

Inductive load — Loads that require both real and reactive power such as motors and fluorescent lights.

Industrial customer — An end user that uses gas or electricity for manufacturing or production of a product. Sometimes defined by utilities simply by size.

Injection — The process by which natural gas is placed into a storage facility or into a pipeline.

Insulator — A material with high resistance to electricity, meaning that electricity cannot easily travel through it.

Integrated gas combined-cycle (IGCC) — A power plant that takes solid coal, converts it into synthetic gas, and then uses the gas to power a combined-cycle gas turbine.

Integrated resource plan (IRP) — The process by which a utility forecasts future demand, evaluates all its options for satisfying that demand and then develops a supply plan for serving it.

Interconnection — The facilities that connect two gas pipelines or two electric lines.

The facilities where a generator connects to the electric grid.

Interruptible rates — An electric rate schedule whereby the end-use customer agrees to not use power during certain hours when instructed by the system operator (used by the system operator as a means of maintaining reliability). In return, the customer receives a rate discount.

Interruptible service — Also called as-available service, this storage or pipeline service is only available after all firm customers have been served and system conditions permit additional volumes to be moved.

Interstate pipeline — A federally regulated pipeline that is engaged in moving gas across state lines.

Intertie — An electric transmission interconnection permitting passage of current between two or more electric utility systems.

Intrastate pipeline — A pipeline that is regulated by the state public utilities commission. Intrastate pipelines cannot transport gas outside the state in which it is regulated.

Inverter — A device that converts direct current (DC) electricity to alternating current (AC).

Investor-owned utility (IOU) — A regulated monopoly utility that is owned by shareholders and run as a for-profit entity.

ISO New England — The system operator for multiple states in the U.S. Northeast.

Kilovolt-amps (kVA) — A thousand volt-amps.

Kilovolt-amps reactive (kVARs) — A thousand volt-amps reactive.

Kilovolt (kV) — A thousand volts.

Kilowatt-hour (kWh) — A unit of energy equal to 1,000 watt-hours.

Kilowatt (kW) — A unit of demand equal to 1,000 watts.

Kinetic energy — Energy available from an object as a result of motion.

Lease facility — The facility in a gas production area where gas from a specific lease is collected, where condensate and water are separated from the gas, and where gas is metered as a basis for compensating lease participants and royalty holders.

Linepack — The inventory of natural gas in a pipeline.

Liquefied natural gas (LNG) — Natural gas that has been chilled to the point that it liquefies. LNG is used as a means to store and transport natural gas.

Load — An amount of end-use demand.

Load factor — The ratio of the amount of gas or electricity used over a period of time in comparison to the amount the customer would have used if they had consumed the energy for the full period of time at their maximum demand.

Load center — A location on an electrical grid where there is a large amount of load, typically requiring that electricity be moved into the location by transmission lines.

Load serving entity (LSE) — An entity that sells electric supply to an end user.

Local distribution company (LDC) — The regulated distribution company that moves natural gas from the interstate pipeline to end-use customers and often provides bundled gas supply service to residential and small commercial customers. Also called a gas utility.

Locational marginal pricing (LMP) — A method of setting prices in an ISO market whereby prices at specific locations on the grid are determined by the marginal price of generation available to that specific location.

Loop flow — Flow of electricity that follows the path of least resistance on the transmission grid. The actual path may include parallel paths around the assumed contractual path.

Looping — Increasing capacity on a pipeline system by adding another pipeline that is parallel to existing lines.

Mainline system — A gas pipeline normally operating at pressures greater than 60 pounds per square inch, transporting gas from other mainline lines or gathering systems to lower pressure distribution and local transmission systems. Also known as a transmission line or backbone system.

Management information system (MIS) — An organized way of continually gathering analysis to provide managers with information they need to make decisions.

Manufactured gas — A combustible fuel produced by burning coal. Manufactured gas historically was used primarily in lighting. No longer in common use in the U.S.

Market-based rates — Charges for energy services that are determined by market forces rather than being set by the regulator.

Market center — A physical location where buyers and sellers make transactions (this may or may not also be a hub).

Market power — The ability of a market participant to artificially elevate prices over a period of time.

Market segmentation — A two-step process of identifying broad product markets and dividing them up to select target markets and develop suitable marketing mixes.

Marketer — An entity that buys gas or electricity, arranges for its transportation, and then resells it to end users or other gas purchasers.

Marketing — The performance of activities that seek to accomplish the organization's objectives by anticipating customer needs and profitably satisfying those needs through delivering products and services.

Marketing affiliate — Typically a non-regulated marketing company with corporate ties to a regulated pipeline, LDC, or an electric utility. Regulated companies are prohibited from favoring marketing affiliates in any business transactions.

Megawatt-hour (MWh) — A unit of energy equal to 1,000,000 watt-hours or 1,000 kilowatt-hours.

Megawatt (MW) — A unit of demand equal to 1,000,000 watts or 1,000 kilowatts.

Mercaptan — A harmless odor injected into natural gas giving it the smell of rotten eggs.

Merchant generator — A generation unit or company that is not part of a regulated monopoly vertically integrated utility and that is subject to market pricing for sales. Sometimes used synonymously with the term independent power producer (IPP).

Meter — A device used to measure the amount of gas or electricity flowing through a point on the system.

Methane — The main component of natural gas.

Midstream — Commercial gas operations that are generally associated with the transmission or storage aspect of the industry. Also sometimes applied to processing and gathering functions.

Mileage-based rates — Rates based on the actual distance natural gas is transported.

MISO — The Midcontinent ISO, a system operator serving portions of the Midwest and Southeast in the U.S. as well as providing reliability services to the Canadian province of Manitoba.

Monopoly — A marketplace characterized by only one seller.

Mothballing — Temporarily removing a power plant from service but not permanently shutting it down.

Muni — See **municipal utility**

Municipal utility — A utility owned and operated by a municipality or a group of municipalities.

Native load — The end-use customer load of a specific utility.

Natural gas — A combustible gaseous mixture of simple hydrocarbon compounds, primarily methane.

Natural gas liquids (NGLs) — A group of hydrocarbons including ethane, propane, normal butane, isobutane, and natural gasoline that are normally liquid at atmospheric pressure and temperature. NGLs are commonly removed from the natural gas stream at the wellhead and/or the processing plant and are marketed as valuable fuels.

Netback — A calculation determining the amount of money a seller will realize in the producing area once all transportation charges have been subtracted from the market price.

Netforward — A calculation determining the total cost of gas in the market once the price in the producing area plus all transportation charges have been added.

New York Mercantile Exchange (NYMEX) — An organization that runs the market for trading of commodity futures and options, owned by the CME Group.

Nitrogen oxides (NOx) — A group of highly reactive gases consisting of one nitrogen molecule and two or more oxygen molecules; a significant contributor to the formation of ground-level ozone that can cause smog.

No-notice service — A transportation service that allows customers to receive gas on demand and without an advance nomination.

Nomination — A request to transport a specific quantity of gas on a specific day under a specific contract.

Noncore customers — Relatively large gas customers who have alternative fuel capability or are willing to be interrupted during gas supply shortages. Typically include large commercial, industrial, cogeneration, and electric generation customers.

Non-performance — Failure to deliver according to the terms of a contract.

North American Electric Reliability Corporation (NERC) — An international, independent, self-regulated, not-for-profit organization whose mission is to promulgate electric operation and planning standards and ensure the reliability of the bulk power system in North America.

North American Energy Standards Board (NAESB) — An industry group of energy companies created to standardize operating and scheduling procedures for natural gas and electricity across North America.

Notice of proposed rulemaking (NOPR) — A document released by a regulatory agency in which the agency sets forth a proposed revision to its rules and gives market participants notice concerning the regulatory proceeding that will consider these revised rules.

New York ISO — The system operator providing services to the state of New York.

Nuclear power — Electricity generated using the heat of nuclear fission.

Odorization — The process of adding an artificial odor to natural gas so that leaks can be detected.

Off-peak — The period of a day, week, month, or year when demand is at its lowest.

Ohm (Ω) — The basic unit of resistance in an electrical circuit.

Ohm's Law — Physical law that quantifies the relationship among voltage, current, and resistance in an electrical circuit.

Open access — The requirement that pipelines transport or store gas for any creditworthy party on a non-discriminatory basis.

The requirement that a transmission system transmits electricity for any creditworthy party on a non-discriminatory basis.

Option — A contract that gives the holder the right, but not the obligation, to purchase or sell the underlying product at a specific price within a specified time period in return for a one-time premium payment.

Order 636 — An order issued by FERC in 1992 laying out the final blueprint for interstate gas industry deregulation including the unbundling of gas sales and transport services, implementation of capacity release, recovery of transition costs, and changes in transportation rate design.

Output — The amount of energy put onto the grid by a power plant over a specific period of time, usually measured in MWh.

Overhead facilities — Electrical facilities that are installed on transmission towers or distribution poles.

Peak demand — The maximum demand for natural gas or electricity in a given period of time.

Peaking units — Generating units normally run only during times of peak demand on a system.

Performance-based ratemaking (PBR) — A form of incentive ratemaking in which a utility's actual performance (either financial or service-wise) is compared against specified baselines. The utility can attain extra earnings if the baseline is exceeded, but can lose earnings if the baseline is not achieved.

Permeability — The ease with which a fluid or gas can pass through rock.

Permeable rock — Rock that has spaces through which gas or fluid can migrate.

Photoelectric effect — A natural phenomenon where certain materials produce an electric flow when they are struck by sufficient amounts of light.

Photovoltaic cells (PV) — A cell containing material that converts light into electricity.

Pig — A device used to clean and inspect the inside of a pipeline.

PJM — An ISO in the U.S. that is the system operator for parts of Mid-Atlantic, Northeast, and Midwest states.

Potential transformer (PT) — A small transformer used to reduce the voltage of electricity flowing through the meter allowing the meter to measure large amounts of electricity.

Power — See **electrical power**. Power is synonymous with demand in kW or MW.

A synonym for electricity.

Power factor — The ratio of real power to apparent power in an electrical system or circuit.

Power plant — A combination of connected generators and other equipment that produces electric power. Synonymous with generating unit.

Power pool — An entity formed by multiple utilities to coordinate dispatch of generating units owned by the utilities to optimize coordinated system operations among the utilities.

Power purchase agreement (PPA) — A contract for the sale/purchase of electricity.

Power quality — A measure of the level of voltage and/or frequency disturbances.

Price volatility — The movement of market prices over time.

Primary distribution — A voltage on the distribution system that is lower than transmission voltage and higher than secondary voltage ranging from 600 volts to 50 kV. Common voltages include 4160V, 12.5 kV, 25 kV, 36 kV, and many others.

Pro-rata allocation — Methodology that allows all customers to receive the same proportion of gas available as their share of total firm contracted volumes.

Producer — An entity that operates wells to bring gas from reservoirs into the gathering system.

Production — The process of extracting gas.

The process of generating electricity.

The amount of gas or electricity produced in a given period of time.

Propane — A liquid component of natural gas that is typically extracted at a processing plant and sold separately.

Proved natural gas reserves — The quantity of natural gas that is economically recoverable with the use of current technology.

Public Service Commission (PSC) — The state agency that regulates the activities of investor-owned utilities (and also municipal utilities in some states).

Public utility — A regulated entity that supplies the general public with an essential service such as electricity, natural gas, water, or telephone.

Public Utilities Commission (PUC) — See **Public Service Commission**

Public utility district (PUD) — A utility run by a local governmental agency or a group of governmental agencies other than a municipality.

Quadraplex — A four-wire conductor bundle used for overhead service drops consisting of three insulated wires and one uninsulated ground.

Ramp rate — The speed at which a power plant can increase its power output; usually stated in terms of MW per minute.

Rate — A regulated price charged by a regulated entity such as a utility.

Rate base — Working capital plus net capital investment in facilities, equipment, and other property a utility has constructed or purchased to provide utility services to its customers, less accumulated depreciation.

Rate case — The regulatory proceeding in which a utility's rates are determined.

Rate design — The development and structure of rates for regulated electric services.

Rate of return on equity (ROE) — Earnings divided by the equity portion of the rate base. ROE can be stated as actual ROE, which is based on actual earnings, or authorized ROE, which is the return authorized by the regulator during a cost of capital proceeding and used to set rates.

Rate of return - overall (ROR) — The amount of revenue left to pay debt and earnings after all expenses, taxes, and depreciation have been paid divided by the size of the rate base.

Rate schedule — The commission-approved document setting out rates and terms of service specific to a certain service and service provider.

Rated capacity — The maximum power in megawatts that a power plant is designed to provide to the grid without reducing its design life.

Reactive loads — Electric consuming devices such as fluorescent lights and motors that cause the electrons in the circuit to lag behind the voltage in time due to the way they use electricity.

Reactive power — The form of electric power that is measured in volt-amps reactive (VAR), kilovolt-amps reactive (kVAR), or megavolt-amps reactive (MVAR).

Real power — The form of electric power that is measured in watts (W), kilowatts (kW), or megawatts (MW).

Receipt point — The point on a pipeline system at which gas is taken into the system.

Reciprocating engine — An engine that converts pressure to rotating movement by using pistons to turn a crankshaft.

Regional transmission organization (RTO) — An ISO that operates over a regional geographic area and fits specific criteria defined by FERC.

Regulation — The myriad of rules or orders issued by state or federal agencies that dictate how gas or electric service is provided to customers.

Ramping a generating unit up or down in real time to match supply to demand and maintain system frequency within acceptable tolerances.

Regulator — The governmental entity that sets the rules and orders that make up regulation.

Reliability — A measure of how often electrical service is interrupted.

Renewable energy — Electricity that is generated from a source that is naturally replenished in a reasonably short period of time such as solar, wind, geothermal, biomass, and hydro. Sometimes the term is not applied to large-scale hydro due to assumed environmental impacts of large hydro projects.

Renewable fuel — A fuel that is naturally replenished such as wind or solar.

Reservation charge — See **demand charge**

Reserves — Generation capacity that is available to the system operator if needed but that is not currently generating electricity.

The quantity of natural gas existing in underground formations.

Reservoir — An underground deposit of natural gas.

Residential customer — An end user that uses gas or power in a home.

Resistance — A measure of the strength of impedance to the movement of electricity through a conductor commonly quantified in units of ohms.

Resources — Quantities of gas – discovered or undiscovered – that reasonably can be expected to exist.

The amount of available electric capacity in a specific region or market.

Restructuring — Changes in regulatory rules that result in change in control, ownership, or regulatory mechanisms applicable to specific industry sectors.

Retail access — The opportunity for an end user to buy gas or electric supply from someone other than its regulated utility distribution company.

Retail competition — The opportunity for multiple electric suppliers to compete to sell gas or electric supply service to end-use customers.

Retail marketer — A firm that sells products and services directly to end users.

Retail merchant — A firm that sells products and services directly to end users.

Return — The amount of money included in the revenue requirement to provide earnings and/or to pay back debt.

Return on investment (ROI) — Ratio of net profit after taxes to the investment used to make the net profit.

Revenue requirement — The revenues a utility must take in to cover its total estimated costs and allowed return.

Rulemaking — A regulatory proceeding held to establish new market rules.

Rules — Commission-approved general terms of service included in tariffs.

Rural electric co-op — A utility owned by its customers that usually serves rural areas.

Scheduling — The process of confirming nominations and, if necessary, using priority rules to determine which gas can flow under system constraints.

The process of determining which generating units will be generating or on reserve status for a specific hour. Also, the process of determining which requested transactions across a transmission line will be allowed to occur.

Secondary distribution — A voltage on the distribution system that is at the level typically used by customers such as 120V, 208V, 240V, 277V, 480V, or 2,400V.

Service — Gas system components that connect the distribution system to the customers including the service line, the meter, and the pressure regulator.

Electrical components that connect the service transformer to the customer including the wires that run into the facility, the meter that measures electric deliveries, and the protective devices that ensure the safety of the service and circuits within the customer facility.

Service conductor — The wires that connect a customer facility to the utility distribution system.

Service configuration — The way that the distribution facilities including the service transformers are connected to provide service to a customer. Key parameters include whether the service is two-wire, three-wire, or four-wire; whether the service is single-phase or three-phase; and if three-phase, whether the service is delta or wye.

Service drop — Overhead conductors used to connect the distribution system to a customer facility.

Service lateral — Underground conductors used to connect the distribution system to a customer facility.

Service territory — The geographical area served by a utility.

Service transformer — The transformer that converts the voltage of the primary distribution line to the voltage on the secondary distribution line required by a customer.

Service voltage — The voltage delivered by the utility to a customer facility.

Shipper — Any party that contracts with a pipeline for the transportation of natural gas and retains title while it is transported.

Short circuit — An interruption in the flow of electricity due to an undesired conductor coming in contact with the electrical flow.

Shut-in well — A well that has been completed but is not currently producing gas.

Simple-cycle gas turbine — See gas combustion turbine.

Single-phase power — Power produced using a single independent coil of wire in the generator. Power with one voltage curve that travels on a single phase conductor.

Small hydro — Hydroelectric power facilities with an installed capacity of 10 MW or less.

Smart meter — An advanced solid state meter that includes remote communication of data and may also provide remote control capabilities.

Solid state meter — A meter that measures consumption electronically, stores data digitally, and has an electronic register.

Speculating — The initiation of a transaction in a physical or financial market with the goal of making a profit due to market movement.

Spot market — The short-term market for natural gas.

The short-term market for electricity; usually refers to day-ahead, intra-day, and/or real-time markets.

SPP — Southwest Power Pool, the independent system operator providing system operations in multiple states in the central U.S.

Steam turbine — A turbine whose blades are spun by the kinetic energy in moving steam.

Storage — A means of maintaining gas in reserve for future demand, either through injection into an underground storage field or by holding it within the pipeline or an above-ground storage vessel.

The capture of electrical energy produced at one time for use at a later time.

Stranded costs — Utility costs that result from assets acquired under prior regulatory rules that are in excess of the market value of those assets.

Substation — An electric facility containing switches, transformers, and other equipment used to adjust voltages, direct flow, and monitor circuits.

Sulfur dioxide (SO2) — A gas made of sulfur and oxygen that is a significant contributor to the formation of acid rain.

Supply — Electricity available to the grid.

Natural gas available to any given pipeline system.

Supply basin — A geographical area where numerous natural gas reservoirs are located.

Switchyard — An enclosed area that includes the switching facilities and transformers that connect a power plant to the transmission system.

System operator — The entity that manages the transmission grid by dispatching generation and scheduling reserves and transmission. In some cases system operators may also facilitate short-term energy markets, ancillary reserves markets, and capacity markets.

System peak — The maximum load on an electrical system during a given period of time.

Take-or-pay — A contractual provision that requires a buyer to pay for service whether it was utilized or not.

Tariffs — Commission-approved terms of service for a regulated entity including rate schedules, rules, approved contracts, and service territory.

Therm (Th) — A unit of heating value. One therm is equivalent to 100,000 Btu.

Three-dimensional (3-D) seismic technology — Similar to a CAT scan, technology that uses sound waves to paint a three-dimensional picture of the earth's geologic formations.

Three-phase power — Power produced using three separate independent coils of wire in the generator. Three-phase power has three separate independent voltages with different timing and with each phase running through a separate conductor.

Three-wire service — A single-phase electric service from the utility to a customer facility that consists of three conductors: two hot conductors and one ground.

Throughput — The volume of gas flowing through a pipeline or delivered to a customer.

Time-of-use (TOU) meter — A meter capable of registering and recording the amount of usage in multiple defined time periods such as peak and off-peak.

Trading arrangements — The set of rules that specify how the system operator will acquire the necessary services to maintain system reliability, will allocate transmission access, and will facilitate markets.

Trading point — A physical location where buyers and sellers make transactions (this may or may not also be a hub or market center).

Transco — The abbreviation for transmission company, a regulated entity that owns onlytransmission facilities.

Transformer — A device used to change voltage. A step-up transformer increases the voltage while a step-down transformer decreases it.

Transmission — The transport of electricity over high-voltage power lines from generators to the interconnection with the distribution system.

The process of transporting large volumes of natural gas over long distances.

Transmission line — A power line with a voltage greater than 50 kV or 50,000 volts.

Transmission operator — The entity responsible for scheduling and operating a transmission system.

Transmission owner (TO) — The entity that owns a transmission line or transmission system.

Transmission system operator (TSO) — The entity responsible for scheduling and operating a transmission system and sometimes for facilitating real-time markets.

Transmission substation — A substation located on the transmission grid, usually where two or more separate transmission lines interconnect.

Triplex — A conductor bundle used for overhead service drops consisting of two insulated wires and one uninsulated wire.

Turbine — A machine with blades that are rotated by the movement of liquid or gas thus converting the kinetic energy of the liquid to mechanical energy of a rotating shaft.

Two-wire service — An electric service from the utility to a customer facility that consists of two conductors; it may include two hot conductors or one phase conductor and one ground.

Unbundling — The separation of a pipeline company's or LDC's transportation service from gas procurement service.

The separation of an electric utility's distribution service from electric supply service.

Underground facilities — Electrical facilities that are installed below ground level.

Underground service entrance (USE) cable — A conductor bundle that is used for underground service laterals that can be directly buried in the ground.

Upstream — Commercial gas operations that are associated with the production aspect of the industry.

Usage — The same as energy in kWh or MWh.

Usage charge — A component of a pipeline's or LDC's rate structure charged on a per unit of usage basis.

Utility distribution company (UDC) — A regulated utility that provides distribution services to end users.

Value-added services — Services related to electrical supply that are in addition to supply itself.

Value at risk (VAR) — A measure of potential earnings loss due to adverse market movements with a specified probability and specified level of volatility over a particular period of time.

Vertical integration — The ownership of all sectors of electric delivery (generation, transmission, system operations, and distribution) within one entity.

Volt — A unit of measure of voltage.

Volatility — See **price volatility**

Volt-amps reactive (VAR) — A unit of measure of reactive power.

Voltage — The electrical force that moves electricity through conductors, technically the difference in electrical potential between any two conductors or between a conductor and ground.

Watt (W) — A unit measure of power or demand.

Watt's Law — Law that quantifies the relationship among current, voltage, power, and power factor in an electrical circuit.

Well — The hole drilled into the earth's surface to produce natural gas.

Wellhead — The point where gas is pumped from the reservoir and enters the gathering system.

Wet gas — Natural gas that produces a liquid condensate and/or contains significant quantities of natural gas liquids (NGLs) when it is brought to the surface.

Wheeling — The transmission of power across a utility system on behalf of a third party.

Wholesale trading — The buying and selling of power between parties that are not ultimate end users.

Wind turbine — A turbine that is spun through the kinetic energy in wind.

Working gas — Natural gas in a storage field.

Wye configuration — A way of connecting three-phase electric lines, achieved by connecting three independent transformer windings at a common point.

Zone rates — Rates based on the distance gas is transported.