

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

### October 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

#### Emissions gap report

The [UN Environment Emissions Gap Report 2017](#) shows there is still a large gap between the pledges by government to cut greenhouse gas emissions and the reductions scientists say are needed to avoid dangerous levels of climate change. Current plans from national governments, and pledges made by private sector companies and local authorities across the world, would lead to temperature rises of as much as 3°C or more by the end of this century, far outstripping the Paris Agreement goal of holding warming to below 2°C.

#### Energy efficiency at a crossroads

The IEA's Energy Efficiency 2017 [report](#) says that global progress on energy efficiency has become dependent on yesterday's policies, with the implementation of new policies slowing. If the world is to transition to a clean energy future, a pipeline of new efficiency policies needs to be coming into force. The report says that the current low rate of implementation risks a backward step.

#### Universal energy access by 2030 within reach

[Analysis](#) from the International Energy Agency (IEA) finds that the most cost-effective strategy for providing universal access to electricity and clean-cooking facilities in developing countries is compatible with meeting global climate goals, and prevent millions of premature deaths each year. The findings are a positive sign that universal access to energy is within reach for billions lacking energy services.

#### World petrol demand likely to peak by 2030

A [report by Wood Mackenzie](#) predicts that world petrol demand will peak within 13 years thanks to the impact of electric cars and more efficient engines. Of the 96 million barrels of oil consumed globally each day, almost 60 million are used in transport. However, technological advances in fuel efficiency and the move to hybrid and electric vehicles look set to disrupt demand.

#### New Zealand climate ambition

New Zealand's Prime-minister elect Jacinda Arden has announced plans for the country to reduce its net greenhouse gas emissions to zero by the year 2050 and to generate 100% of its electricity from renewable sources by 2035. Ms. Arden is quoted saying "I don't need to be influenced on climate

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change, it will sit at the heart of what this Government does."

### **Norway proposes major cuts to CCS budget**

The Norway state budget proposal for 2018 sets out plans to slash carbon capture and storage (CCS) funding by 90%. The independent non-profit Bellona Foundation has [criticised](#) the move saying it will jeopardise three CO<sub>2</sub> capture installations around the Oslo fjord. The announcement comes as the UK and the Netherlands [announce new strategies](#) to develop CCS.

### **Paris to ban petrol- and diesel-fueled cars by 2030**

Paris authorities are planning to [ban all but electric cars from the city by 2030](#). Paris City Hall said in a statement France had already set a target date of 2040 for an end to cars dependent on fossil fuels and that this required speedier phase-outs in large cities.

### **Surge in corporate planning for cost of carbon**

The number of international companies [using an internal carbon price](#) in their business planning rose sharply in 2017 as boards and investors pushed managers to assess risks associated with climate change. Public filings compiled by [CDP](#) shows there are 607 big companies using some kind of carbon price assumption to inform strategic decisions, up 17% from 2016.

### **UK and Canada announce global alliance to end coal power**

The UK and Canada have committed to phase coal out of their electricity generation – by 2025 in the UK and 2030 in Canada. A [statement](#) from Canada's minister for the environment Catherine McKenna and UK climate minister Claire Perry said " Phasing unabated coal power out of the energy mix and replacing it with cleaner technologies will significantly reduce our greenhouse gas emissions, improve the health of our communities, and benefit generations to come."

### **New Dutch coalition goes for climate leadership in Europe**

After 7 months of negotiations, [a new four-party government has been formed](#) in the Netherlands. Included in the new coalition accord (the measures the parties have agreed on for the coming governing period) are very ambitious paragraphs on climate change and energy. The new government intends to adopt a Climate Law, a minimum CO<sub>2</sub> price, close all coal-fired power stations by 2030, and allow only zero-emission vehicles to be sold from 2030.

### **Renewable electricity set to grow 40% by 2022**

The IEA's newly renamed [Renewables 2017](#) (formerly titled Medium-Term Renewable Energy Market Report) shows that the renewable electricity market has witness an unprecedented acceleration in recent years, and it broke another annual deployment record in 2016. A report by [Carbon Brief](#) states the forecast is a significant upwards revision of IEA's projections a year ago, and is largely driven by increasing expansion of solar energy in China and India.

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## UK Climate and Energy Research and Policy

### Clean Growth Strategy

The UK Government's Clean Growth Strategy, published on the 12 October 2017, has been met with mixed reaction from different stakeholder groups. Some examples below:

- [Committee on Climate Change](#)
- [Grantham Institute](#)
- [UKERC](#)
- [WWF](#)
- [Green Alliance](#)
- [Scottish Renewables](#)
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### Independent review on the cost of energy

A report by Professor Dieter Helm on how to reduce costs in the power system have been [published](#) by the UK Government. Following the publication of the UK's Industrial Strategy Green Paper, Prof Helm was asked to consider the whole electricity supply chain of generation, transmission, distribution and supply. The government is now considering the findings of Prof Helm's review, a process which includes a [stakeholder call for evidence](#).

The [Committee on Climate Change](#) has published its reflections on the Helm Review, and [Carbon Brief](#) has published the challenges facing its implementation.

### Public engagement with energy

UKERC has published a [paper](#) examining public engagement with energy in the UK. Using mapping techniques, the paper investigates instances of engagement with energy between 2010 and 2015. The paper concludes with a number of practical recommendations to assist the move towards a broader, whole systems approach to engaging society in low carbon transitions – see also the project [blog](#).

### London enforces T-Charge

Older vehicles driving in central London now need to meet minimum Euro emission standards or pay an extra daily charge. This is in addition to the Congestion Charge. The [T-Charge](#) (officially known as the Emissions Surcharge) operates in the Congestion Charge zone and is part of our commitment to help clean up London's dangerously polluted air. Air quality policies like the T-charge, and their impacts on health and the environment were the subject of discussion at a [Grantham Institute](#) hosted event. Experts discussed using creative policy to combine air pollution and climate change solutions.

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### **Technologies to support Scotland's Energy Efficiency Programme**

Innovation will be a key part of reducing heat demand through the delivery of Scotland's Energy Efficiency Programme (SEEP). ClimateXChange has published [research](#) on the status of near-to-market energy efficiency, heat generation and smart energy technologies. The research will inform the Scottish Government on these technologies' potential suitability in SEEP.

### **Comparison of remote sensing approaches for detection of peatland drainage in Scotland**

Peatland drainage in Scotland has been carried out for over a century, to prepare peatland for afforestation, agricultural or grouse moorland use. Drainage leads to peatland degradation and carbon release, in the form of Greenhouse Gas (GHG) emissions and the release of carbon into waterways. There are few records remaining of where drainage has taken place in Scotland, although this information is vital to enable accurate emissions accounting in the UK GHG Inventory and to assess priority areas to fulfil the ambitious peatland restoration and rewetting targets in the Climate Change Plan. A first pilot study was undertaken in 2016 to explore the use of earth observations (EO) to detect drains. CXC has published [research](#) based on extending the modelling approach from the pilot study.

### **Grass-fed beef will not help climate change**

A [report](#) by the Food Climate Research Network at the University of Oxford has found that cattle fed on grass release more greenhouse gas emissions than are offset through soil carbon sequestration. This means that grass-fed beef is "in no way a climate solution" says the lead author of the report.

### **Scottish MSPs vote to endorse fracking ban**

Following the announcement in early October that unconventional oil and gas extraction 'cannot and will not take place in Scotland', MSPs have [voted](#) to endorse the Scottish Government's ban. 99% of responses to the public consultation opposed fracking and MSPs backed the energy minister Paul Wheelhouse 91 votes to 28.

### **World's first floating wind farm starts delivering electricity**

Five giant turbines, tethered to the seabed 15 miles from Peterhead in Aberdeenshire has [started delivering electricity to the Scottish grid](#). The wind farm will generate enough power for 20,000 homes. The turbines themselves measure 175m from sea surface to blade tip. They extend 78m below the surface and are chained to the seabed to stay in place.

### **Glasgow named as Scotland's first low emission zone**

Glasgow has been [named](#) as Scotland's first Low Emission Zone (LEZ) following the Scottish Government's commitment to have the first LEZ in operation by 2018. Further LEZs will be established so that Scotland's four largest cities are covered by the initiative by 2020.

[www.climatexchange.org.uk](http://www.climatexchange.org.uk)

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### **Oxford to ban all petrol and diesel vehicles from city centre**

[Proposals to ban](#) all petrol and diesel vehicles from its city centre would see them excluded from six central streets from 2020. The area will then be expanded in 2025 and 2030 to cover the entire city centre, and finally in 2035 HGVs will also be banned from the same zone. It is thought this will become the world's first Zero Emissions Zone. A six-week public consultation on the proposals has been launched.

## **Climate Science, Impacts and Adaptation**

### **Preparing Europe for climate change**

A new [report](#) by the European Environment Agency (EEA) assesses current practices in climate change adaptation and disaster risk reduction in Europe. It highlights emerging innovation tools that national, regional and local authorities are using to tackle the impacts of weather- and climate-related hazards. The report finds that increasing coherence in actions and using innovative methods can improve the handling of extreme weather events across Europe and elsewhere.

### **Geoengineering: Scientists debate radical ways to reverse global warming**

The Institute for Advanced Sustainability Studies in Potsdam, Germany has [convened](#) international research scientists, policymakers and ethicists to discuss the emerging field of "climate engineering" and what it could mean for the planet. Carbon Brief has pulled together a useful [summary of the conference](#), which included updates on geoengineering technologies, governance of emerging technologies, public engagement and the wider implications of climate engineering. The conference also included sessions run by those strongly opposed to geoengineering.

Scientists attending the [Chatham House Climate Change conference](#) have [warned](#) the world needs 'carbon sucking' technology by the 2030s.

### **CO<sub>2</sub> rise will affect all sea life**

The Germany-led [Biological Impacts of Ocean Acidification \(BIOACID\)](#) project has reported that all sea life will be affected by CO<sub>2</sub> emissions that are making the oceans more acidic. The eight-year study involved more than 250 scientists.