

Energy

1. Energy costs

CONCEPT 3

ENERGY RESOURCES

NOTES

Electricity is generated by turning a magnet inside a coil of wire making current flow. Energy resources are used to generate electricity in the vast quantities required. These can be from renewable and non-renewable sources.

Non-renewable energy resources such as fossil fuels (coal, oil and gas) are commonly used to generate electricity. These fuels contain a concentrated form of energy which is released as heat when the fuels combust. The heat released turns water to steam which turns a turbine connected to the generator. Whilst these resources are very reliable, the process releases polluting gases into the atmosphere and supplies are running out.

Another non-renewable resource is nuclear power. Uranium atoms undergo nuclear decay releasing heat in the process. Whilst this reaction does not produce any polluting gases the resultant reactor waste remains dangerous for many years and can contaminate large areas of land if not stored carefully.

Renewable energy resources don't use fuels and therefore do not release any polluting gases or harmful waste into the environment. However, these resources cannot be relied upon to supply the constant demand for electricity generation. These resources are less efficient and not always available in the places where the electricity needs to be generated.

Renewable Electricity Generation	
Solar	Produces electricity from sunlight.
Wind	Uses wind to turn the turbine.
Hydroelectric	Uses falling water from a dam to drive a generator.
Wave	Use the energy generated from water waves.
Biomass	Produces gas from decomposing plant and animal matter – carbon neutral.
Geothermal	Uses natural heat sources close to the surface of the earth.
Tidal	Extracts the energy from water moving as the tides come in and out.