

Achieving a Sustainable Low-Carbon Society

Symposium and Workshop

Executive Summary



13-15 June 2007
London, UK

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Key Findings

The key findings from the second workshop of the Japan-UK Low-Carbon Society Collaboration were:

- Climate change represents a significant threat to humanity and the global environment. Urgent action is needed to reduce global greenhouse gas emissions significantly (by at least 50 per cent by 2050) and adapt to unavoidable impacts of climate change.
- A range of country studies has already demonstrated that it is both technically and economically feasible to achieve deep cuts in greenhouse gas emissions by 2050 – as much as 60-80 per cent in developed countries. The costs of transitioning to low-carbon societies are far less than costs associated with inaction.
- The scale of the problem is such that a wide range of stakeholders – from government; business; and civil society, both as individuals and organisations – need to be engaged in finding solutions. Creating visions of low-carbon societies can help to educate and motivate people and organisations
- International action will require bold and innovative measures. The workshop identified the need to:
 - Develop long-term policy signals for business through strengthening carbon pricing e.g. through taxation and enhanced international trading;
 - Enhance international RD&D in integrative and transformational technologies; and
 - Mobilise investment resources for low-carbon development in developing countries.
- Well designed low-carbon strategies are an important aspect of sustainable development that can deliver significant co-benefits in terms of the local environment, economic growth, access to energy and energy security.
- Changes in human behaviour and lifestyle are essential to achieving low-carbon societies. This requires policies and frameworks to provide consumers with the opportunity to make low-carbon, and to remove carbon-intensive, choices.
- Existing technologies and those close to commercialisation can make a major contribution to carbon emission reductions. Emerging technologies must also contribute significantly in the medium to long term. The interplay between technology and behaviour needs to be taken into account.
- A significant share of global greenhouse gas emissions is due to cities. Existing initiatives and projects at city-level around the world show that effective action can be and is being undertaken.

Introduction

Achieving a Sustainable Low-Carbon Society was the second in the series of Low-Carbon Society workshops hosted and organised by The Ministry of the Environment of Japan (MoEJ) and the UK Department for Environment, Food and Rural Affairs (Defra), the UK Energy Research Centre (UKERC), the National Institute for Environmental Studies (NIES), and the Tyndall Centre for Climate Change Research. 63 experts from 20 countries and 15 international organisations contributed to the workshop; 20 business representatives also attended the symposium.

Global greenhouse gas emissions will need to peak within the next 10-15 years followed by reductions of at least 50 per cent by 2050 if we are to avoid dangerous climate change. Developed country emissions will need to be reduced significantly. As much as a 60-80 per cent reduction in emissions from developed countries by 2050 are feasible, both technically and economically. In addition, developing country emissions will need to follow a pathway that allows continued growth and development whilst making the transition to a low-carbon society.

Climate change is now recognised as an economic as well as an environmental problem. The costs of strong and urgent action both in mitigation of and adaptation to climate change are vastly outweighed by the future costs of inaction. According to the Intergovernmental Panel on Climate Change (IPCC) expected macro-economic costs of moving to low-carbon societies are less than 0.12 percentage points reduction of annual global GDP growth.

Any delay in *mitigation* (i.e. interventions that reduce the sources or enhance the sinks of greenhouse gases) causes significant cost increases. Stabilising at a level below 450 parts per million (ppm) of carbon dioxide equivalent (CO₂e) would require global emissions to peak in the next 10 to 15 years. A 10 year delay almost doubles the annual rate of the required reduction.

Equally, even with strong international action to tackle climate change some level of *adaptation* will need to be a key part of any future development strategy. Policies will need to take into account the potential for future costs associated with damages from emissions of greenhouse gases, whilst supporting technology development and combating deforestation.

Workshop outputs

Policy recommendations

Participants identified six key areas of policy that should be viewed as priority areas for development in order to move towards low-carbon societies:

- Develop frameworks that create financial incentives for enhancing the deployment of Carbon Capture and Storage, in particular international regulatory mechanisms to enable demonstration projects such as cap and trade systems and a global carbon market.
- A comprehensive programmatic approach to global forestry and soil carbon stocks, taking into account a long-term carbon price to provide incentives for sustainable land use management
- Establish a fiscal framework that discourages low sustainability developments and helps to prevent the degradation of rural land.
- An approach to transport policies that promote more sustainable mobility through carbon pricing in the transport sector in all areas such as; infrastructure, personal vehicle use and public transport
- Create long-term regulatory measures that provide incentives for the design, construction and use of more energy efficient homes whilst addressing the need for enhanced RD&D in the built environment.
- Develop schemes, such as carbon labelling, which raise people's awareness of the impacts that their consumption choices have on their carbon footprint. Personal carbon allowances could play a role in raising awareness and promoting action, but the operation of any scheme needs to be assessed carefully.

Further work and research

We found that there are research activities focused on country-level and city-level actions to evaluate the feasibility of low-carbon society scenarios, and that a new modelling comparison framework has been developed. Further research is needed – among the ideas discussed at the workshop were:

- To develop a low-carbon society road map to clarify role of policy options and timing in a physical, financial, and economical manner,
- To investigate the harmonisation of policies (emissions trading, common technology standards) to enhance development of low-carbon societies, and;
- To further identify the existing networks of stakeholders working on low-carbon society activities, such as governments (both national and sub-national level), business and research communities, NGOs and civil society.

Next steps

A third low-carbon society workshop will be held 13-15 February 2008 in Japan with the aim of demonstrating feasibility of low-carbon societies through establishing methodologies for creating visions and drawing roadmaps, and raising awareness. The third workshop will focus on scientific achievement of the low-carbon society study, explore integration of low-carbon societies and sustainable development, and mobilise wider dialogue among stakeholders. It was proposed and accepted by the participants that a compilation of visions of low-carbon societies by various countries will be prepared for the third workshop. Work on developing the policy recommendations and mapping of low-carbon society activities will continue with the aim of delivery at the G8 summit in Japan mid-2008.

**International Steering Committee
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The UK Department for Environment, Food and Rural Affairs (Defra) and the Ministry of the Environment of Japan (MoEJ) are working together on the joint research project “Low-Carbon Society Scenarios Towards 2050”. The focus for the development of the joint research project between the UK and Japan was on deepening our understanding of the need to reduce greenhouse gases to achieve low-carbon societies and using the scientific evidence base delivered through the submission of country level emission scenarios. Further specific objectives were set for the UK-Japan collaboration to explore:

- Identifying and understanding the necessity for deep cuts in greenhouse gas (GHG) emissions toward 2050
- Reviewing country-level GHG emissions scenario studies in developed and developing countries
- Formulating win-win strategies to align sustainable development and climate objectives
- Studying methodologies to achieve low-carbon societies – visions; pathways modelling the future society; technological, institutional, behavioural and financial mechanisms
- Identifying gaps between goals and the current reality
- Sharing best practices and information
- Identifying opportunities for cooperation

The full report can be found at <http://www.ukerc.ac.uk/>

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