COP29 Key outcomes and next steps for the UK

December 2024

Climate Change Committee

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This report is available online at: www.theccc.org.uk/publications

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Acknowledgements

The Committee would like to thank:

The team that prepared this report and its analysis. This was led by Emma Pinchbeck, James Richardson, Emily Nurse, Richard Millar, Viv Scott, and Sam Karslake, and included Rose Armitage, Florence Bates, Tom Dooks, Cilla Hellgren, Elena Saggioro, Sophie Vipond, and Eveline White.

Executive summary

COP29 was held this year in Baku, Azerbaijan. It was the latest annual United Nations (UN) climate conference, which negotiates collective global actions and sets an overarching framework for national level climate policies. It delivered mixed results against a background of wider geopolitical uncertainty, the warmest year on record, and major climate change-exacerbated extreme events occurring worldwide.

The UK had a strong presence at COP29. Announcement of the UK 2035 Nationally Determined Contribution (NDC) emissions reduction target of at least 81% below 1990 levels, in line with the Climate Change Committee's advice, was a clear statement of intent. It was well received by international partners during the COP. The announcement builds on the record of UK emission reductions to date, including rapid progress in power sector decarbonisation over the past decade through the phase-out of UK coal power generation and market-driven deployment of renewables. The underpinning of this progress by the UK Climate Change Act 2008 and carbon budgets is widely recognised and is increasingly being replicated in other countries. Over 20 countries now use climate change advisory committees to support their governments, sharing knowledge through the International Climate Councils Network (ICCN).

Outcomes of COP29

Overall, COP29 maintained the process of international climate diplomacy, negotiating key agreements on finance and carbon markets. However, it deferred several other decisions, leaving these and urgent progress on mitigation to next year's COP30 in Brazil. Key outcomes include, but are not limited to, the following:

- **A new finance goal.** Agreement was reached on a new climate finance goal of at least $300 billion per year from the developed world by 2035. This was a compromise outcome, with some developing countries expressing frustration and disappointment. There was recognition of the much greater scale of overall finance needed, calling for at least $1.3 trillion per year by 2035. This marks a shift to formally recognising the wider mobilisation required, which will only be achieved if climate change investment is mainstreamed into wider public and private finance flows.

- **Finalised carbon market agreement.** COP29 saw agreement on the rules underpinning both bilateral carbon trading and a centralised crediting mechanism. The conclusion of these negotiations was a necessary advance. Functioning carbon markets can enable increased global ambition and emissions reduction delivery, subject to robust standards, which must now be developed.

- **Wider progress on mitigation was limited.** The announcement of 2035 NDCs from Brazil, the United Arab Emirates (UAE), and the UK gave useful early momentum towards the submission of NDCs from all countries next year. But in the negotiations, there was a failure to build on the first global stocktake from last year's COP28. Urgent and substantial steps are required to contribute towards meeting the Paris Agreement temperature goal – notably to transition away from fossil fuels. It leaves a huge amount of progress to be made prior to next year's COP30 in Brazil.

- **Limited progress on adaptation.** COP29 demonstrated the growing importance of adaptation and the need for greater support and guidance for countries. Some functional progress was made on defining indicators for the Global Goal on Adaptation, but key decisions were postponed to COP30.

- **Sectoral coalitions.** Outside of the formal negotiations, work continued to support delivery through state and private sector coalitions. Progress was made in key areas of action including breakthrough technologies, energy storage, methane emissions reduction, and forests.

Next steps for the UK

Working with the COP30 Brazil presidency and other parties, the UK has the opportunity to play a significant diplomatic role in supporting global climate progress in the next year. Key actions include, but are not limited to, the following:

- **Leveraging UK finance sector expertise**. The UK is well positioned to support delivery of the finance goal, including through continuing to pursue reform of international financial institutions and developing wider sources of finance.

- **Continuing to strengthen delivery coalitions**. The UK should clearly set out the processes to coordinate the new UK-led Global Clean Power Alliance, including how it will complement other multilateral and industry coalitions also working on fossil fuel reduction and clean energy.

- **Submitting a comprehensive UK NDC**. Alongside formalising the 81% target, the UK NDC must set out the UK's plans to contribute across the goals of the Paris Agreement, including climate change adaptation and finance.

Realising this opportunity rests on the UK delivering here at home. Building on this year's Progress in reducing emissions 2024 Report to Parliament, the Committee's forthcoming Seventh Carbon Budget advice will set out an updated pathway to Net Zero for the UK and the essential actions needed to meet the UK's 2030 NDC, new 2035 NDC, and Sixth Carbon Budget. The UK must also significantly strengthen its domestic adaptation planning, taking inspiration from international developments on monitoring and evaluation frameworks, transformational adaptation, and broad stakeholder engagement. To support this, the Committee's work on the evidence base for the UK's Fourth Climate Change Risk Assessment will set out a suite of actions to reach a well-adapted UK, helping to focus policy on action to adapt to the climate risks the UK faces.

Chapter 1: COP29, the UNFCCC, and the Paris Agreement

The UN Framework Convention on Climate Change (UNFCCC) is an international agreement that commits countries to efforts to stabilise greenhouse gas (GHG) concentrations to prevent dangerous, human-induced climate change. The 'COP' (Conference of the Parties) is the main decision-making body of the UNFCCC. It is made up of the countries that are UNFCCC signatories, including the UK, and meets annually.

COP21 in 2015 created the Paris Agreement, a global treaty that commits countries to mitigation, adaptation, and finance goals:

- **Mitigation:** limiting global average temperature to well below 2°C above preindustrial levels and pursuing efforts to limit temperature increase to 1.5°C above preindustrial levels.
- **Adaptation**: strengthening the ability to adapt to climate change and build resilience.
- **Finance:** aligning finance flows with a pathway towards low GHG emissions and climate-resilient development.

Past COPs have been effective in bringing countries together to agree a global process and set of rules for tackling climate change under the Paris Agreement, assessing progress, and exchanging knowledge on climate solutions between countries. Decisions at the COP need to be agreed by consensus among national governments, often leading to long and complex negotiations on the draft decisions. Over recent years, the COPs have increasingly become a forum for commitments to be made outside of the formal negotiations, often involving business and civil society coalitions, initiatives, or small collections of countries working together on key topics.

COP29 was held in Baku, Azerbaijan, in November 2024 – coinciding with the most recent meeting of the G20 countries (held in Brazil). Billed as the 'finance COP', this was the last COP in which the Newly Collective Quantified Goal on Climate Finance (NCQG – a new global commitment to mobilise finance to address climate change) could be agreed. It was also the last COP to be held prior to the submission of countries' new NDCs covering the period through to 2035.

COP29 came soon after the conclusion of the UN Convention of Biodiversity COP16 (held in Colombia in October 2024) which, despite some progress, concluded without consensus on key issues such as finance and progress monitoring. The UK has not yet submitted an updated National Biodiversity Strategy and Action Plan, as required under the Biodiversity Convention.

The UK was well-represented at ministerial level and played an active role at COP29 (Box 1). A small delegation from the UK Climate Change Committee also attended, participating in a range of public events and bilateral discussions (Box 2).

Box 1
The UK at COP29

At COP29 there was a clear step-change in the UK's engagement and presence compared to recent years. The Prime Minister attended the World Leaders Summit to announce the UK's new 2035 NDC, one of relatively few leaders of major economies or large emitters to attend. His presence was complemented by senior delegation leadership across the two weeks from the Secretary of State for Energy Security and Net Zero, the Foreign Secretary, and Special Representative on Climate. Other ministers and senior officials from the Department for Energy Security and Net Zero, Department for Environment Food and Rural Affairs, Department for Business and Trade, Department for Education, and the Scottish Government also attended.

The diplomatic power of the UK, as demonstrated by an early NDC announcement, was evident at the COP. UK negotiators and officials were active across many negotiation streams and were called upon to support the Presidency in seeking a balanced outcome in the second week of the COP. Officials ran an impressive schedule of pavilion events which were well-attended, including by senior officials and ministers from partner countries. There was also a strong UK private sector presence advocating the need and benefits of low carbon transition over the two weeks.

Strong UK collaboration with Brazil, which also put forward an early NDC, positioned the UK to provide effective international leadership on ongoing climate negotiations working towards COP30, which Brazil will host in Bélem, in 2025.

Box 2
The ICCN at COP29

The International Climate Councils Network (ICCN) is a collaboration between climate councils that have a national level remit to provide climate mitigation and/or adaptation advice and assessment to their government(s). Initially coordinated by the UK Climate Change Committee and launched at COP26 in collaboration with international partners, the ICCN now numbers over 20 national-level bodies and the EU-wide Scientific Advisory Board, with new members from Ukraine, the Netherlands, and Nigeria welcomed this year.[1]

The ICCN hosted several events at COP29. These included a panel event opened by the UK Minister for Climate to discuss the role of climate councils in achieving net zero, a panel event in the Ukrainian pavilion focused on priority areas for decarbonisation investments, and a plenary with council chairs.

ICCN members shared approaches to key issues in the work of climate councils, including developing net zero pathways and carbon budgets, advising and assessing progress on adaptation measures, and how to contribute to making the low-carbon transition fair for workers and communities. The ICCN also met with the Intergovernmental Panel on Climate Change (IPCC) secretariat to discuss areas for collaboration and share experience in using evidence to inform national climate strategies.

There was strong interest from other parties in the work of the ICCN and climate councils, with several countries looking to introduce climate councils as part of their climate change policy frameworks.

Endnotes

[1] International Climate Councils Network (2024) *International Climate Councils Network (ICCN) – Global network of national climate advisory bodies.* https://www.climatecouncils.org/.

Chapter 2: COP29 outcomes and implications for the UK

This section covers the key outcomes that were agreed at COP29, both inside and outside the formal negotiations. We have reviewed outcomes across the three different pillars of the Paris Agreement of finance, mitigation, and adaptation. For each we briefly summarise implications for UK climate policy.

2.1 Finance

2.1.1 Developments prior to COP29

The share of finance flowing to clean energy and nature has been growing, but a rapid scale-up will be needed to align with Paris goals. Globally, the world now invests almost twice as much in clean energy as it does in fossil fuels, with clean energy investment expected to reach $2 trillion in 2024.[1] However, absolute investment into fossil fuels is not yet falling.[2] Despite this scale-up, finance availability remains insufficient to the need, with funding for adaptation particularly lacking.

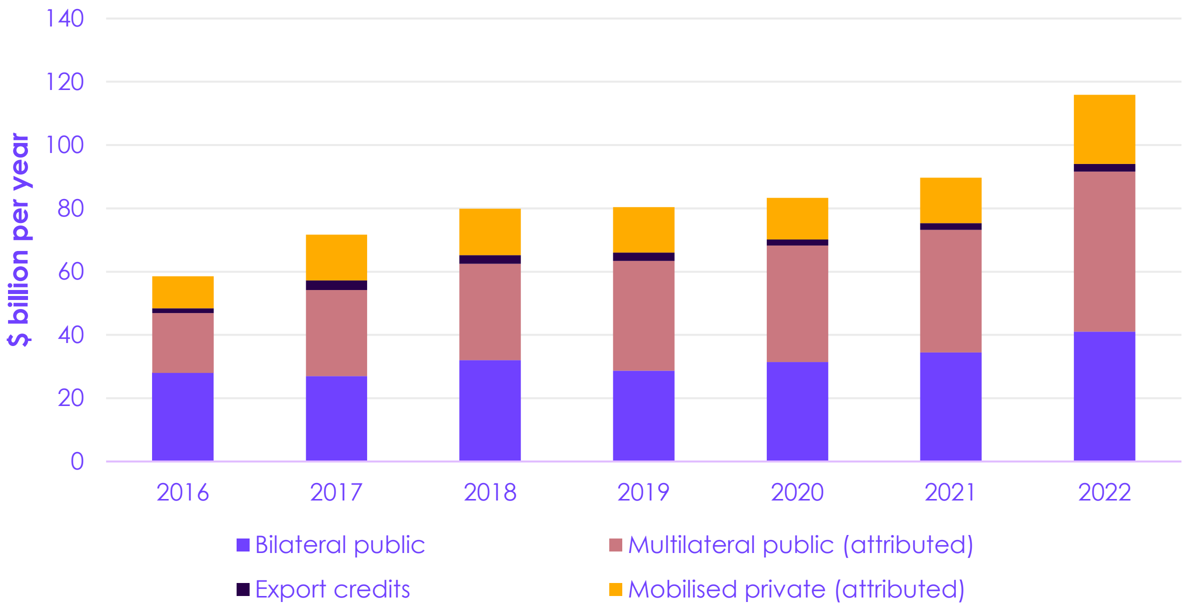
Within the UNFCCC, finance has been at the centre of debates about trust between developed and developing countries. The previous collective goal for climate finance flows to UNFCCC developing countries has now been achieved, but later than planned.

- In 2009 developed countries (those with relatively high income in 1992 when the UNFCCC was founded) committed to mobilise $100 billion per year in climate finance to developing countries. This could be sourced directly from public sources or through private investment leveraged by governments. Climate finance data compiled by the Organisation for Economic Co-operation and Development (OECD) suggest that the original target date for the $100 billion goal of 2020 was missed and that the target level was met for the first time in 2022 (Figure 1).[3]

- At COP26 in 2021, developed countries were urged to at least double their collective provision of adaptation finance. International public adaptation finance flows to developing countries totalled $28 billion in 2022.[4] While an increase from 2021, this is still far short of both the doubling of finance from 2019 levels by 2025 as well as from the UNEP estimate range of adaptation finance needs of $215-387 billion per year.[5]

The delay in meeting the previous finance goal has been seen by many developing countries to undermine trust in the commitment of developed countries to mobilising climate finance and has made negotiations on the next global finance goal more difficult.

Figure 1 Climate finance for developing countries



Source: Organisation for Economic Co-operation and Development (OECD) (2024) *Climate Finance Provided and Mobilised by Developed Countries in 2013–2022*.
Notes: Based on Biennial Reports to the UNFCCC, OECD Development Assistance Committee and Export Credit Group statistics, complementary reporting to the OECD. Includes loans and grants.
Description: Climate finance for developing countries has increased steadily between 2016 and 2022, and in 2022 surpassed $100 billion per year.

Under the UNFCCC, countries committed to raising global climate finance provision from 2025, but public finances are currently stretched in many parts of the developing and developed world. Public and private finance must therefore work together to achieve the investment flows needed. The Independent High Level Expert Group on Climate Finance published an updated estimate of climate finance needs in November 2024, estimating around $2.4 trillion per year is required by 2030 for developing countries, excluding China. Around $1 trillion of this would need to come from international sources.[6] The Bridgetown Initiative seeks to enable a scale-up of climate finance through wider reform of the international financial architecture, including multilateral development banks (MDBs). The Initiative has recognised recent positive developments but continues to call for greater progress.[7]

2.1.2 Key outcomes at COP29

A new climate finance goal was agreed at COP29, tripling the amount developed countries commit to developing countries in nominal terms, as part of a wider aim to mobilise much greater levels of investment.[8] Outside of the formal negotiations, limited new commitments were announced, though some progress was made on international financial architecture reforms. Key outcomes include:

- **New Collective Quantified Goal.** The new goal was agreed with a target for developed countries to take the lead in mobilising at least $300 billion per year for developing countries by 2035. This is substantially lower than developing countries have called for and, when accounting for inflation, will likely represent substantially less than a tripling of flows in real terms. The goal included several other notable features:

– Developing countries are now encouraged to make voluntary contributions. This is a break from the language around the previous finance goal which was focused on contributions from developed countries only. It followed the significant development of, for the first time, China referring to the support it provides to developing countries tackling climate change as climate finance.[9]

– The $300 billion goal is put in the context of scaling up of financing to developing countries to reach at least $1.3 trillion per year by 2035 from all public and private sources. This recognises the scale of the global investment challenge and the breadth of finance sources – extending beyond sources directly provided and mobilised by governments – to achieve it.

– A "Baku to Belém Roadmap" was launched to explore how the $1.3 trillion could be reached, albeit with limited further detail. A review of this newly agreed finance goal is scheduled for 2030.

- **Multilateral financial architecture reform.** Agreements at both COP29 and the G20 leaders' summit highlighted the importance of international financial institutions reform, such as development banks.[10] This followed a joint statement made by MDBs at the start of COP29 that by 2030 their annual collective climate financing for low and middle-income countries will reach $120 billion, including $42 billion for adaptation. MDBs aim to mobilise an additional $65 billion from the private sector.[11] Progress was also announced in the Climate Investment Funds Capital Markets Mechanism, an innovative approach to mobilising private capital for climate action by channelling it through MDBs.[12]

The agreement of the new global goal for climate finance was crucial in establishing a new destination target for both public and private finance efforts to work towards. Efforts, both nationally and multilaterally, must now turn toward the actions that will be needed to deliver it.

2.1.3 Implications for the UK

The UK is a large, developed economy with high historical responsibility for climate change. It also hosts a large financial sector that plays a critical role in the global financial system. Action on both public and private finance will therefore be key for the UK to contribute to the delivery of the new global climate finance goals. Announcements of UK support for developing countries at COP29, including to support adaptation in Small Island Developing States, was welcome.[13] Priority actions for the UK should include:

- **Setting out an ambitious new public finance contribution**. The UK should set out an ambitious and fair contribution to the new goal, including the share going to adaptation. This should build on plans to most effectively deliver the remaining parts of the existing climate finance commitment to provide £11.6 billion between 2021 and 2025.

- **Driving reform of international financial architecture.** The UK has recently re-emphasised support for the reform of, and increased funding towards, development finance institutions.[14] It should continue to use its influence as a shareholder to push forward the reform agenda and explore innovative sources of finance, such as levies on international shipping (as recently proposed by the Prime Minister) and fossil fuel subsidy reform.[15]

- **Act to enable private sector investment.** The UK Government has signalled a desire to make London the world's leading green global financial centre, and recent announcements show some progress. This includes the launch of a consultation on a Green Taxonomy by the Chancellor and the launch of the Clean Energy Finance Mission under the Global Clean Power Alliance.[16;17;18] There is more to do to unlock larger levels of private investment in a low-carbon and climate-resilient transition globally, including accelerating plans to consult on transition plans for large businesses and financial organisations.

To maintain trust in the multilateral process, the UK and other developed countries must carefully consider their respective public finance contributions to the new finance goal. Delivering on the Paris Agreement goals is ultimately a challenge of mobilising trillions, not billions. With its strong financial services sectors, this is where the UK can play the greatest role.

2.2 Mitigation

2.2.1 Developments prior to COP29

Global GHG emissions continue to rise and are not yet showing signs of peaking. 2023 saw a new high in global emissions (41 $GtCO_2e$, approximately equal to 2019 levels) and 2024 is expected to be higher still (initial estimates project a 0.8% increase in CO_2 emissions from fossil fuels in 2024).[19;20]

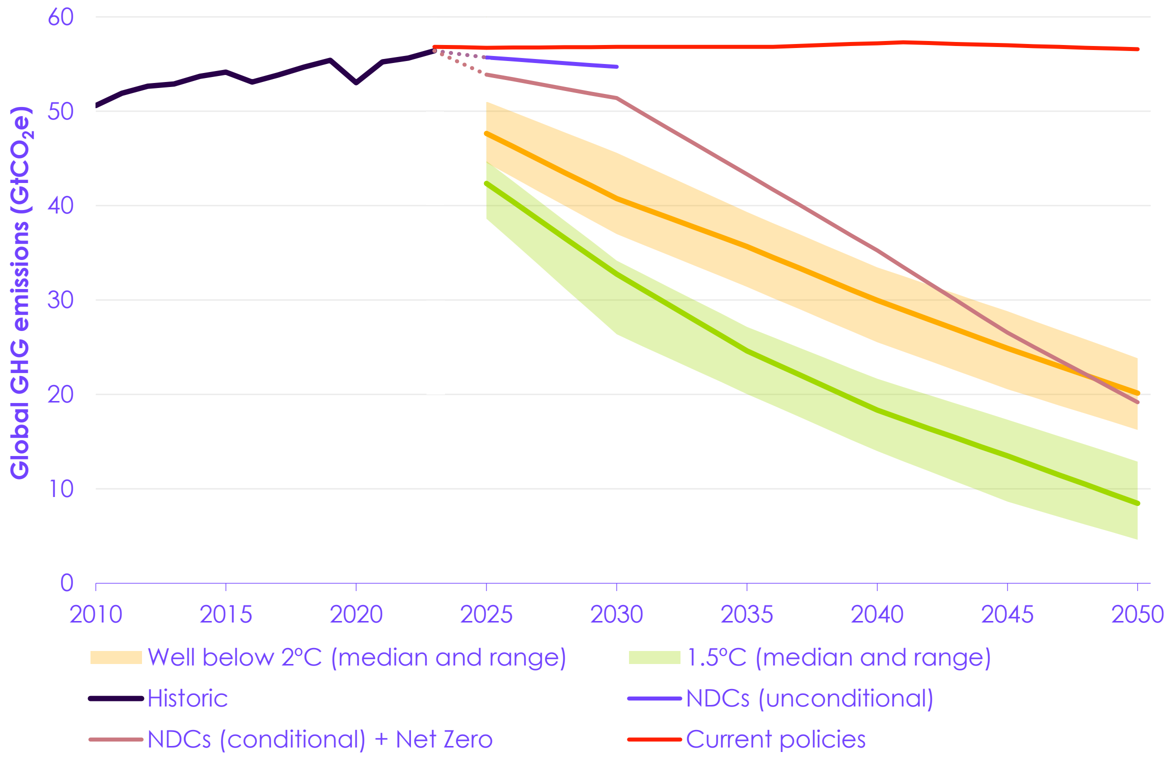
While there has been progress in emissions reduction ambition since the Paris Agreement was signed in 2015, there has been no material change to projections of future global warming in the last year. This leaves a substantial global ambition and implementation gap to be closed, despite some positive trends on low-carbon deployment.

- Projected global emissions implied by national commitments remain significantly higher than pathways consistent with the Paris Agreement long-term temperature goal (Figure 2). 2030 NDCs are assessed to be consistent with global warming of around 2.5°C.[21] If major emitters' current net zero goals are also considered, warming could be kept to below 2°C. However, current policy scenarios imply warming of around 3°C, indicating a large implementation gap on top of the ambition gap.[22]

- Progress in delivery is being made. Global deployment of solar and wind power generation has grown rapidly in recent years, with some developing countries achieving higher shares of renewables and electrification than developed countries.[23] The International Energy Agency project that current trends would see renewable electricity capacity grow to 2.7 times the 2022 level by 2030 – closing in on the COP28 aim to triple global renewable generation capacity by 2030.[24]

The new round of NDCs for 2035 – which are due to be submitted to the UNFCCC by February 2025 – represent the next big opportunity to raise global ambition on climate change mitigation.

Figure 2 Global GHG emissions under current ambition, compared to a Paris-aligned trajectory



Source: Rogelj, J., Den Elzen, M.G.J., Portugal Pereira, J. (2024) *Chapter 4: The Emissions Gap in 2030 and 2035, in: The UNEP Emissions Gap Report 2024: No More Hot Air… Please! With a Massive Gap between Rhetoric and Reality, Countries Draft New Climate Commitments*, UNEP, Nairobi, Kenya, pp. 26–34.
Notes: For simplicity, current policies and current ambition scenarios show median pathways only, masking a wider uncertainty range. Other than for current policies, scenario data is available from 2025 onwards – dotted lines joining historic emissions to future scenarios are for visual consistency only. Emissions here are presented in terms of Global Warming Potentials from the IPCC's Fourth Assessment Report.
Description: Current policies and commitments imply flat or falling future global emissions respectively, which in both cases leads to emissions above scenarios consistent with limiting warming to 1.5°C or well below 2°C.

2.2.2 Key outcomes at COP29

Progress on mitigation at COP29 was limited. There were few new emissions reduction commitments, albeit not many were expected, and limited developments both within the formal negotiations and around them. Agreement on carbon market rules was the most significant development. Key outcomes include:

- **Few new emissions reduction commitments.** Very few 2035 NDC targets have yet been announced or submitted, including at COP29, though some countries have stated intentions to bring forward more ambition. There are currently limited signs of new ambition from major emitters.
  - The UK (Box 3) and Brazil were the first G20 countries to announce their 2035 NDC targets, and the UAE, which held the COP28 Presidency, also submitted its NDC.[25;26;27] No other countries have so far announced 2035 NDCs, with less than three months until the UNFCCC's implied February 2025 deadline.

– Some other G20 countries signalled additional ambition. Mexico has indicated it is exploring a commitment to net zero by 2050.[28] Such a commitment would mean all G20 countries would have net zero commitments under current administrations.[29] At the G20 leaders' summit happening simultaneously in Brazil, Indonesia signalled the possibility of bringing its net zero target forward from 2060 to 2050, and its coal power phase-out date to 2040.[30]

– Some medium and large emitters committed at COP29 to submitting ambitious, net zero and 1.5°C-aligned 2035 NDCs.[31] The results of the recent US election will have significant implications for their contributions to the Paris Agreement but will be unlikely to reverse the trend of lowering US emissions.[32]

– China signalled that its 2035 emissions target will cover all GHG (compared to CO_2 only in its 2030 target).[33] There are currently no clear indications on the planned level of ambition for 2035.

- **Carbon markets rules finalised.** After many years of negotiations on both high-level and technical issues, agreement was reached at COP29 to operationalise carbon market provisions under the Paris Agreement.[34;35] This clears the way for transfers under both the country-to-country trading (Article 6.2) and centralised international carbon market (Article 6.4) to begin as early as 2025. Detailed work on standards and methodologies to underpin Article 6.4 will continue in the coming years. Robust standards and monitoring of the use of the flexibilities that the agreement leaves will be needed to ensure environmental integrity of credits transferred.

- **Limited wider progress within the negotiations.** Countries did not reach consensus on any of the key texts which could have taken forward implementation of the high-level mitigation goals established by the first global stocktake at COP28. These include transitioning away from fossil fuels, tripling global renewable energy capacity and doubling the rate of energy efficiency improvements by 2030.

- **Some limited progress in non-negotiated mitigation initiatives.** The COP29 Presidency proposed a range of new initiatives, including a pledge with a welcome ambition to scale up energy storage in line with a 1.5°C scenario.[41] It is not clear how many countries have signed up or what follow-up actions are planned. The Forest and Climate Leaders' Partnership announced progress on six country packages for forests, all in major forest nations.[42] A new sub-initiative of the Global Methane Pledge which aims to reduce methane from organic waste was endorsed by over 30 countries, including the UK.[43] The Breakthrough Agenda now counts around 60 supporting countries. At COP29 it launched the 'Baku Priority International Actions' to accelerate progress over the next year, while the UK and Germany pledged support for industrial decarbonisation in developing countries. At the G20 leaders' summit, the UK launched the Global Clean Power Alliance alongside Brazil.

Box 3
The UK's 2035 NDC

At COP29 the Prime Minister announced the UK's 2035 NDC in line with the Climate Change Committee's advice, committing to an at least 81% reduction in GHG emissions by 2035 relative to 1990 levels, excluding emissions from international aviation and shipping.[36]

The UK's announcement received positive reactions from a range of stakeholders. Business leaders, investors, and NGOs have noted the important signal it sends to the private and financial sectors in providing long term certainty and building on UK strengths.[37;38;39] International partners have also welcomed the ambition, including the COP29 President, and at COP29 many international partners expressed interest in the UK's NDC development process.[40]

Overall, COP29 leaves a large amount of work remaining to help address current shortfalls in global emissions reduction ambition compared to the Paris Agreement goals. An ambitious new round of NDCs – due in early 2025 – and strengthened efforts at COP30 in Brazil will be key to drive forward further progress at a global level.

2.2.3 Implications for the UK

The UK should continue to leverage its strong track record of emissions reduction in encouraging greater ambition and policy implementation from other countries. To maintain credibility, the UK should urgently bring forward more policies to get on track for its targets. Key actions include:

- **Formal NDC submission and leveraging ambition from others.** The UK should formally submit a high-integrity 2035 NDC to the UNFCCC by February 2025, based on the 81% reduction target announced by the Prime Minister at COP29. The formal NDC submission should champion international transparency through inclusion of a best practice technical annex (known as 'information to facilitate clarity, transparency and understanding'). The annex should set out how the global stocktake informed the NDC and how delivery of the NDC will integrate with action on nature and adaptation, as detailed in our Advice on the UK's 2035 Nationally Determined Contribution.

  – The UK should capitalise on its early and ambitious 2035 NDC announcement to encourage high ambition commitments from other countries in the run up to COP30. It should also leverage the diplomatic reach of the UK's new climate and nature envoys.

  – The Government must demonstrate that the UK's new NDC is credible by closing domestic delivery gaps to get on track for our 2030 and 2035 targets. In our Progress in reducing emissions report to Parliament 2024 we highlighted several priority actions, some of which the Government has made welcome progress on. We need to see further urgent action to speed up deployment of low-carbon solutions such as electric vehicles, heat pumps, and tree planting. We will provide new advice on the pathway to the UK's existing targets in February 2025 as part of our advice on the Seventh Carbon Budget.

- **Article 6 guidance.** With Article 6 rules finalised, the Government should support the development of environmentally robust guidance for specific standards and methodologies which will underpin the central crediting mechanism. It should also begin work preparing for potential engagement by the private sector, setting out a process for establishing guidance. This can build on the recently published principles for business engagement in voluntary carbon and nature markets.[44] We will be providing advice on the use of international carbon credits towards UK emissions targets in our upcoming Seventh Carbon Budget advice.

- **Continued strengthening of international sectoral initiatives.** While the UNFCCC provides important frameworks and high-level objectives, implementation often happens elsewhere. International sectoral initiatives can play a valuable role in driving progress. The UK should seek to strengthen such pledges and alliances, including through ensuring action follows ambition, and streamlining where possible. The stated goals of the recently launched Global Clean Power Alliance overlap with the UK co-chaired Energy Transition Council and relate closely to the Breakthrough Agenda, Powering Past Coal Alliance and Just Energy Transition Partnerships. The Government should ensure the initiatives complement each other's work and avoid duplication.

With its domestic track record and new NDC, the UK is in a strong position to push forward mitigation on the international stage – it should make the most of the opportunity to foster wider progress.

2.3 Adaptation loss and damage

2.3.1 Developments prior to COP29

Increasingly severe climate impacts are being experienced in the UK and around the world, driven by record global temperatures, which this year temporarily exceeded 1.5°C above preindustrial levels.

- 2024 is virtually certain to be the warmest year on record. For the first time annual global mean temperature anomalies are expected to exceed 1.5°C above 1850 to1900 levels, due to the long-term and growing human-induced warming of 1.3°C being temporarily increased by natural climate variability (Figure 3).[45;46]

- This record warming led to damaging impacts from extreme weather. 2024 saw anomalously strong hurricanes, rainfall events, wildfires, and heat waves. Hurricane Helene caused over 200 deaths in the US east coast, and the total yearly cost of extreme weather events in the US is expected to be well over $100 billion.[47] The Dana storm and floods in Spain caused at least 220 fatalities in the province of Valencia and caused widespread damages to properties and farmland.[48] Climate science is increasingly able to demonstrate whether the intensity or likelihood of individual extreme weather events was increased by human-induced warming.[49;50]

- In the UK, the 18 months leading up to March 2024 were the wettest on record for England.[51] Wet weather impacted UK farming by disrupting both planting and harvesting, causing a 4.9% and 12% year-on-year decline in the volume of home-produced vegetables and fruit, respectively.[52]

Growing climate change impacts are highlighting the urgent need for rapid and effective adaptation globally and in the UK. However, the world remains poorly prepared for the effects of climate change today, let alone in the future, as efforts still do not match the scale of the needs.[53]

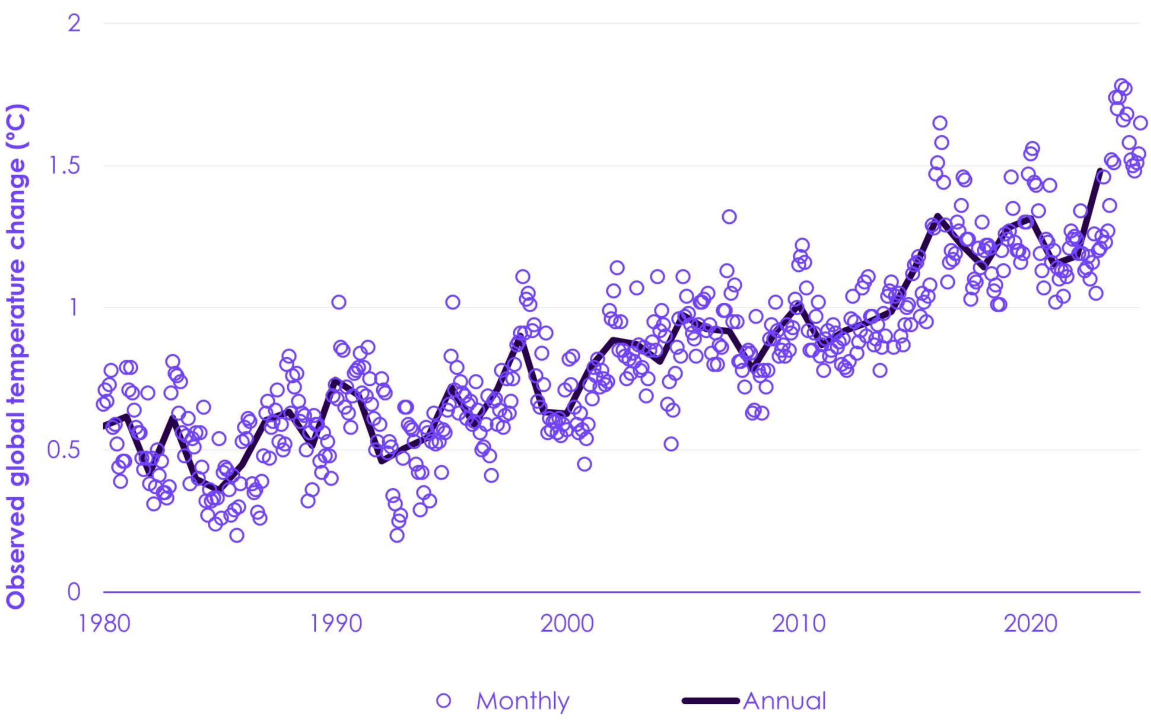
- Countries are slowly making progress on adaptation planning although criticalities remain, with 13% of countries not having any national adaptation planning (NAP) instruments and many existing NAPs lacking key elements needed to be effective.[54] Beyond planning, outcomes and effectiveness of NAP implementation remain hard to evaluate due to limited data collected.[55] Finance for adaptation remains a limiting factor with a large gap between financial flows and needs, especially in developing countries. [56]

- In the UK, the latest NAP published in 2023 is an improvement on its predecessors, but our Independent Assessment of the Third National Adaptation Programme (NAP3) found that delivery of adaptation is still fundamentally limited by issues of governance, investments, and lack of a monitoring framework.

COP28 saw an important step forward in the operationalisation of the Paris Agreement's Global Goal on Adaptation through the creation of a framework to define and assess it against seven thematic and four adaptation process targets.[57] The two-year UAE-Belém work programme was established after COP28 to come up with a set of adaptation indicators to track progress against those goals, and in doing so also increasing accountability and measuring the effectiveness of adaptation actions.[58] However, considerable work remains to operationalise the global adaptation framework, including defining a monitoring framework, and addressing implementation needs, such as capacity building and technology transfer.[59]

COP28 also saw the creation of a loss and damage fund to compensate for existing impacts of climate change in developing countries.[60] Operational details of the loss and damage fund remain unresolved – including on eligibility criteria, access channels, and fund mobilization.[61;62]

Figure 3 Observed global temperature change from pre-industrial levels



Source: ECMWF (2024) *ERA5 monthly anomalies for surface air temperature*.
Notes: The white dots show the change in monthly mean global temperature compared to pre-industrial levels (1850-1900). The purple line shows the change in annual mean global temperature compared to pre-industrial levels.
Description: The increase in global mean temperature compared to pre-industrial levels is not slowing down. Since the late 2010s, individual months have been more than 1.5°C warmer than pre-industrial. The year 2024 is virtually certain to be the first year above 1.5°C overall.

2.3.2 Key outcomes at COP29

COP29's outcomes on adaptation reflected the need to scale up adaptation finance as part of overall finance efforts, and interim steps towards developing indicators to track global adaptation. Key outcomes include:

- **Need for 'balance' between adaptation and mitigation recognised in the finance goal.** The COP29 outcomes noted the need for a balance between adaptation and mitigation but no quantified share for adaptation finance was agreed.[63] Countries acknowledged the fiscal constraints and increasing costs of adaptation and the resulting need for public grants and highly concessional finance for both adaptation and loss and damage.[64]

- **Further instructions for developing adaptation indicators.** Countries provided further guidance to the expert group tasked with identifying adaptation indicators for the global adaptation framework. These additional instructions included limiting the number of indicators available for countries to choose from to no more than 100 in total, and the need for indicators to be globally applicable.[65] Work on indicator development is continuing towards COP30 where agreement on the final list needs to be made.

Other adaptation items at COP29 failed to achieve agreement and were postponed to future COPs. This included the NAP progress assessment, which reviews the state of NAP submission and implementation.[66] Loss and damage was not included as an explicit component in the new finance goal. The fund established at COP28 received some additional funding, taking the estimated total pledged to $759 million. This remains small relative to the estimated need, which is in the order of billions to trillions.[67;68] Talks on other aspects of loss and damage, including on governance, were not successful and deferred into 2025.[69]

2.3.3 Implications for the UK

COPs provide a useful forum for knowledge sharing between countries on how to move forward on adaptation. The UK should seek to improve its domestic adaptation planning and align it with the global adaptation framework for targets and monitoring. Key actions for the UK include:

- **Improving the Third National Adaptation Programme.** NAP3 should be strengthened to make adaptation a fundamental aspect of policymaking across all departments. It should set clear objectives and measurable targets, in line with the new global adaptation framework. This strengthening should also seek to align with the UK's commitments to the UN Convention on Biological Diversity. The UK should update its adaptation communication to the UNFCCC to capture the range of new domestic adaptation programmes now in place around the UK.[70] Setting clear and quantifiable objectives for adaptation action is another opportunity to show international leadership.

- **Building an operational monitoring and evaluation system within the lifetime of NAP3 by 2028.** This is needed to align with the global adaptation framework, which established monitoring and evaluating as one of its targets.[71] UK work on the monitoring and evaluation system can help shape the global adaptation indicators, which are now in development under the UAE-Belém work program and due to be finalised at COP30.

The UK has considerable expertise on adaptation (in government, research, and the private sector) which can be deployed internationally to support others. Through international forums such as technical expert groups connected to UNFCCC processes, bilateral dialogues and regional technical support such as the ICCN, the UK can also learn from experience in implementation and monitoring of adaptation in other countries.

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December 2024

COP29: Key outcomes and next steps for the UK

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