



Going Low-Carbon

The governance of climate change technologies

EXECUTIVE SUMMARY

This briefing provides a summary of the discussion at the UCL event *Going Low-Carbon: The governance of climate change technologies*, held in November 2011.

The seminar considered the appropriate modes of governing the different technologies that are emerging to meet our climate objectives, and the role of public participation within this, focusing in particular on wind power, carbon capture and storage (CCS), and buildings insulation. A number of common themes emerged, which included:

1. **Technology cannot be separated from its social context** or from social values. Engaging with social values and concerns and embedding the complexity of governance within policy is crucial to successful governance and thus the successful implementation of climate change technologies.
2. Different publics are too often branded as NIMBYs, particularly in the case of wind power. This overlooks the key role of social and economic concerns and values, as well as the possibility of a democratic deficit in public debate, which may be dominated by a small but vocal population. **Frequently, engaging the public is seen as a case of simply supplying information**, which fails to recognise that facts cannot be used to settle a debate that is not actually about facts, but about the values attached to those facts.
3. **The public is often characterised as a barrier** to be overcome in relation to new technologies, with public participation too often an afterthought. Public engagement in new technologies is about the process of engagement, rather than overcoming opposition in order to secure agreement (public rejection might constitute a successful democratic process and thus represent successful public engagement).
4. **The political aspect of governance is crucial:** long-term political will is necessary to create and implement supportive financial and social policies to enable the deployment of climate change technologies.
5. **Coordination of responsibilities** and overcoming the fragmentation of different actors in a complex socio-economic system can present governance challenges for technologies in areas such as CCS and building insulation. **Joined-up policy instruments**, adequate legislation and multi-scale governance within the UK will be necessary to ensure successful implementation.

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Introduction

UCL Public Policy, UCL Grand Challenges and UCL Laws are bringing together a group of UCL academics over 2011/2012 to investigate the governance of climate change technologies.

It is clear that technological innovation is expected to play a significant role in meeting the UK's greenhouse gas mitigation targets. This raises very broad and complex governance challenges, including, but not limited to, the economic signals currently receiving greatest attention in high-level political discourse. Because any technology is embedded in its social context, the UCL Governance of Climate Change Technology group is particularly interested in the ways that various publics (as citizens, consumers, communities) play unavoidable and important roles in the adoption, proliferation and impact of climate change technologies.

On 23 November 2011, UCL held a public seminar on *Going Low-Carbon*. Professor Yvonne Rydin (UCL Bartlett School of Planning and the UCL Environment Institute) chaired the event. She described the task of the four panellists and the audience as being to consider the appropriate modes of governing the technologies that are emerging to meet our climate objectives. There are many different technologies, and many different options for governing these technologies. Getting the framework right is crucial.

Key Governance Issues

Professor Maria Lee (UCL Laws and UCL Centre for Law & the Environment) started by saying that a focus on technology for the implementation of our greenhouse gas mitigation targets is entirely understandable given the current implausibility of sufficiently dramatic social and behavioural change. However, it is not possible to separate a technology from its social context (and so social and behavioural change), and there is a risk that in the rush to implementation, the complexity of governance might be overlooked.

Technology in the social context

The sorts of governance issues at stake include social as well as technological effectiveness (the conversion of technological innovation into real life carbon savings), possible negative effects on other social goods (such as the environment), the willingness of communities to host infrastructure (and associated issues around the distribution of costs and benefits) and the governance balance between control and incentivisation (in part reflected through the ownership and control of the technology). Professor Lee argued that to date the focus of the Department for Energy and Climate Change (DECC) and the Committee on Climate Change has been on economic incentives, with relatively little attention paid to broader governance issues.

However, there are no governance vacuums in the modern world, and policy sits in a regulatory context that finds space for different publics: some form of public involvement is unavoidable. One striking common theme in the policy coming out of DECC and the Committee on Climate Change is the characterisation of familiar governance tools (such as planning) and the role of publics within them, as barriers to be overcome. But even if avoiding planning might help put some low carbon infrastructure in place quickly, it seems highly unlikely that it will contribute more generally to the move to a

low carbon society. A single-minded focus on technology risks would miss some of the more general governance issues.

Public participation and processes of governance

The approach in the Planning Act 2008 to 'nationally significant infrastructure projects' comes closest to reflecting political frustration with the messiness and the pace of planning and public participation. But even here, UK and EU law require public participation at the level of both national policy setting and individual project permitting. While public participation is unavoidable, its purposes remain open in law. Those purposes might include a concern with process and democratic legitimacy: citizens have a right to be involved in decisions that shape their world. The participation might be about good decisions, a recognition that no single institution or group of institutions has all the necessary information or knowledge. Both of those rationales imply some humility about institutional capacity, some recognition of the fragility of expertise. Public participation might also be conceived to persuade and educate the public in respect of developments that are considered self-evidently necessary.

The Planning Act provides a framework for local public participation within a powerful (legally and politically) pre-determined policy. This sort of 'high level policy'/'local level implementation' division is plausible and common, but tricky to negotiate. Public engagement and support at the higher level is abstract, floating free of many of the real life conflicts and distributive impacts that become more apparent when closer to a real development. The costs of infrastructure are concentrated in a locality, its energy and climate benefits are diffuse and the profits are often concentrated somewhere else entirely. This must be placed against the ethically and politically serious distributive questions around who bears the costs of an unwillingness to host infrastructure. The distributive issues are complex; 'community benefit' schemes are certainly on the agenda, but arguably without addressing the full complexity of rearranging costs and benefits.

Embedding governance

While governance is highly complex, this is not an excuse for ignoring it. The complexity of governance could usefully be better embedded in key policy work which if nothing else, could enhance accountability. But if cautionary tales are needed, the history of biofuels indicates how a rush to implement policy without adequate consideration of governance can lead to neglect of broader social and environmental issues, as well as of actual carbon savings.

Wind Energy and the Public – NIMBYism, engagement or just a load of hot air?

Dr Simon Lock (UCL Science & Technology Studies) discussed the ways in which the public is framed in the discourse around wind technology. As was the case with earlier technologies, such as GMOs and nanotechnology, and as was touched on in the first presentation, the public is frequently viewed as a barrier to the deployment of new technology. This can be seen in particular through the characterisation of the publics who object to wind development as 'NIMBY'.

Unpicking NIMBYism

The characterisation of those objecting to wind developments as 'NIMBY' rests on a number of under-examined assumptions about 'the public'. It is assumed as a starting point that the public are pro-science and pro-wind; we are often told that 80% of the population are pro-wind. This leads to an associated assumption that being anti-wind in any particular case is somehow deviant. But the detail and context of the generation of the relevant statistics is seldom discussed. So there is no critical examination of the data around support for wind, which are in any event snapshots, with no scope to consider the evolution of public opinion. Moreover, broad 'are you pro-wind/pro-science?' questions at a high level are not terribly meaningful, and answers are likely to differ at a lower level and in respect of specific projects.

The supposed paradox around the support of 80% of the public for wind power, compared with the implementation of only 25% of wind generation capacity is explained on the basis of NIMBYism. One alternative to the NIMBY explanation is the possibility that there is a democratic deficit, which allows the small population opposed to wind to have a disproportionate impact since it shouts louder and has better access to the media or government. It is more likely that the 80% figure connotes qualified agreement: 'I like wind, but subject to certain caveats.' Public support or opposition to wind is complex, is likely to reflect existing broad beliefs rather than NIMBYism, and cannot be captured by a simple opinion poll.

An information deficit?

Another assumption about opposition to wind development is that opposition arises from a lack of understanding or information. The 'Public Understanding of Science' movement worked on the basis that to increase acceptance of technological innovation, it was simply necessary to increase one-way communication of information (the 'deficit model' of public participation). This is far from straightforwardly the case, and in fact the opposite can be true; in some cases, the more information provided, the more doubts the public have. Moreover, facts cannot be used to settle a debate that is not actually about facts, but about the values attached to those facts.

Achieving genuine public engagement

A more developed approach is to prefer two-way public engagement. But even here, assumptions that engagement will necessarily build trust need to be treated with caution. A lot of so-called public engagement sees the process as a mechanism for industry to convince the public of the value of their technology, as a policy management tool to manufacture consent. This can backfire and be worse than no engagement at all. Similarly, while public benefit (eg community ownership and benefits) might help in engagement over wind development, it is not simple or straightforward. For example, when large developers offer 'benefits' to local communities, this can sometimes be negatively perceived as a simple bribe. The best processes are those in which the public direct the discussions themselves, and which reflect the various social, cultural, judicial, institutional and other contexts in which public engagement exists. Crucially, public engagement must be about the process of engagement, rather than overcoming opposition.

Dr Lock concluded that it is too simplistic to dismiss public opposition to wind developments as NIMBYism. Opposition is much more complex and nuanced than this, affected by a wide range of social, economic, emotional and behavioural factors. What is required is genuine public engagement about what a community wants, with the community engaged from the very start.

Carbon Capture and Storage

Chiara Armeni (UCL Laws and UCL Centre for Law & the Environment) explored the context in which carbon capture and storage (CCS) is being developed in the UK. CCS, as a fairly new technology, has encountered public opposition at the individual project level as well as through criticism of the amount of public financial support earmarked for demonstration projects. She highlighted the political aspect of governance, the necessity of long-term political will to create and implement supportive financial and social policies to enable the deployment of climate change technologies.

The governance framework for CCS

The UK governance framework for CCS is reasonably well developed. There is an immediate target that four demonstration projects will be up and running by 2018. A dedicated legal and regulatory framework is based on the existing oil and gas legal regime; the familiarity of this regime has been helpful in building trust with stakeholders. Further, the UK planning regime includes mandatory requirements for CCS, such that no new builds or retrofits of powerplants can be permitted without demonstration of future CCS capacity. And finally, the governance approach to CCS includes multi-level (national and EU) financial incentives.

Governance challenges

However, there remain challenges associated with CCS. Public participation is too often an afterthought in this area, and requires the discussion of social and economic concerns and values. Developers and governments have learned that providing information about the technology does not on its own lead to approval of CCS. The values associated with CCS projects may differ between different groups, and there are questions around the ability of the 'standard' approaches to public engagement to deal with certain peculiarities of CCS, for example the long-term commitments of the project. Additionally, as had been mentioned by the earlier speakers, there are questions about the purpose of the participation process. Some might see the public rejection of a CCS project as a 'failed' public engagement exercise; that is not necessarily the case, as public rejection might constitute a successful democratic process and thus represent successful public engagement.

Further governance challenges include the ability of financial mechanisms on their own to deliver adequately in respect of CCS, and on the difficulty of coordinating powers and responsibilities across the full CCS chain and multiple agencies, including in the context of devolution in the UK of certain powers, such as planning. Finally, the impact of policies on climate change technologies, when those policies are rooted in a politics of climate change that is subject to rapid change, can undermine instruments of governance.

Policy and political commitment is necessary from start to finish. However, there are significant challenges in terms of the long-term governance of CCS and the governance of risk.

In conclusion, while the UK is very supportive of CCS, and has put in place a number of enabling mechanisms, questions remain about the ability of these to deliver a CCS demonstration project.

Building Insulation – The challenges and intended consequences of insulating the existing housing stock

Professor Tadj Oreszczyn (UCL Energy Institute) discussed the place of energy efficient buildings in meeting greenhouse gas mitigation targets. He argued that the existing domestic building stock is key to tackling climate change, with electricity and space and water heating of buildings constituting 30–40% of primary energy use worldwide and 40–45% in Europe; 70% of UK homes will still exist in 2050.

Controlling energy use in buildings is not a new issue. Most of the technologies that are in play now have been in place for 30–40 years, and regulatory measures such as fuel rationing and prohibitions on the heating of public buildings to above 19°C were tried in the 1970s. Buildings regulations have also been strengthened gradually since that time.

The fact that little progress has been made in reducing domestic energy use emphasises the challenge ahead in achieving the required reductions from buildings, which is less a question of technology but one of governance and its fragmentation. The appropriate technologies need to be deployed in 24 million dwellings, within a complex socio-economic system. And by contrast with some other low carbon technologies, those involved in this area are fragmented and dispersed, without a clear and focused economic interest. It will be important to join up supply and demand in tackling this.

From theory to reality

There can be a gap between the theoretical expectation of building energy use and real energy use. The UK building industry often gets blamed for this gap, but it is also found in other countries. It arises for a combination of reasons, including:

- poor data
- misapplication of the laws of physics (eg ignoring party walls as a source of heat loss, when sound insulation standards have meant that that party walls in new houses are cavity rather than solid walls – new detached houses as a result have been performing better than new terraced houses)
- failure to build or refurbish as per modelling (eg it can be difficult to get insulation everywhere you want it)
- failure to understand changes in occupant behaviour (eg occupants might perfectly reasonably take the benefit of insulation as thermal comfort rather than a reduction in energy use).

Professor Oreszczyn concluded that the Great British Refurbishment will not be easy or cheap, but it will be easier and cheaper than not doing it. This time around joined-up policy instruments will be required to implement it; real verification, eg through smart meters; and it may be necessary to improve storage to ensure smooth supply. Adequate

legislation and insurance will also be importance, including proper enforcement – no one in the UK to date seems to have been pursued in law for failing to meet thermal building requirements.

Discussion

The audience engaged in a keen discussion with panellists, around issues including the definition and purpose of 'governance', the significance of technological choice and the influence of different actors in that process, the importance of actually converting technologies into carbon savings, the failure of property markets to pick up on energy efficiency, the roles of networks of stakeholders in this process, and the Green Deal.