

Climate change champion

Professor Judith Rees, director of the ESRC Centre for Climate Change Economics and Policy, talks to **Martin Ince** about local, national and global initiatives to tackle climate change and how evidence informs climate policy

Judith Rees is not someone to get annoyed easily. But she shows every sign of irritation when she describes how, following the Copenhagen climate conference in 2009, the whole process of attempting to reach an international agreement to curb greenhouse gas emissions is described as a failure.

For her, our future approach to climate change may not involve a big international treaty like the 1997 Kyoto Protocol. Instead, she thinks that solid progress on mitigating climate change and adapting to it will come from modest agreements such as those struck at Copenhagen and a year later at Cancun. These should be regarded as important stepping stones towards the strong international framework that will still be needed.

The ESRC Centre for Climate Change Economics and Policy is a joint venture with the Sustainability Research Institute at the University

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of Leeds, where her co-director Andy Gouldson is based. At the LSE the Centre is situated alongside the Grantham Research Institute on Climate Change and the Environment, of which Professor Rees is also director. Together this has created perhaps the UK's biggest group of researchers into the politics and economics of climate and environmental change. It numbers about 70 people in all, including associates based in other departments, visiting fellows and PhD students.

Professor Rees' original academic interest is in water and other natural resources, and she has undertaken research on the energy industry. She says that once climate change emerged as an issue: "It was always obvious that I would be involved." For one thing, climate change can have big effects on water resources. Professor Rees points out that our ability to adapt to climate change will depend critically on how we manage water to ensure food security and minimise the effects of extreme events such as floods and droughts. Additionally, the policy instruments available for cutting carbon emissions are basically the same as those which have already been used in attempts to manage water demand and curb water pollution. They include one family of measures which involves

trading and taxing emissions, and another which involves regulation and enforcement.

As someone who speaks often to policymakers, business executives and politicians, Professor Rees is reassured by how rarely she encounters full-blown climate change scepticism. She believes: "The generally accepted scientific picture of climate change has become embedded in the life of decision makers in the UK at a national level. People in the street are less convinced, and still ask why we have cold winters if the world is getting warmer. But I am impressed by the way in which both the last and the new UK government seem to regard managing the risks of climate change as a central aim."

She is aware that the picture is less clear in the rapidly developing countries, which are now major emitters of greenhouse gases. "On a recent trip to India, it was evident that climate change seems to be accepted as a reality and is blamed for droughts and for changes to weather patterns and growing seasons. But there was still a strong view that the problem was caused by the advanced nations and had to be solved by them."

However, it is now clear that action by the advanced countries alone will not be enough to solve climate change. Professor Rees sees that there is growing acceptance in India and other emergent economies of the need to curb greenhouse gas emissions and pursue low-carbon growth strategies. In China the new five-year plan has major commitments to carbon reduction including big renewable energy targets. "The argument in China is not about climate change," she says. "It is expressed in terms of energy efficiency, competitive advantage and new jobs."

The Centre is at the forefront of efforts to bring this sort of thinking to the UK. 'Green growth' is one of the themes of its ESRC-funded programme, which is looking at the opportunities for new jobs and industries, and at the barriers to success. The Centre's researchers are aware that carbon reduction policies cannot be considered in isolation from the need to encourage economic recovery and reduce world poverty. They regard green investment and growth as ways of promoting economic development without unsustainable natural resource use.

Professor Rees says: "The UK needs to become more serious about these opportunities. The Danes got first-mover advantage in wind power, and India and China are pushing ahead with solar energy. But there is scope to encourage innovation ►



- which might displace environmentally harmful technologies." She is interested in investments that might produce growth and new jobs and also in changes which might reduce costs, such as retailers recycling more and generating energy from waste.

Professor Rees has a strong interest in the ways in which evidence is used to form climate policy. She is confident that most policymakers understand the evidence for global warming that comes from bodies such as the Intergovernmental Panel on Climate Change (IPCC). Even the recent controversies over reports from the IPCC and from the University of East Anglia in the UK have not substantially damaged this consensus.

But she is a social scientist and she emphasises the importance of social science research as an evidence base for policy. Evidence is needed on how the instruments used to moderate carbon emissions – taxes, incentives, regulations and the rest – can be better designed, the conditions which affect the way they work, and their impact on businesses and on human behaviour.

This evidence reveals a tangled picture. A new paper from the Centre discusses what happens when you have a market for carbon emissions, and then add a carbon tax to it. The combined effect is not to drive down emissions, but to rearrange where reductions take place. Other work has shown that carbon pricing has not adversely affected

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employment, profitability or innovation, which is important given current concerns with economic recovery, competitiveness and job creation.

Professor Rees says: "Policy is often made without evidence. It can be driven by ideology or by people choosing to use tools that they are familiar with. Much more evidence is needed on what instruments work under what circumstances. All too often attempts are made to 'import' a policy tool which has worked well in one locality or country, without understanding the underlying political, legal, economic and social conditions which allowed it to succeed. Finding and implementing effective policy tools is always challenging and never more so than in climate. A mix of tools will be needed at the local, national and global scales."

But she adds that the available policy instruments do work. "Water markets have been a reality in the western US for well over a century and trading schemes have been developed to reduce air pollution. Carbon trading is simply a variant of such schemes and we should be able to make that work too. While a global trading scheme seems politically unlikely, the main thing is to involve a comparatively small subset of major emitters such as the US, the EU, China, Brazil and India."

So how does she see the world coping with the need for a new approach to the climate? Professor Rees does not rule out a big new global framework treaty on climate change. Centre colleagues such as Lord Stern are big players in the hunt for such an agreement. But she believes that more modest agreements may well have a large effect, for example by getting countries such as China to make serious carbon reduction investments. The effort to achieve an international agreement in Copenhagen has produced a long list of nations with carbon reduction commitments.

She has a particular interest in adaptation to climate change, and stresses that adaptation will be inevitable. Even if we stopped all greenhouse gas emissions today, warming would continue for decades. She adds that "adaptation costs need not be excessive but thinking about adaptation has to be embedded in land use, planning, and infrastructure decisions, including major road, rail and water developments. The Committee on Climate Change Adaptation Sub-Committee and the Environment Agency are both doing important work and will have a continuing influence here."

In the longer term, Professor Rees sees immense scope in encouraging behaviour change in energy use. This needs incentives for the general population to become as conscientious as the greenest of us are already. But there is a long way to go, particularly as such a high proportion of the population remains uncertain about the reality of climate change. It will be important for innovations which allow the transition to a low-carbon lifestyle without substantially lowering human welfare.

So, on balance, is she an optimist about this apparently complicated picture? She answers this question in two ways. She is pessimistic in that she thinks the world will warm by more than two degrees Celsius. This is the target set out in the agreements from both Copenhagen and Cancun and is the level beyond which the risks of potentially irreversible 'dangerous' climate change are thought to rise. However, she is optimistic about how fast China, and some other big emitting countries, are reacting to the problem.

She adds: "Things are not moving fast enough in Europe or the US. I think there will be big European emission reductions, but I am not confident about US action in the near future." The British government regards climate change as a serious problem. But there are major barriers to change, including the political sensitivity of big price rises for energy. ■



Judith Rees has been Professor of Environmental and Resources Management at the London School of Economics (LSE) since 1995 and was Deputy Director of LSE from 1998 to 2004. She was previously Dean of Geography and Pro Vice Chancellor at the University of Hull. She has been a member of the ESRC Council. Professor Rees has been involved in water issues in the UK, Australia and globally. She is a member of the UN Secretary General's Advisory Board on Water and Sanitation and in the past was a member of the National Water Customers' Council in the UK.

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