

Julian Critchlow – speech for the Royal Meteorological Society Climate Change Forum

Hello, my name is Julian Critchlow and I'm the Director general at BEIS in charge of Energy Transformation and Clean Growth. I lead a group of hundreds of policy makers, scientists and engineers all working on the question of how the UK and the world can decarbonise our economies. The teams I lead span the gamut of our international climate negotiators and funders of low carbon development in the developing world, to decarbonising heat, to energy efficiency and smart meters, to industrial energy use. This work is all backed up by a team of 70 scientists and engineers who work to ensure that our policies and programmes are underpinned by the best available evidence.

In this talk I want to discuss the way in which we as policy makers, and indeed society as a whole, can be informed by the data that is provided by you, the climate science community.

The UK has always strongly emphasised the crucial role that scientific evidence has to play in climate change policy. The Committee on Climate Change's (CCC) original 2008 advice on the UK's appropriate long-term target saw a prominent discussion of the science of impacts and the rationale for action. Moreover the legally binding target itself, the first in the world, was derived, in conjunction with considerations of fairness and equity, from modelling of the emission reductions required to meet a two degree target.

We have a strong track record of decarbonisation in the UK, with emissions having fallen by over 40% since 1990. This success story has been evidence-led and informed by a wide range of scientific and engineering expertise, ranging from whole-energy system modelling to detailed technical considerations of individual low carbon technologies. In the background and ultimately underpinning this

work is the findings of the climate science community on the urgent need to address the threat of our warming planet.

These findings are ultimately best summarised by the vital work of Intergovernmental Panel on Climate Change (IPCC), to which the UK provides a considerable amount of support at both the expert and Government level. The IPCC continues to be absolutely essential platform upon which international climate negotiations are based and played a central part in the lead up to the Paris Agreement. It, along with the advice of the CCC, is ultimately the foundation on which UK action is based.

We can be very proud of the contribution the UK makes to the IPCC, from the scientific papers that are fed in, to the participation of authors in writing the reports, to the expert and Government reviews and the Government's funding of the Working Group 3 Technical Support Unit. This vital UK contribution ensures that IPCC products are accurately reflective of the underlying evidence base and of use to decision-makers.

By way of illustration of the UK's crucial input to the IPCC, Met Office authors alone contributed to over 90 papers that were included in the 1.5 Special Report and the UK is in the top three countries providing authors for the Sixth Assessment Report.

So, as we have seen, there has always been a strong strand of scientific evidence in the thinking around UK climate policy and this has also fed into a broad public consensus on the need to act. However, recently we have seen how climate science has taken on a more transformative role within society.

The IPCC Special Report on 1.5 degrees has catalysed wide ranging discussions about the severity of climate change, net zero and the need for raised ambition. We have seen large scale demonstrations in favour of climate action, concern about climate and the

environment has reached record levels in polling and pressure has come from across the political spectrum for a net zero target.

We have also seen how the UK can continue to role-model the use of science in climate policy-making. The UK was the first country in the world to specifically ask for independent scientific advice on a net zero target. The CCC's net zero report has a whole chapter dedicated to climate science and, as with the 2008 report, the choice of target date is strongly informed by the results of the latest developments in our understanding of the pathways consistent with the temperature goals of the Paris Agreement.

These recent developments demonstrate that scientific evidence is now more prominent and more important than ever in the societal response to climate change. While science can only ever be part of the picture in informing how we transform our economies to meet the Paris Agreement, there is now a unique opportunity to inject it right into the heart of the debate.

This is a hugely exciting development and the UK is particularly well placed to capitalise on this.

We have a world leading research community and capability and host numerous outstanding climate science institutions, including the Met Office Hadley Centre, the National Centre for Earth Observations as well as many departments and centres in world-leading Universities, such as the Tyndall Centre, the Priestley Centre and the Grantham Institute.

This expertise is deployed in numerous ways, from the pure physical science of climate physics and model development, to projections of future climate change and the consequent environmental impacts. The UK also specialises in improving our understanding of not only what is likely to happen, but how we should respond to this and places science at the heart of this thinking.

For example, the Environment Agency Thames Estuary Project on the future of flood protection along the Thames relies heavily on the latest projections of future sea level rise.

The new UK Climate Projections (UKCP18) are providing the most up to date assessment of how the climate of the UK may change over the course of the century. This data, available at an impressively granular scale, can be used by decision-makers across the UK to inform planning around future flood risk and heat stress.

The response to climate change is of course ultimately an international one, with no one country acting alone. Here again, we can see how the UK is uniquely placed to play a leadership role on the science agenda.

Through the Global Challenges Research Fund and the Newton Fund, from 2016 to 2021 the UK is investing £1.5 billion into projects that harness the expertise of UK researchers to address some of the most pressing global development issues, including climate change and environmental degradation.

We engage across many international organisations, including the Global Commission on Adaptation, the World Adaptation Science Programme (where we sit on the Governing Board), the UN Environment's Country-Level Impacts of Climate Change project, the European Space Agency Climate Change Initiative Programme (of which we are one of three main funders, through the UK Space Agency) and make a significant contribution to Global Climate Observing System. We are heavily involved in the World Climate Research Programme and UK scientists lead the majority of the Grand Challenges.

The UK also has major collaborative projects with international partners, such as the Newton Fund funded Climate Science for Service Partnership both in China & in Brazil.

Indeed it is in the international context where we see some of the greatest real world impact that UK climate science has. There are numerous examples of this, for instance the work that the Met Office have been undertaking in conjunction with the World Food Programme to devise an index of food vulnerability to climate change.

Or the Future Resilience for African Cities and Lands (FRACTAL) Project, where the University of Oxford and the Met Office are working in partnership with colleagues from South Africa, Malawi, Zimbabwe and Zambia to help decision makers plan climate-resilient cities in Africa.

Or the Asia Regional Resilience to a Changing Climate (ARRCC) programme, where UK scientists are collaborating with the World Bank to strengthen weather forecasting in Bangladesh, Pakistan, Nepal and Afghanistan. The long term aim of the ARRCC is to enable vulnerable communities to use weather forecasts to prepare for climate-related shocks.

Ultimately it is these sorts of collaborations that make me optimistic about our ability to address climate change. They are fine examples of working together to produce use expertise in the production of evidence that helps us to understand, mitigate and adapt to climate change.

If we can continue to place scientific evidence at the heart of the decisions of politicians and of society then we put ourselves in a much better position to be able to meet the challenges of the coming decades.