

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

February 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

#### China likely to surpass its 2020 climate target: lead envoy

China's lead climate envoy, Xie Zhenhua, claimed that China could surpass its [2020 greenhouse gas reduction targets](#) by as much as 10%. Xie suggested the country could cut its economy's carbon intensity by 50% by the end of this decade, citing recent downturn in demand for coal and planned investments in the green economy worth US\$628 billion to 2030. China's demand for coal fell by 3.7% between 2014-15, despite GDP growth of 6.9%, [according to official statistics](#). The Chinese Government this month announced that it plans to address 'overcapacity' in the coal and steel sectors, laying-off [1.8 million workers](#) by 2020. China's renewable energy sector has continued to grow, with solar capacity increasing by 74% in 2015, and wind by 34%. Greenpeace estimates that China's CO2 [emissions declined by 1-2% in 2015](#), despite 'exaggerations' in China's emissions reduction data reporting acknowledged by Xie himself.

#### President Obama plans to double budget for clean energy research and investment

President Obama has planned a significant increase in support for environmental regulators and clean energy in his [proposed final budget as President](#). The proposal would double investment in clean energy research and development between 2016-21 to \$12.8 billion. Approximately 76 percent of the funding for research and development is planned to go toward Department of Energy research programmes. A proposed 10 year plan to green the country's transport sector would invest in mass transit, clean vehicle research and lower-emission transportation sectors on the local and state level. A \$10 per barrel tax on oil produced in the United States may be considered to fund this \$32 billion plan, though this is likely to be blocked by Republicans. Investment of over \$2 billion is planned for climate change resilience initiatives. The President has also signaled his commitment to the Paris Agreement by assigning \$1.3 billion into international climate change programmes. This includes a \$750 million investment in the Green Climate Fund, up from \$500 million in the 2016 budget. [Oxfam America has judged this figure as consistent](#) with the country's four-year commitment to add \$3 billion to the Fund.

---

<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.

### **Credibility of countries' climate change pledges analysed**

A [study by the Grantham Institute](#) assessed the credibility of the pledges made by countries to the Paris Agreement last year. The study's authors argue that the credibility of pledges – defined as the likelihood that policymakers will keep promises to implement their pledges – will be as important as ambition for the long-term success of the Agreement. Their analysis found significant differences in the level of credibility of individual G20 members' pledges. It also noted variations between industrialised countries and countries with developing economies, calling for continued attention to capacity building in the latter. Credibility was assessed according to criteria including rules and procedures; players and organisations; norms and public opinion; and past performance in implementing international commitments and domestic policies.

### **International Energy Policy**

#### **IEA predicts medium term global oil supply shortages**

The [International Energy Agency](#) predicted global oil supply challenges in its Medium Term Oil Market Report. Oil prices have [dropped 70% in 18 months](#) and daily supply currently exceeds demand by over 1 million barrels. This situation is likely to be exacerbated as Iran fulfils plans to add over 500,000 barrels a day to global supply, following the recent removal of sanctions on the country. Low oil prices, however, have led to historic cuts in investment, which the IEA warns will threaten security of supply in the medium term. Their report sees 4.1 million barrels a day (mb/d) being added to global oil supply between 2015 and 2021, down sharply from the total growth of 11 mb/d in the period 2009-2015. It is expected that global demand will grow over this same period by an average of 1.2 mb/d. Investment in the UK's oil and gas industry is expected to drop by almost 90% this year with predictions that almost half of the UK's oil fields will fail to make a profit if oil prices remain below £30. [BP reported a US\\$3.3 billion fourth-quarter loss](#) this month, while Exxon Mobil, the American industry's largest player, [reported a 58 percent decline](#) in its quarterly profit. Industry has called on Westminster to reform its North Sea tax regime to safeguard the industry's future in the UK.

#### **Electric cars cheaper than conventional vehicles by 2022**

Bloomberg Energy Finance analysis found that the costs of buying and running an electric vehicle (EV) will be [cheaper than conventional cars by 2022](#). EVs currently represent only 1% of new car sales globally. The study predicts that sales will remain below 5% in most markets in the next few years without subsidies. However, the cost comparison between EVs and conventional vehicles is expected to change radically in the 2020s. This change will largely be attributable to the reduction of battery costs as technology develops. Lithium-ion battery costs have already dropped by 65% since 2010, reaching \$350 per kWh in 2015. Bloomberg expect EV battery costs to be well below \$120 per kWh by 2030. The report projects that 35% of global new car sales will be EVs in 2040, with one in four of all cars being an EV. This would lead to a 14% cut in global oil consumption by 14%.

### Gas can play limited role as a 'bridge' to a low carbon UK without CCS

The [UK Energy Research Centre](#) (UKERC) found that gas can play only a limited role in transitioning the UK to a low carbon economy. Their research also found that without carbon capture and storage (CCS), the scope for gas use in 2050 is little more than 10% of the 2010 level. UKERC's study analysed how much gas use is compatible with meeting the UK's emissions reduction targets, how this will be affected by the availability of carbon capture and storage technologies, and how long the timeframe for the use of gas might be. The authors cautioned that new gas-fired power stations built to replace coal plants will have to operate at very low load factors in the 2030s and beyond unless they are retrofitted with CCS, and that it is unlikely investors will be willing to build this capacity without strong policy incentives in place.

A [UK Energy and Climate Change Committee report](#) issued a similar caution, finding that the Government's decision to pull funding for carbon capture and storage (CCS) will delay the development of the technology in the UK. This could make it challenging for the UK to meet its climate change commitments agreed in Paris last year as well as its goal to end coal power generation by 2025. The Committee called on the Department of Energy and Climate Change (DECC) to work with National Infrastructure Commission to devise a new strategy for CCS in conjunction with a new gas strategy.

The [Institute of Mechanical Engineers](#) argued that the UK will lack the resources and skills required to build the number of gas-fired power stations needed to 'plug the gap' left by coal under current policy conditions. It called on National Infrastructure Commission to urgently implement changes across the industry and supply chain to deliver security of electricity supply in the absence of coal-fired generation. This should include assessing the incentives required to reduce energy demand, as well as investment in research and development for renewables, energy storage, combined heat and power and innovation in power station design and build.

### Local authorities warn of power cuts next winter

Planned closures of 5 coal-fired power stations will put the UK at risk of power cuts next year, the [Industrial Communities Alliance](#) has warned. The Alliance, which represents 60 local authorities in industrial areas of England, Scotland and Wales, blamed market conditions including carbon taxes for the closure of coal-fired plants. It also claimed that contracts [introduced by National Grid last year](#) to provide additional power reserves were insufficient to fill the gap left by the planned closures. DECC has [refuted this claim](#), stating that action has already been taken to secure capacity for next winter.

### Drax calls for UK biomass subsidy

Allowing 'established' technologies such as biomass to compete with 'less established' technologies like offshore wind could save the UK consumers [up to £2.2 billion](#), according to a report produced for biomass generator, Drax Group plc. The report claims that biomass is a cheaper source of electricity than wind power if 'whole systems costs' such as back-up generation are considered. The UK Government is [planning three auctions for green subsidies](#) during this parliament. The first, due

later this year, will allow "less established technologies" including offshore wind, wave and tidal stream to compete for Contracts for Difference. While some biomass technologies are eligible to take part in this action, the technology used by Drax will not be. Ongoing work by DECC examining the "whole system costs" of different energy technologies is due for completion in the first half of this year. [Renewable UK argued](#) that wind and solar power help to keep energy prices low for consumers, stating that "The additional costs of having variable generation on the system are low and for the most part renewable generators already pay these costs".

### **DECC to review UK tidal energy potential**

[DECC announced an independent review](#) into the feasibility and practicality of tidal lagoon energy in the UK. The review will commence this spring and is intended to help establish an evidence base to ensure all decisions made regarding tidal lagoon energy are in the best interest of the UK. The review has been criticised by some as a 'disastrous setback' for Tidal Lagoon's planned Swansea Bay development. The Conservative Party included support for the development in its [2015 election manifesto](#). However, the project has been [delayed by a year](#) as the Government considers whether or not it will financially support the project. Tidal Lagoon has called for a decision by mid-April to ensure that the project is viable.

### **Climate Impacts and adaptation**

#### **2015-16 El Niño has peaked: WMO**

The exceptionally strong 2015-16 El Niño pattern will continue to influence the global climate, despite having passed its peak. The [World Meteorological Organisation](#) (WMO) expects the pattern to weaken in the coming months and fade away during the second quarter of 2016. The El Niño-Southern Oscillation (ENSO) phenomenon is the result of the interaction between the ocean and atmosphere in the east-central Equatorial Pacific. It has an irregular recurrence period of between two and seven years. The 2015-16 El Niño pattern is one of the strongest on record with Pacific Ocean surface temperatures being more than 2 degrees Celsius above average in late 2015. WMO Secretary General Petteri Taalas said that the event had caused extreme weather in countries on all continents and helped fuel record global heat in 2015. He also stated that lessons learnt from this El Niño event will be used to further build resilience to weather related hazards, which will increase as a result of climate change.

#### **Great Barrier Reef may be the next hit by global coral bleaching event**

The [Coral Reef Watch](#) program at the US National Oceanic and Atmospheric Administration has warned that [third global coral-bleaching](#) event is now threatening the heritage listed Great Barrier Reef. The global mass-bleaching event, which began in 2014, is the result of unusually warm waters caused by global warming. When waters warm beyond what coral can cope with, they expel the algae that feed them energy and give them colour. If that lasts too long, the corals starve, become infected with viruses, and die. One sixth of the world's coral was bleached during 1998's record El Niño event.



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

Increased carbon dioxide in the Earth's atmosphere also threatens corals by making seas more acidic. A [US-led study on Australian corals](#) released this month concluded that ocean acidification is already damaging coral reefs, and that reducing global carbon emissions is the only way to prevent the phenomenon beyond very localised interventions.