

CHAPTER 16 VOCABULARY – Energy Efficiency and Renewable Energy

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active solar heating system	System that uses solar collectors to capture energy from the sun and store it as heat for space heating and water heating. Liquid or air pumped through the collectors transfers the captured heat to a storage system such as an insulated water tank or rock bed. Pumps or fans then distribute the stored heat or hot water throughout a dwelling as needed. Compare <i>passive solar heating system</i> .
biofuel	Gas (such as methane) or liquid fuel (such as ethyl alcohol or biodiesel) made from plant material (biomass).
cogeneration	Production of two useful forms of energy, such as high-temperature heat or steam and electricity, from the same fuel source.
energy efficiency	Percentage of the total energy input that does useful work and is not converted into low-quality, generally useless heat in an energy conversion system or process. See <i>energy quality, net energy</i> . Compare <i>material efficiency</i> .
energy productivity	See <i>energy efficiency</i> .
geothermal energy	Heat transferred from the earth's underground concentrations of dry steam (steam with no water droplets), wet steam (a mixture of steam and water droplets), or hot water trapped in fractured or porous rock.
hydroelectric power plant	Structure in which the energy of falling or flowing water spins a turbine generator to produce electricity.
hydropower	Electrical energy produced by falling or flowing water. See <i>hydroelectric power plant</i> .
material efficiency	Total amount of material needed to produce each unit of goods or services. Also called <i>resource productivity</i> . Compare <i>energy efficiency</i> .
micropower systems	Systems of small-scale decentralized units that generate 1–10,000 kilowatts of electricity. Examples include microturbines, fuel cells, wind turbines, and household solar-cell panels and solar-cell roofs.
passive solar heating system	System that, without the use of mechanical devices, captures sunlight directly within a structure and converts it into low-temperature heat for space heating or for heating water for domestic use. Compare <i>active solar heating system</i> .
photovoltaic (PV) cell	Device that converts radiant (solar) energy directly into electrical energy. Also called a solar cell.
PV cell	See <i>photovoltaic cell</i> .
resource productivity	See <i>material efficiency</i> .
solar cell	See <i>photovoltaic cell</i> .
solar collector	Device for collecting radiant energy from the sun and converting it into heat. See <i>active solar heating system, passive solar heating system</i> .
superinsulated house	House that is heavily insulated and extremely airtight. Typically, active or passive solar collectors are used to heat water, and an air-to-air heat exchanger prevents buildup of excessive moisture and indoor air pollutants.

wind farm

Cluster of wind turbines in a windy area on land or at sea, built to capture wind energy and convert it into electrical energy.