



LOW CARBON SOCIETIES IN DEVELOPING COUNTRIES

P.R. SHUKLA, INDIA
Professor, Indian Institute of Management, Ahmedabad (IIMA)

Many near-term development choices are vital for low-carbon transition. In a conventional approach, emissions grow along a secular path which is altered through exogenous carbon market policies. In case of developing countries, back-casting from multiple future goals is more appropriate approach. It realises their "late-comer advantages" by altering policies and actions that align stakeholder choices that deliver multiple co-benefits, while avoiding lock-ins witnessed elsewhere. City planning is an example. Modeling research for Ahmedabad shows that GHG emissions in 2035 would reduce by two-thirds, over the conventional baseline, following sustainable development goals already delineated by city planners. Analysis for India demonstrates that actions that follow sustainability goals significantly lower economic losses from mitigation caused by stringent stabilisation.

Low Carbon Societies in Developing Countries

Low Carbon Societies in developing countries was one of the topics that prompted intensive discussion at the LCS-RNet Inaugural Meeting.

Dr. Shuwei ZHANG from China, on behalf of Dr. Jiang Kejun from the Energy Research Institute of National Development and Reform Commission, presented mid- and long-term energy demand and GHG emissions scenarios for three paths up to 2050; 1) Business As Usual without no climate change policies, 2) Low Carbon Scenario under the high GDP growth rate assumption with domestic policies and other factors such as enhanced technology improvement, 3) Enhanced Low Carbon Scenario with the shared vision of global concurrent efforts to mitigation. The institute published "China's Low Carbon Development Pathways by 2050" this September.

Mr. Frank Princiotta (National Risk Management Research Laboratory, NRMRL EPA, US) gave a presentation entitled "New Energy/Climate Change Directions in the Obama Administration". Introducing various points and challenges relating with climate change technologies, he stated that technology is necessary but not sufficient; aggressive global mitigation commitments are also needed.

From India, Dr. P. R. Shukla (Indian Institute of Management Ahmedabad, IIAM, India) put emphasis on back-casting for a low-carbon society and then explained LCS scenarios considering sustainability rather than climate change only (e.g. energy production, dematerialisation, co-benefits for poverty reduction and air-quality). He concluded that a development vision matters to LCS transition (e.g. a paradigm shift towards co-benefits and co-operation) and that it is important to avoid lock-ins into high emissions paths and develop bottom-up actions coordinated with top-down vision and policies such as the National Climate Change Action Plan.

From Brazil, Dr. Emilio La Rovere (Federal University of Rio de Janeiro, Brazil) presented the case of wind energy deployment in Brazil to illustrate the challenges to renewable energy development through technology transfer. In this example, two lessons can be learned, 1) the importance of measures to favour domestic production of equipment and 2) the need of a long-term policy to complement the short-term goal. These lessons are better to be utilised in framing NAMA. He also noted the ways in which the international community could support NAMA such as additional concessionary finance, sharing of licensing costs, joint technology development and technical cooperation to adapt turbines to local conditions.

Dr. Kenrick Leslie from the Caribbean Community Climate Change Center illustrated the situation of the Caribbean Region, that is, a deteriorated economy by the current global financial recession, heavy dependence on imported fossil energy, and vulnerability to the climate change. Low-carbon economy can be a practical solution for sustainable development as well as adaptation and mitigation. He highlighted the potential of the energy, agriculture and tourism sectors as well as transportation. Resources and technical assistance together with favourable conditions for technology transfer under the umbrella of a comprehensive global agreement are required.

Mr. Raffaello Cervigni from the World Bank presented challenges and opportunities for low-carbon growth in developing countries and the Bank's activities. The challenges include poverty, GHG reduction, funding and side-effects (e.g. price rise of crops because of bio-fuel). The opportunities include the potential of renewable resources, untapped mitigation potential and co-benefits (e.g. air-quality). Six action areas of the World Bank Strategy are to: 1) support climate action in country-led development, 2) mobilise additional concessional and innovative finance, 3) develop market-based financing mechanisms, 4) leverage private sector resources, 5) support development and deployment of new technologies and 6) step up policy research, knowledge and capacity building.

History and Mission of LCS-RNet

The realisation of low-carbon societies (LCS) is an urgent global challenge. By strengthened networking through LCS-RNet, researchers will have more opportunities to share their knowledge and to cooperate with research institutions in G8 and outreach countries, as well as with other developed and developing countries. With the direct link between LCS-RNet and the G8 Environment Ministers Meeting process, researchers will continue efforts to communicate with decision makers and various stakeholders such as businesses, IGOs and NGOs, to share social, economic and scientific research findings to help realise low-carbon societies.

LCS-RNet Secretariat

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Inaugural Meeting of LCS-RNet was held in Bologna

Five Key issues for achieving Low Carbon Societies

1. Long and mid-term targets
2. Economic aspects of low carbon societies
3. The role of technology
4. Public policy and lifestyle change
5. Cross-cutting issues

SIDE EVENT at COP15
LCS-Rnet
Dec. 16th 13:00-15:00
EU Pavilion
Room MONNET,
Bella Center
Research community shows pathway toward Low Carbon Society
Organizer: Ministry for the Environment, Land and Sea, Italy

EVENT in 2010
LCS-RNet Conference in Berlin, Sept. 20-21
"Climate Policy for a Green Society"
Bundespresseamt, Berlin



The inaugural meeting of the International Research Network for Low Carbon Societies (LCS-RNet) was held in Bologna, Italy on 12 - 13 October 2009, with 55 participants.

There were 22 presenters who exhibited their research findings, ideas, views, analysis and strategies toward low-carbon societies over five scientific sessions: LCS and the Policy Context, Green Growth and LCS, LCS National Pathways and the Research Environment, LCS and Technology Innovation, LCS and Behavioural Change.

After the meeting, LCS-RNet produced its output in the form of a synthesis report. This newsletter illustrates the report. The Synthesis Report addresses the findings that were brought to the fore during the discussions. These include issues that require further considerations by researchers and by policy-makers to fill the gaps in designing future low-carbon societies that confirm sustainable development with no demarcation between developed and developing countries. Session summaries and summaries of presentations during the sessions are contained as the electronic format, distributed in CD-ROMs.

Please contact the LCS-RNet or <http://lcs-rnet.org>.

What is LCS-Rnet?

Platform of LCS research

The basic nature of LCS-RNet is a platform to support and encourage information-sharing and voluntary cooperation among research institutions, specifically in the field of LCS research. LCS-RNet also facilitates the interaction between researchers and various stakeholders, and delivers their findings to policy-makers to assist science-based policy-making in transitioning to low-carbon societies.

Non-binding network

LCS-RNet is a non-binding network, and its activities and outcomes are independent from the official views of any governments, and while policy-relevant, should not be policy-prescriptive. It is important to note that participation in the Network will not hamper individual research activities in any way.

Objectives of LCS-RNet

- Promotion of information exchange and research cooperation that cover various issues relating to low-carbon societies,
- Promotion of understanding about LCS through dialogues between researchers and various stakeholders including policy-makers, businesses, citizens and others to share national and sub-national visions on low-carbon societies, and
- Contribution to international policy-making processes on climate change including G8 process by providing research outcomes and recommendations.

FIRST MILESTONE OF LCS RESEARCH INPUT INTO POLICY

Antonio NAVARRA, ITALY
President, Euro-Mediterranean Center for Climate Change (CMCC)

After six months of preparation, the first annual meeting in Bologna of Low Carbon Society Network took place in Bologna, Italy, hosted by the CMCC and the Italian Ministry of Environment, Territory and Sea (MATT). The meeting was a great success. It was the first opportunity to meet and discuss after the launch of the initiative on April 1-2, 2009, in Trieste, Italy, under the auspice of the MATT, especially with Italy holding the G8 presidency.

The meeting in Bologna was an exciting opportunity for researchers from all over the world to present innovative LCS research, exchange opinions, strengthen professional and personal relations and interact with policy-makers. The synthesis report has been produced as an output of this meeting and we are looking forward to the next chance to continue this important dialogue.





BEYOND THE WALL

Stefan LECHTENBÖHRER, GERMANY
Co-chair of LCS-RNet Steering Group
Co-Director, RG Future Energy and Mobility Structures, Wuppertal Institute for Climate, Environment and Energy

How can we avoid fatal development patterns and make a path instead for a sustainable economy and society? German Chancellor Angela Merkel made a strong pledge in Washington D.C. "In Copenhagen, we shall be able to overcome this wall separating the present and the future in the interest of our children and grandchildren and in the interest of sustainable development all over the world". For the LCS-RNet conference that will be held in Berlin in 2010, "Climate Policy for a Green Society" – right at the place where the wall between East and West fell 20 years ago – one of the major topics will be an outlook at the crucial economic aspects of climate policy by looking for real benefits of climate policy and LCS, by identifying win-win situations, and looking at social benefits and other co-benefits of LCS. The role of investment, including lessons learnt (or not) from the economic crisis, will be also discussed.

PROPOSING SOCIAL VISIONS FROM SCIENCE

Mikiko KAINUMA, JAPAN
Chief of Climate Policy Assessment Research Section, National Institute for Environmental Studies (NIES)



NIES, together with other institutes, has developed low-carbon society visions and roadmaps for several cities in Asia. With scientific reasoning it has demonstrated possibilities for drastic GHG emissions reductions, while simultaneously maintaining a high quality of life. The role of science is to analyse and provide information on costs and effectiveness of mitigation and adaptation policies. These include policies related to technology innovation, city planning and eco-infrastructure. On the other hand, it is also important for people to realise there is a way to avoid a carbon-intensive future and to take timely actions. Taking action against climate change is a major opportunity to transform the conventional technological society into a sustainable society which is less dependent on resources and energy.

Five Key issues for achieving Low Carbon Societies

1. Long and mid-term targets

- World leaders aspire to bold targets for emissions reductions.
- Co-benefits will arise from setting appropriate country- and region-specific targets.
- Backcasting approaches can identify feasible and desirable pathways towards sustainable low-carbon societies.

2. Economic aspects of low carbon societies

- Co-ordination is needed between environmental goals and innovation policies.
- Sectoral and regional perspectives need to be taken into account.
- New financing paradigms will be required if developing countries' mitigation and adaptation needs are to be met.

3. The role of technology

- Radical technological change is crucial in reaching a low carbon society.
- More investment in energy technology is needed.
- Technology will not deliver a low-carbon society on its own.
- Climate policies and R&D strategies must be synchronised.

4. Public policy and lifestyle change

- Public policy can lead the way to lifestyle change and a low carbon society.
- Facilitating behaviour change is not easy, but can be accomplished.
- The most effective measures will be tailored to individual countries and localities.
- LCS lifestyles do not have to entail sacrifice.

5. Cross-cutting issues

- A persistent signal is needed to stimulate change across all sectors.
- Planning for land use change is essential.
- Cities provide an excellent opportunity to promote a Low Carbon Society.
- Research that would allow developing countries to set their own targets and pathways is essential.
- Human resource development is needed as well as technology co-operation.
- We need to adapt to unavoidable climate change and remain alert to new scientific insights.

- **World leaders aspire to bold targets for emissions reductions**
At the G8 Hokkaido Toyako Summit in 2008, G8 leaders agreed to consider the achievement of at least a 50% reduction in global emissions by 2050. In 2009, at the L'Aquila Summit, G8 leaders recognised: 1) scientific evidence on the need to keep global temperature rises below two degrees Celsius above pre-industrial levels; 2) the need for a more ambitious emissions reduction goal for developed countries of 80% or more by 2050; and 3) the need for mid-term goals which would result in global emissions peaking as soon as possible. These issues were also discussed in the MEF that followed the G8 Summit. These goals are based on evidence presented by the IPCC and the wider scientific community. The new research task is to identify concrete and feasible measures that will allow us to achieve low carbon societies.
- **Co-benefits will arise from setting appropriate country- and region-specific targets**
As the consequences of climate change have become evident, emission reduction targets have come to play a more central role. However, profound differences among regions need to be considered when considering mitigation. For developed countries, traditional patterns of socio-economic development must be transformed into more robust and sustainable directions with implications for energy security, the re-engineering of existing processes and the transition from material-driven life-styles to value-driven ones. For developing countries, people's basic needs must be met and economic growth must be pursued to ensure a better quality of life. To achieve this, developing countries must seek to avoid the negative impacts, e.g. local air pollution, associated with traditional growth. "Leap-frogging" strategies are required that skip the material driven industrial stage experienced by developed countries. Traditionally, economies have been driven by the abundant availability of fossil fuels and materials, giving rise to climate change, resource exhaustion and pollution. Low carbon societies will have more balanced patterns of demand where the use of materials is no greater than is needed to achieve quality of life and permit required levels of economic growth. Research on new indices is needed to support the transition to LCS. These indices should cover: material-use efficiency; people's perceptions of quality-of-life; and the achievement of innovation targets. New indices such as these would underpin the setting of country- and region-specific targets for low carbon societies reflecting local conditions.
- **Backcasting approaches can identify feasible and desirable pathways towards sustainable low-carbon societies**
Quantitative scenarios, using numerical simulation models, are needed to draw pictures of a future low carbon society which integrate different targets. A participatory approach, building on dialogue with stakeholders in order to share visions of the LCS based on quantitative scenarios, is important. "Back-casting" can be used to identify the measures necessary to achieve shared visions of a LCS. A package of measures could include: targets for specific fields/sectors; the identification of barriers; technologies that address specific problems; and policies to support those technologies. Model-based, back-casting approaches can demonstrate how such packages can achieve a LCS. Visualising the impact of packages of measures can motivate people by demonstrating the multiple benefits that they bring.



For a detail of each bullet point of five key issues as well as session summaries in the Bologna meeting, please read the synthesis report which can be obtained through LCS-RNet Secretariat (<http://lcs-met.org>)
Achieving a Low Carbon Society - Synthesis Report: Inaugural Meeting of the LCS-RNet (International Research Network for Low Carbon Societies).
Published in 2009 and prepared by the LCS-RNet Secretariat



EVIDENCE ON GREEN GROWTH

Jim SKEA, UNITED KINGDOM
Research Director, UK Energy Research (UKERC)

Achieving a Low Carbon Society will require large and measurable levels of investment in energy supply technologies running into trillions of dollars annually by 2050. The LCS will also require diffuse and perhaps unquantifiable investments in low-carbon buildings and transport. To achieve our climate ambitions and create opportunities for business, we need coordinated environmental and innovation policies that stimulate R&D and establish new markets for clean technologies. Clear and credible policies are needed that give confidence that the policy direction will be maintained. As long as we build consensus, our long and mid-term goals need not be unambitious.

GLOBAL ROUNDTABLE FOR LOW CARBON SOCIETY

David MCLAUGHLIN, CANADA
President and CEO, National Round Table on the Environment and Economy (NRTEE)



Moving to a low-carbon society will involve not just changes in how we produce energy, but also changes in how we consume energy. These changes will take time and will need the participation of consumers and citizens for them to work. As governments develop new low-carbon policy approaches, they need to consider how they will bring citizens and civil society together to undertake actions that will find much broader and deeper acceptance than they have so far. The National Round Table on the Environment and the Economy from Canada is an independent public policy advisory agency that brings environmental and economic interests together to find sustainability solutions that work for Canadians. What we are experiencing at Copenhagen and beyond is a form of 'global roundtable' to consider how we can get ourselves on a collective path to a low-carbon future that is sustainable in both environmental and economic terms. The LCS-RNet brings together researchers and experts in this field from G-8 countries to offer insightful policy thinking relevant for decision-makers. NRTEE research has contributed to this understanding.