



DOE Office of Indian Energy Project Development and Finance Course Curriculum Terminology Guide

A

Accumulated Deferred Investment Tax – credit net unamortized balance of investment tax credits that are being spread over the average useful life of the related property or some other shorter period. This balance sheet account is built up by charges against income in the years in which such credits are utilized to reduce federal income tax payable and is reduced subsequently through credits to income. (EEI 2005)

AC – alternating current. This is the type of electricity that is used in most U.S. households

Amortization – the gradual write-off of an amount in an account by prorating such amount over a predetermined period, such as the life of the asset or liability to which it applies, or the period during which it is anticipated the benefit will be realized. (EEI 2005)

Available Resource – The sum of existing generating capacity, plus new units scheduled for service, plus the net of equivalent firm capacity purchases and sales, less existing capacity unavailable due to planned outages. (EEI 2005)

ATC – available transfer capability. Transmission capacity that is not otherwise committed or being used by the owner or other transmission customers. The amount of additional power that can be transmitted over existing facilities at any point in time without creating a need for curtailments of service with the same priority (e.g., the amount of firm service that may be added without curtailing existing firm service). Available capacity will depend on the time of use as well as the class of service. (EEI 2005)

Average Revenue Per Kilowatthour Sold (Average Price of Electricity) – revenue from the sale of electricity (exclusive of forfeited discounts and penalties) for a particular class of service divided by the corresponding number of kilowatt-hours sold. (EEI 2005)

Avoided Costs – the costs an electric utility would otherwise incur to generate power if it did not purchase electricity from another source. (EEI 2005)

B

Base Load – capacity of the generating equipment normally operated to serve loads. (EEI 2005)

Biomass – (1) the amount of living matter in a given unit of the environment. (2) A variety of organic fuel sources that can be either processed into synthetic fuels or burned directly to produce steam or electricity. (EEI 2005)

Book Value – the value of a security or asset as shown by the accounting records of the holders. Frequently may be the acquisition cost or other figures that are different from market value. (EEI 2005)



Btu – British thermal unit. The standard unit for measuring quantity of heat energy, such as the heat content of fuel. It is the amount of heat energy necessary to raise the temperature of one pound of water one degree Fahrenheit. (EEI 2005)

Brownfields – abandoned or underutilized, current or former industrial or commercial sites that may contain environmental contamination, often located in economically distressed urban areas. The presence of potential contamination may complicate the redevelopment of such properties. (EEI 2005)

BIA – The U.S. Department of the Interior's (DOI's) Bureau of Indian Affairs (BIA)

BLM – Bureau of Land Management (part of DOI; see BIA)

C

CAISO – California Independent System Operator. Manages the state of California's tens of thousands transmission system, balancing wholesale supply to meet retail demand. The not-for-profit benefit corporation was formed by the California government in 1996. (EEI 2005)

Capacity – the load for which a generating unit, generating station, or other electrical apparatus is rated either by the user or by the manufacturer. (EEI 2005)

Capacity Factor – the ratio of the average operating load of an electric power generating unit for a period of time to the capacity rating of the unit during that period. (EEI 2005)

Capital Structure – the relative proportions of the various components (debt, preferred stock, common equity) of a utility's total capitalization. (EEI 2005)

CDE – community development entity. Required participant in new market tax credit (NMTC) transactions

CHP – combined heat and power. The simultaneous production of electric energy and useful thermal energy for industrial, commercial, heating or cooling purposes. The Energy Information Administration (EIA) has adopted this term in place of "cogeneration." (EEI 2005)

CAA – Clean Air Act. The primary federal law governing the regulation of emissions into the atmosphere. Originally passed in 1963, it has been amended several times, with major changes occurring in 1970 and 1990. (EEI 2005)

Consumption, Electricity (Energy Use) –the total amount of electricity consumed over a period of time. Consumption varies from demand in that demand is the rate at which electricity is being used at any one given time. (EEI 2005)

Cooperative, Rural Electric (Coop) –an electric utility legally established to be owned by and operated for the benefit of those using its service. The utility company will generate, transmit, and/or distribute supplies of electric energy to a specified area not being serviced by another utility. Such ventures are generally exempt from Federal income tax laws. Most electric cooperatives have been initially financed



by the Rural Utilities Service (prior Rural Electrification Administration), U.S. Department of Agriculture. (EEI 2005)

CSP – concentrating solar power

Commercial-Scale Project – a stand-alone project with a primary purpose of generating revenue resulting in financial self-sufficiency

Current – a flow of electrons in an electrical conductor. The strength or rate of movement of the electricity is measured in amperes at a pressure measured in volts. (EEI 2005)

Curtailement – a reduction in the scheduled capacity or energy delivery. (EEI 2005)

D

DC – direct current

Debt Capital – borrowed money obtained primarily through the sale of bonds secured by a mortgage on the property. Interest on debt must be paid before any dividends can be paid. (EEI 2005)

Debt Ratio – the percentage of total capital that is borrowed. (EEI 2005)

Demand or Load (Electric) – the rate at which electricity is being used at any one given time (or averaged over any designated interval of time). Demand differs from energy use, which reflects the total amount of electricity consumed over a period of time. Demand is often measured in Kilowatts (kW = 1 Kilowatt = 1000 watts), while energy use is usually measured in Kilowatt-hours (kWh = Kilowatts x hours of use = Kilowatt-hours). For example: Ten 100-watt light bulbs consume electricity at the rate of 1,000 watts, or 1 Kilowatt. That is, they represent a demand of 1 Kilowatt. If the bulbs are left on for three hours, they will have used 3,000 watt-hours, or 3 kilowatt-hours of electric energy use (1 Kilowatt x 3 hours = 3 kilowatt-hours). The energy use (or consumption) will increase with the length of time the light bulbs are left on. The demand of 1,000 watts or 1 Kilowatt, represented by the ten light bulbs, will not change. (EEI 2005)

Depreciation (Provision for) – charges made against income to provide for distributing the cost of depreciable plant less estimated net salvage over the estimated useful life of the asset (using mortality turnover or other appropriate methods) in such a way as to allocate it as equitably as possible to the period during which such services are obtained from the use of the facilities. Among the factors to consider are wear and tear, decay, inadequacy, obsolescence, changes in demand, and requirements of public authorities. (EEI 2005)

Developer – organizes all of the other parties and typically controls and makes an equity investment in the company or other entity that owns the project

Distributed Generation (DG) – a term referring to a small generator, typically 10 megawatts or smaller, that is sited at or near load, and that is attached to the distribution grid. Distributed generation can serve



as a primary or backup energy source, and can use various technology, including combustion turbines, reciprocating engines, fuel cells, wind generators, and photovoltaics. (EEI 2005)

Distribution, Electric – the process of delivering electricity from convenient points on the transmission system to consumers. (EEI 2005)

Distribution Line – one or more circuits of a distribution system operating at relatively low voltage as compared to transmission lines. (EEI 2005)

Distribution System – the network of wires and equipment that is dedicated to delivering electric energy from the transmission system to the customer’s premises (i.e. these are the wires that come to your house). Electric energy is carried at high voltages along transmission lines. For customers needing lower voltages, it is reduced in voltage at a substation and delivered over primary distribution lines extending throughout the area where the electricity is distributed. (EEI 2005)

DOE – U.S. Department of Energy

DOE-IE – U.S. Department of Energy Office of Indian Energy Policy and Programs

DOI – U.S. Department of the Interior

E

EA – environmental assessment

EERE – U.S. Department of Energy Office of Energy Efficiency and Renewable Energy

Efficiency, Plant – the percentage of the total energy content of a power plant's fuel that is converted into electricity. The remaining energy is lost to the environment as heat. (EEI 2005)

EIS – environmental impact statement

Electric Energy – the ability of an electric current to produce work, heat, light, or other forms of energy. It is measured in watt-hours. (EEI 2005)

Electric Rate – the price set for a specified amount of electricity by a utility or electricity provider (EEI 2005)

Electric Rate Schedule – a statement of the rates, charges, and terms and conditions governing the provision of electric service that has been accepted by a regulatory body with established oversight authority. (EEI 2005)

ERCOT – Electric Reliability Council of Texas. The independent system operator for approximately 85% of the State of Texas. (EEI 2005)



Electricity – a form of energy characterized by the presence and motion of elementary charged particles generated by friction, induction, or chemical change. (EEI 2005)

Emission Inventory – a list of air pollutants emitted into a community's atmosphere, in amounts (commonly tons) per year, by type of source. (EEI 2005)

EIA – Energy Information Administration. since October 1977, the Energy Information Administration (EIA) of the Department of Energy (DOE) has been responsible for collecting and publishing statistical data on energy production, consumption, prices, resources, and projections of supply and demand. The EIA serves as an independent statistical and analytical agency within the DOE. (EEI 2005)

EPAct – Energy Policy Act. A comprehensive federal act passed in 1992 generally designed to improve the efficiency of energy use in the United States. (EEI 2005)

Energy Use (See Consumption, Electricity)

EPA – U.S. Environmental Protection Agency

EPC – engineering procurement and construction contractor. Construction contractor provides design, engineering, and construction of the project

Equity Financing – raising money or other capital by selling preferred or common stock or other ownership (equity) rights. (EEI 2005)

Equity Ratio – the percentage of the total capital structure represented by common equity. (EEI 2005)

F

Facility Scale Project – a single building system with a primary purpose of offsetting building energy use

Feedstock Supplier – provider of the supply of feedstock (i.e., energy, raw materials) to the project (e.g., for a power plant, the feedstock supplier will supply fuel)

FERC – Federal Energy Regulatory Commission. protects the public and energy customers, ensuring that regulated energy companies are acting within the law. FERC is responsible for: Regulating the interstate transmission of natural gas, oil, and electricity; regulating the wholesale sale of electricity (individual states regulate retail sales); licensing and inspecting hydropower projects; approving the construction of interstate natural gas pipelines, storage facilities, and liquefied natural gas (LNG) terminals; monitoring and investigating energy markets; reviews the siting application for electric transmission projects; and reliability of the electric grid. (FERC 2013)

FONSI – finding of no significant impact

Flip – renewable energy development partnership structure in which a non-taxable entity partners with a taxable entity to capture tax credit benefits of renewable energy development



Fossil Fuel – a naturally occurring nonrenewable organic energy source that comes from fossilized plants and animals, such as coal, crude oil, and natural gas. (EEI 2005)

Fuel Cell – a system that converts the chemical energy of a fuel directly to direct current electricity without intermediate combustion or thermal cycles. (EEI 2005)

G

Geothermal – an electric generating station in which the prime mover is a steam turbine. The steam is generated in the earth by heat from the earth’s magma. (EEI 2005)

GW – gigawatt. One gigawatt equals 1 billion watts, 1 million kilowatts, or 1 thousand megawatts.

GWh – gigawatt-hour. One gigawatt-hour equals one billion watt-hours. (EEI 2005)

Grid – an interconnected network of electric transmission lines, distribution lines, and related facilities. (EEI 2005)

Grid Operator – an entity that is responsible for monitoring and controlling the operations of the electric transmission system. (EEI 2005)

H

hp – horsepower. A standard unit of power equal to 746 watts. (EEI 2005)

I

IHS – Indian Health Service

Incentive Rate – a rate or rate discount that is designed to induce specific actions by customers. For example, utilities in several states have offered rate discounts for industrial customers that expand employment or locate significant activities in their service territories. Similarly, residential customers might be offered reduced rates as an incentive for allowing use of load-control devices. (EEI 2005)

ISO – Independent System Operator. An independent, federally regulated control area operator with the primary responsibility of ensuring short-term reliability of the transmission grid. An ISO performs essentially the same functions as a Regional Transmission Organization (RTO), but may not have the same requirements for regional configuration as an RTO. (EEI 2005)

ISO-NE – Independent System Operator of New England. The regional transmission organization (RTO), serving most, if not all of Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. (ISO 2013)

Inverted Lease – one of three primary “tax equity” structures by which medium to large-sized renewable energy projects are financed. In an inverted lease (so called because it is an inversion of the sale leaseback) the developer owns the majority of the project and leases it to the tax equity investor. The



developer then passes through the ITC to the tax equity partner, but retains the depreciation benefits for itself. At the end of the lease term, the project reverts to the developer without any sale (as there is when a developer purchases a project from the tax equity investor in a partnership flip of sale leaseback). This structure is also call a “lease pass-through”

Invested Capital – the sum of capitalization, long-term debt due within one year, and short-term debt. (EEI 2005)

Investment Tax Credit (ITC) – A dollar-for-dollar reduction in the amount of federal income taxes that must be paid. The credit varies by technology (10% to 30% of expenditures); complete details can be found at www.dsire.org.

IRR – internal rate of return

K

kV – kilovolt

kW – kilowatt. One kilowatt equals 1,000 watts.

kWh – kilowatt-hour. The basic unit of electric energy equal to one kilowatt of power supplied to or taken from an electric circuit steadily for one hour. One kilowatt-hour equals 1,000 watt-hours. (EEI 2005)

L

Landowner/Site Owner – legal and/or beneficial owner of land and natural resources

Lease Pass-Through – see “Inverted Lease”

Lender – a single or group of financial institutions that provide a loan to the project company to develop and construct the project and that take a security interest in all of the project assets

LCOE – levelized cost of energy; a comparative measure

LLC – limited liability company

M

MW – megawatt. One megawatt equals one million watts.

Megawatt-hour (MWh) – one megawatt-hour equals one million watt-hours. (EEI 2005)

Metering – the methods of applying devices that measure and register the amount and direction of electrical quantities with respect to time. (EEI 2005)

Metering, Net – a utility metering practice in which utilities measure and bill for the net electricity



consumption or generation of their customers with small generators. Net metering can be accomplished through two means: (1) A single, bi-directional electric meter that turns backward when the customer's generator is producing energy in excess of his demand and forward when the customer's demand exceeds the energy generated or (2) By separately metering the flows of electricity into and out of the customer's facility. Net metering provisions vary by state and can be found in detail at www.dsireusa.org. (EEI 2005)

MACRS – Modified Accelerated Cost Recovery System. A mechanism for computing tax depreciation on property placed in service after 1986 using accelerated methods of cost recovery over statutory recovery periods. An MACRS deduction is determined by applying a declining-balance percentage for a statutory recovery to the cost of the property. The cost of eligible property is recovered over 3-year, 5-year, 10-year, 15-year, or 20-year periods, depending on the type of property. For renewables, most expenditures are on a 5-year schedule. (EEI 2005)

Municipally-Owned Electric System – an electric utility system owned and operated by a city, county, irrigation district, drainage district, or a political subdivision or agency of a State competent under the laws thereof to carry on the business of developing, transmitting, or distributing power usually, but not always, providing service within the boundaries of the municipality. (EEI 2005)

N

Nameplate Rating – the full-load continuous rating of a generator, prime mover, or other electrical equipment under specified conditions as designated by the manufacturers. It is usually indicated on a nameplate attached mechanically to the individual machine or device. The nameplate rating of a steam electric turbine generator set is the guaranteed continuous output in kilowatts or kVA and power factor at generator terminals when the turbine is clean and operating under specified throttle steam pressure and temperature, specified reheat temperature, specified exhaust pressure, and with full extraction from all extraction openings. Actual performance is generally less than the nameplate, on average. (EEI 2005)

NREL – National Renewable Energy Laboratory

NEPOOL – New England Power Pool. A voluntary association of electric utilities in New England that established a single regional network to direct the operations of the major generating and transmission (bulk power system) facilities in the region. Its goals are safety, reliability, and economy. (EEI 2005)

NMTCs – new market tax credits. These credits, initiated in 2000 by the Community Renewal Tax Relief Act of 2000, intend to spark private investment in low income and Tribal areas

NERC – North American Electric Reliability Corporation. A not-for-profit company formed by the electric utility industry in 1968 to promote the reliability of the electricity supply in North America. (EEI 2005)

New York Independent System Operator (NYISO) – the independent system operator for the State of New York. (EEI 2005)

O

O&M – operations and maintenance



Off-Peak – energy supplied during periods of relatively low system demands as specified by the supplier. (EEI 2005)

Offtaker – purchaser of the electricity from a renewable energy system. For a facility-scale project, it is often the building location where the system is located. For a community-scale project, it is often the community supporting the development. For a commercial-scale project, it can be any party purchasing the electricity, but is typically a utility

On-Peak – energy supplied during periods of relatively high system demands as specified by the supplier. On-peak periods can happen during specific hours during a day or week, as well as hours during seasons across a year. (EEI 2005)

Operator – provider of the day-to-day O&M of the project

P

Partnership Flip – one of three primary “tax equity” structures by which medium to large-sized renewable energy projects are financed. In a typical partnership flip transaction, an institutional investor will form a partnership with the developer, which will own the Solar Project or other renewable energy project. The investor will receive an allocation of tax benefits and cash distributions from the partnership until the investor achieves an agreed-upon after-tax return. Subject to some limitations, the investor may make its investment in the partnership over time, which effectively allows the investor to fund its investment in the partnership with reductions in future federal income tax liability (WSGR 2010)

Peak Load Pricing – pricing of electric service that reflects different prices for system peak periods or for hours of the day during which loads are normally high. (EEI 2005)

PJM Interconnection, LLC – a regional transmission organization (RTO) that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. (<http://www.pjm.com/about-pjm/who-we-are.aspx>)

PPA – power purchase agreement. A contract which defines the terms for sale of electricity between the owner of the power plant (seller) and the electricity buyer. The PPA defines the terms of sale including effective date, termination date, pricing, billing and payments, operation, metering, performance terms, and delivery point. The PPA establishes a revenue stream for the project, making it a vital part of project finance. (EEI 2005)

Product Offtaker – See “Offtaker” entry

Project Company – legal entity that owns the project

PTC – production tax credit. This is a federal tax incentive for renewable energy based on the electrical output of the project in kilowatt hours



PV – photovoltaic. This is a solar resource converter to electricity.

R
Remaining Life – the expected future service life of plant at any given age. (EEI 2005)

RECs – renewable energy credits

RPS – renewable portfolio standard. A mandate, or goal, set to require or promote the use of renewable resources for electric generation. The Standard generally states that a certain percentage of a retail electric provider's overall or new generating capacity or energy sales must be derived from renewable resources, with the percentage increasing gradually over time. An RPS most commonly refers to electric sales measured in megawatt-hours, as opposed to electric capacity measured in megawatts. Most Standards also contain a secondary market in tradable renewable credits, allowing the electricity providers to use the least-cost method to achieve the set goals. Standards have been set on the state level in 29 states, the District of Columbia, and 2 U.S. territories. More details can be found at: http://www.dsireusa.org/documents/summarymaps/RPS_map.pdf. (EEI 2005)

RFP – request for proposal

Risk – inherent challenges and potential losses associated with renewable energy development. There are multiple kinds of risk (e.g. development, site, permitting, finance, construction, operating) and risk varies at different stages of project development

RPS – renewable portfolio standard

S
Sale Leaseback – One of three primary “tax equity” structures by which medium to large-sized renewable energy projects are financed. The sale leaseback is an arrangement whereby an asset is purchased or constructed, sold by the owner, and then leased back to the seller by the purchaser. In the case of electric utilities, the sale-leaseback of a generating facility is the most prominent example, but a sale-leaseback can also be accomplished for nuclear fuel, transmission lines or other utility property. The purchaser (lessor) is an investor such as a bank or life insurance company. The specific benefits to an electric utility and its customers are dependent on the tax and regulatory agency treatment of the transaction. Sale-leasebacks are accomplished to reduce the lessee's costs and financing needs, to take advantages of tax benefits, and to level the impact of new utility plant on rates. Only projects that are eligible for the ITC may execute a sale leaseback (EEI 2005)

Self Generation – a generator installed on a customer’s side of the utility meter that provides electricity for a portion, or all, of that customer’s electric load. (EEI 2005)

SPE – special purpose entity

Sponsor – see “Developer” entry



SPV – special purpose vehicle

START – DOE-IE Strategic Technical Assistance Response Team

T

Tax Equity Partner – a project development partner with a tax appetite that can take advantage of existing tax credits for renewable energy projects at the federal and state level. Tax equity partners “monetize” the value of the tax credits by making a capital investment in a renewable energy project. The value of the tax credits are then passed through to the project, which can consequently sell its power at a lower rate, thus making it more economic in a competitive energy market.

TEP – U.S. Department of Energy Office of Energy Efficiency and Renewable Energy’s Tribal Energy Program

Thermal – a term used to identify a type of electric generating station, capacity, capability, or output in which the source of energy for the prime mover is heat. (EEI 2005)

Transmission, Electric – the act or process of transporting electric energy in bulk from a source or sources of supply to other principal parts of the system or to other utility systems. Also a functional classification relating to that portion of utility plant used for the purpose of transmitting electric energy in bulk to other principal parts of the system or to other utility systems, or to expenses relating to the operation and maintenance of transmission plant. (EEI 2005)

Transmission System, Electric – an interconnected group of electric transmission lines and associated equipment for moving or transferring electric energy in bulk between points of supply and points at which it is transformed for delivery over the distribution system lines to customers, or is delivered to other electric systems. (EEI 2005)

Tribal Host – primary sovereign of the project site

Turbine – a part in some electric generators that is spun by a force of energy (e.g., air, water, steam, or a combustion engine) in order to turn the generator. It generally consists of a series of curved vanes emanating from an axis that is turned by forcing a fluid past the vanes. (EEI 2005)

Turnkey Project – a project that is engineered, built, and ready to use when installed. The system may be customized to a specific user or application. The turnkey company provides expertise in every aspect of the project including, but not limited to, the initial feasibility study, technical support for emissions permitting, engineering, design, local construction permitting, construction, project management, and sub-contracting. Following project completion, they may also provide year-to-year operation, maintenance and management of the completed plant. The term is most often used when referring to distributed generation projects. (EEI 2005)

U

USDA – U.S. Department of Agriculture



W

WAPA – Western Area Power Administration

Watt – the electrical unit of real power or rate of doing work. The rate of energy transfer equivalent to one ampere flowing due to an electrical pressure of one volt at unity power factor. One watt is equivalent to approximately 1/746 horsepower, or one joule per second. (EEI 2005)

Watt-hour – the total amount of energy used in one hour by a device that requires one watt of power for continuous operation. Electric energy is commonly sold by the kilowatt-hour (defined herein). (EEI 2005)

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