**Anthropogenic climate change**

**Carbon capture and storage**

**Glossary**

**Abiotic**

Physical rather than biological – relating to non-living things.

**Active citizenship**

Bringing about change through active participation in society, for example, voting, campaigning, or volunteering for a charity.

**Adaptation**

Actions taken to help cope with the effects of climate change, for example, building flood defences, or planting new crops that will thrive under new conditions. Not to be confused with the biological definition ie a characteristic of an organism that improves the likelihood of it surviving and/or reproducing.

**ALAN**

An acronym for Artificial Lighting At Night.

**Alternative energy**

Sources of energy that are produced without burning fossil fuels, such as solar and wind power.

**Anthropocene**

An unofficial term for the current geological age; the period during which human activity started to have a notable impact on the climate and environment.

Man-made climate change, as opposed to natural climate changes caused by things like sunspots, tectonic events, or changes in Earth’s orbit around the sun.

**Atmosphere**

The complex layer/s of gases that envelop the Earth.

**Biodiversity**

The variety of living organisms, such as animals and plants, in an ecosystem. Ecosystems are dependent on biodiversity to persist and to work properly, and we are dependent on ecosystems to function.

**Biofuel**

Fuel derived directly from biological sources, for example plants and some types of waste.

**Biomass**

A collective term for organic matter derived from plants, animals, and microorganisms that can generate fuel through biological processes.

**Biotic**

Biological rather than physical – relating to living things.

**Campaigning**

Actions or events organised by an individual or a group to achieve a specific aim.

**Carbon budget**

The cumulative amount of greenhouse gas emissions permitted over a set period to keep within an agreed temperature threshold. Carbon budgets can be agreed on different scales: individually, on an organisational scale, nationally, and globally.

A process that prevents carbon dioxide (CO2) from entering the atmosphere when it is emitted from sources such as coal-fired power plants. It is used in

areas where reducing emissions is particularly difficult, for example in some types of heavy industry. CO2 is compressed, transported, and then injected underground into deep geological reservoirs.

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Scientific work undertaken by members of the general public, often in collaboration with or under the direction of professional scientists and scientific institutions.

**Citizen science/** **Community science**

**Carbon dioxide CO2**

A gas in the Earth’s atmosphere. CO2 comes from both natural sources (including volcanoes, the breath of animals and plant decay) and human sources (primarily the burning of fossil fuels like coal, oil, and natural gas to generate energy).

**Carbon dioxide equivalent (CO2-eq)**

A measure used to compare emissions from greenhouse gases according to their global warming potential (GWP). This is done by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

**Carbon footprint**

The amount of carbon released into the atmosphere by a group or an individual, as a result of everyday activities or the manufacture of a specific product. Carbon emissions – in the form of carbon dioxide and methane – are what cause global warming and climate change. Carbon footprints do not only apply to people – they can be calculated for companies, events, places, and products.

**Carbon-neutral**

A person, company or country that balances the carbon dioxide they release into the atmosphere through their everyday activities with the amount they absorb or remove from the atmosphere. This is also called net zero carbon emissions or net zero carbon, because overall no carbon dioxide is added to the atmosphere.

**Carbon offsetting**

A way to compensate for greenhouse gas emissions, by funding or playing a part in attempts to remove CO2 from the atmosphere. Sometimes this can mean investing in global environmental projects, such as land restoration or tree planting.

**Carbon sinks**

Any mechanism that removes CO2 from the atmosphere. The major natural carbon sinks are plants, oceans, and soil.

**Carbon sources**

Any mechanism that releases more CO2 into the atmosphere than it absorbs, for example, burning fossil fuels or volcanic eruptions.

**CFCs**

The short name for chlorofluorocarbons – a group of greenhouse gases that are harmful to the ozone layer.

**Climate**

The average weather patterns over a long-term period (over 30 years at least).

**Climate change**

The most commonly used term to describe long-term change in global or regional climate patterns, as a result of increasing levels of CO2 and other greenhouse gases in the atmosphere.

**Climate finance**

Funding on a local, national, or international level that is invested in climate change related activities, to support adaptation.

**Climate justice**

A concept that acknowledges the inequitable outcomes of the climate crisis – that climate change will not affect everyone in the same way, and that this will lead to inequalities between places, people and even generations.

**Climate refugee**

Someone who has been forced to leave their home as a consequence of the climate crisis and sudden or long-term changes to their environment.

**COP26**

COP is an abbreviation of Conference of the Parties. COP meetings happen annually and provide an organised environment for international governments, organisations, and individuals to gather and discuss how best to tackle climate change together.

The 26th UN Climate Change Conference took place in Glasgow in November 2021.

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**Deforestation**

The removal of trees to clear an area of forest to make space for growing crops, animal grazing, construction, manufacturing, or to procure timber. This can lead to significant carbon dioxide emissions.

**Demonstration**

A public meeting or march protesting or showing support for a specific issue or cause.

**Eco-anxiety**

Heightened apprehension in response to the climate crisis and both current and future harmful effects of human activity on the environment.

**Economic impact**

The effect of an event on the wealth of a region or community.

**Ecosystem**

A community of interacting organisms and their physical environment.

**Ecotourism**

Responsible travel, normally carried out in small groups, that has the least possible impact on the local ecosystem and the local people. It usually involves travelling to areas of natural conservation, and often includes education.

**Emissions**

An amount of material produced and released into the air, that causes harm to the environment; in particular, carbon dioxide and other greenhouse gases.

**Enhanced greenhouse effect**

The increased concentration of greenhouse gases, thought to be the cause of recent global warming.

**Energy conservation**

An effort to reduce energy consumption, by using energy more efficiently or using less energy altogether.

**Energy mix**

The mixture of primary energy sources used within a geographical region, and their proportions. The UK’s energy mix consists mostly of natural gas and oil, but the contribution made by renewables to UK power generation has more than doubled since 2014.

**Energy transition**

The ongoing shift from fossil-based energy production towards renewable energy production by the second half of this century. The UK is aiming to produce all electricity from renewable sources by 2035.

**Environment**

The natural world, as a whole or in a specific geographical area. The conditions that surround a living organism.

**Environmental impact**

The effect of an event or activity on the landscape and ecology of an area, or on the environment as a whole.

**Extreme weather**

A weather event that is notably different from the usual weather pattern – ie particularly severe or unseasonal. For example, flash floods or a heat wave in the UK.

**Fast fashion**

A collection of design, manufacturing and marketing methods that aim to produce fashionable clothes as quickly and as cheaply as possible. These clothes often sample designs from the catwalk or celebrity culture and are, in many cases, only worn a handful of times before being thrown out.

**Finite resources**

Non-renewable resources that cannot be replaced and will one day run out.

**Fossil fuels**

Natural fuels, such as natural gas, coal, and oil, formed in the geological past from the remains of living organisms. Most greenhouse gases are produced when fossil fuels are burnt for energy. They are a finite resource.

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**Fragile environment**

An environment that is easily disturbed and unable to adapt to environmental changes, including those that arise as a result of human activity.

**Global average temperature**

The mean temperature of the surface of the Earth, usually measured over a 30-year period to detect and track changes.

**Global dimming**

A gradual decrease in the amount of sunlight reaching the Earth’s surface, as it travels through space, believed to be caused by air pollution from human activity.

**Global warming**

Global warming is an increase in the Earth’s average surface temperature from human-made greenhouse gas emissions.

**Greenhouse effect**

The increase in the temperature of the Earth’s surface and atmosphere, due to the insulating effect of greenhouse gases in the atmosphere.

**Greenhouse gases**

Natural and manufactured gases, such as carbon dioxide and methane, that trap heat from the Earth and warm its surface.

**Greenwashing**

A communication and marketing strategy designed to make people believe that an organisation is doing more to protect the environment than it really is, by providing misleading information.

**Hazard risk**

The probability that a natural hazard may take place.

**Ice cores**

Cylinders of ice extracted from an ice sheet or glacier that can be used to determine past temperatures. The columns of ice contain air bubbles that enable scientists to find out the atmospheric gas concentrations at the time the snow fell.

**Interest group**

An organisation formed to try and persuade the government to adopt specific policies on a particular issue.

**Light pollution**

Light which escapes from artificial lights (See ALAN). Often referred to as ‘unseen pollution,’ it can cause harm to wildlife and humans by changing sleep and feeding patterns. It can also create exposure to predators and affect avoidance behaviour and animals’ ability to breed.

**Lobbying**

A group or individual trying to persuade a politician to take up their cause – for instance, by starting a petition, writing a letter, or organising a demonstration.

**Methane**

A powerful greenhouse gas produced both naturally and through human activity. Whilst methane does not stay in the atmosphere for as long as carbon dioxide, it has a greater heat trapping ability making it very harmful to the environment.

**Mineral extraction**

The removal of solid mineral resources from the earth, such as precious stones, ores, stones used for building and solid fossil fuels like coal.

**Mitigation**

Actions taken to limit the long-term risk to human life and property from natural hazards, such as introducing targets to limit emissions or building earthquake-proof buildings.

**Natural greenhouse effect**

The level of greenhouse gases in the atmosphere that occurs naturally. Without this, Earth’s average temperature would be well below freezing, and life as we know it would cease to exist.

**Natural hazard**

An event that occurs naturally and has the potential to cause death and destruction. Examples of natural hazards are floods, volcanic eruptions, and earthquakes.

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**Natural history**

The study of the natural world (including wildlife, geology, and palaeontology) and its interactions, through observation, research, and communication.

**NDCs**

An acronym for Nationally Determined Contributions – climate action plans for each of the countries that signed the Paris Agreement. They include policies and courses of action to reduce climate change.

**Net zero**

A person, company or country is carbon-neutral if they balance the carbon dioxide they release into the atmosphere through their everyday activities with the amount they absorb or remove from the atmosphere. This is also called net zero carbon emissions, or net zero carbon, because overall no carbon dioxide is added to the atmosphere.

**Nomenclature**

A formal system of names used to label taxonomic groups (see Taxonomy).

**Ocean acidification**

A change in the pH of seawater, which is normally around neutral. Carbon dioxide that is present in the atmosphere dissolves into the ocean. This lowers the pH, making it more acidic.

**Ozone layer**

A layer of ozone gas within the stratosphere – the second layer of the Earth’s atmosphere. It absorbs 98% of the Sun’s most harmful UV rays that cause sunburn and to human skin (and skin cancer) and damage to plants. CFCs have been identified as the main cause of damage to the ozone layer.

**Paris agreement**

An international treaty on climate change, adopted in 2015 at COP21 in Paris and signed by 196 Parties. The agreement aims to limit global warming to well below 2 degrees Celsius (ideally 1.5 degrees Celsius) and encompasses climate change mitigation, adaptation, and finance.

**Pollutant**

A material introduced into the environment that has undesired effects and may harm organisms.

**Pollution**

The introduction of harmful material into the environment.

**Power station**

A facility where electrical power is generated for distribution.

**Pressure group**

An organisation formed to take action, with the common aim of bringing about change regarding a particular issue.

**Primary effects**

The initial, direct impact of a natural event or hazard on people and property, for example buildings collapsing after an earthquake.

**Quaternary period**

The period of geological time that covers the last 2.6 million years.

**Recycling**

The process of converting waste into reusable material.

**Renewable energy**

Energy created from sources that can be naturally replenished, such as biomass, wind, and sunlight.

**Sea-level rise**

An increase in the level of oceans, caused by the effects of global warming. Glaciers and ice sheets are melting and adding water to the ocean. The volume of the ocean is also expanding as the water warms.

**Secondary effects**

The after-effects or indirect impacts of a natural hazard or event on people and property, for example the contamination of water supplies after an earthquake.

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**Sky glow**

The glow in the night sky caused by artificial lighting (see ALAN and light pollution).

It is a form of pollution which can impact sleep patterns in humans and wildlife and affect the navigational ability of some species. It is also what prevents us from seeing the stars at night in built-up areas.

**Smog**

A synonym for air pollution, combining the words ‘smoke’ and ‘fog.’

**Sustainability**

Actions that meet the needs of the present without reducing opportunities for future generations.

**Taxonomy**

The process and method of naming (see Nomenclature), describing, and classifying plants, animals, and microorganisms.

**Urbanisation**

The process through which cities grow, and an increasing percentage of the population comes to live in towns and cities. The increased rate of urbanisation in the world today is driving an increase in emissions.

**Weather**

Atmospheric conditions, such as rain or snow, happening in a place at a specific moment in time, as opposed to climate, which is how much, on average, a type of weather will occur over a longer period.

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