

Lesson 1.3 Energy Applications – Key Terms

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| Active Solar Energy Collection | A type of system that uses circulating pumps and fans to collect and distribute heat. |
| Alternative Energy | Any source of energy other than fossil fuels that is used for constructive purposes. |
| Ampere | The unit of electric current in the meter-kilogram-second system of units. Referred to as amp and symbolized as A. |
| Conduction | The transfer of heat within an object or between objects by molecular activity, without any net external motion. |
| Convection | Process by which, in a fluid being heated, the warmer part of the mass will rise and the cooler portions will sink. |
| Current | The net transfer of electric charge (electron movement along a path) per unit of time. |
| Electrical Energy | Energy caused by the movement of electrons. |
| Electricity | The flow of electrical power or charge. |
| Electromagnetic Energy | Energy caused by the movement of light waves. |
| Electrolysis | The process separating the hydrogen-oxygen bond in water using an electrical current. |
| Energy | The ability to do work. |
| Entropy | The function of the state of a thermodynamic system whose change in any differential reversible process is equal to the heat absorbed by the system from its surroundings divided by the absolute temperature of the system. |
| First Law of Thermodynamics | The law that heat is a form of energy, and the total amount of energy of all kinds in an isolated system is constant; it is an application of the principle of conservation of energy. Also known as conservation of energy. |
| Fuel Cell Stack | Individual fuel cells that are combined in series. |
| Heat | Energy in transit due to a temperature difference between the source from which the energy is coming and a sink toward which the energy is going. |
| Kelvin | A unit of absolute temperature and symbolized as K. Formerly known as degree Kelvin. |
| Line of Best Fit | A straight line that best represents all data points of a scatter plot. This line may pass through some, all, or none of the points displayed by the scatter plot. Also referred to as a Trend Line or Regression Line. |
| Ohm | The unit of electric current in the meter-kilogram-second system of units. Symbolized as Ω. |
| Ohm’s Law | States that the direct current flowing in an electric circuit is directly proportional to the voltage applied to the circuit. |
| Passive Solar Energy Collection | Systems that do not make use of any externally powered, moving parts, such as circulation pumps, to move heated water or air. |
| Product Development Life Cycle | Stages a product goes through from concept and use to eventual withdrawal from the market place. |
| Radiation | The process by which energy is transmitted through a medium, including empty space, as electromagnetic waves. This energy travels at the speed of light. This is also referred to as electromagnetic radiation. |
| Renewable Energy | A resource that can be replaced when needed. |
| Resistance | The opposition that a device or material offers to the flow of direct current. |
| R-value | The measure of resistance to heat flow. |
| Second Law of Thermodynamics | A general statement of the idea that there is a preferred direction for any process. |
| Temperature | A property of an object which determines the direction of heat flow when the object is placed in thermal contact with another object. |
| Thermal Equilibrium | Refers to the property of a thermodynamic system in which all parts of the system have attained a uniform temperature which is the same as that of the system’s surroundings. |
| Thermodynamic System | A part of the physical world as described by its thermodynamic properties such as temperature, volume, pressure, concentration, surface tension, and viscosity. |
| Thermodynamics | The study of the effects of work, heat, and energy on a system. |
| U-value | A measure of thermal transmittance through a material. |
| Volt | The unit of potential difference symbolized as V. |
| Voltage | The potential difference measured in volts. The amount of work to be done to move a charge from one point to another along an electric circuit. |
| Zeroth Law of Thermodynamics | A law that if two systems are separately found to be in thermal equilibrium with a third system, the first two systems are in thermal equilibrium with each other; that is, all three systems are at the same temperature. Also known as thermodynamic equilibrium. |