



POPULATION, FOOD PRICES, SPECULATION AND CLIMATE CHANGE

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Evidence for effects of climate/environment on food security

Meat consumption will grow by 55m to 310 million tonnes per year over the next decade, with a concomitant increase in animal feed grain by 50 to about 640 million tonnes

Grain for biofuel increased fourfold over the past decade

MULTI-

THE UCL CARBON GOVERNANCE PROJECT

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Purpose of Project

Provide new insight into carbon governance issues critical to progress in mitigating human-induced climate change

Exploit and showcase UCL's unique mix of expertise and capability

Convey conclusions to policymakers and practitioners and influence their actions

Approach

Devise governance actions necessary to limit future human carbon emissions to half a trillion tons (0.5 GTC) thereby limiting climate warming to 2-4oC

Draw on

- literature reviews on multilevel governance, innovation strategies and public perceptions and behaviours regarding climate change and low carbon technologies – especially on-shore wind
- “backcasting” study of World Business Council for Sustainable Development

Sub-projects

Multi-Level Governance Arrangements (Lead: Prof Catherine Redgwell)

- o comparative study of energy production issues
- o Innovation Policy (Lead: Prof Paul Ekins)
- o study of innovation theory focusing on the deployment of wind power in the EU, the USA and China
- o Human Behaviour (Lead: Prof Jon Agar)
- o study of public attitudes and responses to low carbon initiatives with wind power as a case study
- o conceptualisation of attitudes to low carbon world and its consequences

Planned Outcomes

Project report which will synthesise the three sub-projects and draw conclusions

Refereed publication – possibly in Nature Climate Change

High-profile launch event to publicise and disseminate the report

Policy briefing(s) on main conclusions of the project

Workshops to disseminate conclusions of report

Engagement with Government

UCL to brief selected DECC/DEFRA officials during in the early spring next year on the draft

INSTITUTIONAL FRAMEWORKS AS KEY TO POLICY SUCCESS

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It is accepted that technological innovation is essential for tackling the low energy/low carbon agenda. However, take-up and successful adoption can be difficult to achieve. This had led to a specific emphasis on behavioural change, often promoted through marketing or awareness campaigns. But the effectiveness of such approaches, including cost-effectiveness is often in doubt. The answer to this conundrum is to focus on establishing the **institutional arrangements** that will deliver the desired energy and/or carbon

EU ACTION ON CLIMATE CHANGE

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The EU has stated its ambition to lead global efforts to fight climate change to 2020 and beyond. Traditionally, it has sought to lead by example, taking on emission reduction targets and devising new policy instruments (especially emissions trading) that it hopes to export elsewhere. Despite this, and despite evidence from the UNFCCC to the contrary, the EU has failed to make its mark at the Copenhagen conference. It is reported that the final (disappointing) deal was struck in the absence of the EU and that the EU Council President learnt of it by way of a text. There are, however, signs that the EU's leadership style is beginning to change and that it is increasingly willing to use the size of its internal market in a bid to galvanise regulatory change elsewhere. Four specific examples support these claims:

1. Aviation: unilateral extension of the emission trading scheme to all airline operators landing planes in the EU. Covers all parts of the relevant journey including those parts outside of European airspace.
2. Clean Development Mechanism: No 'offsets' (Certified Emission Reductions) from new projects except from Least Developed Countries from the start of the third trading phase (2013), in the absence of a global deal or a bilateral agreement with the country in question.

ACCELERATING TAKE-UP OF CLEAN TECHNOLOGIES THROUGH COMMUNITY-DRIVEN INNOVATION

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To achieve the CO2 emission reductions necessary to avert catastrophic climate change, we need to initiate the next industrial revolution: a transition from a low efficiency, high carbon energy system (based on fossil fuels) to one that is high efficiency and low carbon (based on renewable sources). At the same time, there needs to be a massive reduction in energy demand, through increases in efficiency and changing current practices and behaviours.

Many governments around the world have published “transition plans” outlining initiatives and schemes to reduce their country’s emission levels and dependence on foreign oil and gas imports. These ambitious targets will rely on engaging community groups in energy efficiency measures and use of clean technologies. A recent report by the IPPR showed that people make choices on which technologies to use based on a variety of reasons, ranging from the aesthetic to cultural, traditional and other personal values. It is therefore necessary to engage communities in the design and development process, allowing for exchange of ideas and feedback at each stage of the process, so that the resultant technology is both clean (either in itself or the behaviour it promotes), and attractive to the community it is designed for.

The Open Innovation Paradigm

The paradigm that assumes that companies can and should use both internally and externally-generated ideas (and internal and external routes to market) to advance their technologies is known as ‘open innovation’. Sharing ideas outside of the traditional business boundaries with a network incorporating all stakeholders can lead to both accelerated development and accelerated take-up, of technologies¹.

The open innovation concept is highly relevant to the development and deployment of clean technologies: most clean tech. companies are SMEs, which are inherently more reliant on relationships to develop their technologies and to reach the market place. There is also a clear role for universities in the innovation ecosystem, given their experience in collaborative research; impartiality and independence; connections to local communities; and provision of rapid prototyping of ideas, leading to product differentiation and improvements and commercial spin-outs.

The Internet-Energy Revolution and Empowering Communities

The Smart Grid is a concept ideally suited to open innovation, representing an emergent business eco-system, with emergent product markets (smart meters, metering systems, use/price management) dominated by venture-based start-ups

groups, both internal and external to UCL. If proved successful, the new business model will be rolled-out to other UCL research groups working on themes such as energy systems and the Smart Grid.

CLIMATE CHANGE AND PLANNING

Professor Mark Tewdwr-Jones,