

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

**November 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

#### **COP23 key outcomes**

##### Talanoa dialogue

The [Talanoa Dialogue](#), known previously as the Facilitative Dialogue, is a process through which all countries will revise their ambition in reducing greenhouse gas emissions before 2020.

The final approach of the Talanoa dialogue was included as an annex to the main COP23 decision and will be structured around three questions – “Where are we? Where do we want to go? How do we get there?” – and includes new details such as a decision to accept inputs from non-party stakeholders as well as parties.

##### Pre-2020 ambition

Discussions around pre-2020 climate action, centred on a developing country concern that rich countries had not done enough to meet their commitments for the period up to 2020 (before the Paris Agreement kicks in). Two concerns were addressed during talks: the lack of delivery by developed countries against the \$100 billion per year in climate finance by 2020 agreed in 2009; and the fact that the Doha Agreement has not been ratified by enough countries to bring it in to force. The talks concluded with pre-2020 ambition and implementation forming a major part of the [COP23 decision text](#).

##### Paris rulebook

The Paris ‘rulebook’ will establish the technical rules for fulfilling the Paris Agreement, e.g.: how Nationally Determined Contributions (NDCs) should be set, rules for reporting of adaptation efforts and for monitoring compliance with the Paris Agreement. The deadline for this work is COP24 (December 2018), and the COP23 decision text recognises that an additional negotiating session may be needed in 2018 to ensure the Paris rulebook is finished on time.

Further analysis is provided by [Carbon Brief](#).

#### **IEA world energy outlook**

The IEA's [World Energy Outlook-2017](#) includes a full update of energy demand and supply projections to 2040 based on different scenarios. The projections are accompanied by detailed analyses of their impact on energy industries and investment, as well as implications for energy

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security and the environment. This year's report highlights how China's choices could reshape the global outlook for all fuels and technologies and focuses on natural gas, the market implications of the rise of shale gas and LNG, and the opportunities and risks for gas in the transition to a cleaner energy system.

### **International climate change target frameworks**

ClimateXChange has [published](#) a summary of greenhouse gas emissions target frameworks for countries with and without legislated targets. The case study countries were selected on the basis of having statutory and/or highly ambitious targets. The research found that: internationally, a wide range of approaches have been adopted to deal with climate change legislation and targets; approaches adopted are unique to a country's own context and circumstances; all the countries included in the summary use their Nationally Determined Contribution (NDC) as the basis of target-setting and progress monitoring; and no evidence was found of statutory annual emissions reduction targets from any of the countries reviewed.

### **Ireland to face fines after serious rise in greenhouse gas emissions**

The Irish Environmental Protection Agency (EPA) has released figures showing GHG emissions increased by 3.5% in 2016. The rise is attributed to increased activity in the dairy and energy industries, and the transport sector. As a result, [the State could face EU fines](#) of more than €450 million in 2020 for missing legally binding GHG emission reduction targets.

### **The global status of CCS**

The Global CCS Institute (GCCSI) has released its [2017 Global Status of CCS report](#). Conclusions include:

- Paris climate change targets cannot be reached without CCS
- CCS is the only clean technology capable of decarbonising major industry (steel, cement, fertiliser, pulp and paper, petrochemicals)
- CCS is the conduit to a new energy economy of hydrogen production, bioenergy and CO2 re-use applications

## **UK Climate and Energy Research and Policy**

### **UKERC review of energy policy**

Reflecting on changes over the past year, the UKERC [review of UK energy policy](#) recommends:

1. 'Develop a strategy to avoid 'cliff edges' for the energy sector due to Brexit, including effects on interconnectors, the single electricity market for the island of Ireland, and nuclear power.

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2. A White Paper that includes stronger incentives for energy efficiency across the economy, and an enhanced programme of low carbon heat demonstration and evaluation.
3. Learn from the success of offshore wind by extending competitive auctions in the power sector.
4. Minimise the costs of electricity system change and renewables integration by increasing incentives for flexibility.
5. Complement the additional funding for CCS innovation with a new strategy for deployment in the industrial and power sectors.
6. Ensure that vehicle taxation and other incentives are compatible with the target for phasing out new conventionally fueled cars and vans by 2040. This should be complemented by a wider strategy for mobility that takes into account anticipated new services and business models.
7. A more comprehensive programme of action to involve citizens and communities in the clean energy transition.
8. Identify opportunities for energy policy learning across the UK – particularly in the areas of heat, engagement and energy efficiency.

### **UK industrial strategy**

The UK Department for Business, Energy and Industrial Strategy (BEIS) has published its white paper, [Industrial Strategy, Building a Britain fit for the future](#), which sets out a long-term plan to boost the productivity and earning power of people throughout the UK. The strategy focuses on five foundations: ideas; people; infrastructure; business environment; and places.

Four 'Grand Challenges' are identified in the strategy – artificial intelligence, an ageing society, the future of mobility, and clean growth. It states that the move to cleaner economic growth through low carbon technologies and the efficient use of resources is at the same time "one of the greatest industrial opportunities of our time" estimating that the UK's clean economy could grow at four times the rate of GDP.

Hugh McNeal, RenewableUK Chief Executive [expressed disappointment](#) that the Industrial Strategy does not mention onshore wind, wave or tidal energy.

Jill Duggan of The Prince of Wales's Corporate Leaders Group [argues](#) the strategy promises plenty for the green economy, but lacks details.

### **UK autumn budget**

In his [second budget this year](#), the UK Chancellor Philip Hammond said the UK 'led the world on climate change agreements', and pledged new money to support the shift to electric vehicles. The budget effectively ends new support for low-carbon electricity, promises to maintain the UK carbon price at current levels until coal is phased out (but without details), freezes fuel duty, and offers further beneficial tax changes to North Sea oil and gas.

The Renewable Energy Association [said](#), 'Whilst the announcements for electric vehicles are positive, the UK government seem to be turning their back on renewables by announcing no new support for

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projects post 2020 and a freeze on carbon taxes.’

[Carbon Brief](#) provide further analysis.

### **Renewable energy investment after Brexit**

ClimateXChange has [published](#) research that considers the extent to which Brexit poses a risk to renewable electricity investment in the UK – and Scotland in particular. The report finds that in the medium term, Brexit may affect Scotland's substantial number of on- and off-shore wind projects in the pipeline. It notes however positive signs that European utilities remain committed to developing the UK's domestic supply chain, and considers recent inward investment flows and record low auction prices for delivering offshore wind energy as encouraging signs of industry resilience.

### **Local authorities play key role in providing clean energy for all**

UKERC has [published](#) research that maps energy initiatives across all UK Local Authorities for the first time, revealing considerable regional and national variation in activity. The research also examines a sample of energy projects in depth from 40 local authorities and compares local authority engagement in Britain and Europe. The mapping demonstrates that the UK political-economic context for local authority action on energy remains uncertain, due to a number of challenges e.g. austerity in public finances. Despite the challenging context, local authorities continue to pursue energy initiatives which are viewed as a source of revenue and an agent of transformation for local prosperity – see also the project [blog](#).

### **Debate about Moray Firth CO<sub>2</sub> storage**

Researchers from Heriot-Watt University have [cast doubt](#) on one of the most-favoured sites for storing CO<sub>2</sub> under the North Sea, claiming there are potential leakage points. Prof John Underhill, who led the research, insists CCS remains a good idea but better Scottish sites would need to be found, such as depleted oil fields in the North Sea.

Scottish Carbon Capture and Storage (SCCS) has [welcomed the additional information](#) provided by this research, but notes it focuses on an area of the Captain Sandstone over 70km to the west of the sites being considered for CO<sub>2</sub> storage. SCCS referred to extensive studies undertaken by industry and research consortia that have investigated CO<sub>2</sub> storage within the Captain Sandstone - away from cross-cutting faults and the eastward extension highlighted by the Heriot-Watt research - to depths of 1000m.

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

### **Improving poverty and inequality modelling in climate research**

Current models used in climate research have a limited ability to represent the poor and vulnerable, or the different dimensions along which they face these risks. New model features that incorporate [www.climatexchange.org.uk](http://www.climatexchange.org.uk)

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social heterogeneity and different policy mechanisms need to be developed. Increased collaboration between modellers, economists, and other social scientists could aid these developments.

[Researchers have reviewed](#) the history of state of the art models used in climate change research and assessed how and to what extent they represent distributional impacts within countries.

### **Impact of climate change on health**

Researchers from the [Lancet Countdown on Health and Climate Change](#) have [said](#) the effect of climate change on human health is now so severe that it should be considered the 'the major threat of the 21<sup>st</sup> century'. The authors say that from driving up the number of people exposed to heatwaves, to increasing the risk of infectious diseases, climate change has had far-reaching effects on many aspects of human health in the last few decades. The report uses a set of 40 indicators to track the effects of climate change on global health.