

Tackling the **big** issue

A novel approach to climate change research

Barbara Knowles describes a unique institutional experiment to produce research that is truly useful to policy-makers.

Climate change: the big issue of the moment. Not a week goes by without more bad news about melting ice sheets, soaring global temperatures, disappearing butterflies, rising sea levels or unprecedented weather.

So what should we be doing about it? As with many complex problems, science can only provide part of the answer. 'To be really useful, scientific knowledge of climate change and sustainability has to be translated into strategies for coping and slowing the impacts of global warming,' says Mike Hulme, director of the Tyndall Centre for Climate Change Research. 'Our unique approach is to combine the different perspectives of energy analysts, engineers, economists, social and environmental scientists and wider society, to develop practical options for a sustainable future.'

Now in its fifth year of operation, and having just launched its strategy for the next three years, the Tyndall Centre is proud of what it has achieved so far. An evaluation of the centre's past work—conducted for its funders by a panel of international experts from top scientists to business stakeholders—concludes, '...that no comparable programme in its initial years has come further, faster or produced more exciting results.'

According to a report from the United Nation's Framework Convention on Climate Change, '...the Tyndall Centre seeks to break new ground in innovative research on several themes connected with policy responses, including mitigation and adaptation ... It reflects an innovative institutional experiment by the UK to confront complex interdisciplinary issues that face climate research and policy.'

Last year, the centre launched a major report on future energy options for the UK.

Decarbonising the UK: Energy for a climate conscious future was the most comprehensive analysis of how the country might achieve the government's target of a 60 percent cut in

carbon dioxide by 2050. The report described pathways for cutting carbon dioxide emissions from road transport, housing, industry and coal-fired power stations, and the role of renewable energy, nuclear power and hydrogen fuel in providing low-carbon energy supplies. It also considered the potential of policy instruments to cut carbon dioxide, such as a proposed scheme of citizen's carbon permits.

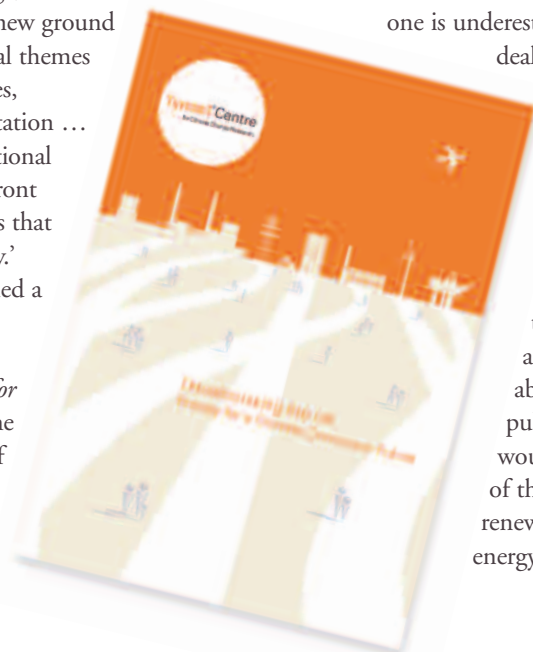
The report revealed that the cost of a low carbon future may be no greater than the costs of investing in current energy technologies. Improvements in energy efficiency can dramatically decarbonise many sectors, and supplying low-carbon energy is both technically and economically viable.

But it wasn't all good news. If Britain is to meet its 60 percent target, everyone's carbon dioxide emissions must go to zero to allow for emissions caused by the predicted increase in air travel. 'If the UK government does not curb aviation growth, all other sectors of the economy will eventually be forced to become carbon neutral. It will undermine the international competitiveness of UK industry,' says Kevin Anderson, who led the research.

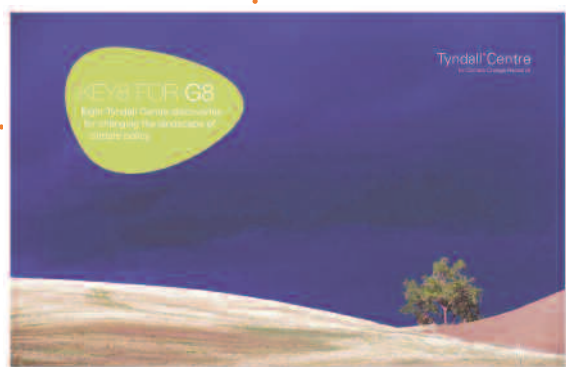
It has been argued that without this report, international aviation would not have been recognised in UK and EU policy circles as such a major source of greenhouse gas pollution. 'No one is underestimating the challenge of implementing policies to deal with climate change, but the failure of all

governments to think about international aviation and shipping [in the past] has led to a serious underestimation of the actions necessary,' says Simon Shackley at the Tyndall Centre and Manchester University.

Understanding human behaviour is crucial to implementing effective climate policies. To inform the Government's Energy Review, Nick Pidgeon and Irene Lorenzoni investigated public opinion about nuclear power. They found that the British public sees the need to tackle climate change, but would only reluctantly accept nuclear power as a part of the solution. Most people believed that promoting renewable energy sources (78 per cent), and reducing energy use through lifestyle changes and energy



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efficiency (76 percent) are better ways of tackling climate change than nuclear power. Nick explained, 'The government has already recognised the need to take public acceptability into account when exploring our future energy options. However, almost nothing is known about how ordinary people are responding to the new debate about nuclear power and climate change.'

'This new research helps us to understand public views on this critical question. Ordinary people have a more sophisticated understanding of energy futures than many decision-makers like to believe,' he added.

'Ordinary' people were involved in another Tyndall report. *A hurricane survival guide*—developed in partnership with the Cayman Islands' Department of the Environment and islanders from the British Overseas Territories—synthesised four years of research with the practical experience of Caribbean islanders to help small islands prepare for the impacts of hurricanes, storms and sea-level rise. It demonstrates the Tyndall approach of developing a rigorous academic framework to learn and communicate lessons about how to prepare society and infrastructure for climate impacts. The research explored how local communities want to be involved in decision-making. 'While media networks made hurricanes Katrina and Rita seem like a new phenomenon, the small islands of the Caribbean are hit each year and every year,' said Emma Tompkins, who led the research.

In July 2005 the centre published *Key8 for G8* to coincide with the G8 Summit in Scotland. The booklet captured eight Tyndall research discoveries to inform the world's political leaders as they consider how to respond to climate change. How were these eight discoveries selected for the booklet? 'Well, if I'd been sitting at the dinner table at the G8 meeting, these are the eight Tyndall topics I'd most want to mention,' explained Asher

Minns, the centre's communication manager.

The Tyndall Centre is a 'unique and ongoing experiment in how to do rigorous academic and agenda-setting research that is truly useful for policy', according to Mike Hulme. 'We will continue to break new ground in innovative research on several national and international climate change themes and be a world exemplar for doing joined-up science for society.'

'We are also training the next generation of researchers in these new approaches,' explains Asher. 'We have had no one to copy or learn directly from. As such, Tyndall has established a worldwide reputation for undertaking high quality research about response options for society, tackled from an interdisciplinary perspective. Other research organisations in the UK and abroad are now adopting the Tyndall model of operation. To help transfer this knowledge, we have recently published *Truly Useful* which discusses the practical lessons that we have learned about doing research that is useful for both theory and practice.'



Want to know more?

The reports mentioned in this article, and other news and information about the Tyndall Centre's research are at www.tyndall.ac.uk

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