EXPERT OPINION IN THE CASE OF STEVE MELIA FROM
Professor Paul Ekins OBE

Details of the expert's qualifications, relevant experience and accreditation

Paul Ekins has a Ph.D. in economics from the University of London, an Hon. DSc from the University of Keele, and is Professor of Resources and Environmental Policy, and Director of the UCL Institute for Sustainable Resources, at University College London. Before that he was Professor of Energy and Environment Policy and Director of Research at the UCL Energy Institute. He has been a Co-Director of the UK Energy Research Centre (UKERC) since its establishment in 2004, leading its Energy Systems and Modelling theme, and Energy Systems theme, in Phases 1 and 2 respectively. In UKERC Phase 3 from 2015-19 he was Deputy Director, leading the theme on Energy Resources. He is also a Fellow of the Energy Institute. He is a member of Ofgem's high-level Sustainable Development Advisory Group, and was a member of the Expert Panel of the UK National Ecosystem Assessment. From 2002-2008 he was a Member of the Royal Commission on Environmental Pollution. From 1997-2005 he was a specialist adviser to the Environmental Audit Committee of the House of Commons, from 2003-2007 was a Member of the Government's Sustainable Energy Policy Advisory Board, and in 2007 was a Specialist Adviser to the Joint Parliamentary Committee on the Climate Change Bill. He was a member in 2010-11 of two Ministerial Advisory Panels, on the Green Deal (DECC) and on the Natural Environment White Paper (DEFRA). In 2011 he was appointed Vice-Chairman of the DG Environment Commissioner's High-Level Economists Expert Group on Resource Efficiency, and in 2012 a member of the European Commission's European Resource Efficiency Platform. He is a member of the UCL-Lancet Commission on Global Health and Climate Change (the reports of which have been published annually since 2015) and is the lead researcher on a project on Climate Change and Food Security funded by the Grantham Foundation. In 2013 he was appointed a member of the International Resource Panel (IRP) of the United Nations Environment Programme (UNEP), and was the lead author of the IRP's report on resource efficiency commissioned by the G7 governments and presented in Japan in 2016. He was also one of two Chief Co-Editors of UNEP's sixth Global Environmental Outlook (GEO-6), which is the United Nations' flagship environmental report, and which was presented to the United Nations Environment Assembly in 2018. In 1994 Paul Ekins received UNEP's Global 500 Award 'for outstanding environmental achievement'. In the UK New Year's Honours List for 2015 he received an OBE (Officer of the Order of the British Empire) for services to environmental policy.

Paul Ekins' academic work focuses on the conditions and policies for achieving an environmentally sustainable economy. He is an authority on a number of areas of energy-environment-economy interaction and environmental policy, including: sustainable development assessment methodologies; scenarios, modelling and forecasting; resource productivity; sustainable energy use; the adjustment of national accounts to take account of environmental impacts; environmental economic instruments and ecological tax reform; sustainable consumption; and environment and trade. He is the author of numerous papers, book-chapters and articles in a wide range of journals, and has written or edited twelve books, including *Global Warming and Energy Demand* (Routledge, 1995) and *Economic Growth and Environmental Sustainability: the Prospects for Green Growth* (Routledge, London, 2000). He is editor or co-editor of the books *Carbon-Energy Taxation: Lessons from Europe* (Oxford University Press, Oxford, 2009), *Hydrogen Energy: Economic and Social Challenges* (Earthscan, London, 2010); *Energy 2050: the Transition to a Secure, Low-Carbon Energy System for the UK* (Earthscan, London, 2011); and *Global Energy: Issues, Potentials and Policy Implications* (Oxford University Press, Oxford, 2015).

Evidence

I have been asked by Steve Melia to address three questions in my evidence, which I will address in turn:

- (In April 2019) was the UK on course to meet its future carbon budgets under the Climate Change Act?
- Broadly, what changes would be needed to enable compliance with the Act?
- (In April 2019) was the government taking the necessary steps to ensure future compliance?

(In April 2019) was the UK on course to meet its future carbon budgets under the Climate Change Act?

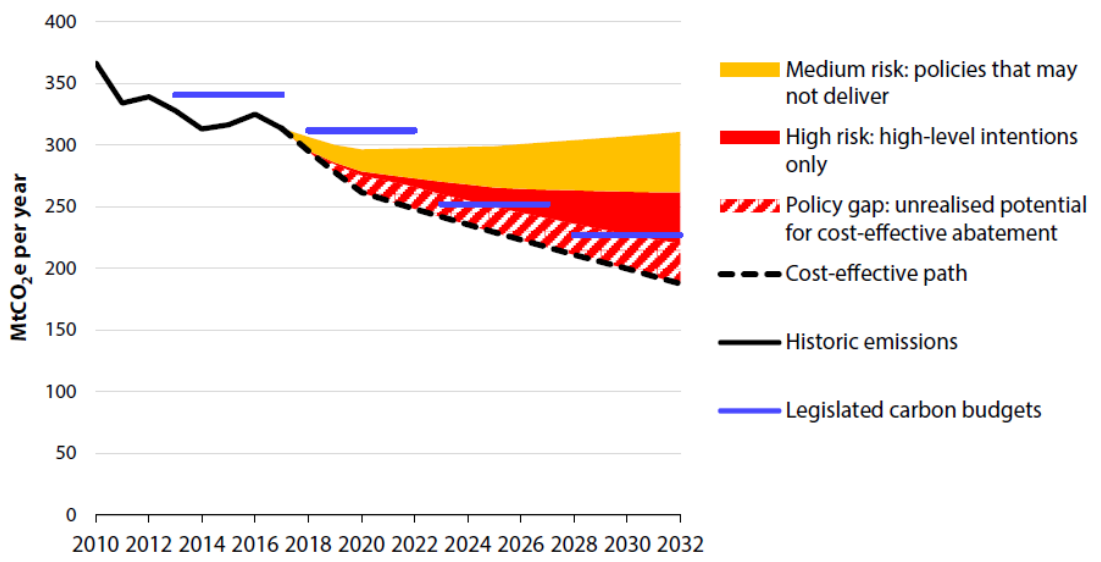
No.

Under the terms of the Climate Change Act, as it applied in April 2019, to Government has to reduce its greenhouse gas (GHG) emissions by 80% from 1990 levels by 2050[1]. To facilitate compliance with the Act, the Committee on Climate Change (CCC), the Government's statutory climate change advisers, recommends five-yearly carbon budgets to chart the emissions reductions to 2050. A carbon budget is the maximum quantity of emissions that can be emitted over the five-year period, a quantity that is reduced in each five-year period such that the 2050 emissions target is attained. The carbon budgets reflect the CCC's estimate of the cost-effective path by which the Government can reach the 2050 target. The fourth and fifth carbon budgets relate to the years 2023-2027 and 2028-2032 respectively. The Government is required under the Act either to accept the carbon budgets and put their achievement into legislation, or give scientific reasons for not doing so. The Government has in fact accepted these carbon budgets and passed the fifth carbon budget into legislation in June 2016. Achievement of these carbon budgets is therefore a statutory requirement. The CCC publishes an annual progress report to assess how the Government is doing in respect of achieving the carbon budgets and 2050 target. Figure 1 from the CCC's most recent progress report[2], published in June 2018, clearly shows the CCC's assessment that even if all of the Government's 'medium-risk' policies deliver, the Government would need all its 'high-risk- policies to deliver as well, to meet the targets, but these are currently only expressed as 'high-level intentions'. Worryingly, a full year after this report, none of these 'high-level intentions' have yet been translated into firm policy – and the fourth carbon budget period begins in 2023.

[1] In June 2019 the target was amended to be 'net zero' GHG emissions by 2050, following a recommendation from the Committee on Climate Change.

[2] CCC 2018 *Reducing UK Emissions: 2018 Progress Report to Parliament*, https://www.theccc.org.uk/publication/reducing-uk-emissions-2018-progress-report-to-parliament/

Figure 3. Risks remain around delivery of policies to meet the fourth and fifth carbon budgets



Source: BEIS (2018) *2017 UK Greenhouse Gas Emissions, Provisional Figures*; BEIS (2018) *2016 UK Greenhouse Gas Emissions, Final Figures*; HMG & HMT (2009) *Building a low-carbon economy: implementing the Climate Change Act 2008*; CCC analysis.
Notes: The chart presents emissions in the 'non-traded' sector only (i.e. sources of emissions not covered by the EU Emissions Trading System – EU ETS), as it is these emissions that determine whether or not a carbon budget is met. Chart is on the basis of the latest Government emissions projections published in January 2018. Emission reductions from existing policies that we judge to have significant delivery risks (e.g. insufficient funding) are rated 'medium risk'. We have assessed emission reductions from proposals and intentions that were included in the Clean Growth Strategy, which are included as 'high risk'. There remains potential for cost-effective emissions reduction, which we include as the 'policy gap' to the cost-effective path - this path outperforms carbon budgets, so not all this gap would need to be filled to meet the legislated budgets, but would provide a contingency and/or contribute to meeting longer-term targets.

Source: CCC 2018 *Reducing Carbon Emissions: 2018 Progress Report to Parliament*, p.18
NB The figures shows the 2nd, 3rd 4th and 5th carbon budgets.

Broadly, what changes would be needed to enable compliance with the Act?

GHGs are emitted from the following sectors: power generation, industry, transport, buildings (commercial and residential) and agriculture. There is a wide range of measures in each sector through which the Government could reduce these GHG emissions. While the CCC does not prescribe policies, it does suggest how Government could meet the carbon budgets which the CCC recommends (and which the Government has accepted, as noted above). So far the Government has either not introduced these policies with the necessary (and recommended) stringency, or has not introduced them at all, and has not introduced other policies which could substitute for them. In some cases it has actually cancelled emission-reduction policies introduced by previous governments. It is therefore not surprising that the Government is not on track to meet the targets.

Figure 2 shows some examples of the kinds of policies the CCC has suggested, the policies the government has cancelled, and the cost-effective policy opportunities that the CCC considers that the Government has missed.

Four messages to Government to put emissions reduction on track

Support the simple, low-cost options

Onshore wind and Solar are likely to be **25% cheaper** than new gas plants by the 2020s

see p68

Efficiency in buildings is an obvious practical step. But insulation rates in homes are **95% lower** than they were in 2012

see p85

Tree planting rates are **two-thirds lower** than they need to be

see p202

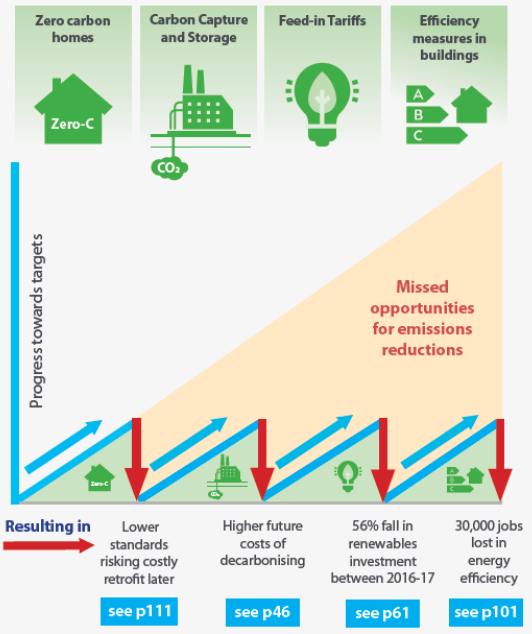
Recycling food waste reduces emissions. By 2025 all **food waste** should be **recycled**

see p211

Failure to pursue these options increases energy bills and adds to the cost of decarbonisation

End the chopping and changing of policy

Recent policies to reduce emissions have been cancelled...



Consistent policies drive investment, cut bills and help to build UK business

Commit to effective regulation and strict enforcement

Poor enforcement and low standards result in…

- Wasted energy !
- Higher bills !
- Higher emissions !

see p105

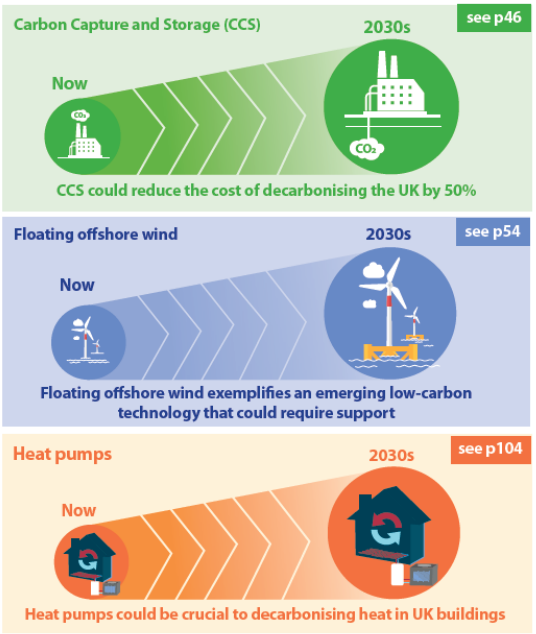
- ! Long EV waiting lists
- ! Higher fuel bills
- ! Worse air quality
- ! Higher emissions

see p164

Ambitious, strictly enforced standards drive innovation and protect consumers from being cheated

Act now to keep long-term options open

Infrastructure requires long-term investment



Further delays will increase costs and reduce options

Source: CCC 2018 *Reducing Carbon Emissions: 2018 Progress Report to Parliament*, p.12

(In April 2019) was the government taking the necessary steps to ensure future compliance?

No.

Despite the very clear advice from the CCC in its 2018 *Progress Report*, summarised in Figure 2, the Government has conspicuously failed to put in place the measures required to put it back on track for the fourth and fifth carbon budgets, so that the 2019 CCC *Progress Report*, due imminently, is very likely to carry the same message as in 2018, but probably more urgently, as a whole year has been effectively wasted. This is not a new situation. In its Progress Report in June 2017[3], the CCC opened the Executive Summary with the words: "The UK urgently needs new policies to cut greenhouse gas emissions. Parliament has made commitments and the Government has a legal duty to propose policies to meet them. Despite this, no significant new policy plans have been published in the 11 months since the fifth carbon budget was set." (p.8) Effectively, as at April 2019, there had been a standstill in government policy on climate change for nearly three years, despite the fact that the Government's statutory advisers on the subject had called 'urgently' for new policies.

GHG emissions reduction is a long-term process requiring long-term commitment. It is both difficult and expensive to reduce emissions very quickly. Policies to do so require long lead times to be introduced and implemented, and tend to take effect relatively slowly. It is therefore extremely concerning that the Government is not even on track to achieve the fourth carbon budget, the commitment period for which begins in a little more than three years. Given the fact that it is unlikely that the Government will wish to implement drastic and expensive measures in order to reduce the emissions quickly, each year that passes without the required policy measures make it less and less likely that the Government will actually meet the fourth carbon budget to which it is legally committed.

Conclusions

The evidence suggests strongly that the Government is currently set to miss the fourth and fifth carbon budgets which have been legislated into law. This will make more difficult and expensive the task of a future Government, which will require even steeper emissions reductions to meet the sixth and subsequent carbon budgets on the path to an 80% reduction in 2050. This becomes even more serious in the new context of the Government's commitment to net zero emissions in 2050, which itself requires enhanced mitigation ambition and even steeper emissions reduction. The failure to get on track for the fourth and fifth carbon budgets is a highly reprehensible situation given the increasingly urgent messages from scientists about the potentially catastrophic effects of climate change on human lives, livelihood and civilisation[4] unless emissions are very substantially reduced.

[3] CCC 2017 *Meeting Carbon Budgets: Closing the Policy Gap*, 2017 Progress Report to Parliament, https://www.theccc.org.uk/publication/2017-report-to-parliament-meeting-carbon-budgets-closing-the-policy-gap/

[4] The risks of climate change are well laid out for a lay audience in the book: Wagner, G and Weitzman, M. 2015 *Climate Shock: the Economic Consequence of a Hotter Planet*, Princeton University Press, New Jersey