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Monthly Report on Research and Policy Developments - Energy and Climate Change

September 2021

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

International Climate and Energy Research and Policy

UN NDC analysis

Widely covered UN [analysis](#) shows that emissions are set to rise 16% by 2030, levels that could lead to a temperature increase of 2.7°C over pre-industrial levels, well above the Paris Agreement targets, [the BBC reported](#). The analysis (Section J) also describes how adaptation has been considered in the NDCs. Of the 191 signatories to Paris, only 113 had produced improved their pledges (nationally determined contributions) by end-July, with several of the biggest emitters missing the deadline, [the Independent reported](#). The findings are a stark warning about the scale of the challenge faced at COP26, the BBC said.

Climate finance

US president Joe Biden pledged to work with Congress to double US funds to help developing nations combat climate change to \$11.4bn a year by 2024 [Reuters reported](#). Earlier in September, the [European Union said](#) it would commit an additional €4bn to vulnerable countries by 2027 on top of the \$25bn a year it already provides. The funding would help meet a global goal of \$100bn a year to support climate action in developing countries, [Climate Home News](#) reported.

Global methane pledge

The US and EU launched a well-received [initiative](#) to reduce global methane emissions by at least 30% below 2020 levels by 2030. At the time of writing, more than 25 other countries, including the UK, Indonesia and Italy, had indicated they would sign up to the Global Methane Pledge which will be discussed at COP26. Separately, the IEA published a [report](#) on methane emissions; the Science Media Centre [published comments](#) on it.

China to cease financing coal abroad

China will no longer build coal-fired power projects abroad, its president Xi Jinping announced, [Reuters reported](#). China had been under heavy diplomatic pressure to cease financing overseas coal projects; its move follows similar pledges made by South Korea and Japan earlier this year. [Carbon Brief covered](#) the announcement in its China Briefing while a [piece in The Conversation](#) looks at what other energy projects China might finance instead.

China's clean energy transition

China has the means and capabilities to accomplish an even faster clean energy transition and thereby increase the chances of limiting the rise in global temperatures to 1.5°C, according to the International Energy Agency. An accelerated transition would see China's CO₂ emissions peak in 2025, opening up the possibility of China reaching carbon neutrality well before its target of 2060, the agency says in a [report](#) on the country's energy sector.

ECB on early climate action

There are clear benefits to acting early to mitigate the risk of climate change, with the short-term costs of the transition piling in comparison to the costs of unfettered climate change in the medium to long term, the European Central Bank (ECB) warns in a [new paper](#). The ECB said its worst-case scenario could knock 10% off European gross domestic product and cause a 30% rise in defaults on corporate loans, [reported the FT](#) (paywall).

EU risk analysis

The European Union has ranked climate change and other environmental challenges first in its list of substantial challenges for Europe in the coming decades, [Euractiv reported](#). In its [Strategic Foresight Report](#), the Commission highlights water scarcity, especially in southern Europe, and pressure on food security as particular issues, saying over 40% of EU agricultural imports could become highly vulnerable to drought by 2050.

\$5bn pledged for biodiversity conservation

Nine philanthropic foundations [have made](#) the largest ever donation to nature conservation, pledging \$5bn to finance the protection of 30% of land and sea by the end of the decade, [the Guardian reported](#). In effect, the Protecting our Planet challenge covers the estimated cost of the 30% goal for this decade, one of the targets included in the draft Paris-style UN agreement for nature currently being negotiated.

Youth climate anxiety

Government inaction on climate change is linked to psychological distress in young people according to the [largest scientific study](#) of its kind. The study, led by Bath University, finds climate anxiety affects the daily life and functioning of nearly half of children and young people surveyed globally. Nearly 60% said they felt very worried or extremely worried, the [BBC reported](#). The survey involved 10,000 people aged 16 to 25 from 10 countries.

Intergenerational climate inequalities

People born in 2020 will face between two and seven times more extreme climate-related events over their lifetimes than people born in 1960, according to estimates in a [study](#) published in *Science*. The paper analyses six extreme event categories, including crop failures, droughts and heatwaves. It finds that even if warming is limited to 1.5°C, younger generations will face “unavoidable impacts that are unmatched by those experienced by older generations” over the course of their lives, [Carbon Brief reported](#).

Fossil fuel subsidies

The fossil fuel industry receives subsidies of \$11m every minute, according to analysis by the International Monetary Fund, reported in [the Guardian](#). In a [working paper](#), the IMF found the production and burning of coal, oil and gas was subsidised by \$5.9tn in 2020, with no country pricing all its fuels sufficiently to reflect their full supply and environmental costs. The paper calculates fossil fuel prices to reflect their full costs and implied subsidies.

ETC on key tasks for 2020s

A [report](#) from the Energy Transitions Commission, an industry think tank, proposes what it considers key actions needed in the 2020s to limit global warming to 1.5°C. It focuses on actions it says are technically feasible and entail minimal cost. These include sharp cuts in methane from leaking gas drilling platforms and production sites which should be a key aim of COP26, [the Guardian reported](#). Cutting global emissions of methane by 40% by 2030 is achievable, the ETC said.

Electric vehicle upsurge

The FT published a [series](#) (paywall) on electric vehicles (EVs), with the [first piece](#) describing the recent upsurge in consumer interest. Separately, the paper looks at the UK [tax implications](#) of greater uptake of EVs. The Atlantic also covers the [increasing interest](#) in EVs while The Conversation published an [article](#) on how to make the transition to EVs sustainable and just.

Aviation climate action

The US government has set a goal of replacing all jet fuel with sustainable alternatives by 2050 and will seek to lower aviation emissions 20% by 2030, [Reuters reported](#). In a [factsheet](#) announcing the plan, the White House said it would release an aviation climate action plan in the coming months. In a separate development, in the UK, a group of academics and researchers wrote to the [Times](#) (paywall) to criticise the government’s Jet Zero strategy on decarbonising flying. They said it would allow UK aviation emissions to increase up to 2030 from 2019 levels, in clear contradiction of Climate Change Committee advice.

Biden moves on HFCs

The Biden administration has finalised its first significant regulation to limit directly greenhouse gases, with a measure to limit production and use of hydrofluorocarbons (HFCs). The Environmental Protection Agency regulation aims to reduce HFCs, widely used in air conditioning, heat pumps and refrigerators, by 85% over 15 years, [Reuters reported](#).

Recyclable wind turbine blades

Wind turbine manufacturer [Siemens Gamesa has developed](#) the first offshore wind turbine blades that are fully recyclable, [edie reported](#). The move – which will involve removing resin from some of the components - is set to save hundreds of thousands of blades from landfill and resolve an issue long highlighted by the industry's critics. About 85% of a turbine, including the steel towers, can already be recycled.

Global livestock emissions

Twenty livestock companies are responsible for more greenhouse gas emissions than either Germany, Britain or France – and are receiving billions of dollars in financial backing to do so, according to a [report](#) by environmental campaigners, [covered by the Guardian](#). An ambitious shift in agriculture and food policy to tackle the climate crisis seems far away, despite scientists' warnings about the need to cut meat consumption in industrialised countries, says the report from Friends of the Earth and Heinrich Böll Stiftung foundation.

UN food summit

A UN Food Systems Summit concluded with around 150 countries announcing voluntary commitments to ensure more “resilient, inclusive and sustainable” food systems around the world. Carbon Brief published an [in-depth Q&A](#) explaining why the summit took place, its outcomes and why it was controversial.

UK Climate and Energy Research and Policy

Morocco-UK power project

A company chaired by the former CEO of Tesco is planning a £16bn project to build the world's longest power link, to import renewable energy from Morocco to the UK, [City AM reported](#). Dave Lewis said the [Xlinks scheme](#) aimed to supply 7m UK homes from 10.6GW of power generated by large-scale solar and wind farms in Morocco, backed by battery storage, via a 3,800km undersea cable. Once complete, it would be capable of supplying 8% of Great Britain's electricity needs, the company said.

Waste management and CCUS

A new [report](#), commissioned by Viridor, the waste management group, outlines a development pathway for carbon capture, utilisation and storage (CCUS) in the UK's energy from waste (EfW) sector. It suggests EfW facilities could benefit from some of the lowest cost CCUS, partly due to their location close to potential CCUS clusters and port hubs.

However, a [report](#) by Zero Waste Europe describes CCS in the EfW sector as an “expensive distraction from a circular economy”. Meanwhile, in a [position paper](#), Bellona, the Norwegian foundation, says CCS deployment on waste incinerators should be complementary to waste reduction strategies.

Ineos investment at Grangemouth

Ineos is to invest more than £1bn to upgrade its Grangemouth refinery to run on hydrogen, under plans to cut the site’s emissions by 60 per cent by 2030. The chemicals group outlined a [road map](#) which also involves carbon capture and storage (CCS) of at least one million tonnes of CO₂ a year by 2030. This will include capturing CO₂ from existing hydrogen production and the construction of a world-scale carbon capture-enabled hydrogen production plant, [S&P Global Platts reported](#).

EV charge point move

All new homes and offices built in England from 2022 will include charge points for electric vehicles (EVs), in a world first, [the RAC reported](#). The new chargers will be ‘smart’ devices to help decide the best time to top up batteries and prevent the electricity network from being overloaded. Although it is cheaper to charge EVs at home, the plans aim to give some of the 40% of UK households without off-street parking access to chargers at work.

NAO on Green Homes Grant

The UK Government’s rushed delivery and implementation of the Green Homes Grant Voucher Scheme significantly reduced the benefits that might have been achieved, according to a [critical report](#) by the National Audit Office (NAO), the government spending watchdog, [the Guardian reported](#). The government should be prepared to limit or delay the launch of a programme if the evidence suggests it is not ready, the NAO said.

CERG on Scottish climate emergency response

The Scottish Government has made some strong commitments in support of a green recovery but now it is time to show how these will be delivered at pace, says a [report](#) from the Climate Emergency Recovery Group. The report sets out 12 immediate actions the Scottish Government could take, building on the CERG’s April 2021 assessment report.

COP26 and UK public

Climate Outreach has published a [report](#) providing new insights on what the UK public wants from the UN climate summit. It draws on Climate Outreach’s work to support climate communicators and campaigners in engaging people in ways that resonate across a broad base of society.

FoE on North Sea

Friends of the Earth Scotland has called on the Scottish Government to reverse its support for further oil and gas exploration and production in a new [report](#) on North Sea oil and a

Just Transition.

Climate Science, Impacts and Adaptation

Peatland restoration

There is substantial public willingness to pay for peatland restoration in Scotland, according to a [paper](#) in *Global Environmental Change*, the [Independent reported](#). Researchers at SRUC were involved in the study which explores the economic implications of delaying greenhouse gas mitigation through ecosystem restoration. It finds considerable benefits for early action, linked to increased resilience of peatlands under future climate change.

Regional climate information

In a Carbon Brief [guest post](#), researchers from the University of Leeds and the Grantham Institute explain how they have developed a framework for assessing the quality of regional climate information. By doing so, they hope to improve ‘adaptation decision-making’ at the local level. The framework is explained in detail in a [paper](#) published earlier this year.

Crop yields and water scarcity

The probability of crop yield failures is projected to be as much as 4.5 times higher by 2030 and up to 25 times higher by 2050 across global breadbaskets, according to [research](#) published in *Environmental Research Letters*. The researchers used the open-source Aqueduct Water Risk Atlas to create a Water Scarcity Index with ten hydrological variables. The index reveals high water scarcity across crop breadbaskets in India, China and the US.

Health and climate change

More than 200 health journals worldwide have published an editorial calling on leaders to take emergency action on climate change and to protect health, the [Guardian reported](#). The British Medical Journal [said](#) it was the first time so many publications had come together in a single statement, reflecting the severity of the situation.

Emulator models

Carbon Brief published a [guest post](#) on the role that ‘emulator’ models play in climate change projections, including in the IPCC Sixth Assessment report. Emulators are relatively simple computer models used to model climate change broadly and to answer specific questions, such as determining sea level rise from melting ice or translating global temperature rise into regional climate change.