

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

March 2017

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 Scottish policymakers informed of issues relevant to the Scottish Government's Energy and Climate Change policy portfolio.

International Climate and Energy Research and Policy

Eliminating Energy-Related Carbon Emissions Possible

A joint International Energy Agency (IEA) and International Renewable Energy Agency (IRENA) report states that global energy-related CO₂ emissions can be reduced by 70% by 2050, and completely phased-out by 2060 with a net positive economic outlook. [Perspective for the Energy Transition: Investment Needs for a Low-Carbon Energy Transition](#) concludes that increased deployment of renewable energy and energy efficiency can achieve the emissions reductions needed to limit global temperature rise to 2°C. The report was commissioned by the German government as G20 president.

Germany to Push for Carbon Price at G20

According to a representative from the German Ministry for Economic Affairs and Energy, Germany will use its G20 Presidency to nudge world leaders towards a [global price on carbon](#) at the [G20 in Hamburg in July](#), when climate change and sustainable development will be among a handful of major themes.

New partnership between FAO and UNFCCC

The Food and Agriculture Organisation of the United Nations (FAO) and the UNFCCC have signed an agreement to collaborate to better support countries to adapt to climate change and meet their pledges to cut GHG emissions. Collaboration will include policy advice, data sharing, and the promotion of access to knowledge held by agricultural smallholders, a large share of the population in many developing countries most exposed to climate change. The FAO and UNFCCC will launch an E-learning course on national GHG inventories and assessing emissions from agriculture, forestry and other land uses. Forest management is a key area for future effort to provide improved access to information and data by countries as they plan, assess and monitor natural resource use, and to help them report adaptation and mitigation efforts.

World Bank launches bonds linked to Sustainable Development Goals

[The World Bank has issued its first bonds](#) linked to the [United Nations' Sustainable Development Goals](#) (SDGs). This is the first time the World Bank has issued bonds that directly link returns to the performance of companies advancing global development targets, set out in the SDGs. These include

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a roadmap for progress on climate, biodiversity, gender equality and sustainable infrastructure. Return on the €163M two-tranche issue led by BNP Paribas are linked to the [Solactive Sustainable Development Goals World Index](#).

South Australia Launches New Clean Energy Plan

In the past six months, the state of South Australia has been hit by a major storm and severe heatwaves that have disrupted its electricity transmission network – causing three state-wide blackouts. The state has now released a new [energy plan](#) to improve energy security and continue its journey towards a cleaner energy system. The new plan aims to build the largest grid-connected battery in Australia to store energy – funded by a new clean technology fund – as well as a government-owned 250 MW gas-fired power plant, able to provide backup power for the grid.

North Sea Clean Power Hub

A consortium of European energy companies [have announced plans](#) to create a 6km² island in the middle of the North Sea that will connect large new wind farms. Power cables from the island would double as ‘interconnectors’, enabling Denmark, Norway, the UK, the Netherlands and Germany to trade electricity.

CCS and Europe’s Contribution to the Paris Agreement

Zero Emissions Platform (ZEP) has published its 5th annual Market Economics report: [CCS and Europe’s Contribution to the Paris Agreement – Modelling least-cost CO2 reduction pathways](#). The report modelled 10 countries and concludes that in all countries, CCS will be essential to achieving the 80-95% emissions reduction target set out in the EU 2050 Roadmap. The report also highlights the importance of CCS to the future competitiveness of key European industries such as steel and cement.

Developments in the United States

US President Donald Trump has signed an executive order that could mean the end of climate change policy implemented by the Obama Administration. The order will curb the enforcement of several climate regulations.

Mark Lynas, an author, journalist and environmental activist has [said](#) the purpose of the order is to make coal competitive again in the US. The order will rescind the moratorium on coal mining on US federal lands and initiate a review of the Clean Power Plan. Ajay Gamier, a policy research fellow at the Grantham Institute for Climate Change and Environment has [said](#) that without the Clean Power Plan, the US will be “lacking a very important signal in decarbonising a sector which emits a lot.”

Sam Adams, the World Resources Institute’s US Director, has [blogged](#) that rolling back the Clean Power Plan is a losing proposition for America. Adams writes that the move will hurt America’s security and economy and will not bring back lost jobs in the coal industry. Instead it pours cold water on the country’s shift to renewable energy.

Patricia Espinosa, UNFCCC Executive Secretary, has [written](#) on this and the [changes to funding](#) for the US Environmental Protection Agency. Ms Espinosa notes that it will be some time before we see the outcome of these announcements and that the UNFCCC secretariat is focused on supporting all

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Parties (which still includes the US) to advance action and take the Paris Agreement forward.

UK Climate and Energy Research and Policy

UK Emissions should be Net-Zero by 2070

Research [published in Nature Energy](#) examines what the Paris Agreement means for UK emissions both now and later this century. It is the first paper to apply a Paris-consistent carbon budget at the level of a single country. The research finds that the UK will need a far more ambitious policy package in order to avoid using more than its fair share of the remaining global carbon budget, with the most stringent case requiring it to achieve net-zero emissions by 2045.

CCC Advice to Scottish Government on new Climate Change Bill

Responding to a request by the Scottish Government for independent advice, the CCC has [published](#) a report on proposed new climate change legislation, including the potential level of ambition for new Scottish climate targets. The Committee concludes that the Scottish Parliament has two options for a new 2050 target for GHG reduction: a 2050 emissions reduction target of at least 80% (on 1990) or 2050 emissions reduction target of 90% (on 1990).

UK Government Outlook for Gas and Clean Energy

Carbon Brief has compiled an analysis of [new UK government energy and emissions projections](#). According to the projections, the future UK electricity mix will have more renewables, batteries and interconnectors than expected. The shift in BEIS modelling, which includes a marked reduction in new gas capacity, parallels similar [changes made by National Grid](#).

Energy Prices and Bills Report 2017

The Committee on Climate Change (CCC) has released its [fourth independent assessment](#) of the impact of UK carbon budgets on household and business energy bills. The report finds that: in 2016, low carbon policies made up around 9% of an annual 'dual fuel' household energy bill of around £1,160; improvements in energy efficiency have saved the typical household around £290 per year since 2008; some energy-intensive manufacturing sectors have higher costs from climate policies but those deemed most 'at risk' are largely compensated for those costs; and, there is a range of opportunities for UK business arising from the transition to a low-carbon economy.

UKERC Review of UK Energy Policy

UKERC has published a review of UK Energy Policy, calling on the Government to take action during this Parliament in a number of key energy policy areas. See the [short video](#). UKERC is calling on the government to: set out clear priorities within the Industrial Strategy and Emissions Reductions Plan; develop a new White Paper on energy efficiency; create new strategies for gas and carbon capture and storage; extend the Levy Control Framework beyond 2020; reform the capacity mechanism; secure better vehicle emissions standards; and, launch a comprehensive public engagement campaign during this parliament.

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What is Driving Down UK Emissions

On 6 March, the Carbon Brief [announced](#) that the UK's CO₂ emissions were at the lowest level since 1894. The scale of recent reductions was credited to falling demand for coal between 2014 and 2016. A study by Dr Anne Owen, a researcher with UKERC and the Centre for Industrial Energy, Materials and Products [explores](#) the extent to which reductions between 1970 and 2016 are due to UK energy needs being met by increased renewables and less coal or, simply, less energy being used in UK homes and factories.

Will the Energy Transition be Derailed?

UKERC has released a blog based on its Director, Jim Watson's speech to UNI-SET Clustering Event, [Universities in the Energy Transition: Focus on Sustainable Transport and Carbon Capture, Storage and Use](#). The blog explores the implications of Brexit on the UK energy sector, the importance of international collaboration, and the need to pay attention to the potential losers of changes and the downside of the transition that is unfolding.

Brexit and Energy Policy

With the triggering of Article 50, UKERC researchers Antony Froggatt and Matthew Lockwood ask [how can the government protect the energy sector](#)? They conclude that the government needs to protect: electricity trade and interconnection; emissions trading and nuclear security; and, budgets for research, development and innovations; and that the government will need to look at the loss of Horizon 2020 and other EU funding and develop UK-based budget mechanisms that enable UK firms and universities to collaborate in Europe.

Dr Alex Howe of the Grantham Institute has [written](#) on Brexit and the uncertain road for the European Emissions Trading System. He writes that Brexit puts the spotlight on several EU schemes that the UK is currently involved in, and explores the value of a European scheme that aims to limit and reduce GHGs from more than 12,000 power and manufacturing plants in 31 countries, accounting for 45% of the EU's total emissions.

BEIS Inquiry on Leaving the EU

Oral evidence is ongoing in the UK BEIS committee inquiry, [Leaving the EU: negotiation priorities for energy and climate change policy](#). The latest evidence was heard on the 21 March 2017 and all written and oral evidence submitted to date can be accessed [online](#).

Scottish Parliament Seminar on Brexit and Energy

The Scottish Parliament Information Centre (SPICe) is seeking expressions of interest from academics to speak in a seminar in the Scottish Parliament on Brexit and Energy on the 24 May 2017. The aim of the seminar is to provide access for parliamentarians and their staff to academic knowledge, and will complement formal parliamentary business, such as committee inquiries and debates. Expressions of interest should be submitted by the 3 May 2017. For more information, email academia@parliament.scot.

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PAC Hearing on CCS

The UK Public Accounts Committee has [heard evidence](#) as part of its [inquiry](#) into the competitions run by BEIS aimed at reducing CO₂ emissions from power generation.

APPCCG Event: What's Next in the Fight Against Climate Change?

The UK All Party Parliamentary Climate Change Group (APPCCG) event ran an event on 7 February 2017, with MediaPlanet, entitled '2017: What's Next in the Fight Against Climate Change'. The event considered how best to focus energies and efforts in 2017 and a [summary of the event](#) has been published.

Survey Finds Growing Concern about Climate Change

A [survey conducted by ComRes for the Energy and Climate Intelligence Unit](#) (ECIU) has found that a growing majority of British adults (64%) say that climate change is happening and that it is primarily due to human activity. The understanding that climate change is real and man-made has steadily become [more widespread](#) since 2014 (57%) and 2015 (59%).

UK Businesses call on Government to Address Policy Gap to Decarbonise Heat for Buildings

Thirty companies and trade bodies active in the energy efficiency, construction and heat markets have [written](#) to BEIS Secretary of State Greg Clark urging him to commit to an ambitious energy efficiency drive as part of the forthcoming Clean Growth Plan. The letter, which was coordinated by WWF, argued that energy efficiency is one of the most cost-effective ways of meeting the UK's climate targets, as well as other benefits, such as tackling fuel poverty.

Support for Low Carbon Rural Energy Innovations in Scotland

The Scottish Government has [announced](#) a multi-million pound fund is being made available to assist innovative local energy projects in rural part of Scotland. Projects that have the potential to increase energy efficiency, reduce carbon emissions and boost local economies to apply for up to £100,000 from the Low Carbon Infrastructure Transition Programme.

Climate Change Plan: Parliamentary Committee Responses Published

The four Parliamentary Committees that have been considering Scotland's new plan to tackle climate change have published their final recommendations to the Scottish Government. The reports from each committee can be viewed online: [Environment, Climate Change and Land Reform Committee, Rural Economy and Connectivity Committee, Local Government and Communities Committee, Economy, Jobs and Fair Work Committee.](#)

Climate Science, Impacts and Adaptation

IEA Bioenergy Response to Chatham House Report

The International Energy Agency Bioenergy Technology Collaboration Programme attracted more

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than [125 academic signatories](#) who consider that the recent [report](#) by UK think tank Chatham House on the impact of bioenergy on global climate does not present an objective overview of the current state of scientific understanding with respect to the climate effects of bioenergy. The signatories to a letter sent to Chatham House argue that the think tank's report is misleading and urge them to consider its recommendations.

A Roadmap for Rapid Decarbonisation

Research by a multi-country academic team [published in Science](#) sketches out a broad decadal decarbonisation narrative in four dimensions – innovations, institutions, infrastructures and investment – to provide evidence of the feasibility and depth of transformation for economies to stay on a low-carbon trajectory. It identifies crucial steps, grounded in published scenarios combined with expert judgement. Each step explores actions for rapid near-term emissions reductions, and actions for systemic and long-term impact.

Climate Change to Stretch Household Budgets

Disadvantaged groups need help with the cost pressures caused by climate change, according to a new report by the University of Dundee for the Joseph Rowntree Foundation. The report, [Community Resilience to Climate Change](#) warns that shocks such as extreme weather events and stresses like changes in the cost of living will interact to generate hardships for local communities. The researchers warn that climate change will disproportionately impact upon already disadvantaged people.

Security of Electricity Supply

ClimateXChange has [published a study](#) which analyses the current level of transmission import capability and investigates the transmission import capability required going forward. Findings include: development of either new transmission links or new schedulable generation capacity in Scotland is likely to be required by the late 2020s; Scottish peak-demand security is only one of a number of aspects of security of supply; and, current calculations used to estimate the required capability of the transmission system in respect of reliability of supply need to be revisited. The author of the study, Simon Gill, University of Strathclyde, has also written a [blog](#) on his research findings.

CCS Sites and Public Perception of CCS

Carola Braun, University of St Andrews, has published research [Not in My Backyard: CCS Sites and Public Perception of CCS](#). Using detailed survey data on the public perception of CCS, the study quantified how living close to a potential CO₂ storage site affects acceptance of CCS. It also analyses the influence of other regional characteristics on the acceptance of CCS. The study finds that respondents who live close to a potential CCS site have significantly lower acceptance rates than those who do not.

Experts Align to Improve Health and Climate Change

Experts from 16 organisations convened this month at the *Lancet Countdown: Tracking Progress on Health and Climate Change* event to discuss priorities for future multidisciplinary research efforts

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and the course of action that academics should take. A film of the event can be viewed [online](#).