

Glossary

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#)
[V](#) [W](#) [XYZ](#)

Search glossary terms:

Browse terms related to these fuel groups: [alternative fuels](#) [coal](#) [electricity](#) [natural gas](#) [nuclear](#) [petroleum](#) [renewable](#)

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U.S. refiner acquisition cost of imported crude oil: The average price paid by U.S. refiners for imported, that is, non-U.S., crude oil booked into their refineries in accordance with accounting procedures generally accepted and consistently and historically applied by the refiners concerned. The refiner acquisition cost of imported crude oil includes transportation and other fees paid by the refiner.

U.S.S.R.: See [Union of Soviet Socialist Republics \(U.S.S.R.\)](#).

U₃O₈: See [Uranium oxide](#).

UF₆: See [Uranium hexafluoride](#).

ULCC: Ultra Large Crude Carrier.

Ultimate customer: A customer that purchases electricity for its own use and not for resale.

Ultra-low sulfur diesel (ULSD) fuel: Diesel fuel containing a maximum 15 parts per million (ppm) sulfur.

Ultraviolet: Electromagnetic radiation in the wavelength range of 4 to 400 nanometers.

UMTRA: See [Uranium Mill Tailings Radiation Control Act of 1978](#).

Unaccounted for (crude oil): Represents the arithmetic difference between the calculated supply and the calculated disposition of crude oil. The calculated supply is the sum of crude oil production plus imports minus changes in crude oil stocks. The calculated disposition of crude oil is the sum of crude oil input to refineries, crude oil exports, crude oil burned as fuel, and crude oil losses.

Unaccounted for (natural gas): Represents differences between the sum of the components of natural gas supply and the sum of components of natural gas disposition. These differences maybe due to quantities lost or to the effects of data reporting problems. Reporting problems include differences due to the net result of conversions of flow data metered at varying temperatures and pressure bases and converted to a standard temperature and pressure base; the effect of variations in company accounting and billing practices; differences between billing cycle and calendar-period time frames; and imbalances resulting from the merger of data reporting systems that vary in scope, format, definitions, and type of respondents.

Unbundling: Separating vertically integrated monopoly functions into their component parts for the purpose of separate service offerings.

Uncompleted wells, equipment, and facilities costs: The costs incurred to (1) drill and equip wells that are not yet completed, and (2) acquire or construct equipment and facilities that are not yet completed and installed.

Unconsolidated entity: A firm directly or indirectly controlled by a parent but not consolidated with the parent for purposes of financial statements prepared in accordance with generally accepted accounting principles. An unconsolidated entity includes any firm consolidated with the unconsolidated entity for purposes of financial statements prepared in accordance with generally accepted accounting principles historically and consistently applied. An individual shall be deemed to control a firm that is directly or indirectly controlled by him or by his father, mother, spouse, children, or grandchildren.

Unconventional oil and natural gas production: An umbrella term for oil and natural gas that is produced by means that do not meet the criteria for conventional production. See [Conventional oil and natural gas production](#). Note: What has qualified as "unconventional" at any particular time is a complex interactive function of resource characteristics, the available exploration and production technologies, the current economic environment, and the scale, frequency, and duration of production from the resource. Perceptions of these factors inevitably change over time and they often differ among users of the term. For these reasons, the scope of this term will be expressly stated in any EIA publication that uses it. For example, see [International Energy Outlook, Table E4](#) for the list it currently uses for unconventional oil and natural gas production.

Underground mine: A mine where coal is produced by tunneling into the earth to the coalbed, which is then mined with underground mining equipment such as cutting machines and continuous, longwall, and shortwall mining machines. Underground mines are classified according to the type of opening used to reach the coal, i.e., drift (level tunnel), slope (inclined tunnel), or shaft (vertical tunnel).

Underground mining equipment:

- A **coal-cutting machine** is used in conventional mining to undercut, top cut, or shear the coal face so that coal can be fractured easily when blasted. It cuts 9 to 13 feet into the bed.
- **Continuous auger machine** is used in mining coalbeds less than 3 feet thick. The auger has a cutting depth of about 5 feet and is 20 to 28 inches in diameter. Continuous auger mining usually uses a conveyor belt to haul the coal to the surface.
- **Continuous mining machine**, used during continuous mining, cuts or rips coal from the face and loads it into shuttle cars or conveyors in one operation. It eliminates the use of blasting devices and performs many functions of other equipment such as drills, cutting machines, and loaders. A continuous mining machine typically has a turning "drum" with sharp bits that cut and dig out the coal for 16 to 22 feet before mining stops so that the mined area can be supported with roof bolts. This machine can mine coal at the rate of 8 to 15 tons per minute.

- There are of two types of **conveyor systems**:
 1. A **mainline conveyor**, which is usually a permanent installation that carries coal to the surface.
 2. A **section conveyor**, which connects the working face to the mainline conveyor.
- **Face drill** is used in conventional mining to drill shot holes in the coalbed for explosive charges.
- **Loading machine** is used in conventional mining to scoop broken coal from the working area and load it into a shuttle car, which hauls the coal to mine cars or conveyors for delivery to the surface.
- **Longwall mining machine** shears coal from a long straight coal face (up to about 700 feet) by working back and forth across the face under a movable, hydraulic-jack roof-support system. The broken coal is transported by conveyor. Longwall machines can mine coal at the rate of 1,000 tons per shift. Mine locomotive, operating on tracks, is used to haul mine cars containing coal and other material, and to move personnel in specially designed "mantrip" cars. Large locomotives can haul more than 20 tons at a speed of about 10 miles per hour. Most mine locomotives run on electricity provided by a trolley wire; some are battery-powered.
- **Ram car or shuttle ram** is a rubber-tired haulage vehicle that is unloaded through the use of a movable steel plate located at the back of the haulage bed.
- **Roof-bolting machine, or roof bolter**, is used to drill holes and place bolts to support the mine roof. Roof bolting units can be installed on a continuous mining machine.
- **Scoop** is a rubber-tired haulage vehicle used in thin coalbeds.
- **Shortwall mining machine** generally is a continuous-mining machine used with a powered, self-advancing roof support system. It shears coal from a short coal face (up to about 150 feet long). The broken coal is hauled by shuttle cars to a conveyor belt.
- **Shuttle car** is a rubber-tired haulage vehicle that is unloaded by a built-in conveyor.

Underground mining methods:

- A **drift mine** is driven horizontally into coal that is exposed or accessible in a hillside. In a hydraulic mine, high-pressure water jets break the coal from a steeply inclined, thick coalbed that would be difficult to mine with the usual underground methods. The coal is then transported to the surface by a system of flumes or by pipeline. Although currently not in commercial use in the United States, hydraulic mining is used in western Canada.
- A **punch mine** is a type of small drift mine used to recover coal from strip-mine highwalls or from small, otherwise uneconomical, coal deposits. A shaft mine is driven vertically to the coal deposit. A slope mine is driven at an angle to reach the coal deposit.
- In a **room-and-pillar mining** system, the most common method, the mine roof, is supported mainly by coal pillars left at regular intervals. Rooms are places where the coal is mined; pillars are areas of coal left between the rooms. Room-and-pillar mining is done

either by 1) conventional mining, which involves a series of operations that require cutting the working face of the coalbed so that it breaks easily when blasted with explosives or high-pressure air, and then loading the broken coal or 2) continuous mining, in which a continuous mining machine extracts and removes coal from the working face in one operation. When a section of a mine has been fully developed, additional coal is extracted by mining the supportive pillars until the roof caves in; the procedure is called room-and-pillar retreat mining.

- In a **longwall mining** system, long sections of coal, up to about 700 feet, are removed and no pillars are left to support the mined-out areas. The working area is protected by a movable, powered roof support system. The caved area (gob) compacts and, after initial subsidence, supports the overlying strata. Longwall mining is used where the coalbed is thick and generally flat, where surface subsidence is acceptable.
- A **shortwall mining** system generally refers to the room-and-pillar mining in which the working face is wider than usual but smaller (less than 150 feet) than that in longwall mining.

Roof support and mine ventilation are paramount in all underground mining operations. Roof bolting is the principal method of supporting the mine roof. In roof bolting, long bolts, 2 to 10 feet long with an expansion shell or with resin grouting are placed in the mine roof. The bolts reinforce the roof by pulling together rock strata to make a strong beam or by fastening weak strata to strong strata. Mine ventilation, accomplished with fans, is essential to supply fresh air and to remove gases and dust from the mine. To reduce the possibility of coal dust explosions, rock dust is sprayed in an underground coal mine. Rock dust is a very fine noncombustible material (pulverized limestone).

Underground natural gas storage: The use of sub-surface facilities for storing natural gas for use at a later time. The facilities are usually hollowed-out salt domes, geological reservoirs (depleted oil or gas fields) or water-bearing sands (called aquifers) topped by an impermeable cap rock.

Underground natural gas storage injections: Natural gas put (injected) into [underground storage](#) reservoirs.

Underground storage: The storage of natural gas in underground reservoirs at a different location from which it was produced.

Underground storage withdrawals: Natural gas removed from [underground storage](#) reservoirs.

Undifferentiated/unspecified reserves and production: Reserves and production that are not separable by FERC production areas or by states. Undifferentiated and unspecified reserves consist only of company-owned gas in underground storage.

Undiscovered recoverable reserves (crude oil and natural gas): Those economic resources of crude oil and natural gas, yet undiscovered, that are estimated to exist in favorable geologic settings.

Undiscovered resources (coal): Unspecified bodies of coal surmised to exist on the basis of broad geologic knowledge and theory. Undiscovered resources include beds of bituminous coal and anthracite 14 inches or more thick and beds of sub bituminous coal and lignite 30 inches or more thick that are presumed to occur in unmapped and unexplored areas to depths of 6,000 feet. The speculative and hypothetical resource categories comprise undiscovered resources.

Unfilled requirements: Requirements not covered by usage of inventory or supply contracts in existence as of January 1 of the survey year.

Unfinished oils: All oils requiring further processing, except those requiring only mechanical blending. Unfinished oils are produced by partial refining of crude oil and include naphthas and lighter oils, kerosene and light gas oils, heavy gas oils, and [residuum](#).

Unfractionated streams: Mixtures of unsegregated natural gas liquid components, excluding those in plant condensate. This product is extracted from natural gas.

Unglazed solar collector: A solar thermal collector that has an absorber that does not have a glazed covering. Solar swimming pool heater systems usually use unglazed collectors because they circulate relatively large volumes of water through the collector and capture nearly 80 percent of the solar energy available.

Uniform system of accounts: Prescribed financial rules and regulations established by the Federal Energy Regulatory Commission for utilities subject to its jurisdiction under the authority granted by the Federal Power Act.

Union of Soviet Socialist Republics (U.S.S.R.): A political entity that consisted of 15 constituent republics: Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan. The U.S.S.R. ceased to exist as of December 31, 1991

Unit price: Total revenue derived from the sale of product during the reference month divided by the total volume sold; also known as the weighted average price. Total revenue should exclude all taxes but include transportation costs that were paid as part of the purchase price.

Unit value, consumption: Total price per specified unit, including all taxes, at the point of consumption.

Unit value, wellhead: The wellhead sales price, including charges for natural gas plant liquids subsequently removed from the gas; gathering and compression charges; and state production, severance, and/or similar charges.

United States: The 50 States and the District of Columbia. *Note:* The United States has varying degrees of jurisdiction over a number of territories and other political entities outside the 50 States and the District of Columbia, including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Johnston Atoll, Midway Islands, Wake Island, and the Northern Mariana Islands. EIA data programs may include data from some or all of these areas in U.S. totals. For these programs, data products will contain notes explaining the extent of geographic coverage included under the term "United States."

Unleaded midgrade gasoline: See [Gasoline grades](#).

Unleaded premium gasoline: See [Gasoline grades](#).

Unleaded regular gasoline: See [Gasoline grades](#).

Unprocessed gas: Natural gas that has not gone through a processing plant.

Unregulated Entity: For the purpose of EIA's data collection efforts, entities that do not have a designated franchised service area and that do not file forms listed in the Code of Federal Regulations, Title 18, Part 141, are considered unregulated entities. This includes qualifying cogenerators, qualifying small power producers, and other generators that are not subject to rate regulation, such as independent power producers.

Unscheduled outage service: Power received by a system from another system to replace power from a generating unit forced out of service.

Uprate: An increase in available electric generating unit power capacity due to a system or equipment modification. An uprate is typically a permanent increase in the capacity of a unit.

Uranium (U): A heavy, naturally radioactive, metallic element (atomic number 92). Its two principally occurring isotopes are uranium-235 and uranium-238. Uranium-235 is indispensable to the nuclear industry because it is the only isotope existing in nature, to any appreciable extent, that is fissionable by thermal neutrons. Uranium-238 is also important because it absorbs neutrons to produce a radioactive isotope that subsequently decays to the isotope plutonium-239, which also is fissionable by thermal neutrons.

Uranium concentrate: A yellow or brown powder obtained by the milling of uranium ore, processing of in situ leach mining solutions, or as a byproduct of phosphoric acid production.

Uranium deposit: A discrete concentration of uranium mineralization that is of possible economic interest.

Uranium endowment: The uranium that is estimated to occur in rock with a grade of at least 0.01 percent U_3O_8 . The estimate of the uranium endowment is made before consideration of economic availability of any associated uranium resources.

Uranium hexafluoride (UF_6): A white solid obtained by chemical treatment of U_3O_8 and which forms a vapor at temperatures above 56 degrees Centigrade. UF_6 is the form of uranium required for the enrichment process.

Uranium importation: The actual physical movement of uranium from a location outside the United States to a location inside the United States.

Uranium mill: A plant where uranium is separated from ore taken from mines.

Uranium mill tailings: The sand-like materials left over from the separation of uranium from its ore. More than 99 percent of the ore becomes tailings.

Uranium Mill Tailings Radiation Control Act (UMTRA) of 1978: The act that directed the Department of Energy to provide for stabilization and control of the uranium mill tailings from in active sites in a safe and environmentally sound manner to minimize radiation health hazards to

the public. It authorized the Department to undertake remedial actions at 24 designated inactive uranium-processing sites and at an estimated 5,048 vicinity properties.

Uranium ore: Rock containing uranium mineralization in concentrations that can be mined economically, typically one to four pounds of U_3O_8 per ton or 0.05 percent to 0.2 percent U_3O_8 .

Uranium oxide: Uranium concentrate or yellowcake. Abbreviated as U_3O_8 .

Uranium property: A specific piece of land with uranium reserves that is held for the ultimate purpose of economically recovering the uranium. The land can be developed for production or undeveloped.

Uranium reserves: Estimated quantities of uranium in known mineral deposits of such size, grade, and configuration that the uranium could be recovered at or below a specified production cost with currently proven mining and processing technology and under current law and regulations. Reserves are based on direct radiometric and chemical measurements of drill holes and other types of sampling of the deposits. Mineral grades and thickness, spatial relationships, depths below the surface, mining and reclamation methods, distances to milling facilities, and amenability of ores to processing are considered in the evaluation. The amount of uranium in ore that could be exploited within the chosen forward-cost levels are estimated in accordance with conventional engineering practices.

Uranium resource categories (international): Three categories of uranium resources defined by the international community to reflect differing levels of confidence in the existence of the resources. Reasonably assured resources (RAR), estimated additional resources (EAR), and speculative resources (SR) are described below.

- **Reasonably assured resources (RAR):** Uranium that occurs in known mineral deposits of such size, grade, and configuration that it could be recovered within the given production cost ranges, with currently proven mining and processing technology. Estimates of tonnage and grade are based on specific sample data and measurements of the deposits and on knowledge of deposit characteristics. *Note:* **RAR** corresponds to DOE's uranium reserves category.
- **Estimated additional resources (EAR):** Uranium in addition to **RAR** that is expected to occur, mostly on the basis of geological evidence, in extensions of well-explored deposits, in little-explored deposits, and in undiscovered deposits believed to exist along well-defined geological trends with known deposits. This uranium can subsequently be recovered within the given cost ranges. Estimates of tonnage and grade are based on available sampling data and on knowledge of the deposit characteristics, as determined in the best-known parts of the deposit or in similar deposits. *Note:* **EAR** corresponds to DOE's probable potential resources category.
- **Speculative resources (SR):** Uranium in addition to **EAR** that is thought to exist, mostly on the basis of indirect evidence and geological extrapolations, in deposits discoverable with existing exploration techniques. The location of deposits in this category can generally be specified only as being somewhere within given regions or geological trends. The estimates in this category are less reliable than estimates of **RAR** and **EAR**.

Note: SR corresponds to the combination of DOE's possible potential resources and speculative potential resources categories.

USACE (sometimes shortened to USCE in EIA tables): U.S. Army Corps of Engineers.

USBR: United States Bureau of Reclamation.

Usage agreement: Contracts held by enrichment customers that allow feed material to be stored at the enrichment plant site in advance of need.

Used and useful: A concept used by regulators to determine whether an asset should be included in the utility's rate base. This concept requires that an asset currently provide or be capable of providing a needed service to customers.

Useful thermal output: The thermal energy made available in a combined-heat-and-power system for use in any industrial or commercial process, heating or cooling application, or delivered to other end users, i.e., total thermal energy made available for processes and applications other than electrical generation.

Utility: See [Electric utility](#).

Utility demand-side management costs: The costs incurred by the utility to achieve the capacity and energy savings from the [Demand-Side Management](#) (DSM) Program. Costs incurred by consumers or third parties are to be excluded. The costs are to be reported in nominal dollars in the year in which they are incurred, regardless of when the savings occur. The utility costs are all the annual expenses (labor, administrative, equipment, incentives, marketing, monitoring and evaluation, and other) incurred by the utility for operation of the DSM Program, regardless of whether the costs are expensed or capitalized. Lump-sum capital costs (typically accrued over several years prior to start up) are not to be reported. Program costs associated with strategic load growth activities are also to be excluded.

Utility distribution companies: The entities that will continue to provide regulated services for the distribution of electricity to customers and serve customers who do not choose direct access. Regardless of where a consumer chooses to purchase power, the customer's current utility, also known as the utility distribution company, will deliver the power to the consumer.

Utility generation: Generation by electric systems engaged in selling electric energy to the public.

Utility-sponsored conservation program: Any program sponsored by an electric and/or natural gas utility to review equipment and construction features in buildings and advise on ways to increase the energy efficiency of buildings. Also included are utility-sponsored programs to encourage the use of more energy-efficient equipment. Included are programs to improve the energy efficiency in the lighting system or building equipment or the thermal efficiency of the building shell. Also see [Demand-side management](#).

[A](#) [B](#) [C](#) [D](#) [E](#) [F](#) [G](#) [H](#) [I](#) [J](#) [K](#) [L](#) [M](#) [N](#) [O](#) [P](#) [Q](#) [R](#) [S](#) [T](#) [U](#)
[V](#) [W](#) [X](#) [Y](#) [Z](#)

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