

Regions, energy and climate change

**Royal
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Advancing geography
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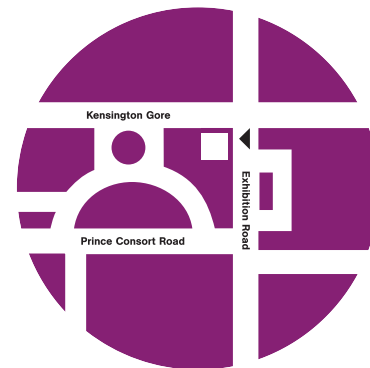


**Environment and
Society Forum**

Summary Statement 21

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Conference report

Executive summary

The Regional Development Authorities, the Devolved Administrations and the Mayor of London have responsibilities for populations as large as many small-medium sized European countries.

The challenge of climate change, with a consequent need to change our patterns of energy use and supply, means these bodies have an increasingly important role to play. The Government's recent Energy Review rightly identifies the need for business, NGOs, the public and government, at all levels, to become engaged with the energy agenda.

This conference was intended to highlight the scope for action at the regional level and identify the ways in which progress can be made. These include: framework setting; setting targets for renewable energy and efficient energy use; working in partnership with the private sector to connect climate, energy and the wealth creation agendas; and promoting regional clusters of energy innovation that link industry and academia. In the longer term, regional bodies could have a critical role to play in transforming energy infrastructure. The conference explored these

opportunities and attempted to extract lessons about how these different strands of activity can be woven together.

Five key points emerged from the conference:

- 1** The UK needs to put itself on a path to 60% CO2 reduction with real progress by 2020; to maintain the reliability of energy supplies; to promote competitive markets in UK and beyond and to ensure every home is adequately and affordably heated.
- 2** Energy matters and the regional dimension matters - energy underpins economic activity, provides critical infrastructure for our physical development, and represents a major economic opportunity for research & development, innovation and business development.
- 3** A major overarching challenge is to decouple carbon emissions from economic growth. There are three key areas which need to be focused on: transport, low-carbon technology and energy efficiency.
- 4** To secure the economic opportunities associated with a growing renewable energy sector we need investment, job opportunities, supply chain development and innovation.

5 We need to celebrate local diversity and take advantage of collaborative experiments.

The following document is a summary of the main outcomes of a one day conference that was held at the Royal Geographical Society with IBG in conjunction with the UK Energy Research Centre on 25 October 2006. The day was chaired by Prof Jim Skea, Research Director, UK Energy Research Centre. Each section is a summary of the presentations given by the following speakers.

Key speakers:

Pam Alexander, SEEDA
 Richard Parker, Renewables East
 Prof Nick Jenkins, Joule Centre
 Prof John Glasson, Oxford Brookes University
 Dr Graham Ault, University of Strathclyde
 Malcolm Wicks MP
 Prof Simon Marvin and Dr Mike Hodson, University of Salford
 Shirley Rodrigues, Head of Environment, GLA

The role of the regions

Nine Regional Development Agencies (RDAs) were set up in 1999 to support business and skills development across England, create sustainable communities and ensure economic development. RDAs work with partners at a regional and national level to develop shared energy priorities and targets. These are reflected in each RDA's Regional and Economic Spatial Strategies, which include policies and targets for addressing climate change, reducing ecological footprints, and setting high standards for sustainable construction. They also relate to regional and sub-regional targets for electricity generation from renewable energy sources. Regions are responding directly to the sustainability agenda, both in relation to future physical and economic development and to its impact on quality of life – now recognised as a key international competitive advantage for the South East.

This has led to a common core of energy priorities with which every RDA is engaged:

- Developing a low-carbon economy
- Improving energy efficiency
- Increasing use of renewable energy resources

- Maximising take-up of business opportunities
- Ensuring focused and integrated delivery and implementation
- Supporting development of energy infrastructure and supply chains and sustainable construction to deliver low-carbon energy supply/energy efficiency

Many of these core activities are supported by the Defra 'Securing the Regions' Future' programme.

In the UK energy has always been important but we have tended to take it for granted and assume that we would have a secure and affordable supply. But with rising energy prices and growing concerns over security of supply, energy has risen rapidly up the business agenda.

To move towards sustainable 'One planet living', we need to de-couple carbon and economic growth, maintain energy security, and businesses need to reduce their direct and indirect carbon footprint. Contributing to the long-term sustainability of energy supply needs a focus on support for energy R&D and innovation, and the deployment of the new ideas

RDAs can help maximise business opportunities. This can include cluster

and supply chain support for renewable and other low-carbon energy technologies and support for energy management in business as part of their wider remit to raise productivity.

RDAs can also reinforce conventional energy sector markets (oil, gas, coal nuclear) through their sector support organisations. This work can be seen in a number of projects across the county, such as NaREC in the North East, Wavehub in the South West and Z-squared in Thames Gateway.

However, the UK regions still have to undergo a transition towards a more sustainable energy future. This will involve behavioural change (and incentives in place to help achieve it), as well as improvements in energy efficiency and performance and bringing new energy technologies to market. Encouraging best practice standards will help to achieve a more sustainable future.

The Scottish Executive has set higher carbon targets than the UK of 18% reduction by 2010 and 40% by 2040. However the same policy tools are used: Renewable Obligation Certificates, emission quotas, planning and energy efficiency. Scotland also suffers similar barriers to meeting these demands:

- 52% of Scots have more than five appliances on standby
- 16% believe turning appliances off uses more energy
- 29% of Scots are turned off by an energy saving lifestyle

A more coordinated and effective programme for energy efficiency needs to be developed, based on education, awareness and implementation. Scotland needs to coordinate its own energy policy, strategy and research while improving energy efficiency and promoting cleaner energy sources. Additional research, development and demonstration of new technologies will be needed, while improving market and infrastructure development.

Setting the lead: the role of central government

The regions and localities play a key role in the move to becoming a low carbon energy economy. This forms an integral part of the discussion as the government works towards a new Energy White Paper. The conclusions of the review which was published in July make it clear that there is a role for everyone to play if we are to be successful. At the Labour Party conference in 2006 the Prime Minister talked of the need for the most radical overhaul of energy policy since the war:

- A five fold increase in renewable energy
- Greater business responsibility for emissions
- A step change in investment in clean technologies
- Big improvements in domestic energy efficiency.

Concentrations of CO₂ in the atmosphere are higher than at anytime in the last 800,000 years. In less than 200 years human activity has increased greenhouse gas levels by 50% compared to pre-industrial levels. In the UK £200bn of assets and 1.8m people are in areas which will be flooded if sea

levels rise. By 2010, imports could be meeting up to 40% of the UK's total gas demand, rising to around 80% by 2020. Europe will be importing over 90% of its oil and 80% of its gas needs by 2030.

National Government must play the leading role in tackling these challenges by ensuring our policies facilitate change and delivery. The energy review launched a major programme of work covering the full spectrum of issues and we are now in the middle of a number of consultations.

But these challenges are so great that national government cannot tackle them unless individuals recognise and take action to reduce the energy they use – with incentives from national government, energy suppliers and others.

Businesses now recognise that reducing emissions is a board-level issue, and have provided solutions for themselves and others. We have also seen local and regional bodies recognise the implications for their own communities; and use the unique opportunities they have to reduce emissions. However, cutting energy demand is an ambitious aim. No major country has been able to grow its economy whilst delivering a sustained

reduction in energy consumption. Nonetheless the package of measures within the review are designed to remove the barriers to all of us.

Government, business and individuals are becoming more energy efficient with accurate information about their energy use, how to lower it and save themselves money at the same time. Inefficient consumer goods are also being phased out, radical new ideas to give energy supply companies and incentives to reduce demand and therefore emissions from the home are being put in place, while proposals for a new Energy Performance Commitment, targeting emissions from large organisations such as supermarkets and hotels, are being considered.

In the longer term, local and regional government also has a key role in helping to ensure the delivery of low carbon residential and business development. The energy review set out the government's long term ambition of carbon neutral development in England and Wales.

Carbon neutral development will require a tightening of national building standards and, in the longer term, will also increasingly require the increased

use of renewable and other low carbon forms of energy both on and off-site. The government is keen to maximise responses from local and regional government, and their partners, on the role they could play as part of a national approach to promote the uptake of innovative distributed energy systems.

If the UK is to meet its energy policy and climate change goals we need to tackle transport – at a national, regional and local level. Transport accounts for around 25% of UK carbon emissions. The review aimed to increase the level of the Renewable Transport Fuel Obligation above 5% after 2010/11 and develop strong successor arrangements to the current voluntary agreements on new car fuel efficiency. The carbon savings from these measures alone will be around 2-3 million tonnes, the equivalent of taking 2-3 million cars off the road.

The energy review was clear that planning must recognise and support the development of infrastructure to meet our national and international energy and climate change goals – including renewables and other forms of low carbon generation. Timely delivery of the right infrastructure is also key to securing supplies and

managing the risks of depending on imported energy. Planning is an important opportunity to promote low carbon, sustainable development as part of a package of measures moving towards carbon neutrality.

A key part of this is to give certainty to developers about the overall direction of travel of Government policy so they can invest in low carbon development with confidence. Later this year, government will launch a consultation on a new Climate Change Planning Policy Statement. This will set out more clearly how the planning system can be used to promote low carbon development. It will also set out how planners should take into account the need for key energy infrastructure built to meet our national energy policy goals.

In short, global, national, regional and local action will all be needed across a wide range of areas if the review's conclusions are to be delivered. The Energy White Paper planned for 2007 will set out how we will work with local and regional government on key issues. The government is working closely with Regional Development Agencies to ensure the action they take is in support of energy policy goals,

and is consistent with their remit for regional economic development and is properly reflected in the new Energy White Paper. By working together we will be in a better position to meet our long-term challenges with positive action, in a way that meets the needs of different regions and localities. The road map for this country genuinely becoming a low carbon economy with secure and affordable energy has been drawn and it is now for all of us – at national, regional and local level – to take the journey.

Transitions to sustainable energy infrastructures: what role for cities and regions?

Moving towards a sustainable economy will require a major technological transition in terms of energy infrastructure. These transitions can be thought of at three levels: Landscape (macro) – political cultures, economic growth, macro economic trends, etc; Regimes (meso) – incumbent technologies intertwined with configurations of institutions, practices and regulations; and Niches (micro) – ‘protected’ spaces within which actors learn in various ways about new technologies and potential uses.

The role of initiatives at the urban and regional scale to give effect to technological transitions is not adequately understood. Yet we continue to see decentralisation of some aspects of energy, technology, innovation and competitiveness policy to cities and regions.

But cities and regions are actively shaping energy transitions through strategic intermediaries. Over 75% of energy consumption is related to cities and major city-regions. Cities are highly vulnerable to the impacts of climate change. They can also implement novel socio-technical solutions that may be widely replicable.

Networks of cities are working together on climate change. Selective cities are being targeted as key demonstrators for Multi National Corporations testing new energy systems.

Strategic intermediaries, such as the London Energy Partnership, selectively shape views of the future through transitions in infrastructures and place. We can build selective social networks on various (international, national, regional, local) scales to manage transition processes within a context, develop place-based visions and

images of transitions in infrastructures and underpin assumptions about relationships between cities and regions and transitions.

To progress, we need to acknowledge the differential positioning of cities and regions in infrastructure transition, for example the respective roles of “World Cities” and “Peripheral Regions”. We need strategic intermediaries to actively work between infrastructure transition possibilities and the local contexts within which transitions may occur. Further understanding of different styles of transition is needed. What would transitions look like in the contexts of ‘autonomous’ regions or medium-sized cities? We need to compare different possible styles to develop a better understanding of the role of cities and regions in infrastructure transitions.

London’s strategic role

The Mayor of London believes that tackling climate change is now the overriding political imperative. Over 50% of the world’s population lives in cities and some 75% of the world’s energy is consumed by cities - cities have the motivation and the opportunities to deliver action on climate change and

energy. Key initiatives include setting the planning framework to promote energy efficiency, decentralised and renewable energy; promoting modal shift; establishing the London Climate Change Agency; working through the London Energy and Climate Change Partnerships to collaborate with key actors to deliver on this agenda. Now he is accelerating the pace of this work.

The London Plan has estimated that an additional 845,000 jobs will be created in London by 2016. This will drive an increase of around 15% in non-domestic floor space; an estimated 31,090 dwellings per year (c. 1% annual growth) will be required to meet the associated population increase. The increase per capita trip rates will exacerbate demand increases arising from population and employment growth.

The plan announced the following targets for reducing CO2 emissions: 15% by 2010; 20% by 2015; 25% by 2020; 30% by 2025 and 60% by 2030. A combination of accelerating energy efficiency and decentralised energy supply will reduce annual energy requirements by 23%; reduce CO2 emissions by 27% by 2025; provide security and reliability of supply and

lower prices for consumers/more affordable warmth. The Mayor has set CO2 reduction targets for London for the first time in his spatial plan and is developing a Climate Change Action Plan to show how this can be met. He is being given a new duty to tackle climate change and a statutory Climate Change and Energy Strategy will be published shortly.

London has set the framework for action and is taking forward key policies and projects. Schemes such as Congestion Charging should reduce car journeys by 16%, leading to a 19% reduction in CO2 emissions. Public transport is to be modernised and made more efficient, e.g. Euro III buses, hydrogen fuel cell buses and a low emission zone for London by 2008. The London Climate Change (Adaptation) Partnership aims to help ensure that London is prepared for its changing climate. Their work focuses on urban heat island research, transport, development, learning from the experience of other cities and working with businesses. The GLA are also working on schemes such as Green Homes and 40 pilot studies supported by the GLA, LDA and Defra will be rolled out over the next year.

Concluding remarks

The event aimed to bring together the issues being faced by different stakeholders in the climate change and energy debate. The Regional Development Agencies will play a key role in helping develop the technologies and initiatives to help the UK reach its CO2 emissions target by 2050 and we should learn to face these challenges by being open to new ideas.

