Sussex Energy Group

University of Sussex
SPRU – Science & Technology Policy Research

Welcome to the Sussex Energy Group Newsletter

The energy White Paper detailing the government's proposals for Electricity Market Reform has now been published. Along with many others involved in UK energy policy debates, the Sussex Energy Group responded to the consultation that preceded the White Paper

All four of the main policy elements from the consultation were confirmed in the White Paper: a new system of long term contracts, a carbon price floor, an emissions performance standard and a capacity mechanism. In our response (see page 3), we argued that the long term contracts are the most important part of this package, but that the rationales for the other elements of the package were less convincing.

A welcome feature of the White Paper is the further information given about the governance of the new contracts for difference. The proposal that they be administered by an arms length body, with a provision for regular reviews – perhaps every five years to coincide with the carbon budgets – coincides with our own views.

There are, of course, many questions remain unanswered. The form of the capacity mechanism is still to be decided. The government's decision to consult further is understandable given the need to think through complex issues of design and the potential impacts on investors. It is also not clear how the contracts will deal with newer, more uncertain technologies – particularly carbon capture and storage (CCS). There is a positive suggestion that contracts for CCS demonstrations could be negotiated, but little detail.

It also remains to be seen whether the policy package will benefit smaller generators, new entrants and demand side action. Many towns, cities and communities in the UK have ambitions to play a more active role in the provision of energy. This includes our own home city of Brighton and Hove (see page 2). It is important that the implementation of new policies should support initiatives like this.

An important rationale for the White Paper has been to support the construction of new nuclear power stations in the UK. The Fukushima incident in Japan has not led to a change in political support for new nuclear, though it has given rise to a new round of debate about its desirability.

A number of SEG team members have been involved in this debate through press articles and blogs (see page 2) and interviews in Italy and Japan itself. Our most recent work in China (see page 3) has also enabled us to follow reactions there. Whilst China's plans for 80GW of nuclear capacity by 2020 dwarf those of other countries, it is important to note that this technology will still represent a few percent of Chinese primary energy if these plans are realised in full.

Jim Watson, Director, SEG

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SEG in the media

Jim Watson and Alister Scott 'Quiet voices must be heeded to avert a future Fukushima' *The Guardian* 18th March 2011: www.guardian.co.uk/commentisfree/2011/mar/17/fukushima-japan-nuclear-disaster?INTCMP=SRCH

Adrian Smith discussed with the cabinet of Brighton and Hove City Council their response to the Public Scrutiny on city-scale renewable energy, 14th July 2011: http://www.brighton-hove.public-i.tv/core/portal/webcast_interactive/61685

Andy Stirling and Alister Scott 'Risky advice' Project Syndicate, 2nd June 2011: http://www.project-syndicate.org/commentary/stirling1/English

Jim Watson 'China's low-carbon leadership headlines fail to capture the reality' guardian.co.uk, 18th April 2011: http://www.guardian.co.uk/environment/2011/apr/18/china-low-carbon-leadership-claims?INTCMP=SRCH

The implications of the Fukishima nuclear incident.

In a comment piece for The Guardian, Alister Scott and Jim Watson discuss whether Fukushima is an example of what Charles Perrow called a 'normal accident'. They call for a more honest and open debate about the potential risks of nuclear power. They also argue that the accident is likely to impact on regulatory frameworks, and may contribute to increasing nuclear costs. See: www.guardian.co.uk/commentisfree/2011/mar/17/fukushima-japan-nuclear-disaster?INTCMP=SRCH

In a STEPS Centre blog, Andy Stirling comments on the pressure on the media to "reassure" the public as the events at Fukushima unfold, and how lessons of risk and vulnerability from past events are neglected: http://stepscentre-thecrossing.blogspot.com/2011/03/japan-neglected-nuclear-lessons.html

Adrian Smith chairs Brighton and Hove Council Panel

In September 2010 Adrian Smith was invited to chair a Public Scrutiny Review Panel into urban-scale renewable energy for Brighton & Hove City Council. This was only the second time that the council has invited and approved an external chair to a process akin to Parliamentary select committee enquiries. Adrian worked closely with the Scrutiny secretariat and advised the panel of councillors over the scope of the study. The role included helping to identify witnesses to give evidence, compiling documentary evidence, chairing expert witness sessions held in public, drafting the report and recommendations, and presenting the final report to Council at the end of April. All recommendations in the report were accepted by the council, which must now respond to them. At the heart of the recommendations was the need to develop a much stronger co-ordinative force for sustainable energy in the city that brings together and capitalises on lots of existing interest amongst different groups, but for whom renewable energy is not a core business or concern. The Chief Executive of the Council, John Barrall, described the Scrutiny Panel as producing a ‘landmark report’. City-scale renewable energy is a complex issue, and SEG research experience helped considerably in framing the scrutiny in such a way that councillors were able to identify the deep-seated issues of strategic importance for the city. A new Green Party-led council was voted into office in May, and a group of local organisations are already mobilising to propose to the council some responses to the report. It will be interesting to see whether the report features in the future politics and practice of energy in the city.

The report from the panel with supporting documents can be downloaded here: http://www.brighton-hove.gov.uk/index.cfm?request=c1243614

Mehdi Majidpour passes his DPhil viva

Medhi's thesis examines the development of gas turbine technology in Iran in the context of debates about 'catching up' by developing economies. It focuses on the interaction between indigenous innovation and the acquisition of technologies and knowledge from international sources. His examiners recommended his thesis be approved on 25th February 2011, subject to some minor corrections.

New report for DECC on low carbon innovation in China

A SEG team led by Jim Watson and Tsinghua University have published the results of their latest research on low carbon technology transfer. Commissioned by DECC to follow on from similar studies in India, this report draws on four case studies of innovation in China. It considers the extent of low carbon innovation within each case and implications for negotiations under the UN Framework Convention on Climate Change. The main conclusions include:

1. There are important differences between low carbon technologies in China. Therefore a 'one size fits all' approach to supporting low carbon innovation is inappropriate. Chinese technological capabilities are strongest in more near-market technologies
2. The case of China is unique, and should not be used as a proxy for developing countries in general. Whilst China still faces many development challenges, the Chinese government has significant resources and there is a large potential market for foreign suppliers.
3. A range of policy mechanisms are used to promote low carbon innovation in China, with an emphasis on regulations and targets. We support the Chinese government's intention to increase the use of market based instruments alongside regulatory approaches.
4. Chinese firms and institutions are developing their capabilities rapidly through indigenous innovation and international technology transfer, but significant gaps remain. Limitations include access to component technologies and engineering and design skills.
5. Access to intellectual property rights (IPRs) is not a fundamental barrier to the development of low carbon innovation capabilities in China. IPR issues, and the need for policy intervention, should be evaluated on case by case basis.
6. International policy frameworks have played an important role in low carbon innovation. The Clean Development Mechanism has been used strategically by the Chinese government to provide significant finance for technology deployment.

To view the full SEG and Tsinghua report, see:
http://www.sussex.ac.uk/sussexenergygroup/research/ukchina

Sussex Energy Group responds on Electricity Market Reform

SEG gave a mixed response to DECC's consultation on far-reaching proposals for Electricity Market Reform. It argues that the case for a carbon price floor (which was confirmed in the 2011 Budget) has not been made. However, it welcomes the proposed long term contracts for low carbon generation, and argues that there may be a case for a capacity mechanism - though not in the immediate future. To read the SEG response, go to:
www.sussex.ac.uk/sussexenergygroup/documents/seg_emr_consultation_response_-_final.pdf

Regulating technology: international harmonisation and local realities by Patrick van Zwanenberg, Adrian Ely and Adrian Smith

Examining the regulation of technologies, this book explores how the drive to harmonize regulatory policies across the world is at odds with the increasingly diverse local settings in which they are implemented. The authors use a 'framings' approach that starts with the concerns and experiences of technology users and works 'upwards' in order to examine how best to improve regulation.

'This book provides an invaluable reality check on the idea that the international regulation of technology, currently designed, can effectively address the multiple social and environmental challenges thrown up by technology innovation and diffusion in diverse settings around the world. Well-researched and accessibly written, it deserves to be read by academics and policy practitioners who may be prompted to re-think regulation'.
Professor Peter Newell, School of International Development, University of East Anglia

To buy this book, go to: http://www.earthscan.co.uk/?tabid=102585

Recent academic publications

Teräväinen, T., Lehtonen, M. and Martiskainen, M. (2011). Climate change, energy security, and risk—debating nuclear new build in Finland, France and the UK. Energy Policy, Volume 39, Issue 6, June 2011, Pages 3434-3442.

Elzen, B., Geels, F.W., Leeuwis, C., and Van Mierlo, B., 2011, 'Normative contestation in transitions 'in the making': Animal welfare concerns and system innovation in pig husbandry (1970-2008)', *Research Policy*, 40(2), 263-275

Berkers, E. and Geels, F.W., 2011, 'System innovation through stepwise reconfiguration: The case of technological transitions in Dutch greenhouse horticulture (1930-1980)', *Technology Analysis & Strategic Management*, 23(3), pp. 227-247

Missing carbon reductions? Exploring rebound and backfire effects in UK households
Energy Policy, *Volume 39, Issue 6*, *June 2011*, *Pages 3572-3581*
Angela Druckman, Mona Chitnis, Steve Sorrell, Tim Jackson

Watson J. and Sauter, R. (2011) 'Sustainable innovation through leapfrogging: A review of the evidence' International Journal of Technology and Globalisation 5(3/4) 170-189; http://dx.doi.org/10.1504/IJTG.2011.039763

von Stechow, C., Praetorius, B. and Watson, J. (2011) 'Policy incentives for demonstrating and financing CCS technologies in Europe: Lessons from the UK and Germany' *Global Environmental Change*. In press; http://dx.doi.org/10.1016/j.gloenvcha.2011.01.011

Sussex Energy Group

The Sussex Energy Group (SEG) at SPRU (Science & Technology Policy Research), University of Sussex, is a team of 17 researchers dedicated to understanding the challenges and opportunities for transitions to a sustainable energy economy. We undertake academically excellent and inter-disciplinary social science research that is also centrally relevant to the needs of policy-makers and practitioners. We pursue these questions in close interaction with a diverse group of those who will need to make the changes happen.

SEG members and key research areas

Jim Watson - Director of SEG, Professor of Energy Policy
Energy policies, energy and development, energy security
Steve Sorrell – Deputy Director of SEG, Senior Fellow
Emissions trading, energy efficiency, climate policy
Rob Byrne – Research Fellow
Low-carbon development, renewable energy technologies, socio-technical transitions
Frank Geels – Professorial Fellow
Transitions to sustainability, socio-technical systems, innovation studies
Florian Kern - Research Fellow
Governance of system innovation, energy innovation policy
Markku Lehtonen - Research Fellow
Knowledge in policy making, biofuels, governance
Francis McGowan - Senior Lecturer in Politics
European energy policy, party politics of energy choices, policy evaluation and the energy sector
Gordon Mackerron - Director of SPRU, Professorial Fellow
Security of supply, energy policy, nuclear power
David Ockwell – Senior Lecturer in Geography
Low carbon technology transfer, discourse analysis, inter-disciplinary research
Mike Parker - Honorary Fellow
Climate change policy, urgency, time critical pathways
Neha Rai – Research Fellow
Governance of infrastructures, water sector regulation
Adrian Smith - Senior Fellow
Governance, technology, politics
Lee Stapleton - Research Fellow
Energy efficiency, quantitative techniques, renewable energy
Andy Stirling - Professorial Fellow
Appraisal, diversity, resilience
Sabine Hielscher – Research Fellow
Community Energy, innovation, socio-technical transitions
Richard Percival – Research Fellow
Multiscale whole systems modelling, analysis for CO2 capture, transport and storage
Jin Park – Research Fellow

Danielle King – Project Co-ordinator

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