

Main Organizer: National Institute for Environmental Studies

National Institute for Environmental Studies (NIES) was established in 1974 at Tsukuba Science City. It has been playing a major role in environmental studies involving natural, social and human sciences. NIES, in collaboration with institutes in China, India, Korea, and Thailand, has developed a large-scale computer simulation model called AIM (Asia-Pacific Integrated Model) to assess climate policy options. The model has been used in a number of policy studies and the results have been presented in various environmental reports by IPCC, UNEP/GEO, ECO-Asia, EMF, Millennium Ecosystem Assessment, and so on.

Website: <http://www.nies.go.jp>

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Japan-UK Joint Research Project “Developing Visions for a Low-Carbon Society through Sustainable Development”

The Ministry of the Environment (MoE), Japan and the Department for Environment, Food and Rural Affairs in the UK (Defra) have initiated a joint scientific research project entitled “Developing Visions for a Low-Carbon Society through Sustainable Development. Together, they are involved in implementing studies toward achieving a low-carbon society (LCS) by 2050, encouraging other countries to engage in LCS studies, and holding a series of international workshops. The first workshop was held in 2006 in Tokyo (<http://2050.nies.go.jp/200606workshop>). The joint research project uses a top-down or “back-casting” approach to identify what is required over the long term to stabilize global temperatures. Visions of a low-carbon society will be along with the scale of cuts in GHG emissions required compared to current levels. The project will identify what can be done now and in the future by concrete actions and innovations needed in terms of legal/social systems, technologies, and life-styles. It is intended to cover studies on the requirements of people living in the 2050 world, as well as studies on various aspects of LCS including energy supply, structure of industries, structure of cities and rural areas, and transportation systems.

Co-Organizers:

The Ministry of the Environment, Japan
The Department for Environment, Food and Rural Affairs, UK

Programme

November 8, 2006 11:15-12:45

Acacia in World Agroforestry Centre (ICRAF)
United Nations Office at Nairobi (UNON)

- 11:15-11:20 **Opening Remarks**
Dr. Ryutaro Yatsu (Ministry of the Environment, Japan)
- 11:20-11:30 **Objectives of LCS through Sustainable Development (SD)**
Dr. Shuzo Nishioka (NIES, Japan), Coordinator
- Keynote speech** - - - - -
- 11:30-11:40 **Aligning Climate Change and Sustainable Development Policies**
Prof PR. Shukla (Indian Institute of Management, India)
- 11:40-11:50 **Modeling LCS to Identify Trend-Breaking Options**
Dr. Junichi Fujino (NIES, Japan)
- 11:50-12:00 **National and Global Cooperation to Achieve LCS through SD**
Mr. David Warrilow (Defra, UK)

Panel discussion - - - - -

- 12:00-12:05 **SD-PAMs**
Mr. Stanford Mwakasonda (University of Cape Town, South Africa)
- 12:05-12:10 **Renewable Energy**
Mr. Martin Weiss (Federal Environmental Agency, Germany)
- 12:10-12:15 **Technology RD&D**
Dr. Jiang Kejun (Energy Research Institute, China)
- 12:15-12:45 **Open Discussion**

★ *A boxed lunch will be served during the event* ★

Key messages:

- 1) Aligning climate change and sustainable development actions will facilitate cost-effective transition to stabilization of climate change.
- 2) A variety of tools (e.g. models) and methods (e.g. backcasting, scenarios) are required to delineate options for cost-effective transition to low-carbon pathways.
- 3) Cooperation for LCS involves a long-term policy framework, a wider range of issues and actors (domestic and international) and a comprehensive range of technologies and policy measures. Political vision and leadership are vital to generate signals, prompt activities and deploy resources to achieve LCS goals.

COP12 and COP/MOP2 Side Event

Global Challenges Toward a Low-Carbon Society (LCS) Through Sustainable Development (SD)

November 8, 2006 11:15-12:45
Acacia in World Agroforestry Centre (ICRAF)
United Nations Office at Nairobi (UNON)



The First Workshop of Japan-UK Joint Research Project
“Developing Visions for a Low-Carbon Society(LCS) through Sustainable Development”
June 13-16 2006, Tokyo



National Institute for Environmental Studies(NIES), Japan



The Ministry of the Environment
(MoE), Japan



The Department for Environment,
Food and Rural Affairs
(Defra), UK



Key message 1: “Aligning climate change and sustainable development actions will facilitate cost-effective transition to stabilization of climate change.”

In the short term, LCS actions will deliver multiple dividends if aligned with Millennium Development Goals. In the long-run, climate stabilization will require significant technological change. Mainstreaming the development, transfer and deployment of low-carbon technologies in national sustainable development policies and actions will be the key to a cost-effective transition to LCS.



Key message 2: “A variety of tools (e.g. models) and methods (e.g. backcasting, scenarios) are required to delineate options for cost-effective transition to low-carbon pathways.”

A set of tools and methods and their consistent application are fundamental to assess the technological and market potential of a variety of technological and policy options to realize low-carbon society. The simulations have to take into account the driving forces of energy (including demographics, economic growth and resource endowments), land-use changes and structural changes in the economy. The complexities of comprehensive, consistent and transparent analysis require use of formal modeling tools, strategic databases and purposive methodologies to achieve optimal and robust results.



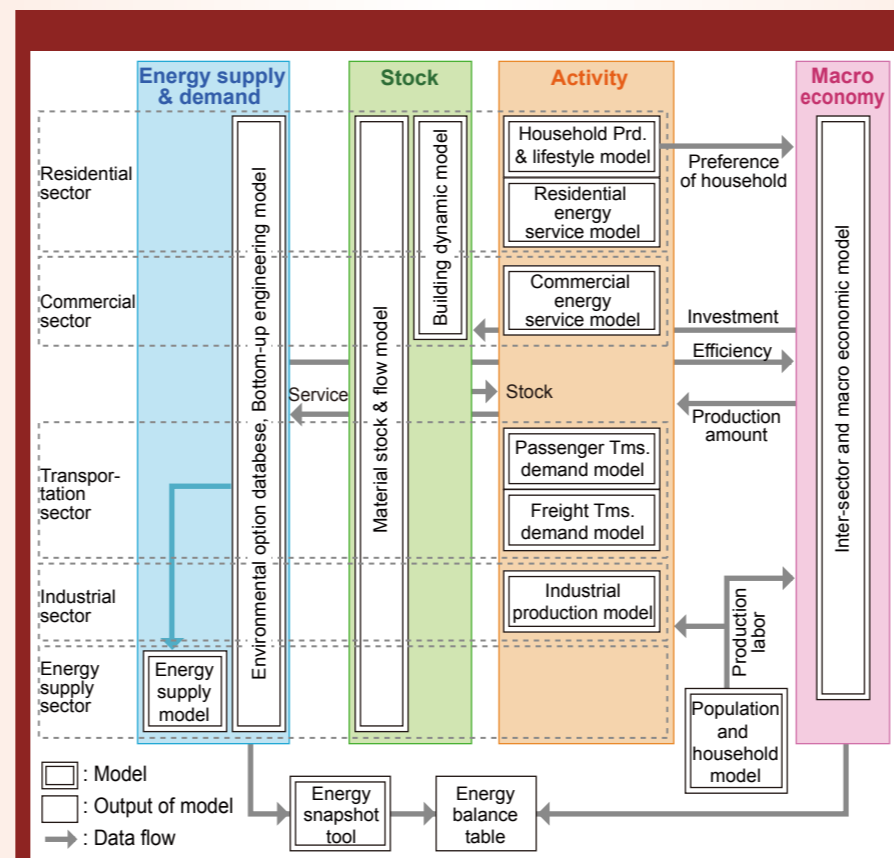
Key message 3: “Cooperation for LCS involves a long-term policy framework, a wider range of issues and actors (domestic and international) and a comprehensive range of technologies and policy measures. Political vision and leadership are vital to generate signals, prompt activities and deploy resources to achieve LCS goals.”

LCS entails broad cooperation in a relatively very long policy horizon framework. It should involve a wider range of domestic and international agents and issues (climate change is not simply an environmental problem) than those involved with purely energy and high GHG intensive sectors. LCS must involve governments (which set the overall framework and can provide long-term predictable policy signals), businesses (who bring technological innovations into the market place), the financial sector (private, public and multilateral) and civil society (whose engagement can help align and legitimate diverse stakeholders). Their incentives and risks have to be jointly addressed. Mainstreaming climate change policies into economic policies, infrastructure development and poverty reduction can help achieve LCS goals through sustainable development.

Development objectives	Possible shift to more sustainable development	GHG reduction or increase relative to business-as-usual (current stated policy)
Remove backlog of 2.6 million houses	Housing All new low-cost houses built with energy efficiency measures	0.05 and 0.6 MtCO ₂ -equivalent per year, across all low-cost housing
Increased access to affordable energy services	Energy Implement free basic electricity (poverty tariff) of 20- 60 kWh / household / month for 1.4 million poor households	Increase of 0.146 MtCO ₂ (upper bound estimate)
Stimulating economic development	National energy efficiency programme to ensure 5% reduction in electricity consumption by 2010 39,000 additional jobs R800 million add'l income	Reduce CO ₂ emissions by 5.5 million tons in 2010
Securing supply through diversity	Renewable Energy Portfolio Standard - 5% of electricity generation by 2010 - 20% by 2025	Reductions in CO ₂ emission of - 10MtCO ₂ in 2010 - 70MtCO ₂ in 2025

Examples of Sustainable Development Policies and Measures (SD-PAMs) in South Africa

(Stanford Mwakasonda, “Aligning Climate Change and Sustainable Development Objectives - South Africa example”)



Relationships Among Models to Develop Japan LCS Scenarios

(Yuzuru Matsuoka, “Modeling Activity to Support Japan “LCS toward 2050” Project”)

Toward a Low-Carbon Society, we need to

- take actions that are compatible with the principles of sustainable development, ensuring that the development needs of all groups within society are met;
- make an equitable contribution towards the global effort to stabilise atmospheric concentrations of carbon dioxide and other greenhouse gases at a level that will avoid dangerous climate change through deep cuts in global emissions;
- demonstrate high levels of energy efficiency, use of low-carbon energy sources and production technologies, and sustainable land use practices;
- adopt patterns of consumption and behaviour that are consistent with low levels of GHG emissions.

Definition of a Low-Carbon Society

(Shuzo Nishioka and Jim Skea, “Co-chairs’ summary” in Workshop Report)