

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

March 2016

**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<sup>1</sup> 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 Policy

#### Paris Climate Agreement to be signed in April

UN Secretary General Ban Ki-moon invited world leaders to sign the Paris Climate Agreement at a ceremony in New York on 22 April. While the draft treaty was agreed by more than 190 countries in December last year, it must be signed by 55 countries representing at least 55% of emissions before it is brought into force. 120 countries are expected to attend the ceremony. [China and the US released a joint statement this month](#), confirming that they will both sign the agreement in April. The [Indian Government has also announced](#) that it will be signing the agreement at the ceremony.

#### Global economy grows while emissions stall

Data released by the International Energy Agency confirmed that global energy-related carbon dioxide [emissions stayed flat for the second year in a row in 2015](#), while GDP grew. [The data](#) suggest that renewable electricity played a critical role, accounting for around 90% of new electricity generation in 2015. Wind alone produced more than half of new electricity generation. The global economy grew by more than 3% in this time, offering further evidence that the link between economic growth and emissions growth is weakening. The world's two largest emitters, China and the United States, both registered a decline in energy-related CO<sub>2</sub>e in 2015. In China, emissions declined by 1.5%, as coal use dropped for the second year in a row. Analysis of data collected for the BP Statistical Review of World Energy 2015 by the [World Resources Institute revealed that 21 countries](#), including the UK, have grown their economies while reducing greenhouse gas emissions since 2000. The New York Times provided [further analysis](#).

#### EU traded emissions fall for the fifth straight year

Data released by the European Commission revealed that the emissions regulated under the European Union Emissions Trading System fell by 0.4% in 2015. 2015 was the fifth consecutive year in which emissions decreased. [Analysts at Thomson Reuters](#) attributed the fall largely to a 0.4% drop in emissions from the power sector, driven by an increase in generation from renewable sources.

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<sup>1</sup> [ClimateXChange](#) is Scotland's Centre of Expertise on Climate Change, supporting the Scottish Government's policy development on climate change mitigation, adaptation and the transition to a low carbon economy. The centre delivers objective, independent, integrated and authoritative evidence in response to clearly specified policy questions.

Low gas prices also led to an increase in the proportion of power generated by gas, displacing emissions from more highly carbon-intensive coal generation. Industry emissions also fell by 0.4%, mainly because of lower industrial production in the steel and cement sectors. Aviation emissions rose by 3.6% to 57 million tonnes of CO<sub>2</sub>e in the same period.

Politico released [a special report on the EU renewables sector](#), finding that renewables are now competitive with traditional energy sources and highlighting the importance of emerging battery technologies in facilitating their integration into power systems.

### **China's carbon emissions may have peaked in 2014**

China is responsible for [10% of the human contribution to climate change](#). The country has signalled [dramatic reductions in its greenhouse gas emissions](#) since signing the Paris Climate Agreement last year. A study of China's economy and energy system by Nicholas Stern and Fergus Green concluded that the trajectory of China's CO<sub>2</sub> emissions over the next decade is likely to be radically different from that during 2000–2013. Evidence reviewed suggests that emissions may have peaked in 2014 and are most likely to peak between 2014 and 2025. These changes are attributed to a major structural transformation of China's economy towards a more 'sustainable and inclusive' development model.

A report published in [Nature Climate Change](#) questioned the reliability of the data on which estimates of China's emissions reductions have been based. It suggests that emissions reductions may have been overstated in recent years, but agrees that coal-derived energy consumption probably decreased in 2015. The [New York Times](#) has further analysis of the study.

## **International Energy Policy**

### **EU faces €123bn nuclear waste management and decommissioning deficit**

Decommissioning and managing waste from the [EU's nuclear power stations will cost €253bn](#), according to a stocktake of the industry by the [European Commission](#). This cost is €123bn more than has been made available for these activities by the Union's nuclear nations. The UK is the only nation among these to have ring-fenced enough money to cover the costs of managing the legacy of its nuclear power plants. 90% of Europe's nuclear power plants are set to be closed by 2050, with almost half reaching the end of their planned lifetime this decade. Up to €500bn will be needed to meet the cost of new plant builds and lifetime extensions.

### **Almost US\$1 trillion of coal generation investments could be wasted**

A study by researchers at the [University of Oxford](#) warned that no investments in greenhouse gas emitting technologies can be made beyond 2017 if warming is to be limited to 2°C.

US\$ 981bn (£698bn) of capital is at risk of being wasted globally as a result of continued investment in new coal-fired power stations despite decreasing demand for coal-generated power. A joint study

by the [Sierra Club, CoalSwarm and Greenpeace](#) found that global coal generating capacity increased by 25% between 2014-15. 90% of this investment was in Asia, led by China and India. Investment despite downturn in demand caused plant utilisation rates to fall in all major regions, including in China, where utilisation is at its lowest since 1969 at 49.4%. A [study by the Energy and Climate Intelligence Unit](#) found that the 'Asian Tiger' economies including China, India, Indonesia and Vietnam, are likely to build far less than half of their current planned coal plants. The four countries have 1,824 plants either in planning or under construction, more than two-thirds of the world total. The study concluded that only around 500 of these are likely to be built.

Emissions from existing coal plants alone will be 150% higher than that required to limit global warming to 2°C— meaning that even currently operating coal-fired plants will have to be phased out well before the end of their planned lifetime.

The world's largest private coal mining company, Peabody, indicated that it is [likely to file for bankruptcy](#), having failed to make routine interest payments on debts. This follows the bankruptcy of [other large mining companies](#) in the past year, attributed to falling demand, low energy prices and increased environmental controls.

## UK Energy Policy

### UK emissions dropped by 4% in 2015

[DECC Energy Trends data](#) released this month show that the UK's carbon emissions fell by 4% in 2015, largely due to significantly reduced coal-fired power generation. [Analysis by Carbon Brief](#) shows that coal-fired power generation fell to its lowest level since the 1950s, down 24% since 2014 and 47% since 2012. The rapid decline in coal use is continuing in 2016, with four more stations closed in the last fortnight, including Scotland's [Longannet](#). Six coal-fired power stations are currently operational in the UK. DECC'S figures show that [57.7% of Scottish electricity consumption](#) came from renewables in 2015 – up 7.9% on the year before and exceeding the 2015 target by 7.7%.

### Capacity Market fails to secure supply: IPPR

A [report by the Institute for Public and Policy Research \(IPPR\)](#) claimed that the UK Capacity Market (CM) is unnecessarily expensive and doesn't help to secure energy supply. A key element of the UK Government's Energy Market Reform, the CM is an annual auction aimed at ensuring a reliable supply of electricity at all times. However, the IPPR claimed that the auction is providing poor value for money and is too focused on large power stations at the expense of more efficient and flexible demand management technologies. It also fails to curtail fossil fuel power generation, awarding £373 million of support to coal and £176 million to diesel last year, according to the report. The authors claim that insufficient investment is being achieved in gas-fired capacity to replace all coal-fired power plants, which the government plans to close by 2025.

The UK Energy Research Centre this month released a report on [security of electricity supply in a low-carbon Britain](#).

### **Replacing Hinkley Point C with renewables would save the UK £24bn: report**

A report by the [Intergeneration Foundation](#) argued that scrapping a planned £24 billion extension of Hinkley nuclear power station in favour of renewable energy would provide the same amount of energy, and save nearly £40 billion. The [‘Toxic-time capsule’ report](#) called the proposed Hinkley Point C the ‘most expensive building on Earth’, and argued it would place economic and environmental burdens on future generations.

## **Climate Impacts and Adaptation**

### **Better local information and warnings required during floods**

Estimates suggest that more than five million people within two million homes and businesses in the UK are currently at risk from flooding. A [study funded by the Economic and Social Research Council](#) explored the flood preparedness of businesses, individuals and communities during the 2013–14 UK winter floods. The report highlighted the need for more locally relevant information and warnings, and that there is currently limited information about vulnerable or hard-to-reach individuals.

### **UK Health Alliance calls for better climate change preparation**

An alliance of leading health bodies has [called on the government](#) to be “properly prepared” for the health impacts of climate change. In a letter to the UK Health Secretary, Jeremy Hunt this month, the [UK Health Alliance](#) claimed that more work is urgently needed to prepare the personnel, the systems and the facilities of NHS England, as well as other institutions involved in health care, for the implications of climate change, including severe weather. It suggested that only a minority of local health bodies have plans in place which “adequately prepare their organisation to respond to climate change”, adding that almost one in 10 healthcare buildings in England are currently operating in flood risk zones.

### **Arctic sea ice reaches record winter low**

Winter arctic sea ice extent was the lowest recorded for the second year in a row this month due to high winter temperatures over the Arctic Ocean. The [National Snow and Ice Data Centre](#) reported that ice covered a maximum of 5.607 million square miles of the Arctic Ocean in 2016 - 5,000 square miles less than the old record set in 2015.

[Two recent studies](#) have raised concerns that global sea levels may rise by a matter of meters by the end of this century. These studies suggest that previous modeling may have underestimated the amount of ice likely to be lost in Antarctica. A [report by the University of Massachusetts Amherst](#) suggests that even if countries meet the pledges made in Paris, global sea level could still rise 1 metre by 2100. Further analysis was provided by [The Conversation](#).

### **Climate change a threat to financial assets**

Trillions of pounds worth of non-bank financial assets are [vulnerable to the effects of global warming](#), according to [study led by the London School of Economics](#). It found that rising temperatures and the dislocation caused by related droughts, floods and heatwaves will slow global economic growth and damage the performance of stocks and bonds. A global average temperature increase of 2°C would put £1.2 trillion worth of assets at risk. A further rise of 0.5°C by the end of the century would place £1.8 trillion of assets at risk.