

Monthly report on research and policy developments
Energy and climate change

December 2023 and January 2024

Purpose: This document provides a summary of recent key developments in policy and research related to energy and climate change. It has been prepared by [ClimateXChange](#) and is intended to keep policymakers informed of issues relevant to the Scottish Government's energy and climate change policy portfolio.

COP28

This first section outlines the main policy and research developments from COP28, the United Nations climate change conference in Dubai, United Arab Emirates, which was held from 30 November to 13 December 2023.

Global agreement to transition away from fossil fuels

13 December 2023

Almost every country in the world agreed to transition away from fossil fuels for the first time in almost 30 years of international climate negotiations. Some countries had entered the negotiations hoping to agree on a phase out of fossil fuels, so there was disappointment that the wording wasn't strong enough, according to the BBC. Countries also agreed to submit more ambitious plans to cut carbon by 2025.

Sources: [UNFCCC](#); [Carbon Brief](#); [BBC](#)

First food agreement at a COP climate summit

15 December 2023

Nearly 160 countries signed a sustainable agriculture declaration. This is recognition of the value of agriculture and food systems in reaching emission reduction targets, alongside concerns about the impact of climate change on food production. Food and agriculture had dedicated discussion time for the first time at a COP meeting.

Sources: [COP28](#); [Carbon Brief](#); [The Guardian](#)

Biodiversity agreement makes final deal

18 December 2023

Countries will need to consider the Kunming-Montreal framework, agreed at the UN Biodiversity Conference (COP15) in 2022, while developing their next round of nationally determined contributions for the UN climate change conference, COP30, in 2025. As a result, biodiversity and climate could be approached as interlinked issues, according to the Guardian. Halting deforestation by 2030 was also included in the final COP28 text.

Source: [The Guardian](#)

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Financial compensation for developing countries

13 December 2023

Progress was made on payment of loss and damage compensation for climate change impacts on vulnerable countries, with the establishment of the new Green Climate Fund at COP28. Over 30 countries made pledges totalling a record US\$12.8 billion. There was a disappointing lack of new financial commitments to aid developing countries adapt to climate impacts and transition away from fossil fuels, according to the BBC.

Sources: [UNFCCC](#); [BBC](#)

Notable publications released during COP28:

- **The Global Climate 2011-2020**

5 December 2023

The decade 2011 to 2020 is the warmest on record, according to the World Meteorological Organization (WMO) report. The impacts of warming, fuelled by greenhouse gas emissions, such as flooding, risks to global food security and population displacement are discussed.

Sources: [WMO](#); [UN News](#)

- **10 New Insights in Climate Science 2023/2024**

3 December 2023

This report discusses new climate science insights that aim to inform policymakers, including carbon dioxide removal as a key tool, the need for food system reforms and the over-reliance on natural carbon sinks.

Sources: [Insights report](#); [Edie](#)

- **Global Tipping Points**

6 December 2023

This report identifies 25 global tipping points. Five important natural thresholds are already at risk of being triggered, which could cause irreversible catastrophic damage to people and nature around the world, at a level never before faced by humanity.

Sources: [Global Tipping Points](#); [Carbon Brief](#); [The Guardian](#)

- **Global Carbon Budget 2023**

4 December 2023

Global carbon emissions from fossil fuels hit record levels in 2023. The 1% increase in emissions from 2022 levels is mainly due to increased emissions from China, according to Carbon Brief.

Sources: [Global Carbon Project](#); [Carbon Brief](#)

International climate and energy research and policy

Renewable energy must grow faster to reach targets

11 January 2024

Global renewable energy capacity is on track to increase by two and a half times by 2030, according to the International Energy Agency annual report on renewables. Governments need to go further to achieve the goal of tripling capacity that was agreed at COP28, the report states. Renewable capacity additions increased by 50% in 2023, compared to 2022, taking the total global installed capacity to 3,700 GW. To reach the goal agreed at COP28, it needs to increase to at least 11,000 GW by 2030.

Sources: [IEA](#); [Reuters](#)

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EU CO2 emissions from fossil fuels at a 60-year low

24 January 2024

CO2 emissions from fossil fuels in the EU are at their lowest level in 60 years. Emissions fell 8% from 2022 to 2023. Over half of the reduction in emissions is from cleaner electricity use, according to research from the Centre for Research on Energy and Clean Air (Crea).

Sources: [Crea](#); [The Guardian](#)

Climate envoys from China and the USA retire

12 and 21 January 2024

John Kerry, the US special presidential envoy for climate, and his Chinese counterpart Xie Zhenhua have announced within weeks of each other that they are retiring. They have influenced climate negotiations over the last decade and had a close personal relationship, according to the Guardian. Liu Zhenmin is the new Chinese special envoy for climate change. The US has yet to announce who will succeed Kerry.

Sources: [Reuters](#); [The Guardian](#)

European countries pledge CO2-free power systems by 2035

18 December 2023

Seven European countries announced that they will eliminate CO2-emitting power plants by 2035. Three of the countries, Germany, France and the Netherlands, jointly account for nearly half of EU power production.

Source: [Reuters](#)

First large-scale US offshore wind project produces power

3 January 2024

The first large-scale offshore wind project in the USA has produced power for the first time. The project, off the coast of Massachusetts, aims to have 62 turbines producing electricity to power 400,000 homes.

Source: [The Guardian](#)

UK climate and energy research and policy

Scotland's climate is changing faster than predicted

19 December 2023

There is an increased likelihood of extreme weather events occurring in Scotland, as the climate is changing faster than expected, according to a study by the James Hutton Institute (JHI). In some areas the temperature is already 2.5C warmer in February and rainfall is at levels forecast for 2050, researchers found. The findings raise concerns about the impact of these changes on food production and peatland protection, according to the BBC.

Sources: [JHI](#); [BBC](#)

UK will miss 2030 emissions targets without changes

15 December 2023

The UK is not on track to reach 2030 decarbonisation targets due to policy changes and inconsistent messaging, according to the UK Energy Research Centre (UKERC). The researchers suggest that next UK Government should decentralise decision-making for renewable energy projects and allow for easier connection to the electricity grid. They also

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recommend that the future government improves home energy efficiency, rolls out more electric vehicles and provides financial support to industry for decarbonisation.

Sources: [UKERC](#); [The Independent](#)

Role of UK Government at COP28 praised by UK climate body 30 January 2024

The Climate Change Committee (CCC) has praised the UK Government's role in the COP28 negotiations. Their COP28 review also calls on the Government to reassert global climate leadership. It adds the UK has an obligation to help deliver on the targets agreed in Dubai and support the acceleration away from fossil fuels.

Sources: [CCC](#); [Business Green](#)

UK solar panels planning rules relaxed 17 December 2023

New UK planning rules mean that some homeowners and businesses will not have to request planning permission to install rooftop solar panels.

Sources: [UK Government](#); [The Standard](#)

Climate change causing chaos for UK nature 27 December 2023

The National Trust warns that climate change is disrupting the regular seasons, making plants and wildlife more susceptible to disease and pests. Impacts include increased algal blooms, which has led to mass fish deaths.

Source: [BBC](#)

Climate change will make winter flooding normal in the UK 6 January 2024

The July to December 2023 period was the wettest on record for the UK, according to figures from the UK Centre for Ecology and Hydrology, reported in the Guardian. The country should be building resilience into the infrastructure to counter flooding, which will become more common due to climate change.

Source: [The Guardian](#)

EU and UK extend electric vehicle tariff deadlines 21 December 2023

The EU and the UK agreed to give electric vehicle (EV) makers two more years before the imposition of tariffs on EVs traded with the UK. The deadline has been extended to 2026 in recognition of the disruption in trading caused by the Covid-19 pandemic and the war in Ukraine. The UK Government said this could save manufacturers and consumers up to £4.3 billion in additional costs.

Sources: [UK Government](#); [Reuters](#)

Analysis shows that 80% of North Sea oil is exported 19 January 2024

Exported UK oil and gas has increased from 60% to 80% over the last two decades, according to analysis of government data by Global Witness reported in the Guardian. During the same period domestic oil production fell by 60%.

Source: [The Guardian](#)

Economists advise increased investment in the green economy 22 January 2024

The UK should increase public investment in a sustainable economy by £26 billion a year to aid prosperity, according to a paper published by leading economists.

Sources: [London School of Economics](#); [The Guardian](#)

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Climate language poorly understood by UK consumers 24 January 2024

Language around the climate crisis and environmental policies to reduce waste, such as “green” and “sustainable” are poorly understood by UK consumers, according to study reported in the Guardian.

Source: [The Guardian](#)

Huge jobs growth seen in Scotland's renewables sector 18 December 2023

Scotland's renewables sector workforce grew by more than 50% in 2021, according to research by the Fraser of Allander Institute. The industry supported 42,000 jobs in 2021 compared with 27,000 in 2020. The biggest increase was in onshore and offshore wind.

Source: [BBC](#)

2023 is UK's second warmest year 2 January 2024

Last year was the UK's second warmest on record, according to provisional data from the Met Office. The year 2023 was the hottest on record for both Wales and Northern Ireland.

Sources: [Carbon Brief](#); [BBC](#)

Climate crisis could cause 10,000 extra deaths a year in UK 11 December 2023

Extreme heat and tropical diseases caused by climate change could result in up to 10,000 extra deaths in the UK each year by the 2050s, according to a report by the UK Health Security Agency.

Source: [The Guardian](#)

Increase in UK domestic heat pumps and solar power in 2023 12 January 2024

A record number of renewable electricity and low-carbon heat technologies were installed and registered in UK homes in 2023. Solar panel installations increased by almost 30% to just short of 190,000 and heat pump installations increased 20%, reaching almost 37,000.

Source: [Carbon Brief](#)

UK Government is not prepared for climate disasters 6 December 2023

The UK Government is not adequately prepared for climate disasters, including severe droughts and floods, according to a report by the National Audit Office (NAO). The report recommends that the Cabinet Office should review risk and resilience structures, and set out what a resilient UK looks like, with a strategy to reach this.

Sources: [NAO](#); [The Guardian](#)

Representation of the UK Emissions Trading Scheme in Scottish TIMES 7 December 2023

The Scottish TIMES model is a diagnostic tool to help understand the key inter-relationships across the energy system, which is being used by the Scottish Government to produce a new net zero pathway for Scotland. This CXC study introduced an accounting mechanism from the UK Emissions Trading Scheme, which will aid understanding of how emissions from sites subject to the scheme are likely to evolve over the transition to net zero.

Source: [ClimateXChange](#)

Organic farming, net zero targets and the impact of a changing climate 11 December 2023

Organic farming practices offer benefits to biodiversity, greenhouse gas emissions and soil carbon, according to this CXC evidence review. The report also found that organic farming

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practices might help farmers adapt to a changing climate in Scotland over the next two decades.

Source: [ClimateXChange](#)

Communicating effectively on the heat transition 13 December 2023

Developing communications and public engagement to facilitate the heat transition and move to zero direct emissions heating systems is a complex and challenging task, this CXC study has found. The report recommends making the case for change visible and attractive, highlighting the positive impact of the heat transition.

Source: [ClimateXChange](#)

Experiences of early adopters of zero emissions heating 13 December 2023

The main motivations for installing a heat pump and other energy efficiency measures were linked to environmental interests to decarbonise and to home renovations or broken heating systems, this CXC research has found. Systematic changes to reduce current barriers are necessary to engage the general public in the next phase of heat pump adoption, the report suggests.

Source: [ClimateXChange](#)

Electricity system security of supply in Scotland 11 December 2023

This CXC report explores issues around security of supply in Scotland's electricity system in the transition to net zero greenhouse gas emissions by 2045. The researchers examined international examples of electricity systems transitioning to net zero, and used scenario modelling to quantify security of supply for the expected technology pathway in Scotland.

Source: [ClimateXChange](#)

Private sector drivers for climate action in Scottish agriculture 19 December 2023

Consumer demand for low-carbon goods is set to increase, so decarbonising value chains will be part of staying in business in a competitive market, according to this CXC report. The research found that the main driver placed on Scottish agricultural producers from the private sector is to complete baseline carbon audits of their operations.

Source: [ClimateXChange](#)

Driving emission reductions through the public sector supply chain 14 December 2023

The purchase of goods, services and works can account for more than 70% of a public body's overall greenhouse gas emissions in Scotland. Targeting these indirect scope 3 emissions could result in significant emissions reduction across public bodies. The report provides evidence for practical approaches and tools that public bodies can use to better understand and thereby reduce these emissions.

Source: [ClimateXChange](#)

Leveraging local and community energy for a just transition 10 January 2024

This research explored developments in local and community energy, and assessed key innovations, opportunities and barriers associated with them. The study found that local and community energy can directly contribute to all eight of Scotland's National Just Transition Outcomes.

Source: [ClimateXChange](#)

Climate science, impacts and adaptation

2023 breaks sea and land temperature records

12 January 2024

The year 2023 was the warmest on record for the earth's surface and for the heat content of the world's ocean, according to Carbon Brief analysis. The 2023 review also notes record ice loss from shrinking glaciers and record sea level rises, as well as record levels of greenhouse gas concentrations in the atmosphere.

Source: [Carbon Brief](#)

Climate change affects Panama Canal global trade route

22 December 2023

The Panama Canal has limited the number of vessels passing through it as drought in the region has led to low water levels. The locking system requires 200 million litres of water for each ship to pass through the canal. Normally 36 ships a day use the canal but the number has been reduced to 22, with an expected drop to 18 by February, according to the Guardian.

Source: [The Guardian](#)

Climate change is main driver in record Amazon drought

24 January 2024

A record drought in the Amazon rainforest has left rivers at the lowest levels in 120 years, threatening life for millions of people in the region and killing wildlife, according to a World Weather Attribution study. The drought was 30 times more likely due to climate change, according to Reuters.

Sources: [WWA](#); [Reuters](#)

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