Why should Dorset care about net zero?

Help Our Planet, Bridport, Dorset

27 November 2025

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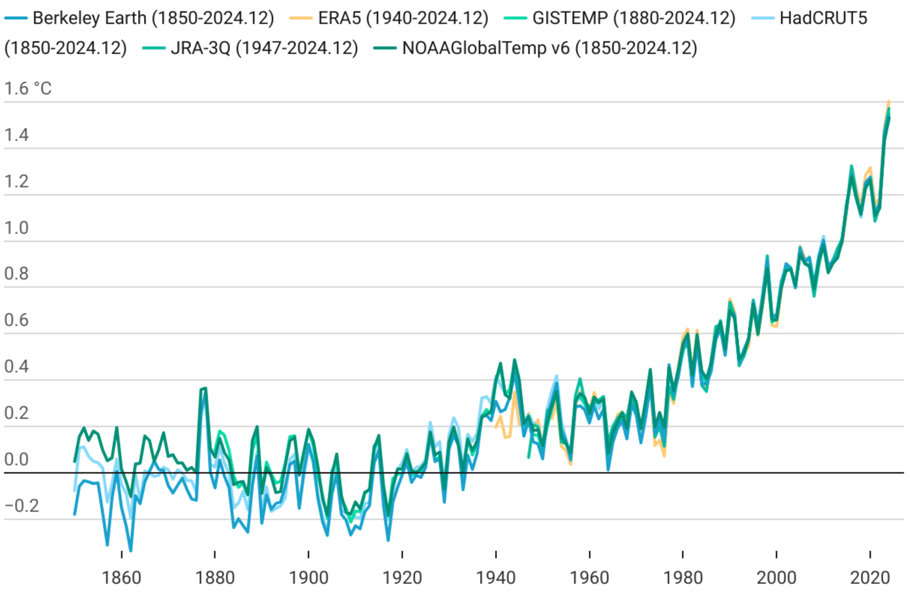
Global climate trends: global temperature

Global mean temperature 1850-2024

Difference from 1850-1900 average



Annual global mean temperature anomalies relative to a pre-industrial (1850–1900) baseline shown from 1850 to 2024

Chart: WMO • Created with Datawrapper

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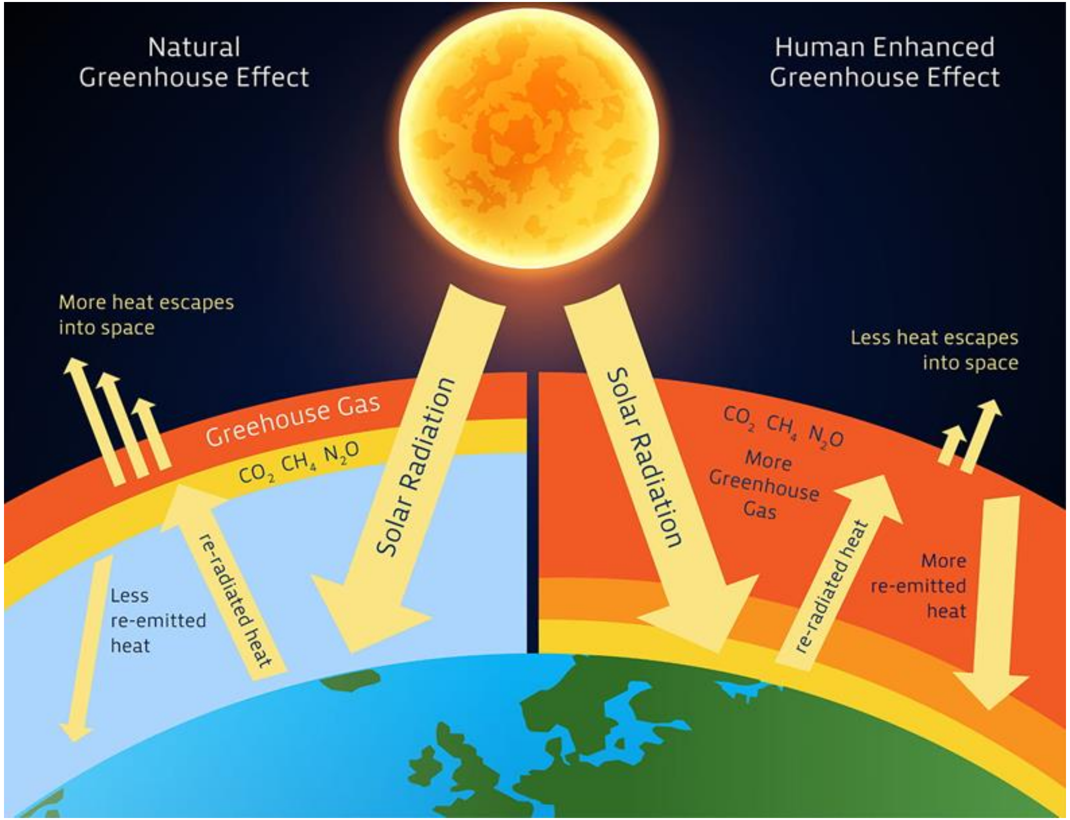
The greenhouse effect

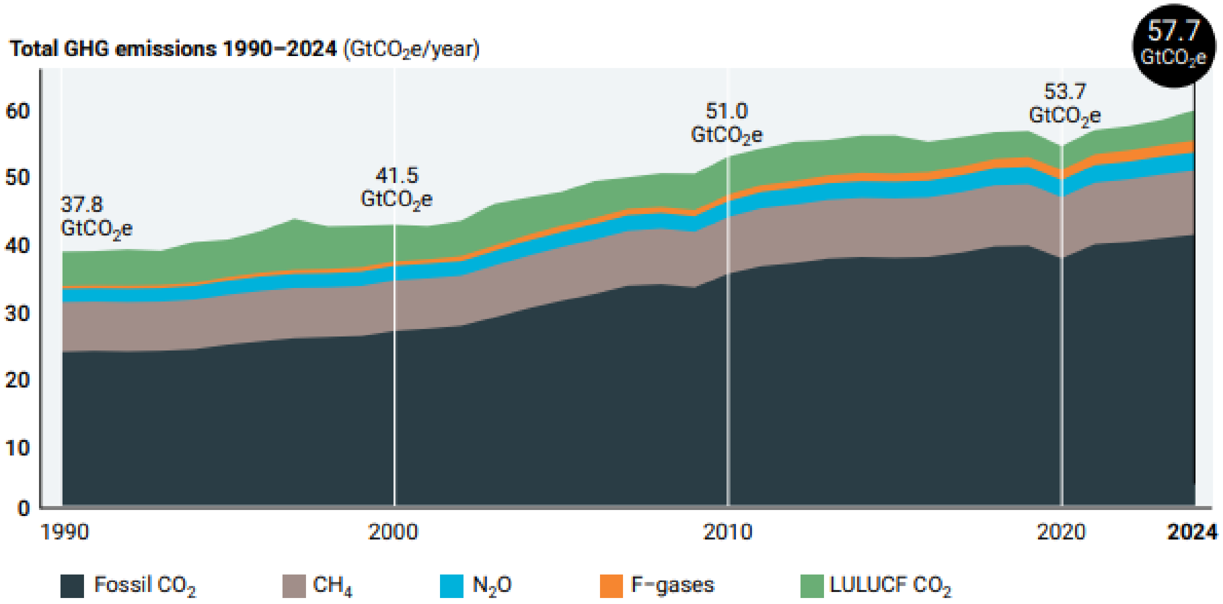


Greenhouse gases

- Greenhouse gases warm the Earth by absorbing energy and slowing the rate at which the energy escapes to space; they act like a blanket insulating the Earth.
- Different gases can have different effects on the Earth's warming, such as their ability to absorb energy and how long they stay in the atmosphere.
- Carbon dioxide (CO_2) remains in the climate system for a very long time: carbon dioxide emissions cause increases in atmospheric concentrations of carbon dioxide that will last thousands of years.
- Methane (CH_4) emitted today lasts about a decade on average, which is much less time than carbon dioxide, but methane also absorbs much more energy than carbon dioxide.
- Nitrous oxide (N_2O) emitted today remains in the atmosphere for more than 100 years.
- Chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) trap substantially more heat than carbon dioxide, and once emitted, persist in the atmosphere for hundreds or thousands of years.

Global climate trends: global annual emissions

Figure ES.1 Total net anthropogenic GHG emissions, 1990–2024



Note: The time series data sets used for the Emissions Gap Report are updated on an annual basis using the latest available statistical information on activities and emissions factors. These updates imply changes compared to prior reporting in the Emissions Gap Report. Accordingly, global GHG emissions in 2023 were adjusted to 56.2 $GtCO_2e$ from the 57.1 $GtCO_2e$ reported in the 2024 edition of the report.

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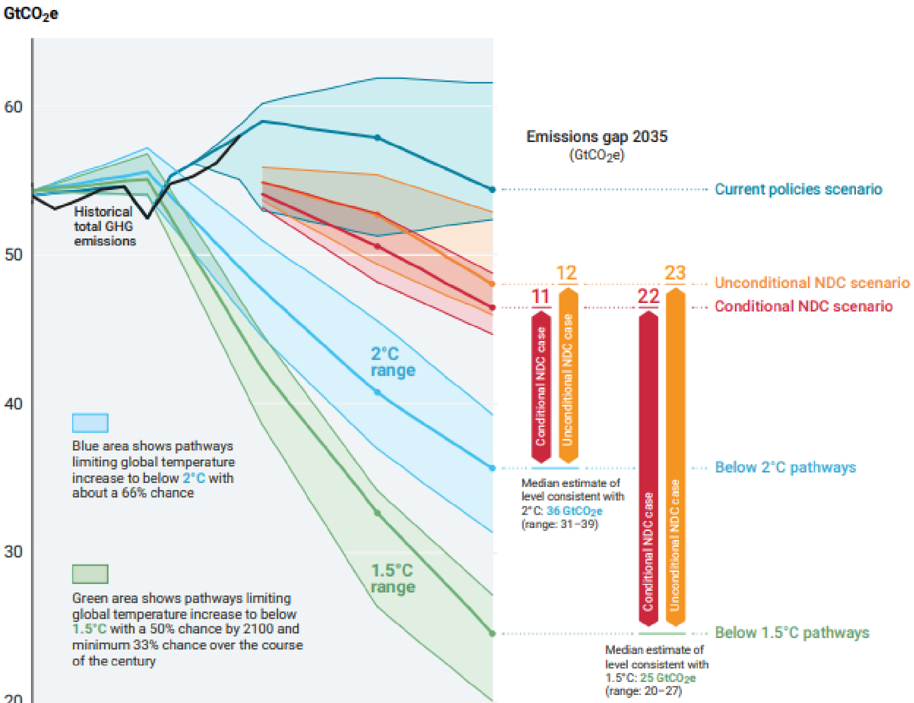
UNEP Emissions Gap Report 2025

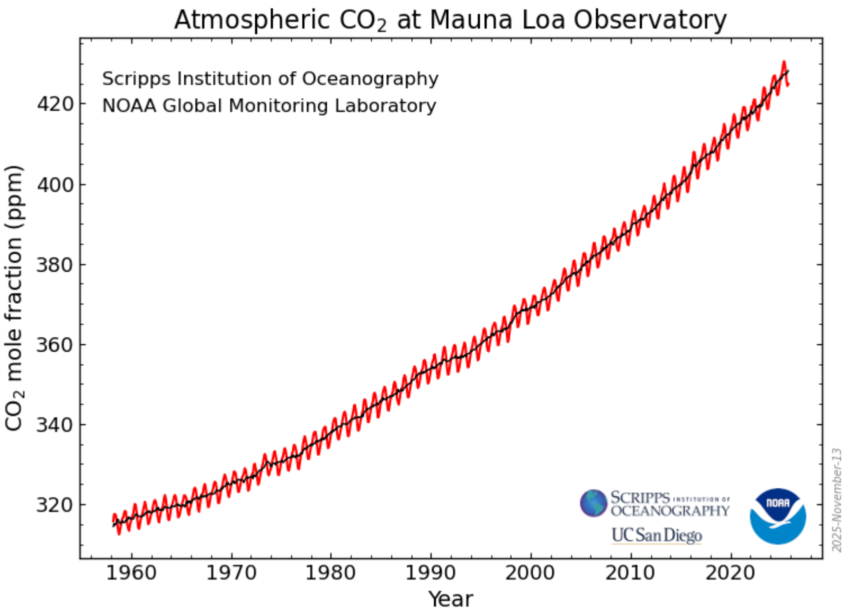
Figure ES.5 Global GHG emissions under different scenarios and the emissions gap in 2030 and 2035

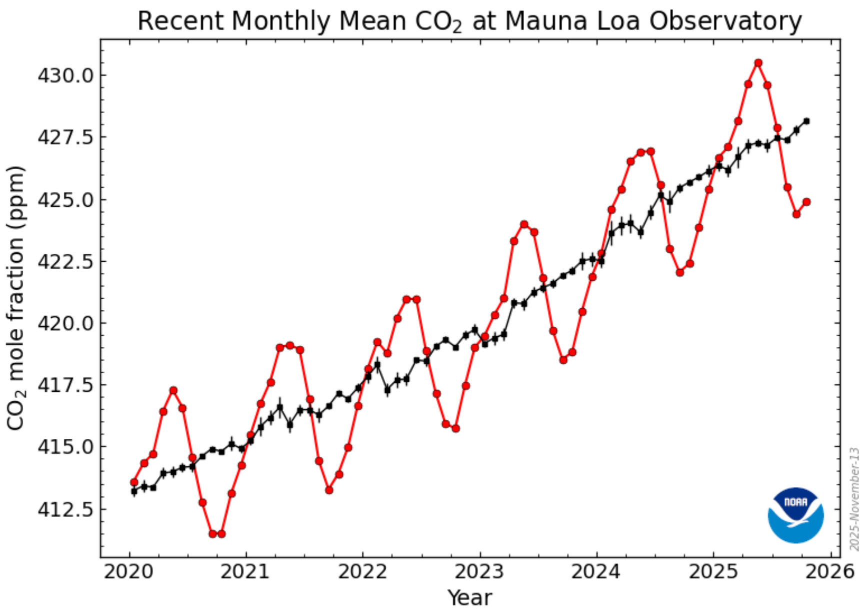


UNEP Emissions Gap Report 2025

- "A continuation of the mitigation effort implied by current policies only limits warming below 2.8°C (range: 2.1–3.9) over the century, with a 66 per cent chance."
- "This level of warming would be reduced to 2.5°C (range: 1.9–3.3) if unconditional NDCs are fully implemented by 2035 and similar efforts continue."
- "Even with efforts sufficient to meet the conditional NDCs in full, warming would only be kept below 2.3°C (range 1.9–3.3) with at least a 66 per cent chance."
- "By 2050, the central warming projections for these scenarios see global warming surpassing 1.5°C by several tenths of a degree, leaving the world with a 21–33 per cent chance that warming will already exceed 2°C by then."

Global climate trends: atmospheric carbon dioxide



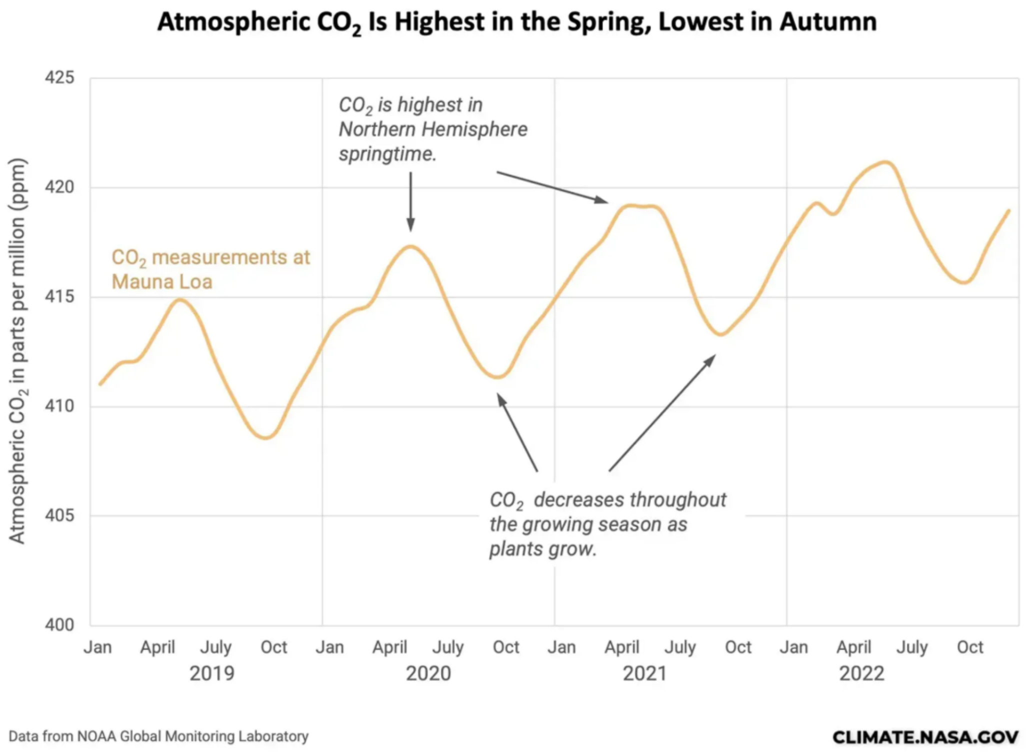


October 2025: 424.87 ppm

October 2024: 422.38 ppm

Last updated: 13 November 2025

Global carbon cycle



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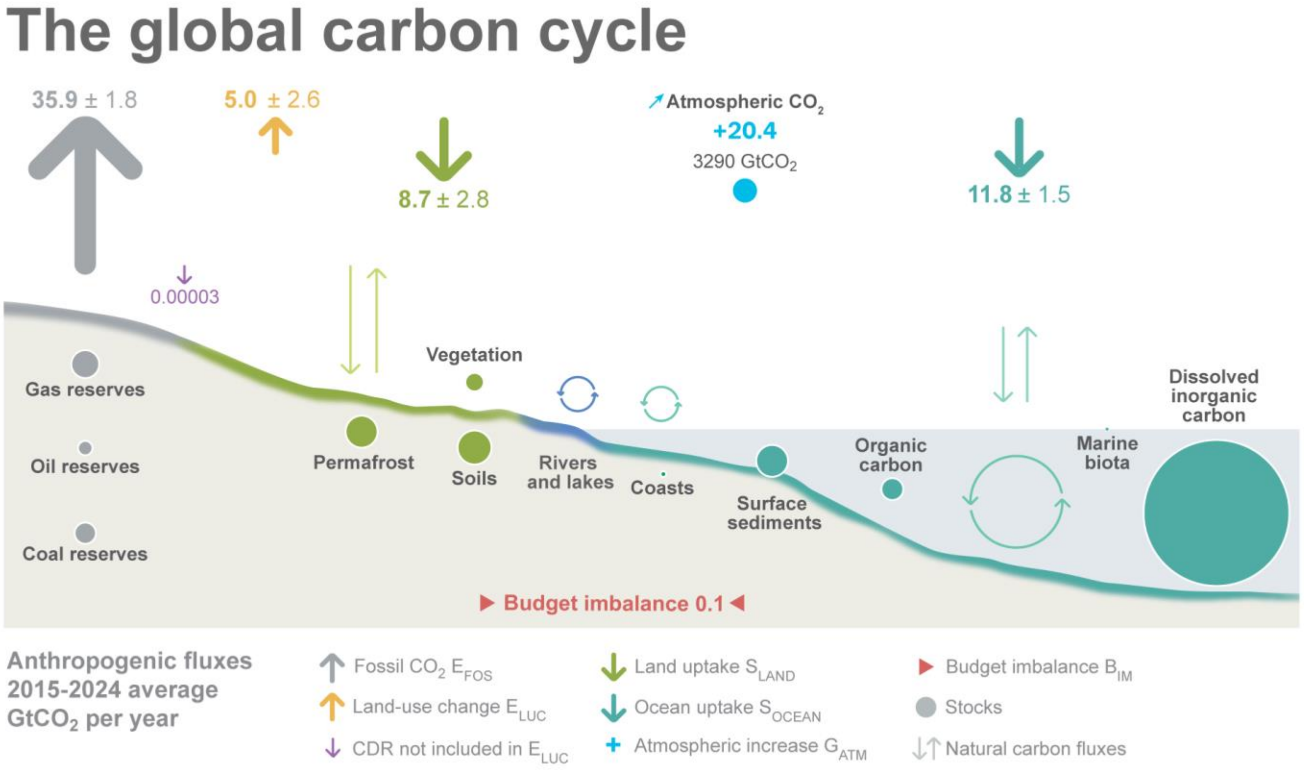
Global carbon cycle



Met Office Climate Projections for Dorset

		0.6°C GWL Baseline 1981-2000	1.0°C GWL Recent Past 2001-2020	1.5°C GWL Paris Agreement	2°C GWL Guidance: Prepare	4°C GWL Guidance: Assess risks
	TEMPERATURE	°C	°C	°C change	°C change	°C change
	Summer Maximum Temperature	28.3 27.7 to 28.5	30.1 29.4 to 31.4	+3.0 +1.2 to +3.4	+3.5 +2.7 to +4.5	+7.2 +6.9 to +9.1
	Summer Average Temperature	15.7 15.7 to 15.7	16.8 16.3 to 17.3	+1.3 +1.0 to +2.1	+2.1 +1.5 to +2.7	+4.4 +3.8 to +5.3
	Winter Average Temperature	5.0 5.0 to 5.0	5.7 5.3 to 5.8	+1.0 +0.7 to +1.2	+1.3 +0.7 to +1.5	+2.7 +1.9 to +3.2
	Winter Minimum Temperature	-6.9 -7.3 to -6.7	-5.9 -6.7 to -4.4	+1.5 +0.8 to +2.9	+2.0 +0.9 to +3.0	+3.6 +2.6 to +4.6
	Annual Average Temperature	10.0 10.0 to 10.0	10.8 10.7 to 11.1	+1.0 +1.0 to +1.3	+1.6 +1.2 to +1.8	+3.3 +2.9 to +3.8

		0.6°C GWL Baseline 1981-2000	1.0°C GWL Recent Past 2001-2020	1.5°C GWL Paris Agreement	2°C GWL Guidance: Prepare	4°C GWL Guidance: Assess risks
	PRECIPITATION	mm/day	mm/day	% change	% change	% change
	Summer Precipitation Rate	1.75 1.74 to 1.75	1.70 1.49 to 1.94	-8 -17 to +7	-13 -29 to -5	-36 -53 to -26
	Winter Precipitation Rate	3.09 3.08 to 3.10	3.21 3.06 to 3.58	+6 -3 to +16	+10 -5 to +16	+23 +12 to +35

Met Office Climate Projections for Dorset

Met Office Climate Report for Dorset

Department for Environment Food & Rural Affairs

Local climate indicators

The table shows projected **climate indicators** for the Local Authority area for a number of Global Warming Levels. For each these are annual totals: a central projection (the Median) and an uncertainty range (the Lower and Upper values are the 10th and 90th percentiles). See also the Scientific Detail (QR Code).

	0.6°C GWL Baseline 1981-2000	1.0°C GWL Recent Past 2001-2020	1.5°C GWL Paris Agreement	2°C GWL Guidance: Prepare	4°C GWL Guidance: Assess risks
Summer Days* Daily maximum temperature > 25°C	10 (10 to 10)	20 (17 to 26)	23 (19 to 29)	29 (24 to 37)	62 (53 to 77)
High daytime temperatures with health impacts for vulnerable people at risk of hospital admission or death. Transport disruption – e.g. track buckling on railways. Can also indicate periods of increased water demand.					
Hot Summer Days* Daily maximum temperature > 30°C	1 (0 to 1)	2 (1 to 3)	3 (1 to 5)	4 (2 to 6)	16 (13 to 27)
Increased heat related illnesses, hospital admissions or death. Further transport disruption – e.g. track buckling on railways, road melt. Overhead power lines become less efficient.					
Extreme Summer Days* Daily maximum temperature > 35°C	0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	0 (0 to 1)	2 (1 to 5)
Increased heat related illnesses, hospital admissions or death affecting not just the vulnerable. Further transport disruption – e.g. track buckling on railways, road melt.					
Tropical Nights Daily minimum temperature > 20°C	0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	0 (0 to 0)	3 (1 to 3)
Health impact due to high night-time temperatures with potential for heat stress. Vulnerable people at increased risk of hospital admission or death.					
Frost Days Daily minimum temperature < 0°C	46 (46 to 47)	36 (33 to 43)	33 (28 to 35)	28 (24 to 36)	13 (9 to 19)
Cold weather disruption due to higher than normal chance of ice and snow.					

Met Office Climate Report for Dorset

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Local climate indicators

The table shows projected **climate indicators** for the Local Authority area for a number of Global Warming Levels. For each these are annual totals: a central projection (the Median) and an uncertainty range (the Lower and Upper values are the 10th and 90th percentiles). See also the Scientific Detail (QR Code).

	0.6°C GWL Baseline 1981-2000	1.0°C GWL Recent Past 2001-2020	1.5°C GWL Paris Agreement	2°C GWL Guidance: Prepare	4°C GWL Guidance: Assess risks
Icing Days Daily maximum temperature < 0°C	2 (1 to 2)	1 (0 to 2)	1 (0 to 1)	1 (0 to 2)	0 (0 to 0)
More extreme than frost days, so more severe cold weather impacts.					
Growing Degree Days+ Daily mean temperature: °C > 5.5°C	1,909 (1,907 to 1,912)	2,148 (2,089 to 2,238)	2,221 (2,183 to 2,302)	2,383 (2,293 to 2,469)	2,939 (2,823 to 3,115)
Energy available for plant growth over a year. This is not a measure of season length.					
Heating Degree Days+ Daily mean temperature: °C < 15.5°C	2,182 (2,179 to 2,183)	1,993 (1,945 to 2,026)	1,909 (1,864 to 1,945)	1,776 (1,757 to 1,922)	1,424 (1,340 to 1,561)
Indicator of energy demand for heating.					
Cooling Degree Days+ Daily mean temperature: °C > 22°C	20 (19 to 21)	39 (33 to 50)	43 (38 to 62)	57 (44 to 77)	148 (127 to 202)
Indicator of energy demand for cooling.					

* Summer days above the stated temperature thresholds can occur at any time of year

+ Degree Days are not a number of days, but the number of degrees the daily average temperature exceeds the threshold, each day, added up over a year.

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Dorset is vulnerable and exposed to climate change impacts

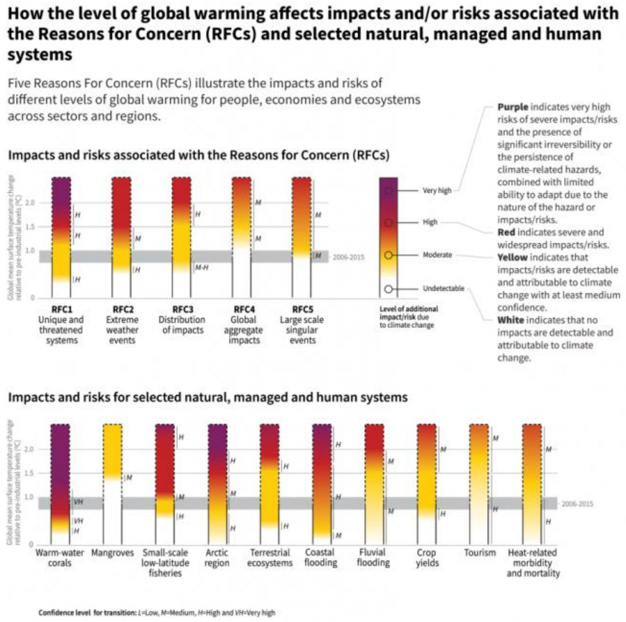
- Dorset is already experiencing the direct impacts of climate change, which is having a growing effect on lives and livelihoods across the county.
- Sea level rise is increasing the risks of coastal flooding and coastal erosion.
- Heavier rainfall is increasing the risk of river and surface water flooding.
- More frequent and intense heatwaves are increasing the risks to human health and productivity, and increasing the risks of wildfire.
- Warmer and more acidic marine waters are causing some native species to disappear and new species to arrive.
- Spring weather is arising earlier, leading to longer growing seasons, but causing difficulties for hibernating animal species.
- Dorset is also experiencing the indirect impacts of climate change in other parts of the world that disrupt supply chains for food and other goods and services.
- Climate change impacts in other parts of the world increase political instability and migration pressures.

Paris Agreement (2015)

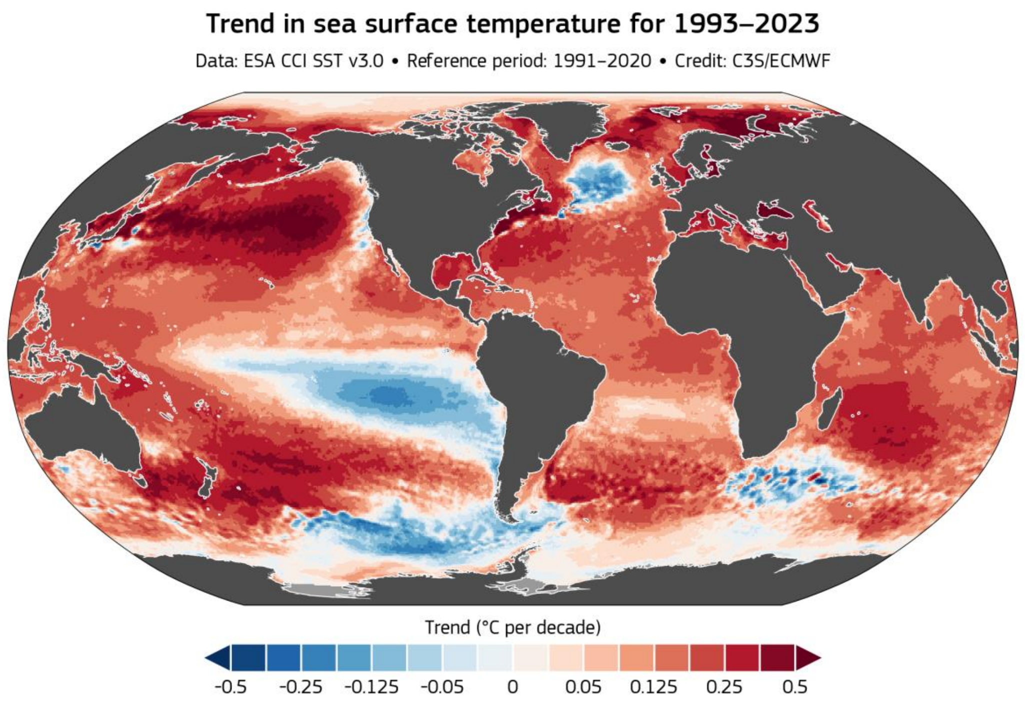
- Article 2: "This Agreement, in enhancing the implementation of the Convention, including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change"
- Article 4: "In order to achieve the long-term temperature goal set out in Article 2, Parties aim to reach global peaking of greenhouse gas emissions as soon as possible, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty."

‘Global Warming of 1.5°C’ (2018)

“There are multiple lines of evidence that since AR5 the assessed levels of risk increased for four of the five Reasons for Concern (RFCs) for global warming to 2°C (*high confidence*). The risk transitions by degrees of global warming are now: from high to very high risk between 1.5°C and 2°C for RFC1 (Unique and threatened systems) (*high confidence*); from moderate to high risk between 1°C and 1.5°C for RFC2 (Extreme weather events) (*medium confidence*); from moderate to high risk between 1.5°C and 2°C for RFC3 (Distribution of impacts) (*high confidence*); from moderate to high risk between 1.5°C and 2.5°C for RFC4 (Global aggregate impacts) (*medium confidence*); and from moderate to high risk between 1°C and 2.5°C for RFC5 (Large-scale singular events) (*medium confidence*).”



Global climate trends: sea surface temperature



Copernicus Climate Change Service
European State of the Climate | 2023

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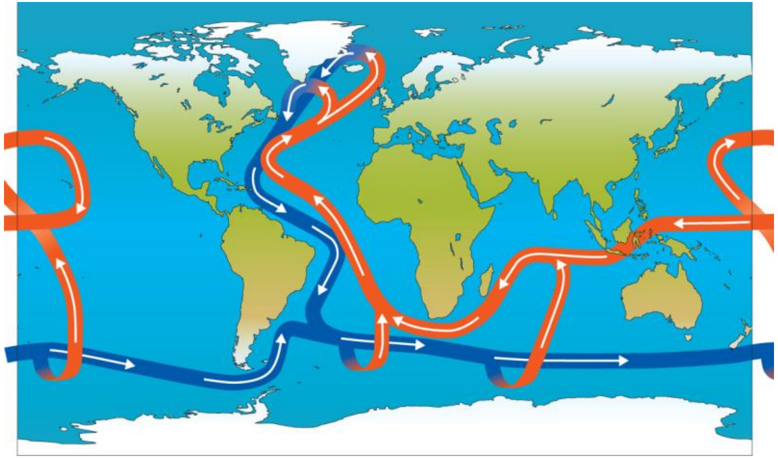
The Atlantic Meridional Overturning Circulation (AMOC)

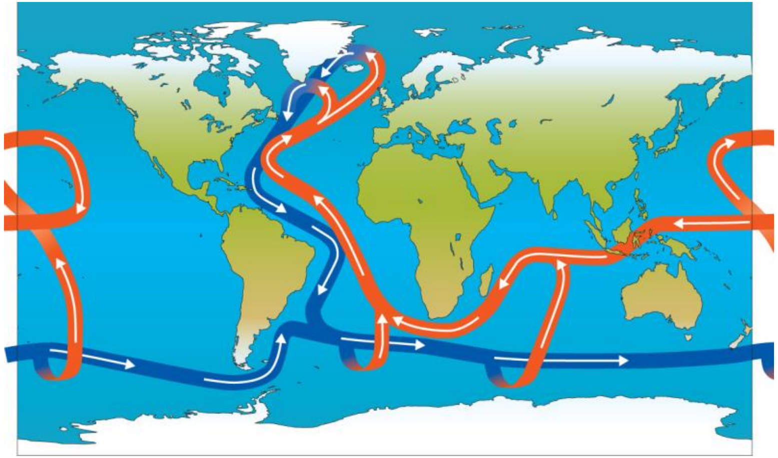
- The AMOC is a large system of ocean currents, like a conveyor belt, driven by differences in temperature and salt content – the water's density.
- As warm water flows northwards it cools and some evaporation occurs, which increases the amount of salt.
- Low temperature and a high salt content make the water denser, and this dense water sinks deep into the ocean.
- The cold, dense water slowly spreads southwards, several kilometres below the surface.
- Eventually, it gets pulled back to the surface and warms in a process called "upwelling" and the circulation is complete.



This global process makes sure that the world's oceans are continually mixed, and that heat and energy are distributed around the earth. This, in turn, contributes to the climate we experience today.

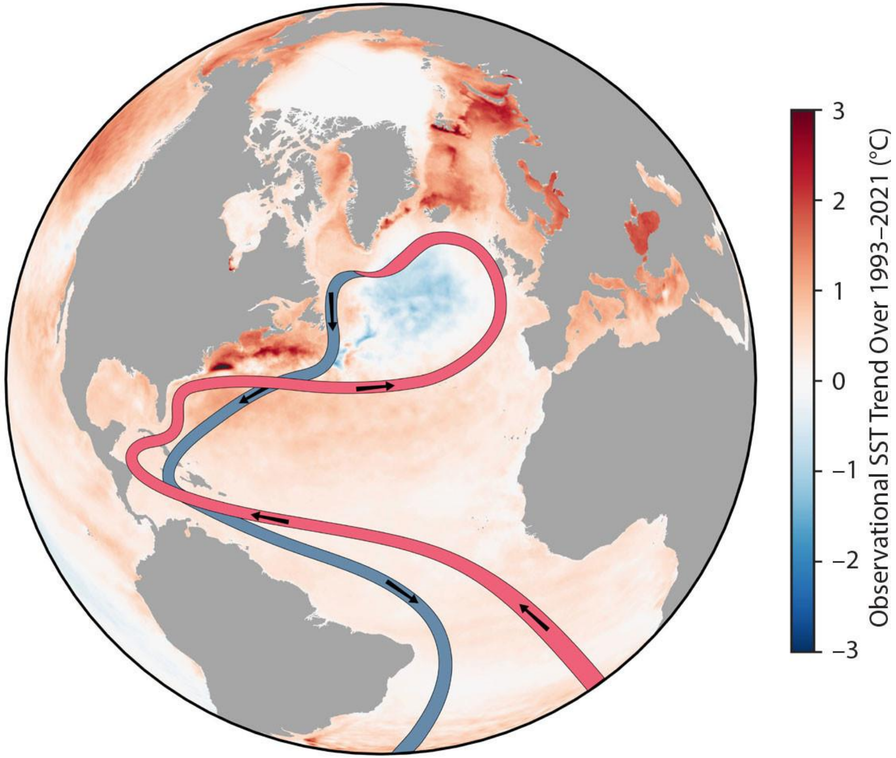
The Atlantic Meridional Overturning Circulation (AMOC)

- Climate change could weaken the AMOC by reducing the amount of water that sinks at high latitude.
- Atmospheric warming, and increases in rainfall and ice melt, both make surface ocean water lighter, reducing its ability to sink at high latitude, and weakening the AMOC.
- Under certain conditions, this weakening may be irreversible, so the AMOC may not recover even if climate change was reversed.



The most recent report by the Intergovernmental Panel on Climate Change judged that, although a weakening of the AMOC by 2100 is very likely, there is "medium confidence" that a collapse will not occur.

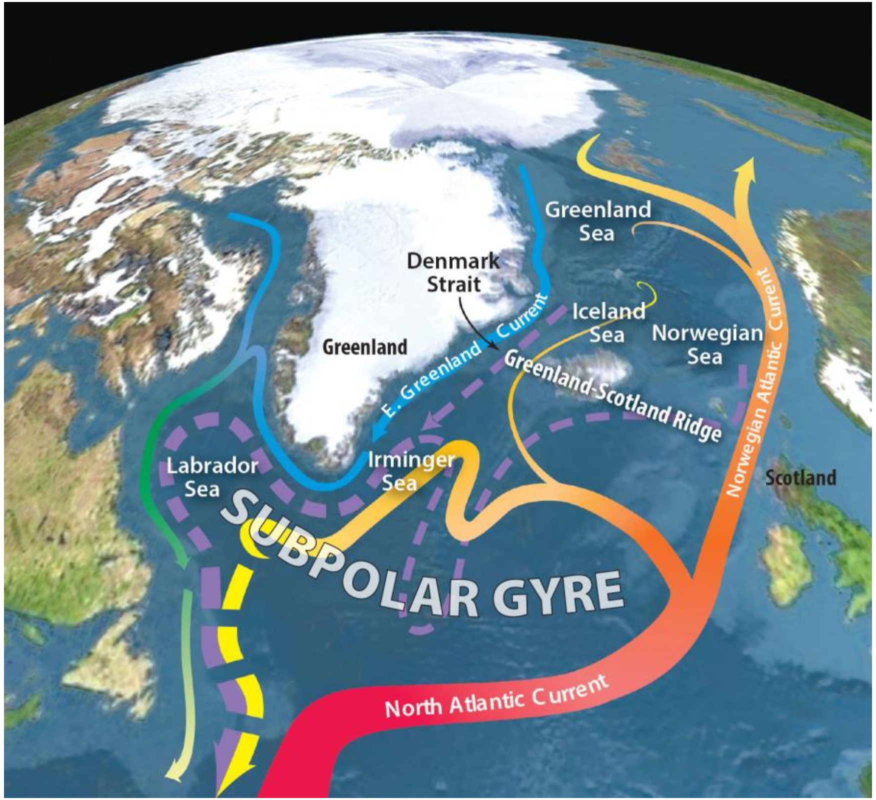
The Atlantic Meridional Overturning Circulation (AMOC)



This graphic shows a highly simplified schematic of the Atlantic Meridional Overturning Circulation (AMOC) against a backdrop of the sea surface temperature trend since 1993 from the Copernicus Climate Change Service.

From: Rahmstorf, S. 2024. Is the Atlantic overturning circulation approaching a tipping point? Oceanography 37(3):16–29, https://doi.org/10.5670/oceanog.2024.501.

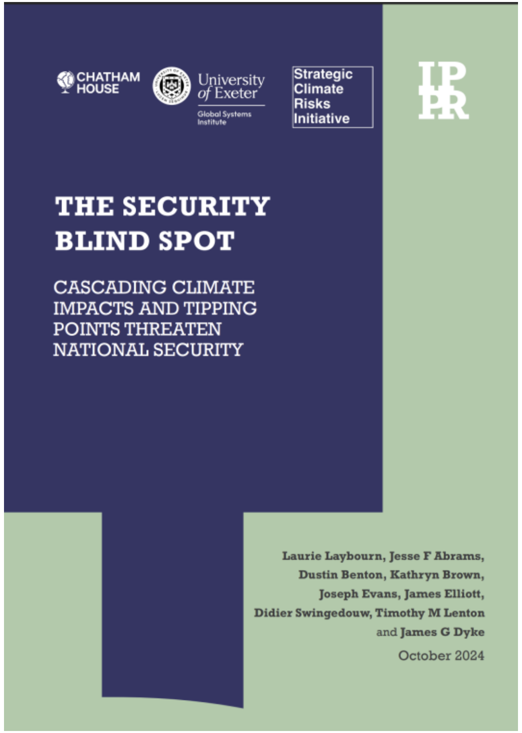
The Atlantic Meridional Overturning Circulation (AMOC)



Present surface flows (solid lines) and deep flows (dashed lines) are shown for the northern Atlantic and the Nordic Seas.

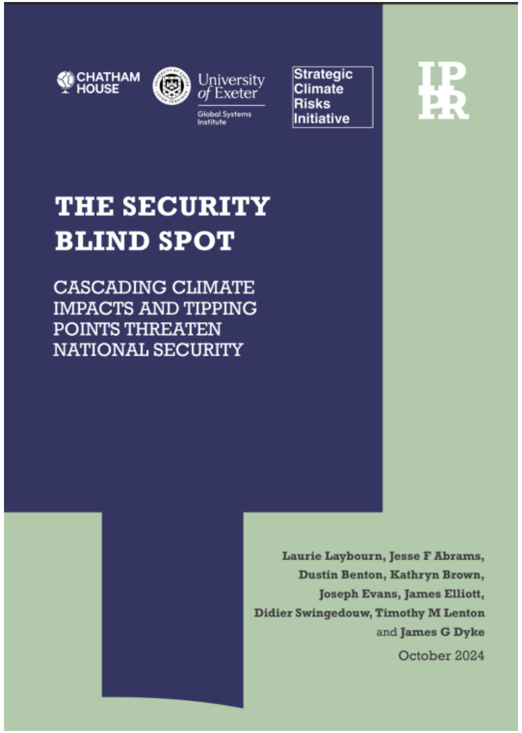
From: Rahmstorf, S. 2024. Is the Atlantic overturning circulation approaching a tipping point? Oceanography 37(3):16–29, https://doi.org/10.5670/oceanog.2024.501.

Collapse of the Atlantic Meridional Overturning Circulation



- The collapse of the Atlantic Meridional Overturning Circulation (AMOC) would profoundly destabilise national and global security.
- Collapse would effectively wipe out crop growing in the UK and combined with other effects of climate change, would cause catastrophic losses to key crops globally.
- The cascading consequences for health, economic stability, political cohesion, trade and geopolitics would be severe, creating unmanageable security outcomes.
- A collapse this century cannot be ruled out without urgent international action to reduce emissions.

Collapse of the Atlantic Meridional Overturning Circulation



- Meanwhile, the collapse of a component of the AMOC – in the North Atlantic subpolar gyre (SPG) – could happen sooner and be triggered at low levels of warming.
- While less severe, its impacts would disrupt weather patterns in the UK and regionally, eroding security.
- Evidence suggests that the likelihood of this ‘SPG collapse’ is unignorably high – up to a 45 per cent chance of occurring this century and happening as early as 2040, if not before.

New paper published in August 2025

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Shutdown of northern Atlantic overturning after 2100 following deep mixing collapse in CMIP6 projections

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Keywords: AMOC, subpolar gyre, CMIP6, collapse

Supplementary material for this article is available online

Abstract
Several, more recent global warming projections in the coupled model intercomparison project 6 contain extensions beyond year 2100–2300/2500. The Atlantic meridional overturning circulation (AMOC) in these projections shows transitions to extremely weak overturning below the surface mixed layer (<6 Sv; 1 Sv $= 10^6$ m^3 s^{-1}) in all models forced by a high-emission (SSP585) scenario and sometimes also forced by an intermediate- (SSP245) and low-emission (SSP126) scenario. These extremely weak overturning states are characterised by a shallow maximum overturning at depths less than 200 m and a shutdown of the circulation associated with North Atlantic deep water formation. Northward Atlantic heat transport at 26°N decreases to 20%–40% of the current observed value. Heat release to the atmosphere north of 45°N weakens to less than 20% of its present-day value and in some models completely vanishes, leading to strong cooling in the subpolar North Atlantic and Northwest Europe. In all cases, these transitions to a weak and shallow AMOC are preceded by a mid-21st century collapse of maximum mixed-layer depth in Labrador, Irminger and Nordic Seas. The convection collapse is mainly caused by surface freshening from a decrease in northward salt advection due to the weakening AMOC but is likely initiated by surface warming. Maximum mixed-layer depths in the observations are still dominated by internal variability but notably feature downward trends over the last 5–10 years in all deep mixing regions for all data products analysed. This could be merely variability but is also consistent with the model-predicted decline of deep mixing.

1. Introduction

The Atlantic meridional overturning circulation (AMOC) transports relatively warm upper-ocean water to the north, where it sinks and returns as cold, deep water to the South Atlantic. Changes in AMOC strongly impact northward ocean heat transport and the climate of the Atlantic mid- and high-latitudes, anthropogenic carbon and oxygen uptake by the ocean, sea level in the northern North Atlantic and the location of tropical rainfall belts [1–3]. In 1961, it was demonstrated that a simple theoretical model of the thermohaline (i.e. temperature and salinity driven) circulation possesses two modes of operation with possible abrupt transitions between the two, when a saddle-node bifurcation (also called tipping point) is passed [4]. Although this simple model is highly idealised, it has since been shown that a full suite of ocean and climate models of increasing complexity, even up to an eddy-resolving ocean, reproduces this fundamental behaviour [5]. Paleoclimatic evidence points to major abrupt climate changes during

"Of particular concern is our finding that deep convection in many models stops in the next decade or two, and that this is a tipping point which pushes the northern AMOC into a terminal decline from which it will take centuries to recover, if at all. As a result, CMIP6 models point to a significantly higher risk than previously assumed for the AMOC to evolve to a state in which the northern AMOC has vanished."

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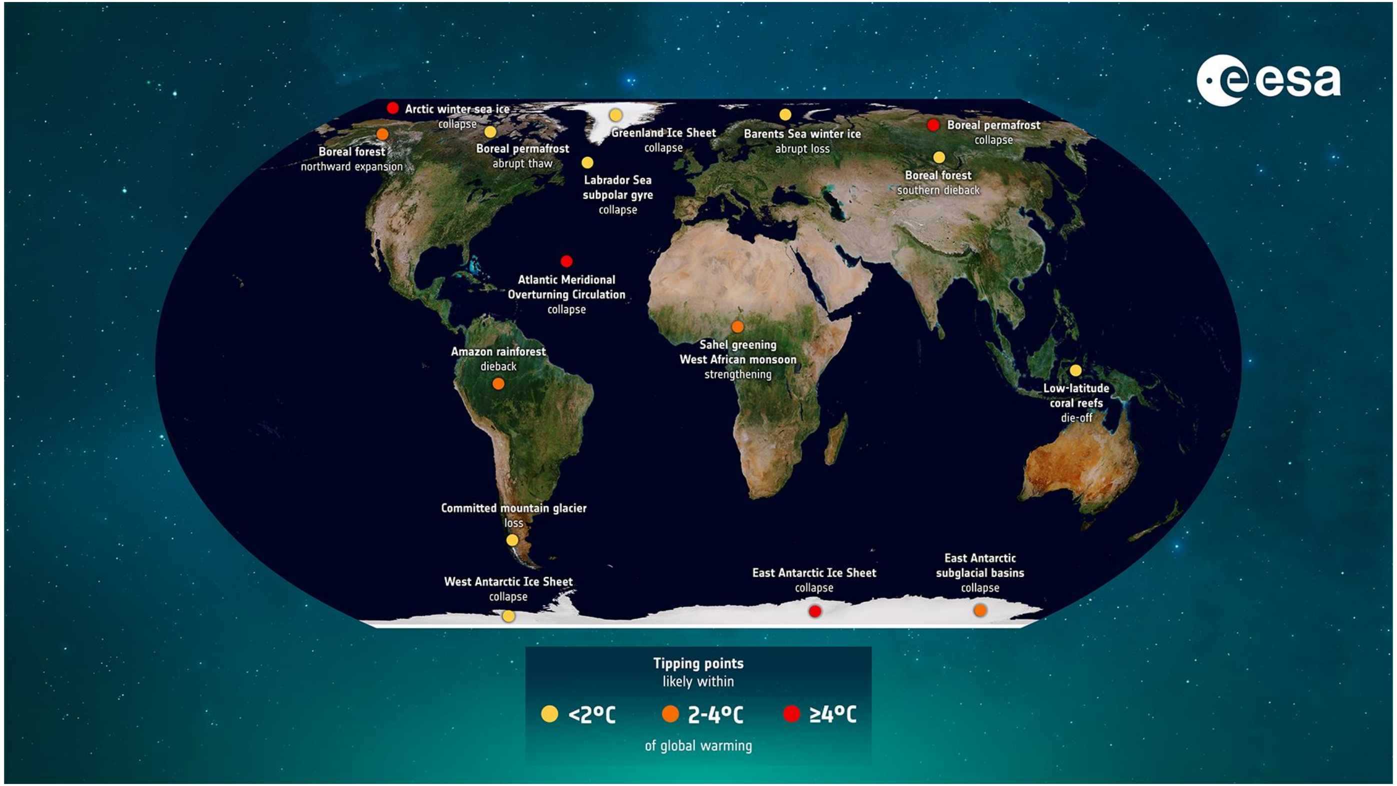
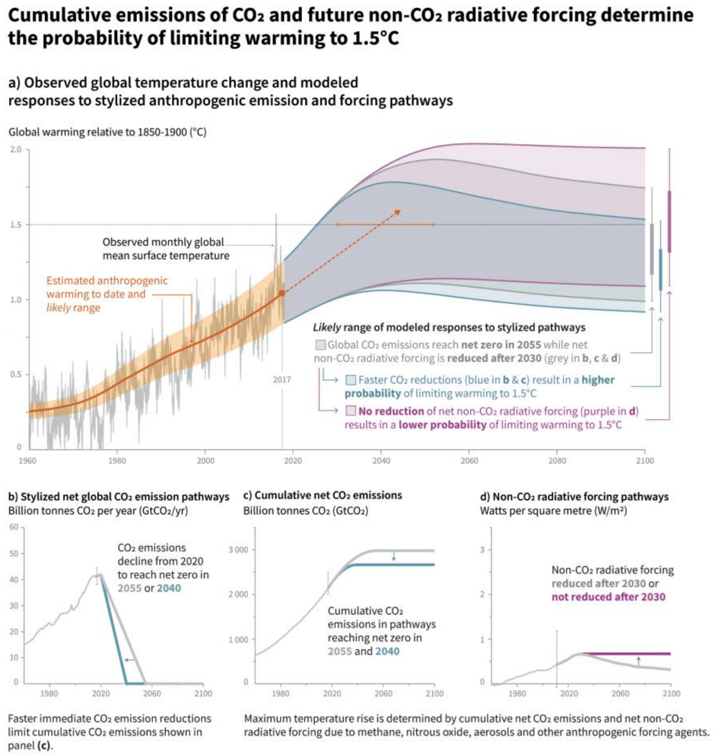
Climate tipping points and thresholds

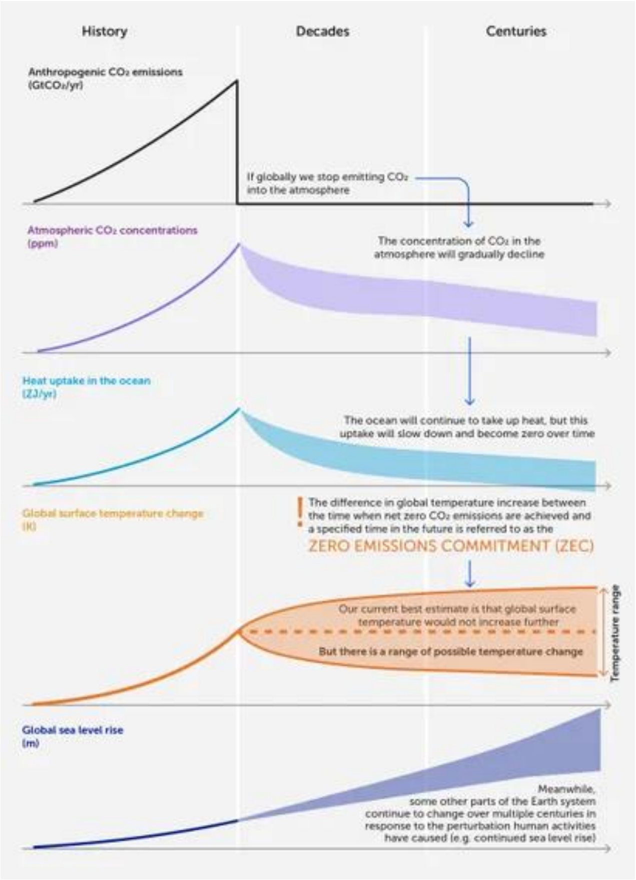


‘Global Warming of 1.5°C’ (2018)

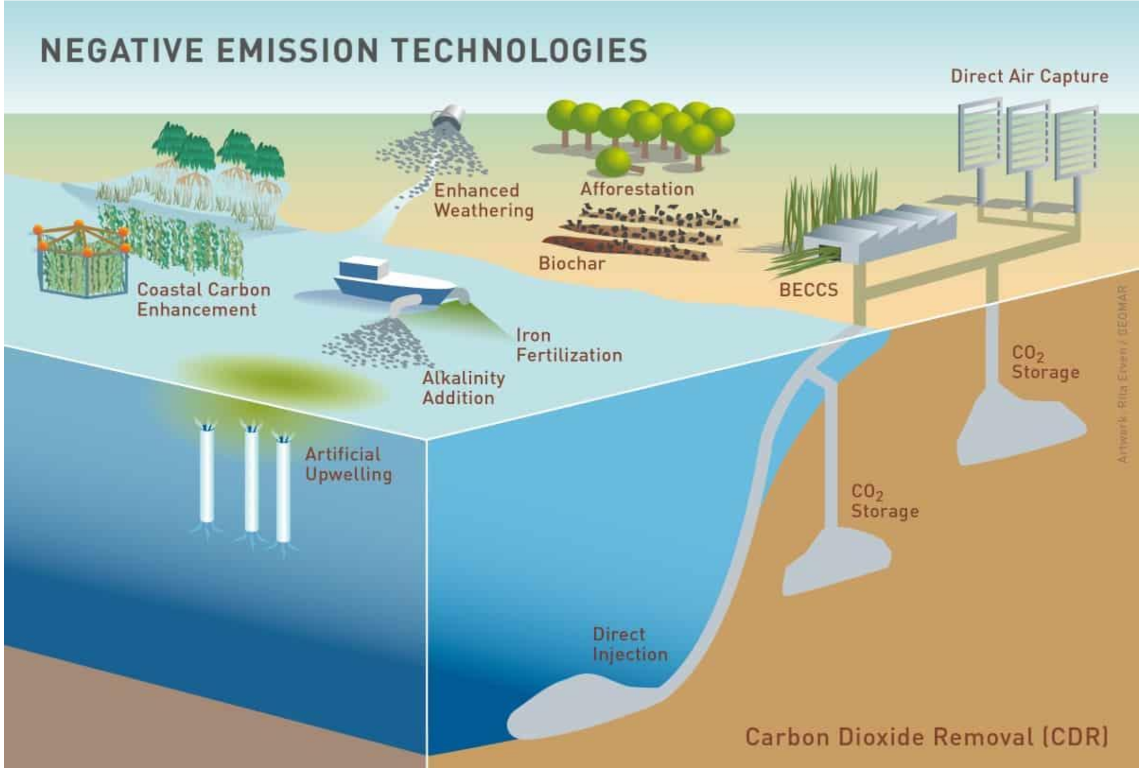
- “Reaching and sustaining net zero global anthropogenic CO_2 emissions and declining net non-CO_2 radiative forcing would halt anthropogenic global warming on multi-decadal times cales (*high confidence*)”.
- “In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030…reaching net zero around 2050”.
- “For limiting global warming to below 2°C, CO_2 emissions are projected to decline by about 25% by 2030 in most pathways…and reach net zero around 2070”.



Impact of net zero emissions



‘Negative emissions’



Climate Change Committee (2019)

- The UK should set and vigorously pursue an ambitious target to reduce greenhouse gas emissions (GHGs) to 'net-zero' by 2050, ending the UK's contribution to global warming within 30 years.
- Reflecting their respective circumstances, Scotland should set a net-zero GHG target for 2045 and Wales should target a 95% reduction by 2050 relative to 1990.
- A net-zero GHG target for 2050 will deliver on the commitment that the UK made by signing the Paris Agreement. It is achievable with known technologies, alongside improvements in people's lives, and within the expected economic cost that Parliament accepted when it legislated the existing 2050 target for an 80% reduction from 1990.

Climate Change Act (2008) – as amended in 2019

The target for 2050

(1) It is the duty of the Secretary of State to ensure that the net UK carbon account for the year 2050 is at least 100% (80%) lower than the 1990 baseline.

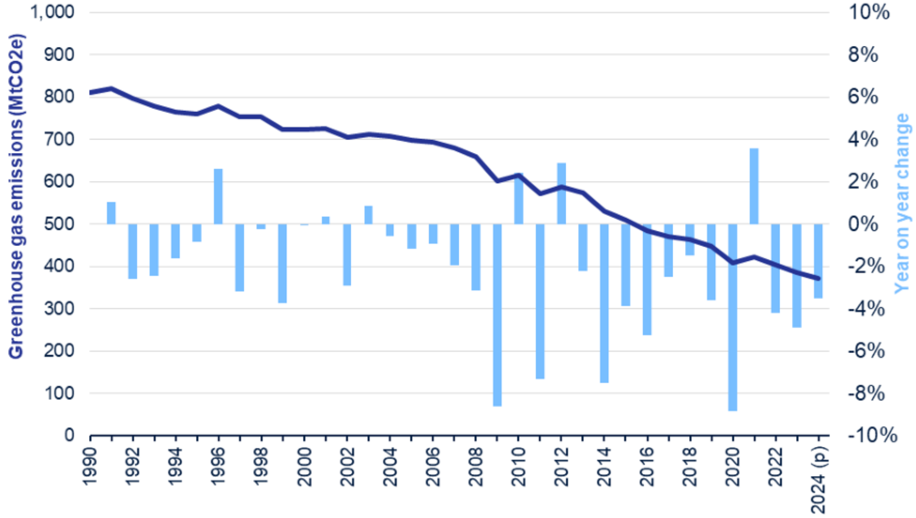
(2) “The 1990 baseline” means the aggregate amount of—

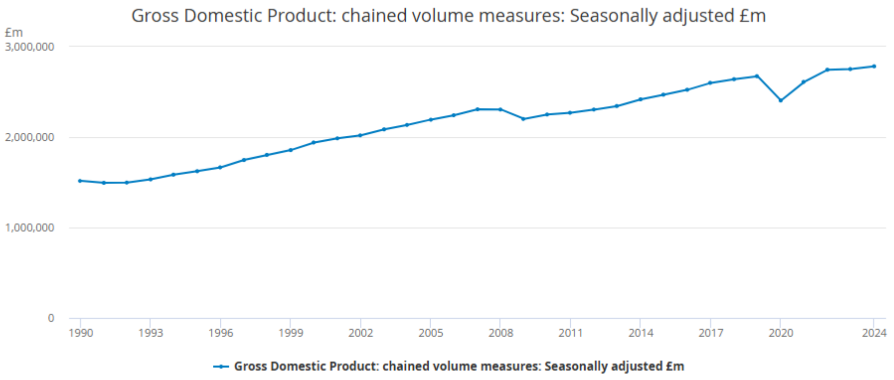
(a) net UK emissions of carbon dioxide for that year, and

(b) net UK emissions of each of the other targeted greenhouse gases for the year that is the base year for that gas.

UK greenhouse gas emissions

In 2024, UK territorial greenhouse gas emissions were 371 million tonnes carbon equivalent (MtCO2e), down 4% from 2023 and 54% from 1990.





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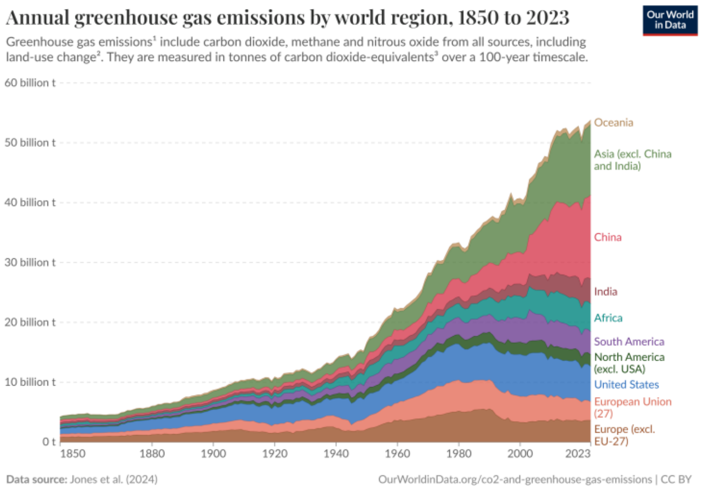
Global greenhouse gas emissions

UK	= <1%
China	= 26.0%
United States	= 10.9%
India	= 7.8%
Africa	= 8.7%



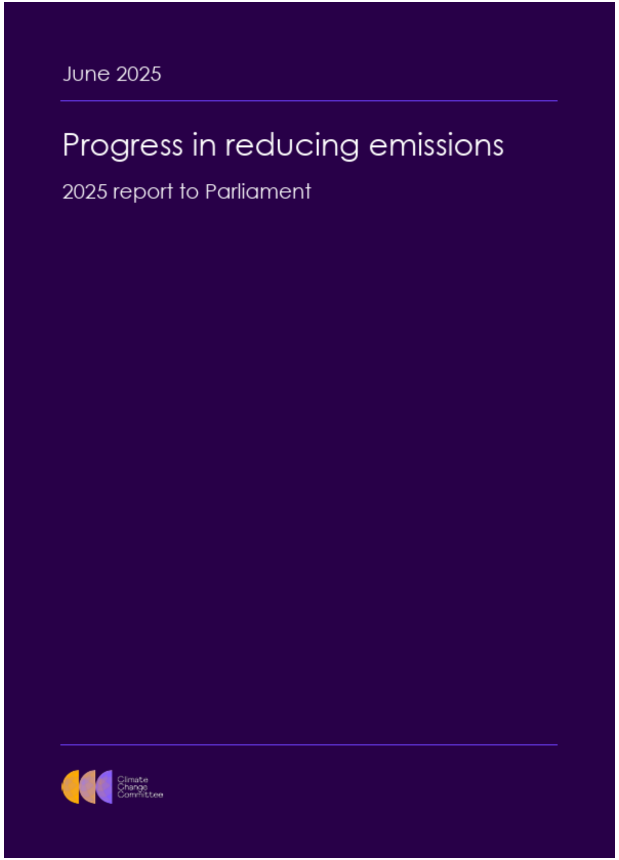
1. Greenhouse gas emissions A greenhouse gas (GHG) is a gas that causes the atmosphere to warm by absorbing and emitting radiant energy. Greenhouse gases absorb radiation that is radiated by Earth, preventing this heat from escaping to space.
Carbon dioxide (CO_2) is the most well-known greenhouse gas, but there are others including methane, nitrous oxide, and in fact, water vapor.
Human-made emissions of greenhouse gases from fossil fuels, industry, and agriculture are the leading cause of global climate change.
Greenhouse gas emissions measure the total amount of all greenhouse gases that are emitted. These are often quantified in carbon dioxide equivalents (CO_2eq) which take account of the amount of warming that each molecule of different gases creates.

2. Land-use change emissions Land-use change emissions are the carbon dioxide (CO_2) released or removed when land use changes.
They mostly come from deforestation, forest degradation, turning forests or other ecosystems into cropland or pasture, and draining peatlands.
When vegetation is cleared or burned, the carbon stored in plants and soil is released as CO_2.
Land-use change can also remove CO_2 from the atmosphere when vegetation grows back, for example, when forests regrow. This can lead to negative emissions in the data.
In scientific and policy discussions, these emissions are sometimes grouped under the broader term "LULUCF" (land use, land-use change, and forestry).
These estimates are uncertain because they depend on limited data and assumptions about land cover, how much carbon is stored in ecosystems, and how land is managed.
They are separate from fossil CO_2 emissions from burning fossil fuels and certain industrial processes.

3. Carbon dioxide equivalents (CO_2eq) Carbon dioxide is the most important greenhouse gas, but not the only one. To capture all greenhouse gas emissions, researchers express them in "carbon dioxide equivalents" (CO_2eq). This takes all greenhouse gases into account, not just CO_2.
To express all greenhouse gases in carbon dioxide equivalents (CO_2eq), each one is weighted by its global warming potential (GWP) value. GWP measures the amount of warming a gas creates compared to CO_2. CO_2 is given a GWP value of one. If a gas had a GWP of 10 then one kilogram of that gas would generate ten times the warming effect as one kilogram of CO_2.
Carbon dioxide equivalents are calculated for each gas by multiplying the mass of emissions of a specific greenhouse gas by its GWP factor.
This warming can be stated over different timescales. To calculate CO_2eq over 100 years, we'd multiply each gas by its GWP over a 100-year timescale (GWP100).
Total greenhouse gas emissions – measured in CO_2eq – are then calculated by summing each gas' CO_2eq value.

Climate Change Committee (2025)

“Climate change is here, now. Until the world reaches Net Zero CO_2 emissions, with deep reductions in other greenhouse gases, global temperatures will continue to rise. That will inevitably lead to increasingly extreme weather, including in the UK…At the same time, continued reliance on fossil fuels undermines UK energy security. Household energy bills rose sharply following Russia’s invasion of Ukraine and have remained high since. It is the price of gas that has driven up both gas and electricity bills. With North Sea resources largely used up, a fossil-fuelled future would leave the UK increasingly dependent on imports, and energy bills would remain subject to volatile fossil fuel prices.”


June 2025

Progress in reducing emissions

2025 report to Parliament

Climate Change Committee

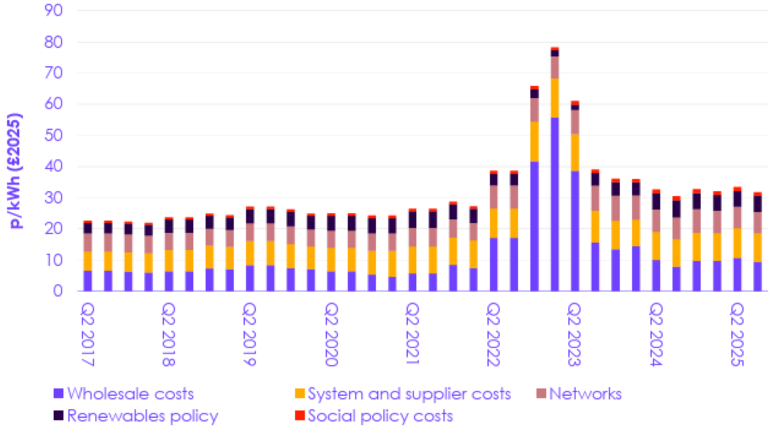
Grantham Research Institute on Climate Change and the Environment

The Queen’s Anniversary Prizes For Higher and Further Education 2021

Climate Change Committee (2025)

"…At the same time, continued reliance on fossil fuels undermines UK energy security. Household energy bills rose sharply following Russia's invasion of Ukraine and have remained high since. It is the price of gas that has driven up both gas and electricity bills. With North Sea resources largely used up, a fossil-fuelled future would leave the UK increasingly dependent on imports, and energy bills would remain subject to volatile fossil fuel prices."

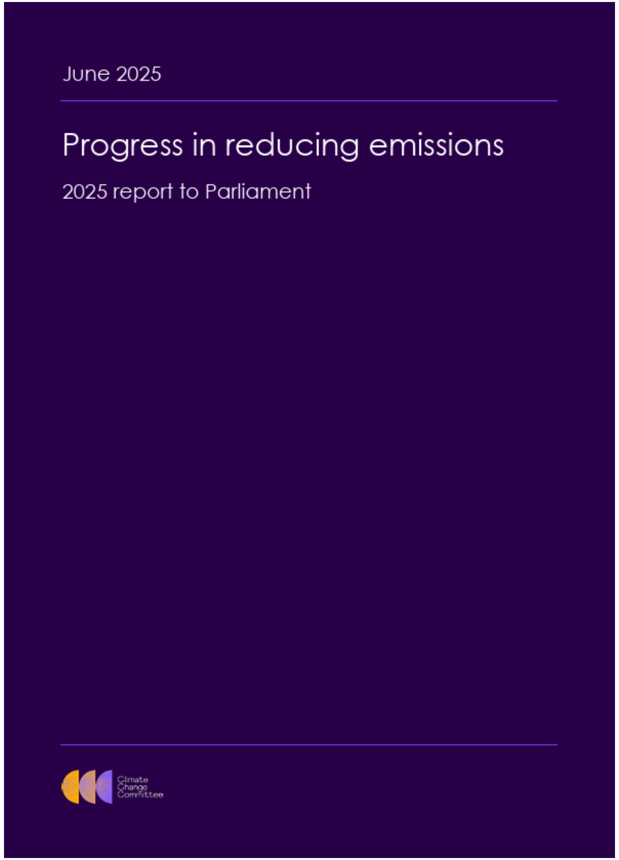
Figure A2 Domestic retail electricity price under the energy price cap (2017–2025), for Great Britain



Description: Domestic retail electricity prices peaked in 2023 driven by higher wholesale costs. Policy costs associated with renewables make up a small share of the retail price.
Source: Ofgem (2025) *Energy Price Cap Q3 2025*; CCC analysis.
Notes: (1) Prices in £2025. (2) Wholesale costs exclude carbon price. (3) System and supplier costs category includes supplier costs, Capacity Market, carbon price, VAT, and other smaller policies. (4) Renewables policy includes Renewables Obligation, Feed-in Tariffs, and Contracts for Difference. (5) Social policy costs include Warm Homes Discount and Energy Company Obligation. (6) Price reflects consumption for a typical household and incorporates the standing charge element.

Climate Change Committee (2025)

"Today, more than half the energy used in the economy is wasted because of the inherent inefficiency of fossil-fuelled technology. Electrification could halve that waste. The transition to a predominantly home-grown energy supply system powering modern, efficient, electric technologies will reduce household bills, increase energy security, and improve air quality, as well as keeping the UK on the path to Net Zero."


June 2025

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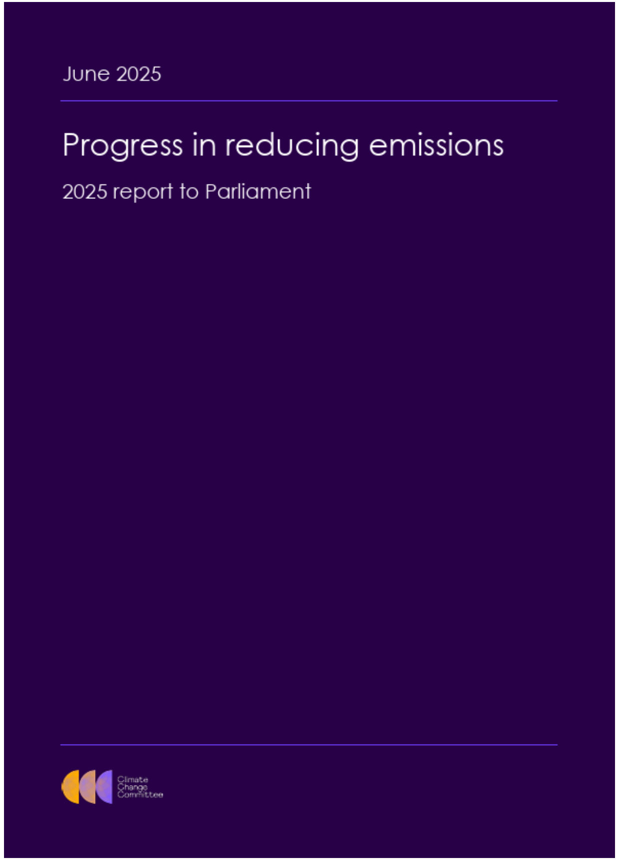
Climate Change Committee (2025)

“Globally, we are seeing a shift towards low-carbon technologies. In 2024, worldwide, one in seven of all new car sales were fully electric, a record 117 GW of wind generation capacity was installed, and total investment in clean energy technologies and infrastructure reached $2 trillion - twice the investment in fossil fuel technologies. Rising demand and falling prices reinforce each other, creating powerful market forces which, combined with effective policy, mean that rapid change is possible.”


June 2025

Progress in reducing emissions

2025 report to Parliament

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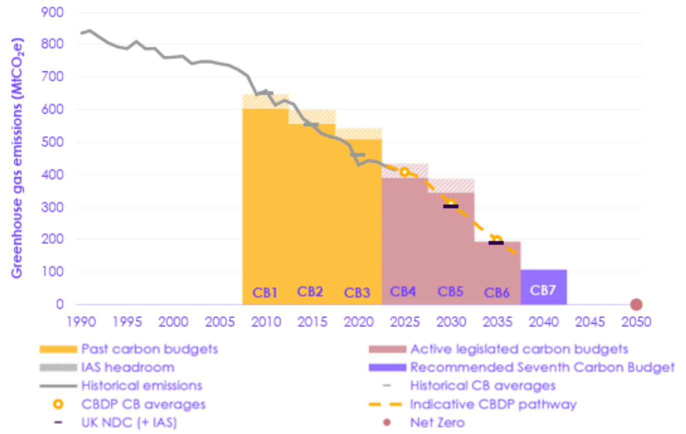
Climate Change Committee (2025)

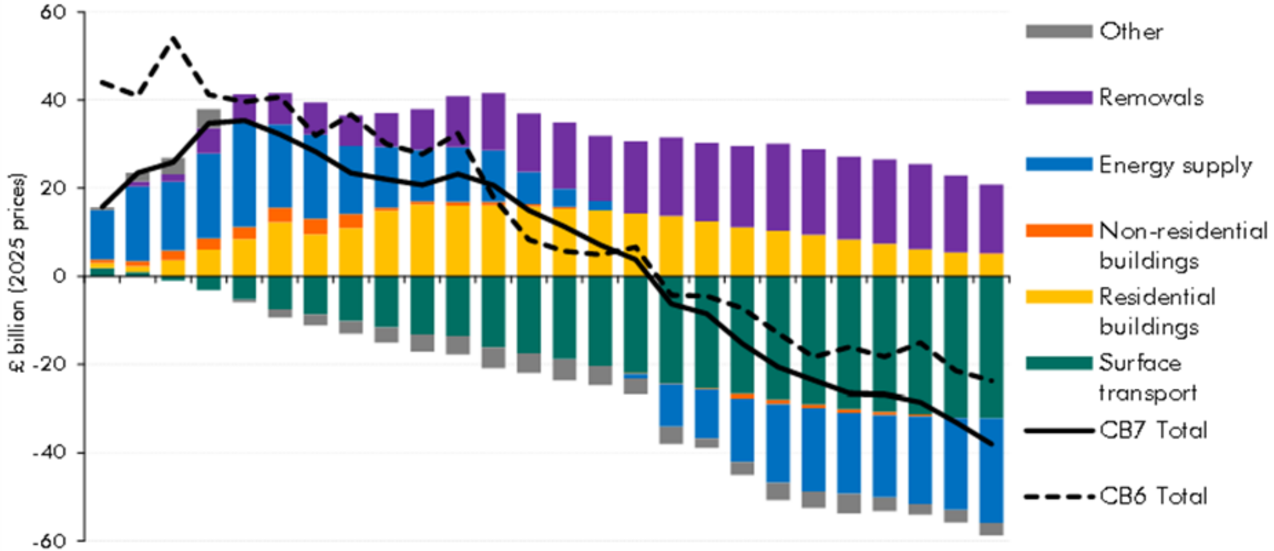
"The UK has an ambitious target to reduce emissions by 68% on 1990 levels by 2030, our Nationally Determined Contribution (NDC) to the Paris Agreement and the first UK target consistent with achieving Net Zero in 2050. This target is within reach, provided the Government stays the course. Progress to date has been primarily driven by decarbonisation of the electricity system, with renewables replacing both coal and, increasingly, gas. Future progress will require a broader change, especially using low-carbon electricity to replace oil and gas in surface transport, heat in buildings, and industry, alongside nature-based solutions such as tree planting, and engineered removals."

Figure 1.1 UK historical emissions, the Government's existing pathway, and the UK's targets



Description: UK emissions have halved since 1990, and the UK met its first three carbon budgets.
Source: DESNZ (2025) *Provisional UK greenhouse gas emissions national statistics 2023*; DESNZ (2025) *Final UK greenhouse gas emissions national statistics: 1990 to 2023*; DESNZ (2023) *Carbon Budget Delivery Plan*; Department for Business, Energy, and Industrial Strategy (BEIS) (2021) *Net Zero Strategy*; CCC (2025) *The Seventh Carbon Budget*.
Notes: (1) Emissions from international aviation and shipping (IAS) are included in historical emissions and the Carbon Budget Delivery Plan (CBDP) pathway and added to the Nationally Determined Contribution (NDC) to allow for a direct comparison. (2) The CBDP projections include only the quantified plans. Unquantified plans may lead to further emissions reductions. (3) The annual pathway is an indication of emissions reduction. The UK does not have annual targets but the five-year carbon budgets and 2030 NDC must be achieved. (4) We have adjusted the Government's published CBDP pathway and baseline for land use to account for changes in emissions accounting. (5) 'CB' refers to the UK's carbon budget. 'CB1' refers to the First Carbon Budget; subsequent numbers refer to subsequent carbon budgets. (6) CB7 refers to our recommended level for the Seventh Carbon Budget.

Whole economy costs of net zero



Note: Energy supply includes both the CCC's electricity and fuel supply sectors. We have restated the CCS investment and operating costs from within the energy supply, industry and waste sectors to the removals sector.

Source: CCC, OBR

"In its Seventh Carbon Budget 'Balanced Pathway', the net cost to the economy of reaching net zero is estimated to be £116 billion (in 2025 prices) over the 26 years from 2025 to 2050."

Source: Chart 4.8: CCC estimates of the whole-economy costs of the balanced pathway. 'Fiscal risks and sustainability report', Office for Budget Responsibility, July 2025.

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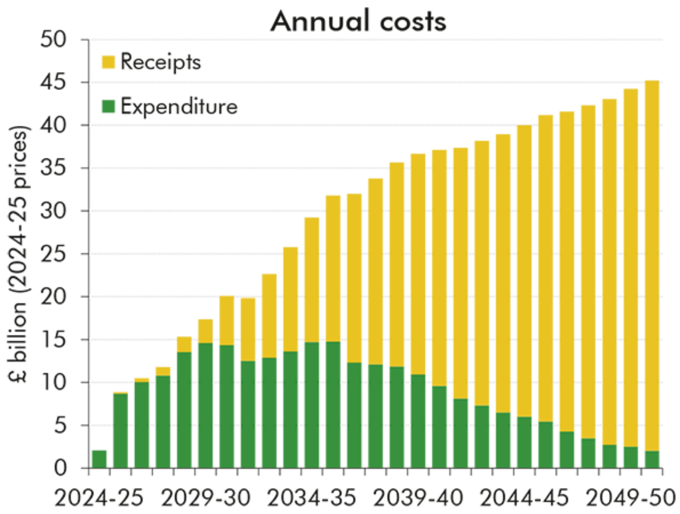
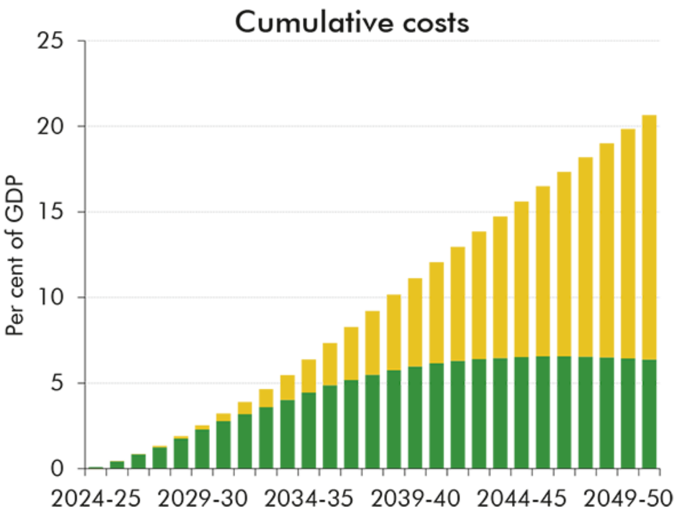
Fiscal costs of net zero





"The total fiscal cost of the net zero transition in our central scenario is an estimated £803 billion, or £30 billion a year on average (0.8 per cent of GDP) (Chart 4.11). Around two-thirds of this comes from lost receipts, and one-third from additional spending."

Source: Chart 4.11: Fiscal costs of the net zero transition. 'Fiscal risks and sustainability report', Office for Budget Responsibility, July 2025.

Dorset Council Plan 2024-2029

"As a rural, coastal county we are especially vulnerable to the negative impacts of climate change, which will include more frequent heatwaves, fewer frost days, heavier rainfall, increased flooding, and more intense storms. Our seaside communities are particularly exposed to rising sea levels which can lead to coastal erosion, flooding, and damage to infrastructure. Our rural communities risk being impacted by unpredictable weather patterns which can harm crops and livestock, disrupt planting and harvesting schedules, and reduce overall agricultural productivity."

Dorset Council Plan 2024-2029

Our vision is to create a climate friendly, nature rich county that is able to adapt and thrive in the face of environmental change.

Our strategic approach to bring this vision to life is as follows:

- Cutting greenhouse gas emissions: We will speed up our efforts to become a carbon neutral county and council, bringing forward our net zero targets by 5 years. As a council we aim to reach net zero by 2035, and the entire county by 2045. By tackling climate change at its source, we can help pave the way for a more sustainable future.
- Halt nature's decline: In collaboration with others, we will take immediate action to help protect and enhance our land, rivers, and seas for wildlife. Through Dorset's Local Nature Recovery strategy, we will set clear goals and build a strong foundation to help make sure spaces for nature are bigger, better and more connected in our county by 2030.
- Prepare for a changing climate: We are committed to helping our communities, ecosystems, and economies adapt to the unavoidable impacts of climate change, ensuring Dorset is resilient and well-prepared for the future.

Dorset Council Plan 2024-2029

Target measures

- deliver a revised carbon reduction target of 80% from 2019 baseline by 2030 to include:
- Dorset Council fleet: transition all small vehicles to electric by 2030 and all large vehicles to use alternative low emission fuels by 2026 to reduce our fleet emissions by 70% by 2026
- generate more of our own energy by installing an additional 5MW of solar PV on our estate by 2030
- switch all our oil-fired heating systems to non-fossil fuel alternatives by 2028
- reduce our emissions from staff travelling for business by at least 25% by 2029
- ensure our services are resilient to climate change by having climate adaptation plans for each service by March 2026
- achieve a 65% recycling and composting rate by 2035 and ensure the optimum use of the
- recycling and composting services provided
- nature recovery target is for 30% of our land to be in positive management for nature by 2030.

Dorset Council Plan 2024-2029

Other targets include

- 80% of our urban verges will be managed to enhance their value for nature by 2030 (currently 50%)
- improve 300 miles of the Rights of Way network, making it more accessible to connect
- people's access to nature by 2030 (30 miles in last 10 years)
- 70% of our county farms land will be managed using sustainable farming practices that balance food production and nature by 2030 (currently 5%)
- 15,000 hectares of Dorset are covered by Landscape Recovery management agreements by 2030 (currently 0 hectares)

Dorset Council Plan 2024-2029

Key actions to deliver this priority - reduce Dorset's impact on climate change by:

- significantly reducing emissions from our fleet vehicles by transitioning all small vehicles to electric by 2030 and all large vehicles to alternative low emission fuels by 2025
- generating more of our own energy by installing an additional 5MW of solar PV on our estate by 2030
- working with others to create a roadmap to help Dorset meet its net-zero goals, identifying the most cost-effective and practical pathways to reduce emissions
- helping residents and organisations to improve energy efficiency and use renewable energy in their homes and buildings through advice, grants and guidance
- develop and implement the Local Nature Recovery strategy, working across organisational systems to deliver change at scale
- renew the rights of way improvement plan (ROWIP) which explains the aspirations and
- improvements proposed for Dorset's public rights of way network to benefit the community, nature and climate and support the local economy

Dorset Council Plan 2024-2029

Leadership and partnership

- work with partners across Dorset to help reduce its carbon footprint by 50% by 2030 (relative to our 2017 baseline)
- work with the farming community to support sustainable farming which will reduce emissions, improve water quality and make more space for nature
- lead on the development and implementation of the Dorset Local Nature Recovery strategy
- support landowners, town and parish councils, businesses, schools and communities to take action to recover nature locally
- continued support of the Dorset Coast Forum and Litter Free Dorset to deliver sustainable practices and nature recovery through their wide partnerships and to the communities of Dorset
- ensure over time that the businesses and organisations we have contracts with provide nature recovery and sustainability credentials as a matter of course
- work with partners to develop a Local Area Energy plan

Dorset Council Plan 2024-2029

Other keys facts

- Dorset's greenhouse gas emissions fell by over 4% from 2019-2021, and by a third since 2005
- Dorset's renewable energy capacity continues to increase. It now stands at 347 MW (2022), an increase of 16% in a year
- our unique landscape offers huge potential for renewable energy. We produce far more renewable electricity than many authorities (328,383 MWH)
- our unique landscape provides opportunities to expand the blue and green economy and exploit the higher educational potential of studying the environment
- Dorset's environmental economy is worth between £0.9bn and £2.5bn per annum. It also supports between 17,000 and 61,000 jobs in the economy.

Summary

- Climate change is real, happening all around us, and driven by human activities.
- Net zero means stopping climate change.
- Many, but not all (eg sea level rise), of the impacts of climate change will stop growing in frequency and intensity soon after the world reaches net zero annual emissions of greenhouse gases (particularly carbon dioxide).
- It will take many centuries for the world to return to its pre-industrial climate without significant reductions in carbon dioxide concentrations in the atmosphere (though planting trees or artificial carbon dioxide removal).
- The UK target of achieving net zero by 2050 is not “arbitrary” – it is based on scientific analysis of the action required to limit warming to no more than 1.5°C (which is now almost impossible without an overshoot).
- The UK will not persuade others to increase their efforts to achieve net zero if we are not trying seriously to achieve net zero.