Producing Electricity

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The energy resources used to generate electricity can be divided into two categories:

nonrenewable

and

renewable.


Nonrenewable resources cannot be increased. We can make these supplies last longer by using them wisely, but when they are gone we will not have any more.

The majority of electricity used in the world is generated at power plants that burn fossil fuels to heat water and make steam. The steam is highly pressurized and directed at turbine ['tɜbaɪn] blades to make them spin.

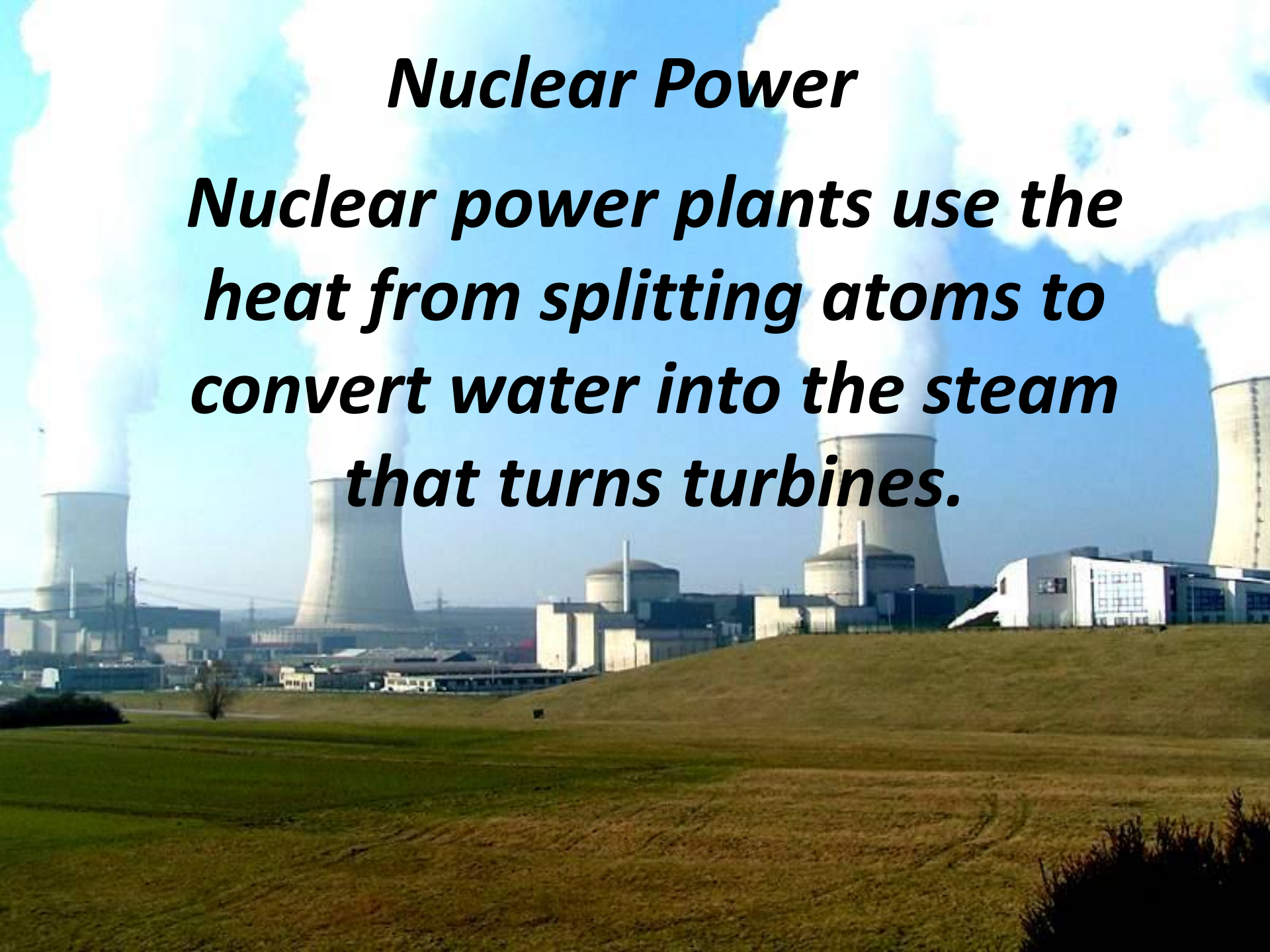
The three forms of fossil fuels are

coal,

oil, and

natural gas.

They are known as fossil fuels because they were formed from the fossilized remains of animals or plants that lived long ago.



Nuclear Power

Nuclear power plants use the heat from splitting atoms to convert water into the steam that turns turbines.

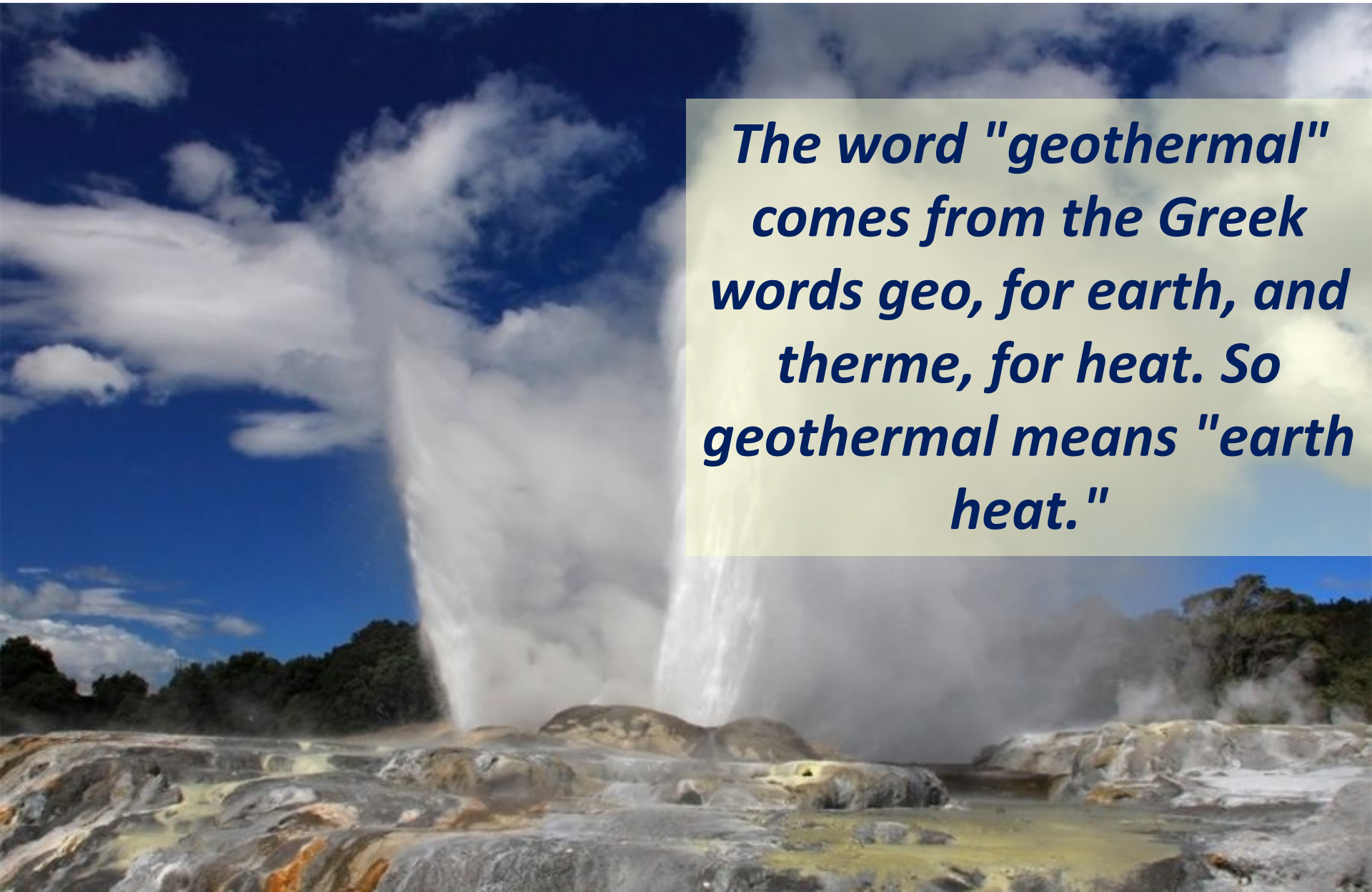
Renewable Resources

Renewable energy resources can be replenished in a short period of time, so they will never be all used up. Energy companies all over the world are using renewable resources more and more to generate electricity.

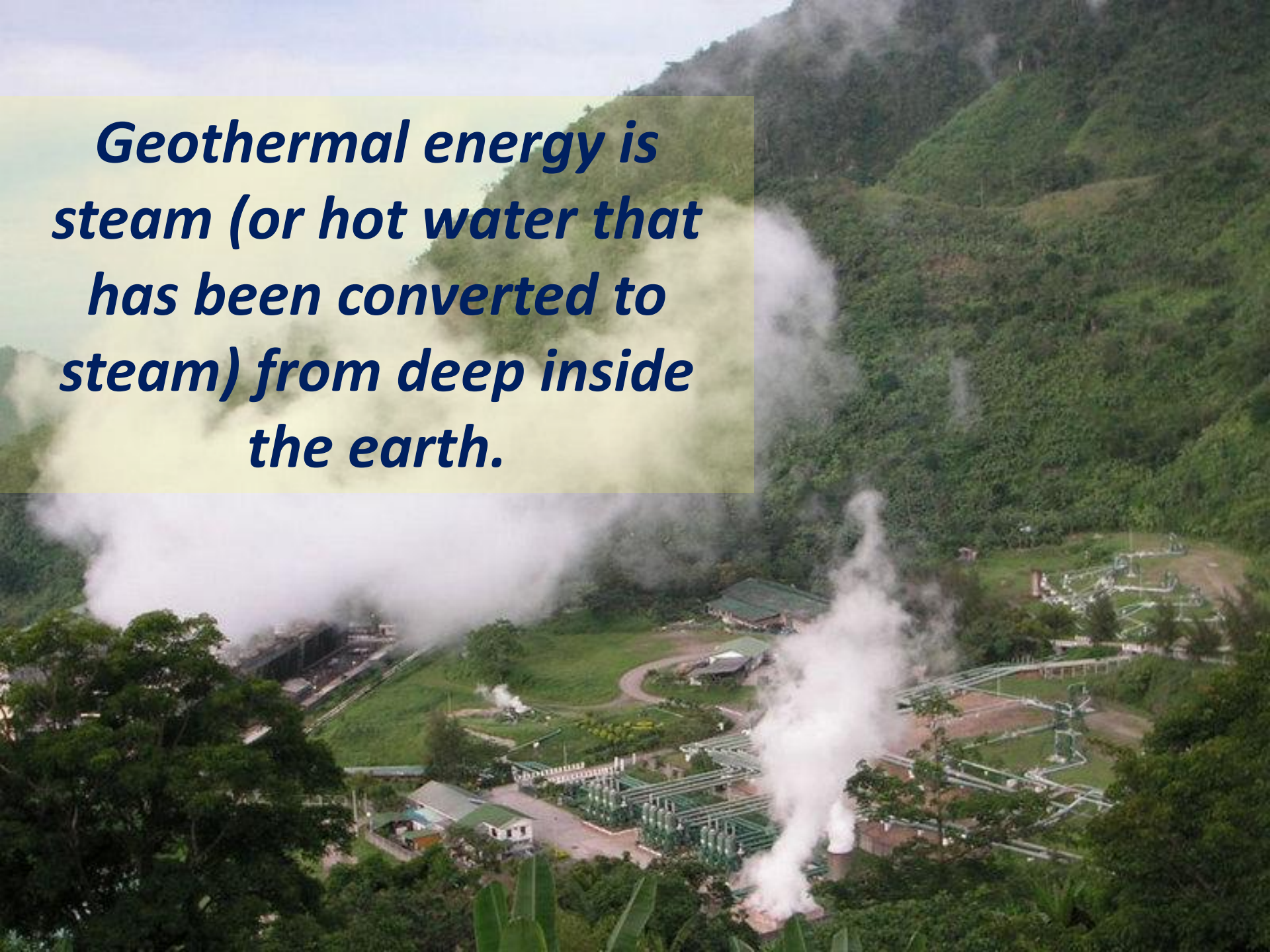
Biomass

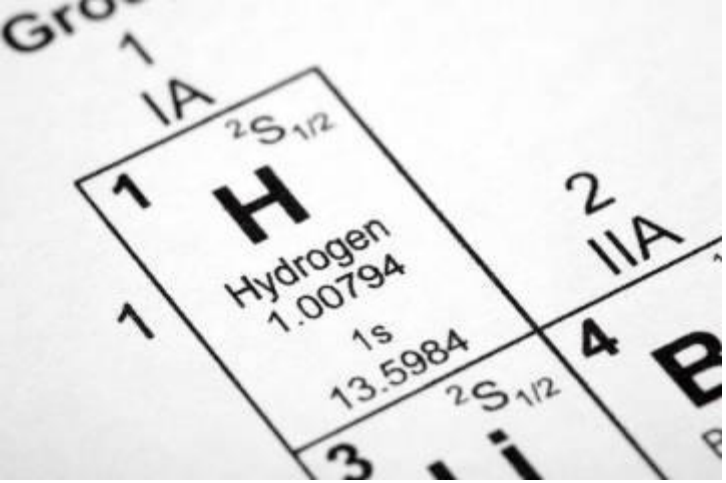
Biomass is organic matter, such as agricultural wastes, and wood chips and bark left over when lumber is produced. Biomass can be burned to heat water to make steam, which turns a turbine to make electricity. It can also be converted into a gas, which can be burned to do the same thing.

Geothermal Energy



The word "geothermal" comes from the Greek words geo, for earth, and therme, for heat. So geothermal means "earth heat."

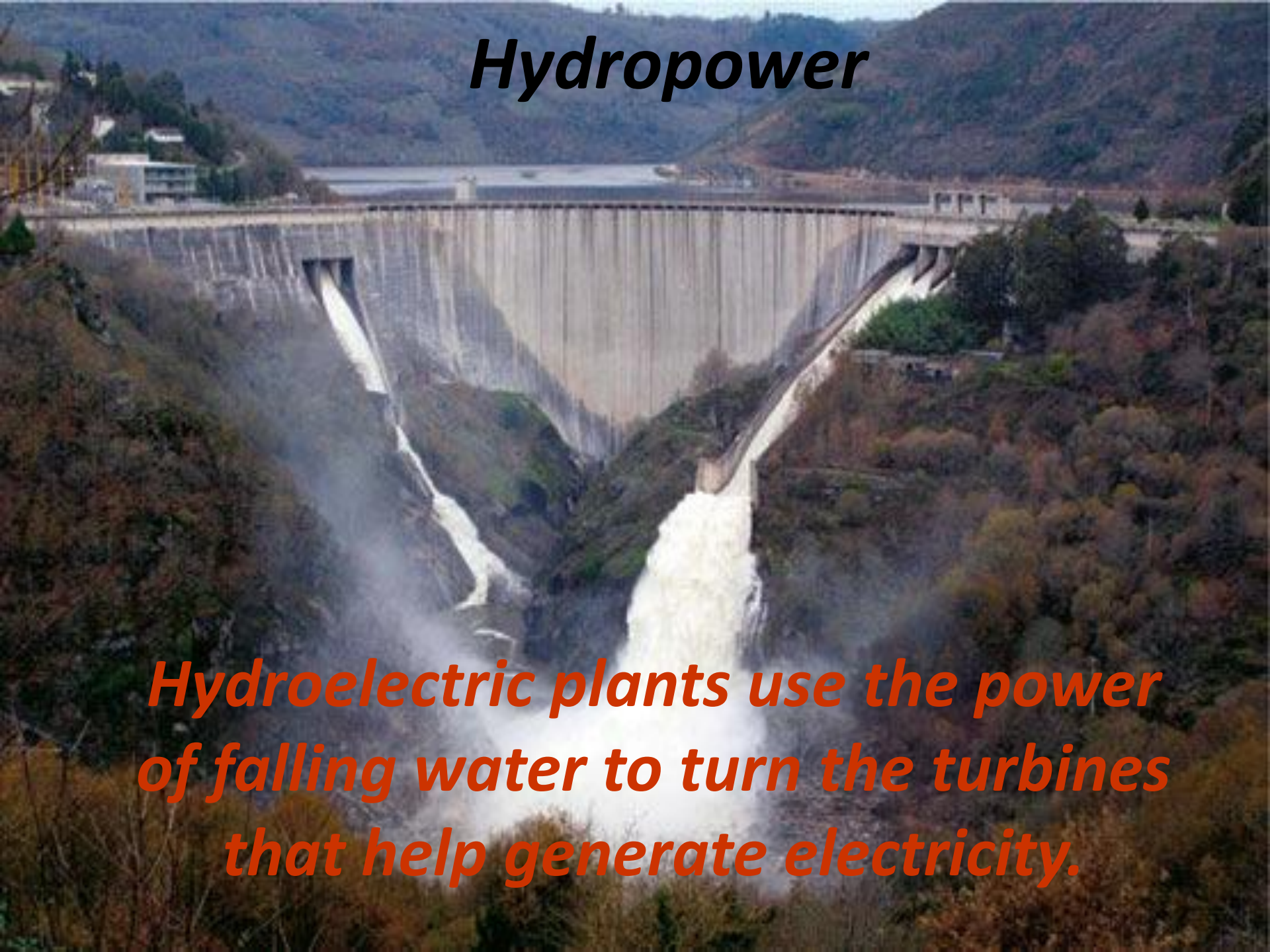

Geothermal energy is steam (or hot water that has been converted to steam) from deep inside the earth.



Hydrogen

Hydrogen is a colorless, odorless gas. Hydrogen can be converted into electricity through a chemical reaction in a device called a fuel cell. Converting hydrogen into electricity produces no pollution—only water and heat.

Hydropower

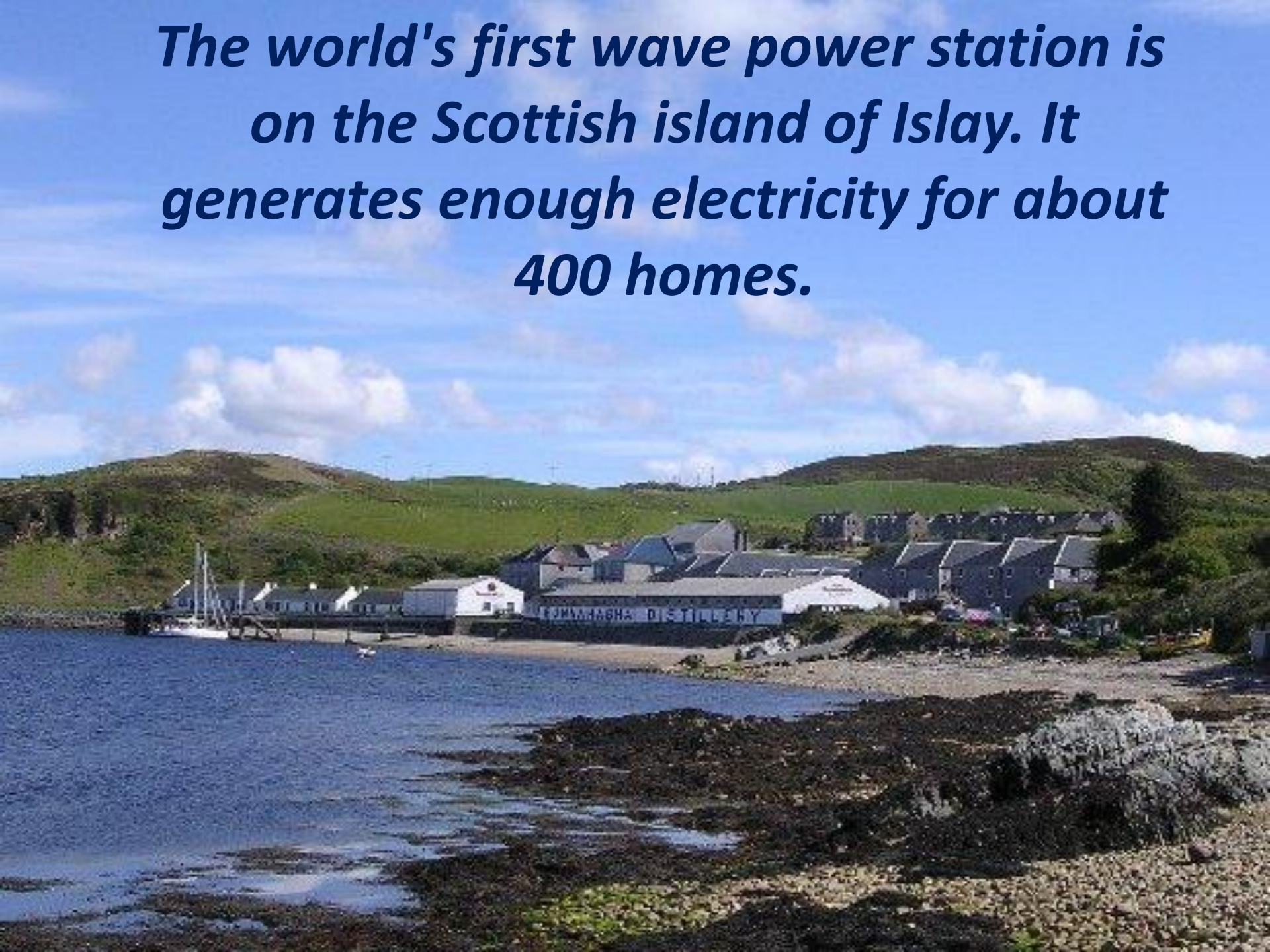


Hydroelectric plants use the power of falling water to turn the turbines that help generate electricity.

Wave power

The energy of the ocean's waves and tides can also be used to generate electricity with dams that force ocean water through turbines. This is called tidal energy, or wave power.

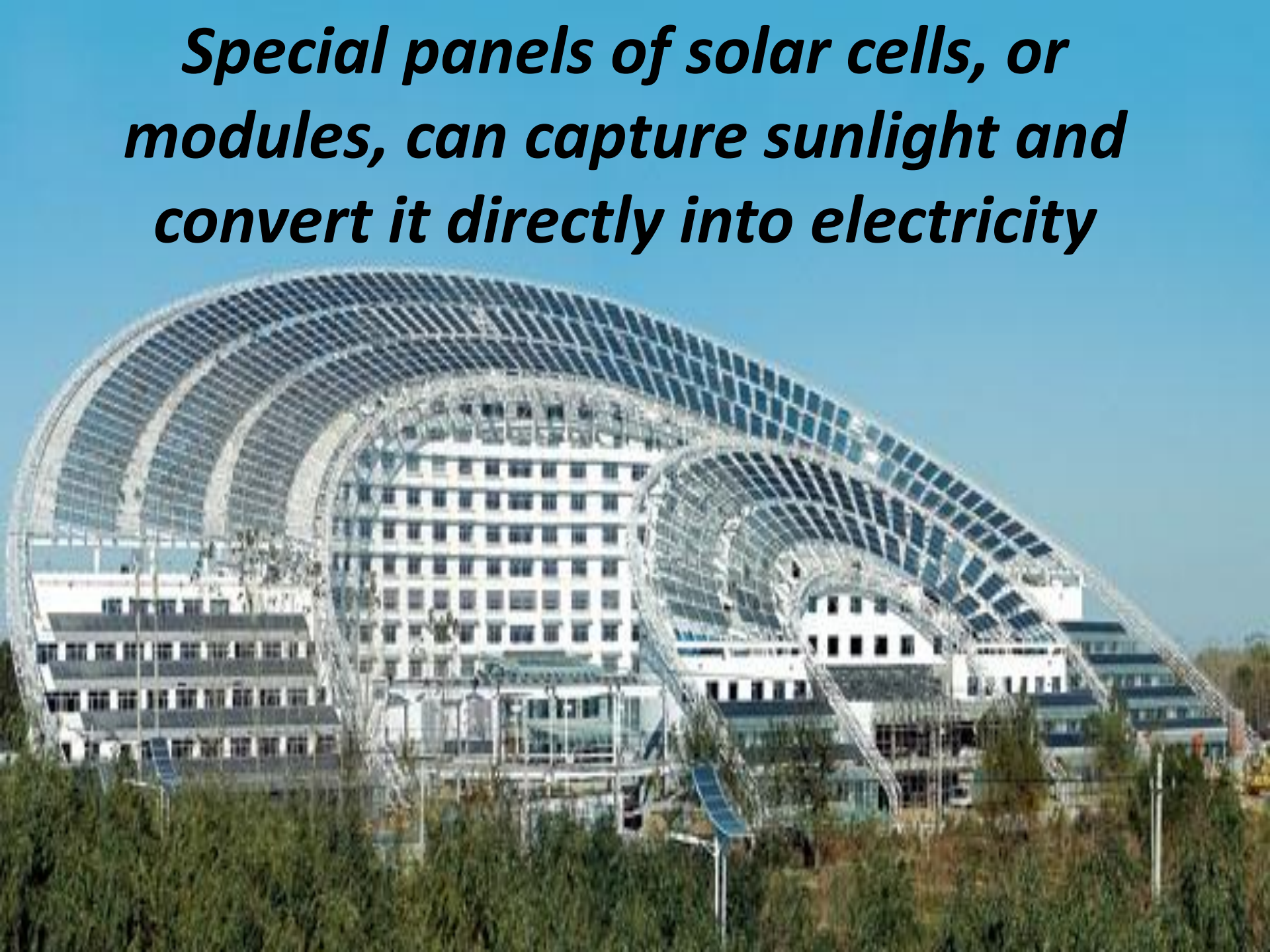
The world's first wave power station is on the Scottish island of Islay. It generates enough electricity for about 400 homes.



Solar Energy

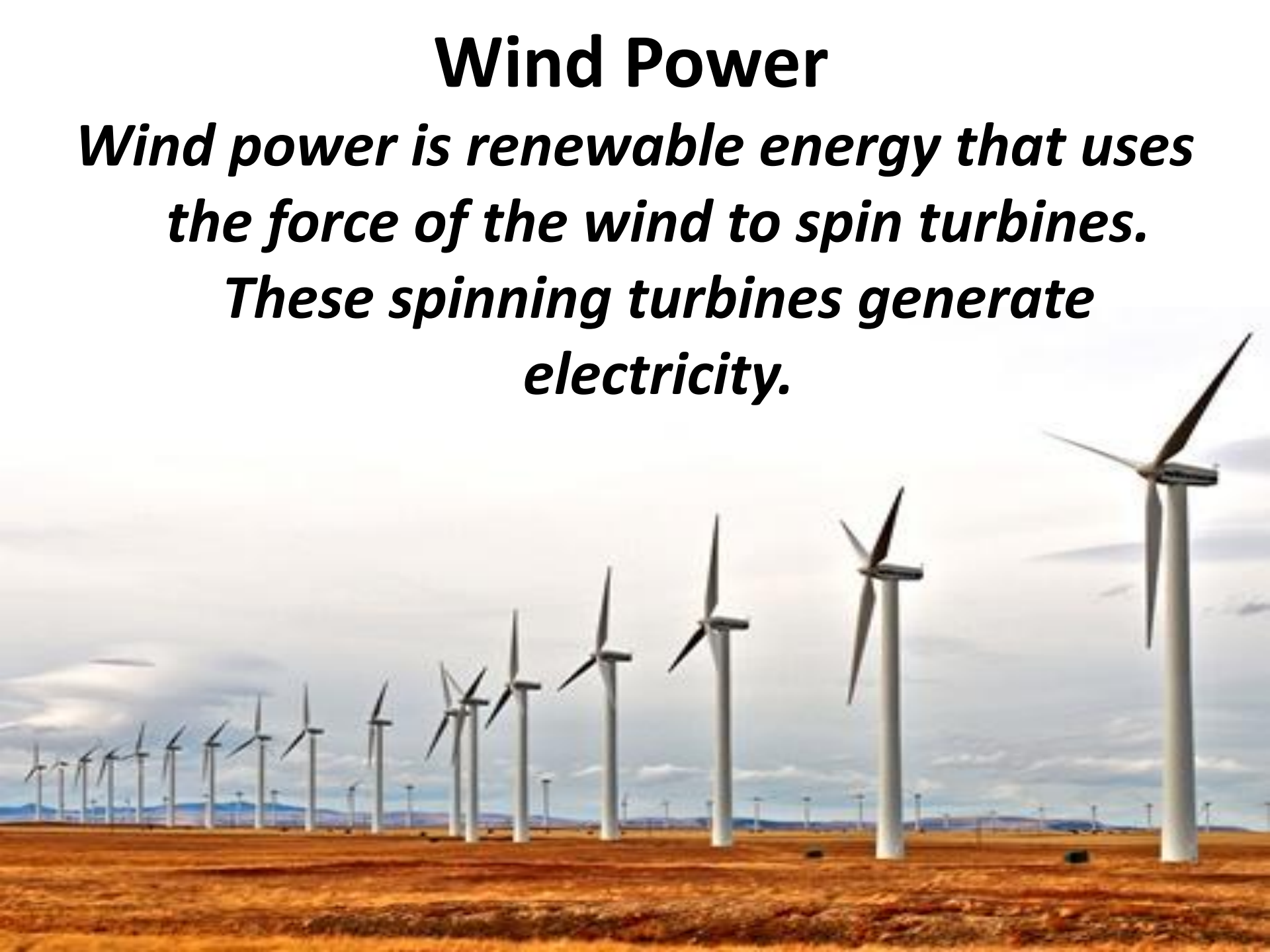
Solar energy is generated without a turbine or electromagnet..

Special panels of solar cells, or modules, can capture sunlight and convert it directly into electricity



Wind Power

Wind power is renewable energy that uses the force of the wind to spin turbines. These spinning turbines generate electricity.



A very large wind farm can generate enough electricity for all the homes in a city of about one million people.