

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

August 2018

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

India's emissions could double by 2030

An assessment of the impact of meeting development goals on greenhouse gas emissions suggests that India's emissions could double by 2030. Researchers in the New Delhi based Centre for Policy Research's Initiative on Climate Energy and the Environment [explain their findings in Carbon Brief](#).

Australia's climate goals at risk amid political turmoil

The seventh Prime Minister in eleven years took office in Australia this month amidst a political row centred on energy and climate policy. Scott Morrison succeeds Malcolm Turnbull as Liberal Party leader after a bitter row over Turnbull's plans for a National Energy Guarantee which would have resulted in modest cuts to greenhouse gas emissions. [Read more here](#)

Mercedes-Benz Energy moves into energy storage

The German car manufacturer is using vehicle technology to repurpose a retired coal plant, as it takes its knowledge of electric vehicles (EVs) and moves into energy storage. Daimler, which owns Mercedes-Benz, is turning the old Mark-E coal-fired plant in Elverlingsen, Germany, into an energy storage facility, using nearly 2,000 modules from EV battery packs. [Read more here](#)

Global forest cover increasing, according to new research

New research published in the journal Nature examines 35 years' of satellite data to show that tree cover has increased by 2.24 million km² (+7.1% relative to the 1982 level). This overall net gain is the result of a net loss in the tropics being outweighed by a net gain in the extratropics. [Read the paper here](#).

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UK Climate and Energy Research and Policy

Ofgem raises price on safeguarding tariff

The energy regulator Ofgem announced that the price of dual fuel for consumers on the safeguard tariff will be raised by £47 from October. The regulator also delayed plans, due to be published in August, on potential changes to the cap. [Read more in Utility Week here.](#)

UKERC publishes new data on biomass

The UK Energy Research Council has published the Techno-Economic Assessment of Biomass Pre-Processing (TEAB). The project models the costs, efficiencies and greenhouse gas emissions of biomass supply chains, with and without significant pre-processing. [The data can be accessed here.](#)

GPs and Churches move to go green

August saw the Royal College of General Practitioners move to divest entirely from fossil fuels whilst the Church of England announced it would go 100% renewable in its energy sources. The GP representative body said it was making the move in response to climate risks that 'threaten to destabilise our National Health Service'. [Read more about the divestment here.](#) [Read about the change by Churches here.](#)

Report shows fracking impact on air pollution

A report from the UK Government's Air Quality Expert Group, finalised in 2015 but only published this summer, estimated that a fracking industry of 400 wells would increase national emissions of pollution, with nitrogen dioxides rising 1-4% and volatile organic compounds 1-3%. But it warned: "Impacts on local and regional air quality have the potential to be substantially higher than the national level impacts, as extraction activities are likely to be highly clustered." [Read the report here.](#)

New research explores economic impacts of UK trade-enhancing policies on the energy system

Research from a group of academics including CXC fellow Gioele Figus, suggests that an across-the-board stimulus to exports stimulates all major economic indicators, and increases total energy use significantly. [Read the research here.](#)

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Climate Science, Impacts and Adaptation

“No evidence” that environmental concerns affect heating system choice

Research published in the journal Energy Policy suggests that environmental concerns are not an important determining factor in either the decision to upgrade or the subsequent choice of heating system. The research examines four aspects of decision-making with respect to heating system upgrades: home-owner decisions on whether to upgrade, decisions on fuel choice, fuel switching patterns, and an examination of the reasons why home-owners make these decisions. Among the key findings are that proximity to the gas grid is an important determinant of residential heating systems upgrades, including fuel choice. [Read the research here.](#)

84 million more people could be at risk of hunger unless climate policies consider welfare

A new study published in Environmental Research Letters suggests that food-security support through international aid, bioenergy tax, or domestic reallocation of income is needed to shield impoverished and vulnerable people from the additional risk of hunger that would be caused by the economic effects of policies narrowly focussing on climate objectives only. In the absence of such support, 35% more people might be at risk of hunger by 2050 (i.e. 84 million additional people). [Read the research here.](#)

Afforestation potentially more effective than BECCS in mitigating climate change

New research suggests that the effectiveness of bioenergy carbon capture and storage (BECCS) in tackling climate change depends on the choice of biomass, the fate of initial above ground biomass, and the fossil-fuel emissions offset in the energy system. Depending on these factors, carbon removed from the atmosphere through BECCS could easily be offset by losses due to land-use change. The study, published in Nature Communications, found that if BECCS involves replacing high-carbon content ecosystems with crops, then forest-based mitigation could be more efficient for atmospheric CO₂ removal than BECCS. [Read the research here.](#)

“Hothouse Earth” research shows potential for runaway climate change

Many news outlets picked up new research which explores the risk that self-reinforcing feedbacks could push the Earth System toward a planetary threshold that, if crossed, could prevent stabilisation of the climate at intermediate temperature rises and cause continued warming on a “Hothouse Earth” pathway even as human emissions are reduced. The research, published in the Proceedings of the National Academy of Scientists journal, suggests that “stewardship of the entire Earth System—biosphere, climate, and societies—[including] decarbonisation of the global economy, enhancement of biosphere carbon sinks, behavioural changes, technological innovations, new governance

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arrangements, and transformed social values” is needed to avoid the Hothouse effect. [Read more here.](#)

Methane uptake in forest soils down 77% in past three decades

The amount of methane absorbed by forest soils has fallen by an average of 77% in the northern hemisphere over the past 27 years, a new study finds. The research, which analysed soil data taken from more than 300 studies, suggests that the world is currently overestimating the role that forest soils play in trapping gas. [Read more in the Proceedings of the National Academy of Scientists journal here.](#)

Plastics emitting climate changing gases

New research published in Plus One finds that plastics are not only polluting our seas but they are also emitting methane and other trace amounts of greenhouse gases. The research suggests that the this “heretofore unrecognised source of climate-relevant trace gases” may increase as plastic production is set to double in the next two decades. [Read more here.](#)

Warm water trapped under Arctic could melt entire ice pack

Researchers have discovered a patch of warmer water, pushed north from increasingly warmer areas of the Chukchi Sea, which they say has the potential to melt the whole Canadian Basin. Assessing data gathered over 30 years researchers at Yale University and Woods Hole Oceanographic Institution saw the “heat content” of the area had doubled during this period. [For more, see Science Advances.](#)