



Scotland's centre of expertise connecting
climate change research and policy

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

July 2019

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

2019 set to be record breaking year

[Carbon Brief](#) estimates that 2019 is most likely to be either the second or third warmest year on record for the Earth's surface (depending on the approach used to calculate global temperatures). June 2019 was the [warmest June since records began](#), and July 2019 is likely to be the warmest July on record and the [warmest month ever recorded](#).

[Analysis¹, published by the World Weather Attribution initiative](#), on the role of human activities in the recent heatwave in France has found that: every heatwave occurring in Europe today is made more likely and more intense by human-induced climate change and; intense heatwaves are occurring at least 10 times more frequently today than a century ago.

European Investment Bank (EIB) to end fossil fuel lending

In a [draft](#) of its new energy lending policy, the EIB has said it will phase out support to energy projects reliant on fossil fuels: oil and gas production, infrastructure primarily dedicated to natural gas, power generation or heat based on fossil fuels. These types of projects will not be presented for approval to the EIB board beyond the end of 2020. In doing so the Bank is focusing on the longer-term challenge and investment needs of the energy sector and has stated that all their activities in the energy sector will be fully aligned with the Paris Agreement. The draft will be discussed by the EIB board at a meeting in September.

¹ The analysis is not yet peer-reviewed but undertaken by scientists experienced in this field and using thoroughly tested methods.

The risks of exaggerating how much CO₂ can be absorbed by tree planting

[Research suggests](#) that exaggerated claims about the role of reforestation in removing carbon from the atmosphere could actually set back meaningful action on climate change. This is because of 'mitigation deterrence', i.e. promises of cheap and easy CO₂ removal in future make it less likely that time and money will be invested in reducing emissions now.

UK Climate and Energy Research and Policy

Top ten UK's hottest years all since 2002

An [updated analysis](#) of the annual UK temperature records from the Met Office shows that since 1884 all of the UK's ten warmest years have occurred since 2002; whereas none of the ten coldest years have occurred since 1963. These figures are further indications of a changing climate, says the Met Office.

The Committee on Climate Change (CCC) report to Parliament on reducing UK emissions

The CCC's [annual report](#) to Parliament finds that UK action to curb greenhouse gas emissions is lagging behind what is needed to meet legally-binding emissions targets. Since June 2018, Government has delivered only 1 of 25 critical policies needed to get emissions reductions back on track. The report recommends that:

- Net-zero policy is embedded across all levels and departments of Government
- Government policies to reduce UK emissions to net zero are business-friendly
- The public are fully engaged in the UK's net-zero transition
- The UK strongly leads international action to tackle climate change

CCC report to Parliament on preparing for climate change

The CCC Adaptation Committee's [report](#) on progress in preparing for climate change in England, and which provides a first evaluation of the Government's second National Adaptation Programme, has the following key findings:

- The priority given to adaptation, including through the institutional and support framework in England, has been eroded over the past ten years.
- England is still not prepared for even a 2°C rise in global temperature, let alone more extreme levels of warming. Only a handful of sectors have plans that consider a minimum of 2°C global warming – water supply, road and rail, flood defences and flood risk planning for infrastructure.
- Many national plans and policies still lack a basic acknowledgement of long-term climate change, or make a passing mention but have no associated actions to reduce risk. This includes aspects of agriculture, the natural environment, health, other infrastructure sectors and business.

- The UK Government must raise the profile, and strengthen the governance, of preparations for the impacts of climate change. It should ramp up resources and action on all of the urgent risks set out in the UK Climate Change Risk Assessment, continue to take appropriate action for those classed as less urgent (but still important), and monitor the effects on climate risk over the next five-year period.

Meeting climate change requirements if there's no Brexit deal

The UK Government has [published](#) a series of technical notices setting out information to allow businesses and citizens to understand what they would need to do in a no deal scenario so they can make informed plans and preparations. These have recently been updated to confirm the start date of the Carbon Emissions Tax; and to update the information on the Kyoto Protocol National Registry.

The purpose of the notice is to support contingency planning for a no deal scenario of UK operations of installations (e.g. power stations) and UK-administered aircraft operators currently within the EU Emissions Trading Scheme (EU ETS); and other organisations and individuals with accounts within the UK section of the Consolidated System of European Registries which also includes the UK's Kyoto Protocol National Registry.

It clarifies the implications of the UK leaving the EU on the licensing regime for the geological storage of carbon dioxide; whilst this is not a direct component of the EU ETS, the licensing regime for the geological storage of carbon dioxide partly relies on EU ETS legislation.

It also outlines the impact on energy-using products that fall under the eco-design directive and/or energy labelling regulations.

Energy demand in a net zero carbon UK

A [new report](#) from the Centre for Research into Energy Demand Solutions (CREDS) proposes actions to strengthen and deliver the commitments in the UK Government's Clean Growth Strategy. The report, which seeks to answer the question, "what is the role for energy demand change in the transition to an energy system consistent with a net zero carbon UK", recommends:

- Prioritising energy demand solutions and recognising all of their benefits
- Scaling up policies that work now and investing in energy demand innovation on the long-term
- That Government acts now to develop institutions and policy

A Citizens' Assembly on Climate Change: Insights from Social Psychology

The UK government plans to set up a Citizens' Assembly to address action on climate change. A [blog](#) by Emily Cox from the Tyndall Centre Cardiff discusses how insights from www.climatexchange.org.uk

research on deliberative decision making could be used when setting up and running the citizens' assembly, for example:

- Research suggests that citizens' assemblies have the potential to come up with reasonable and workable policy recommendations. Non-experts have an ability to see past the tunnel vision of the specialist, and use analogies from their everyday life to make sense of complex topics.
- Giving a citizens' assembly decision-making power could actually benefit the policy-makers themselves. This is because it would absolve the government of responsibility for unpopular decisions in a domain where many decisions are likely to go against someone's wishes.
- The importance of techniques such as 'topic blindness' when selecting participants.

Restore UK bogs to tackle climate change

The Office for National Statistics (ONS) [estimates](#) that fully restoring the UK's lost peatlands could cost between £8-22bn over the next 100 years. However, the predicted savings in terms of reduced carbon emissions is predicted to be £109bn.

Climate Science, Impacts and Adaptation

The role of direct air capture in deep mitigation pathways

Using the first inter-model comparison on the role of Direct Air Carbon Capture and Storage (DACCS) in 1.5° and 2°C scenarios, [research](#) shows that deploying DACCS significantly reduces mitigation costs and it complements rather than substitutes other negative emission technologies. The key factor limiting DACCS deployment is the rate at which it can be scaled up, which would require considerable sorbent production and energy input. The research shows a risk of assuming DACCS can be deployed at scale, and then finding it to be subsequently unavailable, leads to a global temperature overshoot of up to 0.8°C.

Climate change behaviours – segmentation study

New [research by ClimateXChange](#) has identified and evaluated approaches to grouping or segmenting the public according to their attitude and behaviours related to climate change. It has also reviewed the dominant ideas on how to change behaviour.

Key findings regarding how to influence behaviour change are:

- While there have been many studies published in this area recently, behaviours and practices remain the dominant lenses.

- Behaviour change research remains a highly active area, but it has not seen any fundamentally different or significantly more effective approach introduced in the last five years.
- There is a growing evidence base highlighting the limitations of focusing on changing beliefs and attitudes with the intention of changing behaviour.
- Research also highlights the limits on what individual and collective choice can achieve and the limits of 'nudging' or manipulating choice architecture. This is not to say these approaches are not effective. However, a more interventionist approach is necessary to achieve the radical changes to our lifestyles required by the Scottish Government's carbon-reduction targets.
- Using an interrelated practice lens rather than the existing behaviour-based approach will have significant benefits in guiding the interventions required by our climate change obligations.

Key findings regarding segmentation:

- Segmentation is a useful tool for helping to develop public knowledge and attitudes. However, it has limited effect on stimulating actions supporting new low-carbon behaviours over the long term when used to target information-based campaigns.
- It is challenging to identify which segmentation variables (and in which combinations) are the most effective and should be used as the basis for targeted climate change engagement. This is due to a) the broad range of variables used across the themes of housing, transport, consumption/waste, food and diet; b) inconsistent and missing evidence across a large number of studies reviewed; and c) conceptual limitations of the dominant belief-attitude-intention pathway.