

Opening of 4CMR by Sir David King, 27th January 2006.

Speech given by Terry Barker, Director of 4CMR

Sir David, colleagues and friends. It is my pleasure to thank Sir David for opening our Centre. I know that he has an extremely busy schedule and that we are very privileged that he has given us his time and good wishes.

I would also like to thank our partners in the UK Energy Research Centre and the Tyndall Centre for supporting us in the proposals for research and of course the Research Councils who are funding us.

The Centre is focussed on computer modelling of mitigation, or slowing down, of climate change. It would be better to stop the change, but that is impossible. We are committed to it. But hopefully future generations are not yet committed to catastrophic change. The science suggests that there is an increasing chance that they will be, unless we cut and eventually eliminate greenhouse gas emissions from burning fossil fuels and tropical forests.

In one way the problem and solutions are simple to understand. Add more heat to the atmosphere and it becomes more agitated. Make emissions more costly and alternatives to burning coal, oil and gas will emerge. Powerful economic forces, un-noticed and pervasive, provide incentives for new technologies and new ways of doing things, adding to the more immediate responses of saving energy.

But for mitigation to happen we as societies must agree with each other to act. Cooperation must replace competition between nations in areas such as pricing of oil seen as critical to economic welfare and success. There are precedents – the Montreal Protocol on fluorocarbons is proving a success – but the mitigation problem faces stronger opposition from vested interests with deep pockets.

Understanding the complexities of the problem and solution requires interdisciplinary research, and an approach which recognises that the evidence is overwhelming that a long-run stable equilibrium is unlikely for the climate or the economy. We know from chaos theory and observations of the natural and human systems that change is intrinsic and stability can be short-lived.

The founding members of the Centre, all of whom are here, have backgrounds in many disciplines: economics, engineering, mathematics, physics, ecology and geography. But the focus of our research is the special intersection of economics and engineering concerned with climate change mitigation – particularly by economic policies inducing low-carbon technological change.

Within this area, our contribution comes from a long 50-year tradition in Cambridge economics integrating theory and data. Perhaps surprisingly, we are one of a very few teams anywhere whose energy-economy models are based on an annual series of data. It may seem astonishing, but the global climate models, providing governments with estimates of the costs of climate stabilisation are nearly all reliant on one year's data.

This is interdisciplinary research. Mainstream economists have until recently assumed that technological change comes from outside the economic system, "like manna from heaven", and engineers have assumed that the economy is not affected by their technologies.

Our research programme links the micro engineering studies with the macro economy.

- 1) in studies of the UK household, transportation and electricity systems for the UK ERC
- 2) at a global level in studies of how different policy regimes can be designed not only for efficiency and fairness, but to improve economic performance.

There are 9 of us in full time and part time posts, with funding for 2 more. We are fully funded from competitive Research Council and FP6 bids making a full contribution to overheads. The thirst for knowledge in our area is such that we could easily become twice this size.

Our group has moved from one economics department in the University to another, from the Faculty of Economics (we were in the DAE, now closed) to the Department of Land Economy. There were two reasons for this: first we wanted to be in a multidisciplinary department and the DLE covers economics, law, politics, geography and development; and second a review of environmental economics in the University showed that it is centred in DLE – it has the most staff and the most research in the area. Our move highlights and reinforces this specialisation.

We have been welcomed with open arms and with much good will. I and my colleagues want to say how grateful we are to the Department and the School for Humanities and Social Sciences for accommodating us and helping with the move. I also want to thank Cambridge Econometrics, who is working closely with us to support the research programme. We would not have been able to build our global model without the company's help.

We at the Centre have an opportunity (which does not come often or easily in the academic world) to work together as a team with support from colleagues in our networks, the university and Cambridge Econometrics. Our challenge is to break new intellectual ground. It is to use techniques for the climate modellers in understanding past interactions between the energy system, the economy and emissions, such as the effects of the 5 oil price shocks over the past 40 years, and to apply that understanding to making long-term projections in which the climate is stabilised.

I will close by proposing a toast to the success of the new Centre.