

Glossary

<u>Active travel</u>	Travelling by walking, cycling, wheeling or other methods of getting around that do not involve motorised transport.
<u>Adaptation</u>	Preparing for the effects of climate change, such as changing rainfall and rising sea levels. It is often paired with 'mitigation' because the less the climate changes, the less adaptation will be required.
<u>ASU</u>	Air separation unit
<u>ATR</u>	Autothermal reforming. One method for producing hydrogen from natural gas. This produces what is called blue hydrogen.
<u>BoP</u>	Balance of plant. This determines the appropriate size for different components of a system. For example, the size of a windfarm will determine the size of substation and transmission cable for exporting power.
<u>Baseline</u>	An exercise which establishes the level of emissions in a given year.
<u>Biodiversity</u>	The variety of living things in the natural environment. Improved biodiversity leads to stable ecosystems and a more suitable living condition for human beings.
<u>Brownfield</u>	Land or infrastructure that has been previously developed and can be reused for another purpose.
<u>BSUoS</u>	Balancing Service Use of System
<u>CaO</u>	Calcium oxide
<u>Carbon Emissions</u>	The release of carbon dioxide (CO ₂) emissions, the most prevalent greenhouse gas in the atmosphere which causes global warming and climate change.
<u>CAPEX Capital expenditure</u>	The cost for procuring the fixed and physical parts for a project. This can include infrastructure and machinery.
<u>CCUS Carbon Capture, Utilization and Storage</u>	Removing carbon dioxide from the atmosphere and storing it underground. The aim is to prevent the release of large quantities of carbon dioxide into the atmosphere from heavy industry.
<u>Carbon footprint</u>	The emissions generated by an organisation, activity or product. Usually measured in kilotons of carbon dioxide or carbon dioxide equivalent (kt CO ₂ e).

<u>Carbon negative</u>	Also 'emissions negative.' An activity or product that removes greenhouse gases such as carbon dioxide from the atmosphere and reverses the causes of global warming.
<u>Carbon neutral</u>	Achieved when CO2 emissions are balanced by CO2 removals over a specified period.
<u>CH3OH</u>	Methanol. A fuel that can be produced from hydrogen and carbon.
<u>CH4</u>	Methane. A greenhouse gas.
<u>CHG</u>	Compact H2 Generator
<u>CHP</u>	Combined heat and power
<u>Circular economy</u>	An alternative to a traditional linear economy (make, use, dispose) in which resources are kept in use for as long as possible, the maximum value is extracted from them whilst in use, then products and materials are recovered at the end of each service life.
<u>Clean energy</u>	Energy, such as electricity or hydrogen fuel, that is produced without emitting greenhouse gases and therefore does not contribute to climate change.
<u>Climate Change</u>	The long-term shift in global climate patterns, including extreme weather events and rising sea levels, linked directly with the warming of the Earth's atmosphere. Climate change is rapidly accelerating due to human activities, such as burning hydrocarbons for transportation and energy.
<u>Climate-conscious</u>	Activities or products that try to limit their contribution to climate change and have the knowledge to do so effectively.
<u>Climate impact assessments</u>	Reports completed at key project and plan milestones which estimate the effect the project or plan will have regarding contributing to or adapting to climate change.
<u>CO</u>	Carbon monoxide
<u>CO₂</u>	Carbon dioxide, often referred to as just 'carbon,' is the greenhouse gas most responsible for causing climate change when it proliferates in the atmosphere. It is released into the atmosphere primarily by burning hydrocarbons for transportation and energy.
<u>CO₂e</u>	Carbon dioxide equivalent. A holistic way of measuring climate impact which accounts for other greenhouse gases,

	such as methane and nitrous oxide, which have varying warming effects. The warming effect of carbon dioxide is well-understood, so impact is often expressed as an equivalent of kilotons of carbon dioxide (kt CO ₂ e).
<u>Co-benefits</u>	Social, environmental, and economic benefits that arise from undertaking climate action that are incidental to avoiding the worst effects of climate change. For example, undertaking more active travel will result in improved cardiovascular health for the populace.
<u>Committee on Climate Change</u>	An independent, statutory body established under the Climate Change Act 2008 to advise the UK Government and Devolved Administrations on emissions targets and report to Parliament on progress made in reducing greenhouse gas emissions and preparing for climate change.
<u>DBT</u>	Dibenzyltoluene. A liquid organic hydrogen carrier that is capable of storing and transporting hydrogen.
<u>Decarbonise</u>	Altering an organisation, product, service, or investment so that it is delivered producing less emissions. Carbon is used as a stand-in for all greenhouse gas emissions.
<u>DNEC</u>	Dedecahydro-N-ethylcarbazole
<u>DWT</u>	Dead-Weight Tonnage
<u>Embodied carbon</u>	The greenhouse gas emissions generated from manufacturing materials, including extraction and transport of raw materials and manufacturing. It is usually used in construction and means that the structure has an emissions impact just by having been built.
<u>(Greenhouse gas / GHG) emissions</u>	Gases which, when dispersed in the atmosphere, trap the Sun's radiation within the Earth's atmosphere and cause global warming. This achieves a similar effect to a greenhouse, hence the name. Greenhouse gases include carbon dioxide, methane, nitrous oxide, and water vapour.
<u>Emissions factor</u>	The emissions, usually expressed as kilotons of carbon dioxide equivalent, which are generated by producing a unit of energy. This will vary depending on the fuel used and type of energy produced.

<u>Empowerment</u>	Equipping individuals and the community with the power and resources to undertake and accelerate the energy transition. Building knowledge, understanding, skills and capacity within the community will enable groups and individuals to undertake and accelerate their own activities.
<u>ETZ Energy Transition Zone</u>	This is an area in Aberdeen developing a campus and various projects connected to renewable energy and hydrogen ambitions.
<u>EoS</u>	East of Shetland
<u>EUR</u>	Euro
<u>EV</u>	Electric vehicle. Usually powered by a rechargeable battery and therefore a BEV (Battery Electric Vehicle).
<u>FCEV FCH JU</u>	Fuel cell electric vehicle Fuel Cell and Hydrogen Joint Undertaking. An EU initiative for developing hydrogen projects in Europe.
<u>Fixed links</u>	Bridges or tunnels which connect islands, reducing or eliminating the need for inter-island ferries.
<u>FID</u>	Final Investment Decision
<u>Fossil fuels</u>	Fuels such as oil, coal, and natural gas which derive from decomposed organic material – hence ‘fossil’ fuel. This organic matter is primarily made of carbon, therefore burning it releases carbon dioxide. See: hydrocarbons.
<u>Fuel poverty</u>	A household that spends more than 10% of its income on fuel costs is in fuel poverty. If this rises to more than 20%, the household is in extreme fuel poverty.
<u>GBP</u>	British pounds
<u>Generation</u>	How energy is made before it is distributed, such as from wind turbines turning or hydrocarbons burning in a power plant.
<u>GH2</u>	Compressed hydrogen. This is hydrogen in gaseous form, which is compressed to allow for storage.
<u>GHR</u>	Gas heated reformer
<u>Global warming</u>	An increase in the world’s average temperature as a result of greenhouse gases trapping the Sun’s heat in Earth’s atmosphere. Global warming causes more extreme weather and chemical changes, and melts polar ice caps causing sea level rise.

<u>Green hydrogen</u>	Hydrogen fuel which is produced using electricity from renewable generation, such as wind or tidal sources. It is the only sustainable hydrogen fuel because, while burning hydrogen is zero-emissions, producing hydrogen fuel using other means creates emissions.
<u>Green skills / jobs</u>	Skills and jobs which are related to renewable energy, climate change adaptation, or the circular economy. These are seen as future-proof skills and jobs because every industry will need to decarbonise in the coming years.
<u>Greenfield</u>	Previously undeveloped land.
<u>GW</u>	Gigawatt
<u>GWh Gigawatt-hour</u>	Gigawatt-hour
<u>H2</u>	Hydrogen
<u>H2O</u>	Water
<u>ha</u>	Hectares
<u>HER</u>	Hydrogen evolution reaction
<u>HHV</u>	Higher heating value
<u>Hydrocarbons</u>	An organic compound consisting of the elements hydrogen and carbon. These compounds are energy-dense when burned and have powered most human activity, such as transportation and energy, since the industrial revolution. See: fossil fuels.
<u>Hydrogen (fuel)</u> <u>Fuel which uses the element hydrogen and produces only water when burned. It is seen as a viable option for clean energy if it can be produced using electricity from renewable sources (see: Green hydrogen) and is suitable in a wide variety of applications where electricity is not.</u> <u>Hydrogen economy</u> <u>A system in which employment and economic activity is based on the production of hydrogen fuel rather than fossil fuels. It is more future-proof than a fossil fuel economy because changing legislation and technology mean that every industry will need to decarbonise in the coming years.</u>	
<u>IEA</u>	International Energy Agency
<u>IPCC</u>	Intergovernmental Panel on Climate Change
<u>IPCEI</u>	Important Project of Common European Interest
<u>IRENA</u>	International Renewable Energy Agency

<u>KOH</u>	Potassium hydroxide
<u>kWh</u>	Kilowatt-hour
<u>LCH</u>	Low carbon hydrogen
<u>LCOE</u>	Levelised cost of electricity
<u>LCOH</u>	Levelised cost of hydrogen
<u>LCOS</u>	Levelised cost of storage
<u>LH2</u>	Cryogenic hydrogen. This is liquid hydrogen. Hydrogen required a temperature of -253°C to be liquefied.
<u>LHEES</u>	Local Heating and Energy Efficiency Strategies
<u>LHV</u>	Lower heating value
<u>LNG</u>	Liquefied natural gas. This is liquid natural gas.
<u>LOHC</u>	Liquid organic hydrogen carriers. These are a selection of oils that can be hydrogenated and dehydrogenated to allow for hydrogen storage and transportation.
<u>LPG</u>	Liquid petroleum gas
<u>LRC</u>	Lined-rock cavern
<u>MCH</u>	Methylcyclohexane. A liquid organic hydrogen carrier that is capable of storing and transporting hydrogen.
<u>MENA</u>	Middle East and North Africa
<u>MOF</u>	Metal organic frameworks. A porous material that is capable of storing hydrogen.
<u>MOU</u>	Memorandum of Understanding
<u>Mtoe</u>	Million tonnes of oil equivalent
<u>NaBH4</u>	Borohydrides
<u>NEC</u>	N-ethylcarbazole
<u>NECP</u>	National Energy and Climate Plan
<u>NEP</u>	Northern Endurance Partnership
<u>Net Zero</u>	When the carbon emitted is equal to the carbon captured.
<u>NH3</u>	Ammonia. A substance that can be produced using hydrogen and nitrogen. It could be used as a fuel, a refrigerant, or a fertiliser.
<u>NSL</u>	North Sea Link
<u>NTS</u>	National Transmission System
<u>NZT</u>	Net Zero Teesside. A UK Energy Hub.
<u>O2</u>	Oxygen
<u>O&G</u>	Oil and Gas
<u>OECD</u>	Organization for Economic Cooperation and Development
<u>OH</u>	Hydroxide ions
<u>ONE</u>	Opportunity North East

<u>OPEX</u>	Operating expenditure. This is the costs associated to running facilities.
<u>°C</u>	Degrees Celsius
<u>P2X</u>	Power-to-X
<u>PDBT</u>	Perhydro-dibenzyltoluene
<u>PEM</u>	Polymer electrolyte membrane. A type of electrolyser for producing hydrogen.
<u>POX</u>	Partial oxidation
<u>PSA</u>	Pressure swing adsorption
<u>PV</u>	Photovoltaics
<u>PWh</u>	Petawatt-hours
<u>R&D</u>	Research and development
<u>Remap</u>	Renewable Energy Roadmap
<u>Reskilling</u>	involves an employee learning new skills outside of the worker's existing skill set which may be geared toward a different path entirely.
<u>SGP</u>	Shetland Gas Plant
<u>Shetland NZRM</u>	Shetland Net Zero Route Maps ^[1]
<u>SIC NZRM</u>	Shetland Islands Council Net Zero Route Maps ^[2]
<u>SMR Steam methane reforming</u>	Steam methane reforming. One method for producing hydrogen from natural gas. This produces what is called blue hydrogen.
<u>SOE/SOEC</u>	Solid oxide electrolysis. A type of electrolyser for producing hydrogen.
<u>Solar PV</u>	Solar photovoltaic
<u>tn</u>	Tonnes
<u>TNUoS</u>	Transmission Network Use of Service. This is a charge for using the electricity transmission system to export electricity to market. The north of Scotland has some of the highest TNUoS charges.
<u>TRL</u>	Technology readiness level. This is the measure of the development of a technology ranging from novel technologies to more established ones.
<u>TWh</u>	Terawatt-hour
<u>TWR</u>	Terrace wall reformer
<u>USD</u>	United States dollar
<u>Upskilling</u>	is when an employee undertakes learning to expand their existing skill set with the aim to enhance the worker's performance in their current role.
<u>WoS</u>	West of Shetland
<u>ZEV</u>	Zero Emission Valley

^[1] [What are we doing? – Shetland Islands Council](#)

^[2] <https://www.shetland.gov.uk/downloads/download/1515/shetland-islands-council-net-zero-route-map>

[Hydrogen-Transport-Legislation-and-Standards-in-the-NSR-FINAL.pdf \(cenex.co.uk\)](#) this report has a list of abbreviations on page 7 that may be of use