

## Glossary of Terms

**Avoided Cost** - The incremental cost Flint Energies would pay for the next kilowatt-hour of power in the open marketplace for energy. Flint Energies Board of Directors sets this Avoided Cost once a year, targeting the average cost during the year for that next kilowatt-hour.

**Backfeed** - When electric power is added to the local power grid from a distributed generation resource, power flows in the opposite direction from its usual flow from the central power generation stations. Can be harmful to line workers, unless protection exists.

**Backup Generator** - A generator that is used only for test purposes, or in the event of an emergency, such as a shortage of power needed to meet a member's load requirements.

**Backup Power** - Electric energy supplied by Flint Energies to replace power and energy lost when the distributed generation is not making power.

**Base Rate or Fixed Charge** - The basic facilities charge is the fixed amount charged each billing period to cover the cooperative's cost of the meter, reading the meter, billing the account through data processing, collecting, crediting a payment, 24 hour staffing and repair service.

**Baseload Generation (Baseload Plant)** - Generation from a central generating plant, which is normally operated to take all or part of the minimum load of a system, and which consequently produces electricity at an essentially constant rate and runs continuously. These units are operated to maximize system mechanical and thermal efficiency and minimize system operating costs.

**Billing Cycle** - The period of time or the dates of occurrence for issuing periodic bills for service. The billing cycle is also used loosely to refer to the member's meter read cycle, i.e., the reading of the billing meter as opposed to the calculation of the bill.

**Biomass** - Organic non-fossil material of biological origin constituting a renewable energy source. Could be wood, grass, etc.

**Capacity** - The maximum amount of electrical load which a device can carry at one time.

**Central Station Generation** - Production of energy at a large power plant and transmitted through infrastructure to a widely distributed group of users.

**Coal** - A readily combustible black or brownish-black rock whose composition, including inherent moisture, consists of more than 50 percent by weight and more than 70 percent by volume of carbonaceous material. It is formed from plant remains that have been compacted, hardened, chemically altered, and metamorphosed by heat and pressure over geologic time.

**Cogeneration** - The production of electrical energy and another form of useful energy (such as heat or steam) through the sequential use of energy.

**Combustion Turbine** - A generating unit built to meet peak load, this is a rotary engine usually powered by natural gas.

**Consumption (also Energy Consumption)** - The use of energy as a source of heat or power or as a raw material input to a manufacturing process.

**Cooperative** - A business entity similar to a corporation, except that ownership is vested in members rather than stockholders, and benefits are in the form of products or services rather than profits.

**Cost Allocation Policies** - Instructions or statements of direction guiding the apportionment of system costs to the rate classes.

**Cost of Service Ratemaking** – The traditional principles of ratemaking in which a utility's rates are set based upon the prudently incurred investment and reasonable and necessary costs to service the utility's customers plus a rate of return on the utility's investment. Properly designed costs of service ratemaking should ensure that each class of customers – residential, commercial and industrial – only pays the costs incurred to serve that class.

**Cost of Service Study** - An analysis, by member class, of the cost of providing electricity. The purpose of the study is to allocate costs to member classes and provide the basis for developing rates for these members.

**Cross-Subsidization** – The use of resources or revenues from one class of electric members to help fund operations in another rate class.

**Demand** - The demand (kW) is the greatest amount of electrical power supplied to you at a specific interval during the billing period. Demand charges cover the costs incurred by the cooperative to build and maintain a system of the correct capacity to serve the facility. The costs for demand pay for the cooperative to have lines of appropriate size, a transformer that can meet peak requirements, and services (equipment, supplies and personnel) that can meet all of the needs. The demand charge is calculated on the basis of the highest demand over a short period of time (15, 30 or 60 minutes) during the billing period. This amount covers the cooperative's cost of capacity so it can meet demand for power at any time during the entire billing period.

**Demand Charge** - That portion of a member's bill for electric service based upon the peak electric capacity (kilowatts) demanded or required by power-consuming equipment and billed under an applicable rate schedule.

**Distributed Generator** - A generator that is located close to the particular load that it is intended to serve (home or business). General, but non-exclusive, characteristics of these generators include: an operating strategy that supports the served load; and interconnection to a distribution system.

**Distribution** - The act or process of distributing electric energy from convenient points on the transmission system to the members. Also a functional classification describing that portion of the utility facilities or plant used for the purpose of delivering electric energy from convenient points on the transmission system to the members, or describing the expenses relating to the operation and maintenance of the distribution plant.

**Economic Dispatch** (Also Central Dispatch) - The process by which a generating system consisting of multiple generating facilities is operated to maximize the efficiency of the system and minimize its operating costs. It involves using the system's most efficient (having the lowest operating costs) generating unit that is not already fully utilized when additional capacity is needed and back down or taking off the least efficient (highest operating cost) operating unit when the need for capacity is decreased.

**Electric Power Grid** - A system of synchronized power providers and consumers connected by transmission and distribution lines and operated by one or more control centers.

**Electricity Generation** - The process of producing electric energy or the amount of electric energy produced by transforming other forms of energy, commonly expressed in kilowatt hours (kWh) or megawatt hours (MWh).

**Energy** - The kilowatt-hour (kWh) charges cover the total amount of energy used during the billing period. kWh charges may be at a flat rate where every kilowatt-hour from the first one to the last one costs the same amount, or it may be charged at a declining rate where the more kilowatt-hours you use, the less each kWh costs. In an inclined block rate, the more kWh used, the more they cost.

**Energy Charge** - That portion of a member's bill for electric service based upon the electric energy (kilowatt-hours) consumed and billed under an applicable rate schedule.

**Energy Efficiency** - A ratio of service provided to energy input (e.g., lumens to watts in the case of light bulbs). Services provided can include buildings-sector end uses such as lighting, refrigeration, and heating; industrial processes; or vehicle transportation. Unlike conservation, which involves some reduction of service, energy efficiency provides energy reductions without sacrifice of service. May also refer to the use of technology to reduce the energy needed for a given purpose or service.

**Engineering Study** - A study conducted by the electric cooperative that will indicate the equipment needed for the interconnection of a distributed generation system; typically this study will address technical and safety requirements.

**Evergreen Contract** – A contract between parties that automatically renews unless one party provides notice that it will terminate the contract after a specified time or event.

**Grid** - The layout of an electrical distribution system.

**IEEE** - Institute of Electrical and Electronics Engineers

**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.

**Interconnection Agreement** - A legal contract for the connection of the distributed generation facility to the cooperative's lines, specifying the location, size, cost, manner of payment, terms of operation, and respective responsibilities of the cooperative and the distributed generation member-owner.

**Interconnection Costs (DG)** - The reasonable costs of connection, switching, metering, transmission, distribution, safety provisions, and administrative costs incurred by the cooperative directly related to the installation and maintenance of a member-owner's distributed generation facility.

**Intermittent Resource** - 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 such as solar energy, wind energy, or the energy of free-flowing rivers (that is, run-of-river hydroelectricity).

**Isolation Device** - A readily accessible, lockable, visible-break switch located between the distributed generation facility and its interface to the cooperative's electric facilities.

**kW: Kilowatt Demand** – The maximum number of kilowatt hours per defined time interval used by the customer. This is typically based upon the largest number of kilowatt-hours used in any period of the billing period.

**kWh: Kilowatt-Hour** – The quantity of power multiplied by time. One thousand watts of power used for one hour equal one kilowatt-hour.

**Load** - An end-use device or customer that receives power from the electric system.

**Load Factor** - The ratio of average demand, in kilowatts, over a stated period of time to the maximum demand in kilowatts occurring in that same time period. Load factor is a measure of the variability of the load over a period of time, usually a day, a week, a month, or a year. A load factor of 1.0 corresponds to a load that is "on" 100% of the time. A load factor of 0.50 means that the load has an average demand equal to 50% of the maximum demand.

**Load Following** – The process by which a utility meets the variations in electricity demand by preparing generating units for operation under unit commitment schedules, which reflect forecasted load changes over daily, weekly and seasonal cycles plus an allowance for random variations.

**Megawatt** - 1,000 kilowatts, or 1,000,000 watts. See "Kilowatt (kW)."

**Member Charge** - A basic charge added to each member's bill to cover such costs as meter reading, member accounting, and billing. The charge does not vary by the amount of electricity used.

**Methane** - A colorless, flammable, odorless hydrocarbon gas which is the major component of natural gas. It is also an important source of hydrogen in various industrial processes. Methane is a greenhouse gas.

**Mill** - One mill equals one-tenth of a cent. The "mill" is frequently used as a monetary measure when referring to the cost of producing electricity. Ten mills per kilowatt-hour is equal to 10 dollars per megawatt-hour.

**Natural Gas** - A gaseous mixture of hydrocarbon compounds, the primary one being methane.

**Obligation to Serve** – One of the duties of a public utility, usually referring to mandates to serve all prospective customers, to provide adequate service and to render safe, efficiency and nondiscriminatory service.

**Output** - The amount of power or energy produced by a generating unit, station, or system.

**Peak Demand, Peak Load** - The maximum load during a specified period of time.

**Photovoltaic (PV)** - Energy radiated by the sun as electromagnetic waves (electromagnetic radiation) that is converted at electric utilities into electricity by means of solar (photovoltaic) cells or concentrating (focusing) collectors.

**PURPA** - Public Utility Regulatory Policies Act (PURPA) of 1978. One part of the National Energy Act, PURPA contains measures designed to encourage the conservation of energy, more efficient use of resources, and equitable rates. Principal among these were suggested retail rate reforms and new incentives for production of electricity by cogenerators and users of renewable resources.

**Rate Design** - More art than science, this is the terminology used to denote those steps or principles used to plan or construct the rate schedules for the rate classes. This step follows the cost allocation step wherein determinations are made as to how much revenue to collect from each rate class. Rate design governs the relative level of the rate charges such as member, energy and demand charges, block structure, and the components to be included in the schedules.

**Rate Schedule** - A statement of the electric rate and the terms and conditions governing its application. The electric rate part of the schedule generally consists of one or more of the following charge components: member (or basic) charge, energy charge, demand charge, and minimum charge.

**Rate Structure** - The design and organization of billing charges for a group of members. The rate structure may incorporate demand, energy, and member or minimum charges; energy and/or demand blocks; seasonal differentiation; and/or other special features.

**Reliability** – The ability to deliver uninterrupted electricity to customers on demand, and to withstand sudden disturbances such as short circuits or loss of system components, encompassing both the reliability of the generation system and the transmission and distribution system. It may be evaluated by the frequency, duration and magnitude of any adverse effects on consumer service. The guarantee of system performance at all times and under all reasonable conditions to ensure constancy, quality, adequacy, and economy of electricity.

**Renewable Energy** - Energy resources that are naturally replenishing but flow-limited. They are virtually inexhaustible in duration but limited in the amount of energy that is available per unit of time. Renewable energy resources include biomass, hydro, geothermal, solar, wind, ocean thermal, wave action and tidal action.

**Solar Energy** - The radiant energy of the sun, which can be converted into other forms of energy, such as heat or electricity.

**Spinning Reserves** – Reserve electric generating capacity that is connected to the transmission system and ready to immediately furnish load.

**Storage Capacity** - The amount of energy an energy storage device or system can store. The size of a battery.

**System Protection Equipment** - Equipment that protects electrical power systems from faults through the isolation of faulted parts from the rest of the electrical network. The goal is to stabilize the power system by isolating only the components that are under fault, while leaving as much of the network as possible still in operation.

**Transmission System** - An interconnected group of lines and associated equipment for the movement or transfer of electric energy between points of supply and points at which it is transformed for delivery to customers or is delivered to other electric systems.

**Usage** - The amount of energy or electricity used by a member-owner.

**Wholesale Power Cost Adjustment** - The WPCA is a monthly adjustment to the members' bills which collects or refunds differences in the actual cost of wholesale power costs incurred by the cooperative.