

# Glossary

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**Identified resources:** Coal deposits whose location, rank, quality, and quantity are known from geologic evidence supported by engineering measurements. Included are beds of bituminous coal and anthracite (14 or more inches thick) and beds of subbituminous coal and lignite (30 or more inches thick) that occur at depths to 6,000 feet. The existence and quantity of these beds have been delineated within specified degrees of geologic assurance as measured, indicated, or inferred. Also included are thinner and/or deeper beds that presently are being mined or for which there is evidence that they could be mined commercially.

**Idle capacity:** The component of operable capacity that is not in operation and not under active repair, but capable of being placed in operation within 30 days; and capacity not in operation but under active repair that can be completed within 90 days.

**IEA:** International Energy Agency

**Impedance:** The opposition to power flow in an AC circuit. Also, any device that introduces such opposition in the form of resistance, reactance, or both. The impedance of a circuit or device is measured as the ratio of voltage to current, where a sinusoidal voltage and current of the same frequency are used for the measurement; it is measured in ohms.

**Implicit price deflator:** The implicit price deflator, published by the U.S. Department of Commerce, Bureau of Economic Analysis, is used to convert nominal figures to real figures.

**Implied heat rate:** A calculation of the day-ahead electric price divided by the day-ahead natural gas price. Implied heat rate is also known as the ‘break-even natural gas market heat rate,’ because only a natural gas generator with an operating heat rate (measure of unit efficiency) below the implied heat rate value can make money by burning natural gas to generate power. Natural gas plants with a higher operating heat rate cannot make money at the prevailing electricity and natural gas prices.

**Imported crude oil burned as fuel:** The amount of foreign crude oil burned as a fuel oil, usually as residual fuel oil, without being processed as such. Imported crude oil burned as fuel includes lease condensate and liquid hydrocarbons produced from tarsands, gilsonite, and oil shale.

**Imported Refiners' Acquisition Cost (IRAC):** The average price for imported oil paid by U.S. refiners.

**Imports:** Receipts of goods into the 50 States and the District of Columbia from U.S. possessions and territories or from foreign countries.

**Improved recovery:** Extraction of crude oil or natural gas by any method other than those that rely primarily on natural reservoir pressure, gas lift, or a system of pumps.

**In situ leach mining (ISL):** The recovery, by chemical leaching, of the valuable components of a mineral deposit without physical extraction of the mineralized rock from the ground. Also referred to as "solution mining."

**In-house Demand-Side Management (DSM) program sponsor:** The building's owner or management encourages consumers in the building to improve energy efficiency, reduce energy costs, change timing or energy usage, or promote the use of a different energy source by sponsoring its own DSM programs.

**In-use (vehicles):** Implies that a vehicle is:

1. Registered with the Government of one or more States, the District of Columbia, the Commonwealth of Puerto Rico, or the Virgin Islands; or
2. The vehicle is owned or operated by a Government or military organization within the United States that is not required to register vehicles with the Government agencies listed under 1 above. For example, civilian Federal vehicles are generally not required to register with the State Government in which they are assigned.

**Inadvertent power exchange:** An unintended power exchange among utilities that is either not previously agreed upon or in an amount different from the amount agreed upon.

**Incandescent lamp:** A glass enclosure in which light is produced when a tungsten filament is electrically heated so that it glows. Much of the energy is converted into heat; therefore, this class of lamp is a relatively inefficient source of light. Included in this category are the familiar screw-in light bulbs, as well as somewhat more efficient lamps, such as tungsten halogen lamps, reflector or r-lamps, parabolic aluminized reflector (PAR) lamps, and ellipsoidal reflector(ER) lamps.

**Incandescent light bulbs, including regular or energy-efficient light bulbs:** An incandescent bulb is a type of electric light in which light is produced by a filament heated by electric current. The most common example is the type you find in most table and floor lamps. In commercial buildings, incandescent lights are used for display lights in retail stores, hotels and motels. This includes the very small, high-intensity track lights used to display merchandise or provide spot illumination in restaurants. Energy efficient light bulbs, known as "watt-savers," use less energy than a standard incandescent bulb. "Long-life" bulbs, bulbs that last longer than standard incandescent but produce considerably less light, are not considered energy-efficient bulbs. This category also includes halogen lamps. Halogen lamps are a special type of incandescent lamp containing halogen gas to produce a brighter, whiter light than standard incandescent. Halogen lamps come in three styles bulbs, models with reflectors, and infrared models with reflectors.

Halogen lamps are especially suited to recessed or "canned fixtures," track lights, and outdoor lights.

**Incentives Demand-Side Management (DSM) program assistance:** This DSM program assistance offers monetary or non-monetary awards to encourage consumers to buy energy-efficient equipment and to participate in programs designed to reduce energy usage. Examples of incentives are zero or low-interest loans, rebates, and direct installation of low cost measures, such as water heater wraps or duct work for distributing the cool air; the units condition air only in the room or areas where they are located.

**Incremental effects:** The annual changes in energy use (measured in megawatt hours) and peak load (measured in kilowatts) caused by new participants in existing DSM (Demand-Side Management) programs and all participants in new DSM programs during a given year. Reported Incremental Effects are annualized to indicate the program effects that would have occurred had these participants been initiated into the program on January 1 of the given year. Incremental effects are not simply the Annual Effects of a given year minus the Annual Effects of the prior year, since these net effects would fail to account for program attrition, equipment degradation, building demolition, and participant dropouts. Please note that Incremental Effects are not a monthly disaggregate of the Annual Effects, but are the total year's effects of only the new participants and programs for that year.

**Incremental energy costs:** The additional cost of producing and/or transmitting electric energy above some previously determined base cost.

**Independent power producer:** A corporation, person, agency, authority, or other legal entity or instrumentality that owns or operates facilities for the generation of electricity for use primarily by the public, and that is not an electric utility.

**Independent system operator (ISO):** An independent, federally regulated entity established to coordinate regional transmission in a non-discriminatory manner and ensure the safety and reliability of the electric system. [FERC definition](#)

**Indian coal lease:** A lease granted to a mining company to produce coal from Indian lands in exchange for royalties and other revenues; obtained by direct negotiation with Indian tribal authorities, but subject to approval and administration by the U.S. Department of the Interior.

**Indicated reserves:** See [Probable energy reserves](#).

**Indicated resources, coal:** Coal for which estimates of the rank, quality, and quantity are based partly on sample analyses and measurements and partly on reasonable geologic projections. Indicated resources are computed partly from specified measurements and partly from projection of visible data for a reasonable distance on the basis of geologic evidence. The points of observation are 1/2 to 1-1/2 miles apart. Indicated coal is projected to extend as a 1/2-mile-wide belt that lies more than 1/4 mile from the outcrop, points of observation, or measurement.

**Indirect cost:** Costs not directly related to mining or milling operations, such as overhead, insurance, security, office expenses, property taxes, and similar administrative expenses.

**Indirect uses (end-use category):** The end-use category that handles boiler fuel. Fuel in boilers is transformed into another useful energy source, steam or hot water, which is in turn used in other end uses, such as process or space heating or electricity generation. Manufacturers find measuring quantities of steam as it passes through to various end uses especially difficult because variations in both temperature and pressure affect energy content. Thus, the MECS (an EIA survey) does not present end-use estimates of steam or hot water and shows only the amount of the fuel used in the boiler to produce those secondary energy sources.

**Indirect utility cost:** A utility cost that may not be meaning fully identified with any particular DSM program category. Indirect costs could be attributable to one of several accounting cost categories (i.e., Administrative, Marketing, Monitoring evaluation, Utility-Earned Incentives, Other). Accounting costs that are known DSM program costs should not be reported under Indirect Utility Cost; those costs should be reported as Direct Utility Costs under the appropriate DSM program category.

**Industrial production:** The Federal Reserve Board calculates this index by compiling indices of physical output from a variety of agencies and trade groups, weighting each index by the Census' value added, and adding it to the cost of materials. When physical measures are not available, the Federal Reserve Board uses the number of production workers or amount of electricity consumed as the basis for the index. To convert industrial production into dollars, multiply by the "real value added" estimate used by the Federal Reserve Board.

**Industrial restrictions (coal):** Land-use restrictions that constrain, postpone, or prohibit mining in order to meet other industrial needs or goals; for example, resources not mined due to safety concerns or due to industrial or societal priorities, such as to preserve oil or gas wells that penetrate the coal reserves; to protect surface features such as pipelines, power lines, or company facilities; or to preserve public or private assets, such as highways, railroads, parks, or buildings.

**Industrial sector:** An energy-consuming sector that consists of all facilities and equipment used for producing, processing, or assembling goods. The industrial sector encompasses the following types of activity manufacturing (NAICS codes 31-33); agriculture, forestry, fishing and hunting (NAICS code 11); mining, including oil and gas extraction (NAICS code 21); and construction (NAICS code 23). Overall energy use in this sector is largely for process heat and cooling and powering machinery, with lesser amounts used for facility heating, air conditioning, and lighting. Fossil fuels are also used as raw material inputs to manufactured products. Note: This sector includes generators that produce electricity and/or useful thermal output primarily to support the above-mentioned industrial activities. Various EIA programs differ in sectoral coverage.

**Inferred reserve base (coal):** the resources in the inferred reliability category that meet the same criteria of bed thickness and depth from surface as the demonstrated reserve base.

**Inferred resources:** Coal in unexplored extensions of demonstrated resources for which estimates of the quality and size are based on geologic evidence and projection. Quantitative estimates are based largely on broad knowledge of the geologic character of the bed or region and where few measurements of bed thickness are available. The estimates are based primarily on an assumed continuation from demonstrated coal for which there is geologic evidence. The points of observation are 1-1/2 to 6 miles apart. Inferred coal is projected to extend as a 2-1/4-

mile wide belt that lies more than 3/4 mile from the outcrop, points of observation, or measurement.

**Initial enrichment:** Average enrichment for a fresh fuel assembly as specified and ordered in fuel cycle planning. This average should include axial blankets and axially and radially zoned enrichments.

**Initial operation:** First availability of a newly constructed unit to provide power to the grid. For a nuclear unit, this time is when the Full Power Operating License for the unit is received.

**Inoperable capacity:** Generating capacity that is totally or partially out of service at the time of system peak load, either for scheduled outages (see GADS definition of "scheduled outages." These include both maintenance outages and planned outages.) or for reasons such as environmental restrictions; extensive modifications or repair; or capacity specified as being in a mothballed state. This does not include derated portions of generating capacity.

**Installed nameplate capacity:** See [Generator nameplate capacity \(installed\)](#).

**Instantaneous peak demand:** The maximum demand at the instant of greatest load.

**Instantaneous water heater:** Also called a "tankless" or "point-of-use" water heater. The water is heated at the point of use as it is needed.

**Institutional living quarters:** Space provided by a business or organization for long-term housing of individuals whose reason for shared residence is their association with the business or organization. Such quarters commonly have both individual and group living spaces, and the business or organization is responsible for some aspects of resident life beyond the simple provision of living quarters. Examples include prisons; nursing homes and other long-term medical care facilities; military barracks; college dormitories; and convents and monasteries.

**Insulation:** Any material or substance that provides a high resistance to the flow of heat from one surface to another. The different types include blanket or batt, foam, or loose fill, which are used to reduce heat transfer by conduction. Dead air space is an insulating medium in storm windows and storms as it reduces passage of heat through conduction and convection. Reflective materials are used to reduce heat transfer by radiation.

**Insulation around heating and/or cooling ducts:** Extra insulation around the heating and/or cooling ducts intended to reduce the loss of hot or cold air as it travels to different parts of the residence.

**Insulation around hot-water pipes:** Wrapping of insulating material around hot-water pipes to reduce the loss of heat through the pipes.

**Insulation around water heater:** Blanket insulation wrapped around the water heater to reduce loss of heat. To qualify under this definition, this wrapping must be in addition to any insulation provided by the manufacturer.

**Insulator:** A material that is a very poor conductor of electricity. The insulating material is usually a ceramic or fiberglass when used in the transmission line and is designed to support a conductor physically and to separate it electrically from other conductors and supporting material.

**Intangible drilling and development costs (IDC):** Costs incurred in preparing well locations, drilling and deepening wells, and preparing wells for initial production up through the point of installing control valves. None of these functions, because of their nature, have salvage value. Such costs would include labor, transportation, consumable supplies, drilling tool rentals, site clearance, and similar costs.

**Integral collector storage (ICS):** A solar thermal collector in which incident solar radiation is absorbed directly by the storage medium.

**Integrated demand:** The summation of the continuously varying instantaneous demand averaged over a specified interval of time. The information is usually determined by examining a demand meter.

**Integrated gasification-combined cycle technology:** Coal, water, and oxygen are fed to gasifier, which produces syngas. This medium-Btu gas is cleaned (particulates and sulfur compounds removed) and is fed to a gas turbine. The hot exhaust of the gas turbine and heat recovered from the gasification process are routed through a heat-recovery routed through a heat-recovery generator to produce steam, which drives a steam turbine to produce electricity.

**Intensity:** The amount of a quantity per unit floor space. This method adjusts either the amount of energy consumed or expenditures spent, for the effects of various building characteristics, such as size of the building, number of workers, or number of operating hours, to facilitate comparisons of energy across time, fuels, and buildings.

**Intensity per hour:** Total consumption of a particular fuel(s) divided by the total floor space of buildings that use the fuel(s) divided by total annual hours of operation.

**Interburden:** Material of any nature that lies between or separates coal seams. Term is primarily used in surface mining.

**Interchange (electric):** Energy transfers that cross Balancing Authority boundaries. [NERC definition](#)

**Interchange authority (electric):** The responsible entity that authorizes implementation of valid and balanced Interchange Schedules between Balancing Authority Areas, and ensures communication of Interchange information for reliability assessment purposes. [NERC definition](#)

**Interchange energy:** Kilowatthours delivered to or received by one electric utility or pooling system from another. Settlement may be payment, returned in kind at a later time, or accumulated as energy balances until the end of the stated period.

**Interchange transaction (electric):** An agreement to transfer energy from a seller to a buyer that crosses one or more Balancing Authority Area boundaries. [NERC definition](#)

**Intercity bus:** A bus designed for high speed, long distance travel; equipped with front doors only, high backed seats, and usually restroom facilities.

**Interconnected system:** A system consisting of two or more individual power systems normally operating with connecting tie lines.

**Interconnection:** Two or more electric systems having a common transmission line that permits a flow of energy between them. The physical connection of the electric power transmission facilities allows for the sale or exchange of energy.

**Interdepartmental sales:** Includes amounts charged by the electric department at tariff or other specified rates for electricity supplied by it to other utility departments.

**Interdepartmental service (electric):** Interdepartmental service includes amounts charged by the electric department at tariff or other specified rates for electricity supplied by it to other utility departments.

**Interest coverage ratio:** The number of times that fixed interest charges were earned. It indicates the margin of safety of interest on fixed debt. The times-interest-earned ratio is calculated using net income before and after income taxes; and the credits of interest charged to construction being treated as other income. The interest charges include interest on long-term debt, interest on debt of associated companies, and other interest expenses.

**Intergovernmental Panel on Climate Change (IPCC):** A panel established jointly in 1988 by the World Meteorological Organization and the United Nations Environment Program to assess the scientific information relating to climate change and to formulate realistic response strategies.

**Interlocking directorates:** The holding of a significant position in management or a position on the corporate board of a utility while simultaneously holding a comparable position with another utility, or with a firm doing business with the utility.

**Intermediate grade gasoline:** A grade of unleaded gasoline with an octane rating intermediate between "regular" and "premium." Octane boosters are added to gasolines to control engine pre-ignition or "knocking" by slowing combustion rates.

**Intermediate load (electric system):** The range from base load to a point between base load and peak. This point may be the midpoint, a percent of the peak load, or the load over a specified time period.

**Intermittent electric generator or intermittent resource:** An electric generating plant with output controlled by the natural variability of the energy resource rather than dispatched based on system requirements. Intermittent output usually results from the direct, non-stored conversion of naturally occurring energy fluxes such as solar energy, wind energy, or the energy of free-flowing rivers (that is, run-of-river hydroelectricity).

**Internal Collector Storage (ICS):** A solar thermal collector in which incident solar radiation is absorbed by the storage medium.

**Internal combustion plant:** A plant in which the prime mover is an internal combustion engine. An internal combustion engine has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel or gas-fired engines are the principal types used in electric plants. The plant is usually operated during periods of high demand for electricity.

**International bunker fuels:** See [Bunker fuels](#).

**Interruptible gas:** Gas sold to customers with a provision that permits curtailment or cessation of service at the discretion of the distributing company under certain circumstances, as specified in the service contract.

**Interruptible load:** This Demand-Side Management category represents the consumer load that, in accordance with contractual arrangements, can be interrupted at the time of annual peak load by the action of the consumer at the direct request of the system operator. This type of control usually involves large-volume commercial and industrial consumers. Interruptible Load does not include Direct Load Control.

**Interruptible load or interruptible demand (electric):** Demand that the end-use customer makes available to its Load-Serving Entity via contract or agreement for curtailment [NERC definition](#)

**Interruptible or curtailable rate:** A special electricity or natural gas arrangement under which, in return for lower rates, the customer must either reduce energy demand on short notice or allow the electric or natural gas utility to temporarily cut off the energy supply for the utility to maintain service for higher priority users. This interruption or reduction in demand typically occurs during periods of high demand for the energy (summer for electricity and winter for natural gas).

**Interruptible power:** Power and usually the associated energy made available by one utility to another. This transaction is subject to curtailment or cessation of delivery by the supplier in accordance with a prior agreement with the other party or under specified conditions.

**Interstate companies:** Natural gas pipeline companies subject to Federal Energy Regulatory Commission (FERC) jurisdiction.

**Interstate pipeline:** Any person engaged in natural gas transportation subject to the jurisdiction of Federal Energy Regulatory Commission (FERC) under the Natural Gas Act.

**Interstate pipeline purchase:** Any gas supply contracted from and volumes purchased from other interstate pipelines, overland natural gas import purchases, and LNG, SNG, or coal gas purchases from domestic or foreign sources. Purchases from intrastate pipelines to section 311 (b) of the NGPA of 1978 and from independent producers are not included with interstate pipelines purchase.

**Intransit deliveries:** Redeliveries to a foreign country of foreign gas received for transportation across U.S. territory, and deliveries of U.S. gas to a foreign country for transportation across its territory and redelivery to the United States.

**Intransit receipts:** Receipts of foreign gas for transportation across U.S. territory and redelivery to a foreign country, and redeliveries to the United States of U.S. gas transported across foreign territory.

**Intrastate companies:** Companies not subject to Federal Energy Regulatory Commission (FERC) jurisdiction.

**Intrastate pipeline:** Any person engaged in natural gas transportation (not including gathering) that is not subject to the jurisdiction of the Commission under the Natural Gas Act (other than

any such pipeline that is not subject to the jurisdiction of the Commission solely by reason of Section 1(c) of the Natural Gas Act).

**Investment of municipality:** The investment of the municipality in its utility department, when such investment is not subject to cash settlement on demand or at a fixed future time. Include the cost of debt-free utility plant constructed or acquired by the municipality and made available for the use of the utility department, cash transferred to the utility department for working capital, and other expenditures of an investment nature.

**Investments and advances to unconsolidated affiliates:** The balance sheet account representing the cost of investments and advances to unconsolidated affiliates. Generally, affiliates that are less than 50-percent owned by a company may not be consolidated into the company's financial statements.

**Investor-owned utility (IOU):** A privately-owned electric utility whose stock is publicly traded. It is rate regulated and authorized to achieve an allowed rate of return.

**Ion exchange:** Reversible exchange of ions adsorbed on a mineral or synthetic polymer surface with ions in solution in contact with the surface. A chemical process used for recovery of uranium from solution by the interchange of ions between a solution and a solid, commonly a resin.

**IOU:** See [Investor-Owned Utility](#)

**IPP:** See [Independent Power Producer](#)

**Iron and steel industry:** Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills Establishments primarily engaged in manufacturing hot metal, pig iron, and silvery pig iron from iron ore and iron and steel scrap; converting pig iron, scrap iron, and scrap steel into steel; and in hot-rolling iron and steel into basic shapes, such as plates, sheets, strips, rods, bars, and tubing.

**Irradiated nuclear fuel:** Nuclear fuel that has been exposed to radiation in the reactor core at any power level.

**ISO:** See [Independent System Operator](#)

**Isobutane (C<sub>4</sub>H<sub>10</sub>):** A branch-chain saturated (paraffinic) hydrocarbon extracted from both natural gas and refinery gas streams, which is gaseous at standard temperature and pressure. It is a colorless gas that boils at a temperature of 11 degrees Fahrenheit.

**Isobutylene (C<sub>4</sub>H<sub>8</sub>):** A branch-chain olefinic hydrocarbon recovered from refinery or petrochemical processes, which is gaseous at standard temperature and pressure. Isobutylene is used in the production of gasoline and various petrochemical products.

**Isohexane (C<sub>6</sub>H<sub>14</sub>):** A saturated branch-chain hydrocarbon. It is a colorless liquid that boils at a temperature of 156.2 degrees Fahrenheit.

**Isomerization:** A refining process that alters the fundamental arrangement of atoms in the molecule without adding or removing anything from the original material. Used to convert

normal butane into isobutane (C<sub>4</sub>), an alkylation process feedstock, and normal pentane and hexane into isopentane (C<sub>5</sub>) and isohexane (C<sub>6</sub>), high-octane gasoline components.

**Isopach:** A line on a map drawn through points of equal thickness of a designated unit (such as a coal bed).

**Isopentane:** A saturated branched-chain hydrocarbon (C<sub>5</sub>H<sub>12</sub>) obtained by fractionation of natural gasoline or isomerization of normal pentane.

**Isotopes:** Forms of the same chemical element that differ only by the number of neutrons in their nucleus. Most elements have more than one naturally occurring isotope. Many isotopes have been produced in reactors and scientific laboratories.

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**Thank You.** We welcome your comments or suggestions (*optional*).

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