

# **Edexcel Geography A-level**

## The Carbon Cycle and Energy Security Glossary of Definitions

**Acidification** - The gradual reduction of pH of the oceans, due to dissolving carbon dioxide from the atmosphere.

**Afforestation** - Planting trees and vegetation in the aim of increasing forest cover.

**Biofuel** - Burning crops and vegetation for electricity and heat.

**Carbon Capture & Storage (CCS)** - The capture of carbon dioxide emissions directly from the factory, pumped into disused mines rather than being released into the atmosphere.

**Carbon Fluxes** - The movement of carbon between stores.

**Carbon Neutral** - A process that has no net addition of carbon dioxide to the environment.

**Carbon Stores** - Places where carbon accumulates for a period of time such as rocks and plant matter.

**Choke Points** - Points in the logistics of energy and fuel that are prone to restriction.

**Combustion** - The process of burning a substance, in the presence of oxygen, to release energy.

**Decomposition** - The break down of matter, often by a decomposer which releases carbon dioxide through their own respiration.

**Energy Mix** - The composition of a country's energy sources.

**Energy Security** - The ownership and full control of a country's energy source, production and transportation.

**Energy Pathway** - The movement of energy from its extraction or source, through pipes, freight logistics or cabling.

**Energy Players** - Key companies and individuals who own, distribute and sell energy and energy sources.

**Enhanced Greenhouse Effect** - The build-up of greenhouse gases in the atmosphere, reducing the amount of solar radiation reflected into space.

**Inorganic Carbon** - Carbon stored in carbonated rocks.

**Non-Renewable** - A source of energy that can only be used once to generate electricity or takes thousands of years to replace e.g. Fossil Fuels.

**Nuclear Fusion** - The process of joining atomic nuclei together, to produce energy.

**OPEC** - Oil and Petroleum exporting countries. An organisation that supports and coordinates fossil fuel exporting countries.

**Organic Carbon** - Carbon stored in plant material and living organisms.

**Outgassing** - The release of dissolved carbon dioxide (e.g. at plate boundaries, warming the oceans).

**Photosynthesis** - The process of converting carbon dioxide and water into glucose and oxygen. All plants and some organisms rely on this process to survive.

**Phytoplankton** - Small organisms that rely on photosynthesis to survive, so intake carbon dioxide from the atmosphere.

**Primary Energy** - The initial source of energy, as it is naturally found. This could be natural ores, water, crops or radioactive material.

**Renewable** - Primary energy that can be re-used to produce electricity or has a short lifetime, therefore any used can be replaced quickly e.g. Hydroelectric, biomass, solar.

**Respiration** - The process of converting glucose and oxygen into carbon dioxide and energy. Some organisms rely on respiration to survive.

**Secondary Energy** - The product of primary energy, mostly electricity.

**Sequestration** - The transfer of carbon from the atmosphere to stores elsewhere - living biosphere, inorganic rocks, etc.

**Thermohaline Circulation** - The movement of volumes of seawater from cold deep water to warm water surface water.

**Tipping Point** - A critical threshold where any changes to a system after the tipping point are irreversible.

**Urbanisation** - The growth of populations in towns and cities.