

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.

