



Enough for Everyone



Renewable energy is energy that comes from a source that won't run out. They are natural and self-replenishing, and usually have a low- or zero-carbon footprint. Examples of renewable energy sources include wind power, solar power, bioenergy (organic matter burned as a fuel) and hydroelectric, including tidal energy.

Key Knowledge

Renewable energy

Solar Power

Solar energy is plentiful, free and renewable. Solar panels do not produce any carbon dioxide emissions when converting solar power into electricity. Solar power can be used to create electricity in remote places where it might be very hard to get electricity through the National Grid.

Wave Power

When wind blows over areas of water it creates waves. Some of the energy from the wind is transferred to the waves, which then carry this energy as they move through the water. It is a renewable source of energy, which means that it will not run out. As an island we have a lot of suitable coastline and therefore could harness a lot of wave energy. The energy source is free. No fuel is needed and no waste or emissions are produced.

Wind Power

Wind power is an alternative energy source. This means that the power of the wind can be used in place of other energy sources such as coal, oil, and nuclear reactions. Wind can be used to produce electricity that heats homes and lights streets and buildings. Wind power is harnessed by a machine called a wind turbine

Types of Power Station

Coal

Coal is brought to the power station and crushed into a powder. The coal is burned in a furnace. The heat is used to heat water to create steam. The steam turns the blades of the turbines. The turbines connect to a generator which creates electricity. The steam is cooled into water in cooling towers.

Combined Cycle Gas Turbine (CCGT)

Gas is burned in a turbine to heat the air supply. The force of the expanding air pushes the turbine blades around. The turbines connect to a generator which creates electricity. The hot gases are used to heat water to create steam. The steam turns the blades of a steam turbine connected to another generator. The steam is cooled back into water in condenser and used again.

Nuclear

Uranium atoms are split into lighter elements in the reactor. This is called nuclear fission. Nuclear fission produces lots of heat energy. The heat is used to heat water to create steam. The steam turns the blades of the turbines. The turbines connect to a generator which creates electricity. The steam is cooled into water by a condenser and used again.

Pumped Storage

Water is stored in a reservoir behind a dam. When the electricity is needed, a pipe called a penstock is opened. Water flows under great pressure down to a turbine. The water turns the blades of the turbine. The turbine connects to a generator which creates electricity. The water is returned to the river. The water is stored in a lower reservoir. It is pumped back up to the top reservoir at times of low electrical demand (for example, overnight).

Trade Links

Trade is the buying and selling of goods and services. Goods are objects that people grow or make—for example, food, clothes, and computers. Services are things that people do—for example, banking, communications, and health care. People have traded since prehistoric times. Today most countries take part in international trade, or trade across country borders.

Fair Trade

Fair trade is a way of buying and selling products that allows the farmers to be paid a fair price for their produce, and have better working conditions. Trade is 'unfair' when farmers receive very low income and have poor conditions while the companies that sell their products make lots of money from them.

Key Vocabulary

aspect	The positioning of a building or other structure in a particular direction.	power station	Where electricity is generated.
² CO	Carbon dioxide is a colorless, odorless gas.	radioactive waste	A by-product of nuclear power plants.
coal reserves	The amount of coal left in the ground.	reactor	A device using atomic energy to produce heat.
combined cycle gas turbine	A power plant that uses both a gas and a steam turbine together to produce up to 50 percent more electricity.	renewable	Capable of being replenished.
condenser	A device or unit used to condense a gaseous substance into a liquid state through cooling.	resources	Supplies.
emissions equipment	Equipment to test the amount of gas or radiation discharged.	solar power	Electricity made by the sun.
fertile land	Land that can produce a large number of good quality crops.	speed of rotation	The speed of a turn.
generator	A machine for converting mechanical energy into electricity.	The National Grid	The system operator of Great Britain's electricity and gas supply.
hydroelectric power plant	The conversion of energy from flowing water into electricity.	transport links	Access to different kinds of transport.
kerogen	A fossilized organic material.	turbines	An engine that turns movement into energy.
non-renewable	Not capable of being replenished.	uranium atoms	An element used in nuclear power plants to make electricity.
nuclear power	Electric power generated by a nuclear reactor.	water supply	Access to a source of water.
organic material	Matter that has come from a recently living organism.	viable	Capable of living.

Mineral Distribution around the world

Minerals are inorganic substances, meaning that they do not come from an animal or a plant. Mineralogy is the science of minerals. Mineralogists, or people who study minerals, have identified hundreds of minerals. Some of the most common minerals are metals—for example, gold, silver, copper, and platinum.

Food Distribution around the world

World wide hunger is an issue for 862 million people. People die every day because of a lack of food and nutrition. Drought and poor weather conditions contribute to hunger. Inadequate rain and storms destroy crops. Crops don't grow well in poor soil. Rising food prices mean that not everyone can afford food.

