

UK climate policy unravelling



© Ian Taylor

Caton Moor wind farm near Lancaster. Recent changes to UK climate policy undermine new wind and solar projects in favour of fracking and nuclear projects.

(Image Copyright Ian Taylor. This work is licensed under the Creative Commons Attribution-Share Alike 2.0 Generic Licence: <http://creativecommons.org/licenses/by-sa/2.0/>)

The government claims that the UK is taking a leading role in tackling climate change – but support mechanisms for renewable energy and energy conservation are rapidly being cut. Stuart Parkinson, SGR, examines what is going on.*

The Conservative government has recently been very upbeat in its assessment of UK climate policy. In October, Secretaries of State, Amber Rudd and Liz Truss, wrote: “We should be proud of what we have achieved so far to tackle climate change. Our track record is strong. Provisional figures for 2014 show that emissions fell by 8.4% between 2013 and 2014 while the UK’s economy grew by 3%. Our renewable electricity capacity almost trebled between 2010 and 2014.”¹

Yet the government has spent the period since the General Election in May instigating large cuts to subsidies for renewable energy and energy conservation programmes. It is claimed that these cuts will not jeopardise Britain’s ability to reduce carbon emissions on the scale required to adequately tackle climate change. It is also claimed that these

cuts are necessary “to keep bills as low as possible for hardworking families”.²

So are they right? To answer this, we need to dig into the evidence.

Some successes

The most recent detailed assessment of the progress made by the UK on reducing carbon emissions was provided in a progress report³ by the government’s advisory body, the Committee on Climate Change (CCC), published last summer.

The headline figure was that the UK’s carbon emissions in 2014 were 36% below 1990 levels – on track to exceed near-term targets set under the UK Climate Change Act. Electricity generated from renewable energy sources had reached 20% of the UK total – four times the level in 2007 and ahead of nuclear for the first time. Indeed, the figures⁴ for the first nine months of 2015 show that renewables generation has risen even higher, now supplying more electricity than either coal or nuclear. The CCC’s report also showed that installation to date of the most common home energy efficiency measures – such as loft insulation and energy-efficient boilers – was also ahead of targets, industrial carbon emissions had markedly fallen

Contents

SGR News2

A few words from the Director.....2

New National Co-ordinating Committee.....2

New SGR report on nuclear weapons.....3

Challenging military science3

Climate change activities4

Feature articles5

Trident, deterrence and UK security5

A new phase of ‘offensive insecurity’?7

Ocean acidification8

Statistically assessing the risks of commercial nuclear energy10

The Paris Agreement: key points11

Science4Society Week12

Teaching science ethics13

The industrialisation of war:
Lessons from World War I14

The quest for ‘brain-like machines’16

How space tourism could alter the climate .17

Reviews21

SGR conference.....21

The burning answer23

and sales of electric vehicles had also exceeded targets. These achievements reflected the success of a number of policies brought in by governments over many years and from across the political spectrum.

Since the CCC’s report, the government has also announced⁵ its intention to phase out coal (without carbon capture technology) in the electricity sector by 2025 – a proposal which has earned it international praise.

On the face of it, these are laudable achievements – and this was reflected in the UK being rated as one

continued on page 19

* NB. This article focuses on UK policies aimed at reducing carbon emissions rather than on adapting to the impacts of climate change.

UK climate policy unravelling – *continued from front page*

of the highest performing countries for action on climate change by the NGO Germanwatch.⁶ The NGO also pointed out that the UK's energy-related carbon emissions per head of population were now only slightly above those of China.

However, a closer look reveals a whole host of problems.

A lack of progress

The first set of problems can be identified from the CCC's progress report.⁷ One particular issue was that a large proportion of recent reductions were due to little more than good luck. For example, warmer winter weather in 2014 had led to markedly reduced energy consumption, while a large drop in emissions in the industrial sector had been unexpected and still remains to be clearly explained. Such emissions reduction may be reversed if our luck does not continue to hold.

One area where progress had especially stalled was building energy efficiency. A key problem here had been the general failure of the Coalition government's Green Deal programme, introduced in 2012, whose shortcomings have been pointed out by numerous analysts, including SGR.⁸ The scheme led to the annual rate of home energy efficiency installations falling by over 60% in the course of a single year, and the rate has continued to fall since.⁹

There has also been a general lack of progress in reducing emissions from the agricultural sector, while transport-related emissions actually rose slightly between 2013 and 2014.¹⁰

However, the CCC's biggest criticism was the general lack of longer term climate policy measures beyond 2020 – and even major proposals that the government had indicated its commitment to, such as new nuclear power stations, were subject to serious doubts about the industry's capability to deliver.

It is also important to remember that the CCC's remit is only to assess government policy against the targets set in the Climate Change Act – which is focused on an 80% reduction by 2050. The CCC has acknowledged that this only represents the UK's share in giving the world a 50% chance of staying below a 2°C global temperature rise. The new Paris Agreement (see p?) now specifies a target of “well below 2°C” with the need “to pursue efforts to limit the temperature increase to 1.5°C” – reflecting the latest scientific evidence that points to some major

impacts below 2°C. Hence, it is clear that a great deal more ambition is needed by the UK (and other nations). Figures from the Tyndall Centre for Climate Change Research (compiled before the Paris climate conference) suggest that a more acceptable target for the UK and EU would be at least 80% cuts by 2030 – 20 years earlier than in current legislation.¹¹

Undoing the good work

The policy response since the new Conservative government came to power in May, however, has almost been the reverse of what is needed.

We have seen major cuts to financial and other support for renewable energy.^{12,13} Subsidies for onshore wind farms are due to be abolished from spring 2016 and planning controls on wind turbines are being made more restrictive. Subsidies for small solar photovoltaic (pv) farms (below 5MW) are also due to end in the spring, following the abolition of subsidies for large solar pv farms in 2015. Subsidies for household renewables are also to be markedly reduced. Community scale renewable energy projects are being hit especially hard with large reductions in payments via the Feed-in Tariff scheme, a sudden end to tax relief for investors in these projects, and the loss of some organisational support. Bio-energy projects have also lost some of their financial support and there is concern about a lack of progress with marine energy and offshore wind energy. Perhaps the most perverse policy change for renewable energy projects is that they will now have to pay the Climate Change Levy, a tax originally set up to penalise carbon emissions. This measure alone, the industry estimates, will add an extra £450m to its costs this financial year, rising to £1bn by 2020/21.¹⁴

While some reductions to subsidies are justified as the technology costs fall, and there are question marks over the sustainability of certain bio-energy sources, the scale of the cuts has taken many by surprise. Over 1,000 jobs have already been lost in the solar pv sector since the announcements, with thousands more under threat.¹⁵ The most frustrating aspect of these cuts is that they are punishing successful industries. Targets for the deployment of small-scale solar pv, wind, hydro and biogas (via anaerobic digestion) have all been met five years early.¹⁶ Meanwhile, offshore wind farms have been 20% more productive than predicted.¹⁷ But the planned subsidy cuts now mean that the UK may miss its 2020 target for energy generated from renewable sources.¹⁸

There have also been major cuts to energy conservation programmes, especially those aimed at households. It is no surprise that the Green Deal has been cancelled¹⁹ given its numerous problems, but to do so before alternative proposals have been put together leaves a major gap in efforts to conserve energy. The Energy Company Obligation (ECO) – designed to help those in fuel poverty – has been much more successful than the Green Deal, but a massive 42% cut in its annual funding is now to be implemented from 2017.²⁰ This is especially irresponsible given the estimate that 7,800 UK deaths per year are as a result of illnesses due to living in cold homes.²¹ The government has also abolished zero carbon targets for new homes and buildings.²²

Even the proposal to phase out the use of unabated coal – the highest carbon fuel – in power stations by 2025 is lacking in credibility. The first problem is that government funding for the development of carbon capture technologies has been cut.²³ Secondly, one of the main replacements for coal is planned to be an expansion of natural gas – with an increasing proportion from shale gas wells in the British countryside.²⁴ Life-cycle carbon emissions from conventional natural gas are at least nine times greater than renewables, while those from shale gas are even higher – and the latter creates additional risks of local water, land and air contamination.²⁵

There are also serious problems with the third strand of the new policy – that of building a new generation of new nuclear power stations. For a start, the national and international nuclear power industry has been experiencing major difficulties since the Fukushima accident, if not before.²⁶ The current frontrunner for a plant in the UK is the European Pressurised Reactor (EPR). At the time of writing, a final investment decision is due for the Hinkley Point C site in Somerset – but progress elsewhere with this design is not encouraging. One EPR is currently under construction in Finland, one in France and two in China. The one in Finland is nine years late (and counting), costs have nearly trebled and it is at the centre of a legal battle.²⁷ The one in France is six years late (and counting), costs have more than trebled, and it is under examination by the safety regulator over possible weaknesses in the reactor pressure vessel.²⁸ The two in China are two years behind schedule²⁹ – under a significantly less stringent regulatory regime. Estimates of the earliest a new plant could come on stream in the UK have slipped to 2025.³⁰ Meanwhile, Toshiba – the lead contractor of one of the other consortia planning to

Feature Articles

build nuclear power stations in the UK – is in severe financial difficulties.³¹

Only plans to continue the expansion of offshore wind offer a serious attempt to tackle carbon emissions from the energy sector.

The skewed priorities can be clearly seen in how subsidies are being targeted. Britain is the only one of the leading G7 economies which is expanding its already large fossil fuel subsidy level.³² Meanwhile, the subsidies being offered to for new nuclear power stations include very large upfront loan guarantees for construction, 35-year energy price guarantees, and limits on liability for nuclear accidents and long-term radioactive waste management – far more extensive than anything offered to the renewable energy industry. The solar energy industry has pointed out that, for just half of only one of these subsidies (the energy price guarantee) being offered to Hinkley Point C, it could deliver an equivalent amount of electricity (including back-up).³³ Even more could be achieved with cheaper onshore wind.

The situation in the transport sector is also grim. For example, the tax differential between high and low pollution cars has been reduced³⁴ and large-scale airport expansion is still being proposed.³⁵

A complete re-think

The UK had been making steady, if inadequate, progress on reducing carbon emissions – up until the General Election. The backtracking since then has put this progress at risk, not only in terms of tackling climate change, but also by undermining efforts to reduce fuel poverty, create skilled jobs, improve air quality, increase energy security and improve economic performance.

The government needs to prioritise action in three main areas:

- Increase financial and non-financial support for home energy conservation, including a large expansion for the ECO scheme and a replacement for the Green Deal;
 - Rapidly phase out subsidies for oil, gas (especially from fracking) and nuclear, and provide appropriate subsidies for renewables, especially wind, solar, marine and associated energy storage technologies, and especially at smaller-scales;
- Scale up efforts to reduce carbon emissions from the transport, agriculture and other neglected sectors.

Extra funding could come from cuts to Britain's huge military equipment budget (see p.7) – justified as

climate change is widely acknowledged as a driver of insecurity.

Then the UK would play a leading role in helping the world reach the ultimate goal of “preventing dangerous climate change”.

Dr Stuart Parkinson is Executive Director of SGR, and has researched and written widely on climate and energy issues.

References

- 1 Rudd A, Truss L (2015). Committee on Climate Change's 2015 progress report: Government response. Joint Foreword. www.gov.uk/government/publications/committee-on-climate-changes-2015-progress-report-government-response
- 2 Dept for Energy and Climate Change (2015). 22 July. www.gov.uk/government/news/controlling-the-cost-of-renewable-energy
- 3 CCC (2015). Reducing emissions and preparing for climate change: 2015 Progress Report to Parliament. www.theccc.org.uk/publication/reducing-emissions-and-preparing-for-climate-change-2015-progress-report-to-parliament/
- 4 Office for National Statistics (2015). Energy Trends section 5: electricity. 22 December. www.gov.uk/government/statistics/electricity-section-5-energy-trends
- 5 DECC (2015). 18 November. www.gov.uk/government/news/new-direction-for-uk-energy-policy
- 6 BBC News online (2015). 8 December. www.bbc.co.uk/news/science-environment-35044423
- 7 As note 3.
- 8 Webber P (2015). SGR Newsletter, no.43. www.sgr.org.uk/resources/uk-household-energy-policy-another-fine-mess
- 9 Energy Bill Revolution (2014). ECO and the Green Deal. www.energybillrevolution.org/wp-content/uploads/2014/07/ACE-and-EBR-fact-file-2014-06-ECO-and-the-Green-Deal.pdf
- 10 As note 3.
- 11 Parkinson S, Mumford P (2014). ResponsibleSci blog, 5 December. www.sgr.org.uk/resources/mind-carbon-gap
- 12 Woodman B (2015). ResponsibleSci blog, 13 October. www.sgr.org.uk/resources/rudd-s-magic-money-tree-risks-undermining-investments-low-carbon-economy
- 13 No2NuclearPower (2015). nuClear news, no.80. www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo80.pdf
- 14 The Guardian (2015). 9 July. www.theguardian.com/business/2015/jul/09/green-energy-sector-attacks-budget-climate-change-levy
- 15 The Independent (2015). 19 October. www.independent.co.uk/news/uk/home-news/hundreds-of-renewable-energy-companies-could-be-forced-out-of-business-due-to-dramatic-subsidy-cuts-a6700466.html
- 16 DECC (2015). Consultation. 27 August. www.gov.uk/government/uploads/system/uploads/attachment_data/file/469476/Consultation_on_a_Review_of_feed-in_tariff_scheme.pdf
- 17 Carbon Brief (2015). 13 July. www.carbonbrief.org/qa-has-the-uk-blown-its-green-power-budget
- 18 The Ecologist (2015). 9 November. www.theecologist.org/News/news_analysis/2986190/leaked_letter_rudd_admits_25_green_energy_undershoot_misled_parliament.html
- 19 As note 12.
- 20 Association for the Conservation of Energy (2015). 25 November. www.ukace.org/2015/11/press-release-scandalous-winter-deaths-surge-but-chancellor-slashes-help-for-cold-homes-by-42/
- 21 Energy Bill Revolution (2015). www.energybillrevolution.org/fuel-poverty/
- 22 As note 12.
- 23 The Guardian (2015). 25 November. www.theguardian.com/environment/2015/nov/25/uk-cancels-pioneering-1bn-carbon-capture-and-storage-competition
- 24 As note 5.
- 25 Harrison G, Parkinson S (2015). SGR Newsletter, no.43. www.sgr.org.uk/resources/shale-gas-and-fracking-examining-evidence-febmar-2015
- 26 China Dialogue (2015). 6 November. www.chinadialogue.net/article/show/single/en/8287-Nuclear-on-the-wane-as-grids-adapt-to-renewable-energy
- 27 The Ecologist (2015). 15 May. www.theecologist.org/News/news_analysis/2859924/finland_cancels_olkiluoto_4_nuclear_reactor_is_the_epr_finished.html
- 28 The Ecologist (2015). 2 October. www.theecologist.org/News/news_analysis/2985650/flamanville_nuclear_safety_fail_sounds_death_knell_for_hinkley_c.html
- 29 World Nuclear Industry Status Report (2016). 5 January. www.worldnuclearreport.org/UPDATE1-World-Nuclear-Industry-Status-as-of-1-January-2016-Mind-the-China.html
- 30 The Guardian (2015). 21 October. www.theguardian.com/environment/2015/oct/21/hinkley-point-reactor-costs-rise-by-2bn-as-deal-confirmed
- 31 BBC (2015). 21 December. www.bbc.co.uk/news/business-35149520
- 32 The Guardian (2015). 12 November. www.theguardian.com/environment/2015/nov/12/uk-breaks-pledge-to-become-only-g7-country-increase-fossil-fuel-subsidies
- 33 Solar Trade Association (2015). 20 October. www.solar-trade.org.uk/solar-could-provide-as-much-power-as-hinkley-point-c-for-half-the-subsidy-cost/
- 34 Friends of the Earth (2015). July. www.foe.co.uk/sites/default/files/downloads/budget-2015-car-tax-80672.pdf
- 35 Airports Commission (2015). 1 July. www.gov.uk/government/news/airports-commission-releases-final-report