

Key Findings from Plenary and Parallel sessions in LCS-RNet Rome Meeting

This is only a part of key findings of the sessions, more details can be found in the synthesis report of LCS-RNet Rome meeting: http://lcs-rnet.org/pdf/publications/2014_6th_Annual_Meeting_of_the_LCS-RNet_in_Rome.pdf

Plenary 1: Can low carbon societies deliver on energy policy goals, including security and affordability?

There are security benefits from shifting to low carbon societies that reduce the use of fossil fuels. These benefits include reduced exposure to potential high fossil fuel prices. However, low carbon societies could mean new energy security risks that could, for example, affect resource availability (e.g. of bioenergy or scarce materials) or electricity system reliability. New strategies to mitigate these risks and strengthen energy system resilience will be required.

Parallel Session 1-1: Innovative solutions to power system needs

Recent advances in technology coupled with developing markets have together fostered low-carbon energy systems in which electricity plays a major role. Future development needs and intensified international cooperation in technology development and deployment policies, as well as significant upfront investment in renewables and low carbon systems, will all have large co-benefits and realise reduced expenditures on fossil fuels.

Parallel Session 1-2: Energy use and behavior

The involvement of consumers in policy and product design, and the potential of energy sufficiency (as opposed to efficiency) initiatives are examples of fields being pursued offering future potential in policy.

Plenary 2: Common challenge in resource efficiency improvement

A wide range of economically attractive low-carbon measures are available which could lead to significant reductions in energy use and carbon emissions. Concurrently, transition to a circular urban economy cannot be realised within the current economic paradigm; a deeper transformation involving the main drivers is required.

Parallel Session 2-1: Resource efficiency improvement in the industrial sector, as part of the joint transition to LCS and green economy framework

Energy efficiency and technology improvements alone will not achieve the LCS goals. Thus, resource efficiency and a circular economy are keys to a low carbon society.

Parallel Session 2-2: LCS and related resource efficiency improvements in territories management

In order to promote low carbon urbanisation, a combination of technical and social innovation changes of behaviours and lifestyles, as well as fundamental methods, pragmatic databases and tools, and harmonised protocols and streamlined accounting are required.

Plenary 3: Utilise low-carbon and resilient investments as leverage to renovate economies in crisis

Attaching a price to carbon alone does not efficiently spur transition towards LCS—specific policies aligned with the paradigm shift initiated by the Cancun Agreement (adapted to national circumstances and taking into account potential resistances) will aid this transition.

Parallel Session 3-1: Barriers and opportunities of financing/investing in mitigation and adaptation

Public funding mechanisms to support mitigation and adaptation efforts have been shown as ineffective in satisfying the short-term climate change agenda.

Parallel Session 3-2: Building consensus to support climate change policies: genuine public engagement & bottom-up local low carbon initiatives

A broad participatory approach to develop climate action plans based on an iterative process is one way to integrate expert know-how, to maximise transparency, acceptance and public engagement, to create an appropriate implementational culture, and to stimulate new cooperation schemes and joint approaches. This process could produce concrete mitigation measures (policy instruments) and offers additional political and communication benefits beyond the implementation of selected measures.

Plenary 4: A big 'win-win' in shaping low-carbon resilient development

To support the popular view that technology transfer can occur between developed and developing countries if enabling conditions are in place, adequate financial flows are needed. Creative solutions are also required, and collaborative agreements should benefit all parties involved.

Parallel Session 4-1: Challenges in developing countries

The research community can catalyse low carbon development in developing countries by serving as provider of tools and guidance to make informed decisions. The research community can also support capacity development in developing countries by providing fora for knowledge exchange and peer-to-peer learning.

Parallel Session 4-2: How can emission pathway modeling contribute to raising ambition levels of nationally determined contributions (NDC)?

Both the top-down approach, such as allocation of global carbon budget based on equity indicators, and bottom-up approach, such as technology-based energy system modeling, can serve as important sources of information in comprehending INDCs. Early planning and action is essential to achieve deep, long-term decarbonisation toward 2050.



International Research Network for Low-Carbon Societies

- Scientific Research Contributing to Low Carbon Policy-making Process -

Newsletter Vol.15 (December 2014)



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The Sixth Annual Meeting of Low Carbon Societies Research Network was held in Rome and presented a wide range of discussion on key issues that are at the forefront of the climate change debate. These issues included integration of climate policies with the more traditional policies in the energy sector, i.e. security of supply and cost reduction; climate mitigation and resource efficiency improvement nexus; securing adequate financing for mitigation and adaptation activities, as well as strengthening international collaboration.

Each of these themes were tackled in the plenary and two related parallel sessions, offering an in-depth analysis from different perspectives. In the energy sector, the status of the technologies was offered together with an investigation of the impact of behavioural change on GHG emissions; resource efficiency improvement was analysed from an industrial and territorial management perspective;

finance was tackled analysing barriers and opportunities of financing/investing in mitigation and adaptation together with the issue of building consensus to support climate policies; international cooperation focused on the challenges in developing countries and on the use of pathway modelling to raise ambition levels of nationally determined contributions (NDCs) and raise awareness of the existence of serious opportunities for alternative development paths and leapfrogging to avoid carbon lock-in.

The proceedings of the meeting in Rome will be published in a special issue of the ENEA journal which will be delivered during the seventh LCS-RNet annual meeting due to take place in Paris in the spring of 2015. The meeting in Rome and the subsequent meeting in Paris are intended to be a single joint effort to deliver a "policy brief" as a contribution from LCS-RNet to COP 21 in Paris.

About LCS-RNet Rome meeting

The Sixth Annual Meeting of LCS-RNet was held in Rome, Italy, 1-2 October 2014. Six years have passed since LCS-RNet was proposed at the G8 Environment Ministers' Meeting in Kobe. This year, scientists and policymakers gathered in Rome fully aware of the need to discuss issues such as energy security and affordability, resource efficiency improvement and low-carbon investment to pursue transformation to a low-carbon society. This newsletter introduces the key findings of the discussions in Rome and looks ahead to future development of the LCS agenda. This year, LCS-RNet entered its second phase after five years of operations. In this phase, our network will focus on adaptation with the goal of making significant progress in low-carbon society research. As a further objective we intended to announce proposals from the scientific community ahead of COP21.

For more details of the meeting, please refer to the LCS-RNet website at: http://lcs-rnet.org/6th_annual_meeting_presentations/

For the synthesis report, please refer to the publication: http://lcs-rnet.org/pdf/publications/2014_6th_Annual_Meeting_of_the_LCS-RNet_in_Rome.pdf



Key Findings from LCS-RNet 6th Annual Meeting in Rome, Italy

The sixth LCS-RNet Annual Meeting considered how a low carbon society could be brought about within a complex socio-economic context in order to avoid the most dangerous impacts of climate change over the medium- to long term. The 6th annual meeting addressed low carbon societies and energy policy goals, including security and affordability, common challenges in resource efficiency improvement and low-carbon and resilient investments. All of these issues must be addressed in coming to an international agreement on climate change at CoP21 in Paris. The key findings are summarised below.

Energy security, affordability and efficiency as energy policy goals

Climate change mitigation is not the only energy policy goal for many countries. Strategies to reduce emissions also need to account for impacts on the other two parts of the 'energy trilemma', namely energy security and affordability. Whilst some strategies can meet more than one of these goals, there are often trade-offs between them. For example, whilst investment in renewable energy could help to reduce the vulnerability of a country to fossil fuel price shocks, especially if prices are high, some renewable technologies could lead to more complex electricity systems that require new strategies to operate them reliably. Similarly, it is not sufficient to implement policies that good for energy security and affordability alone, since these policies may not deliver lower emissions.

In recent years renewable electricity generation has made substantial progress worldwide and is now seen as a vital component of a low carbon energy system. Technological improvements continue to drive down renewable electricity costs and in some cases these are now cheaper than fossil fuels. However, implementing this transition is linked to technological (grid stability etc.) as well as institutional (markets etc.) challenges. In spite of the rapid rate of development, policy has to be carefully designed to avoid distributional effects on low income households and energy intensive industries. In the longer term, renewable energy policy can also address these issues, so it is essential to coherently pursue a low carbon transition with a strong emphasis on renewable energy integration.

Energy efficiency policies should be a priority since they are likely to address all three policy goals within the 'energy trilemma'. A 'package' of energy efficiency policies is often required to address the multiple barriers identified by research, and to address the needs of different consumers. This package could include a combination of price incentives, standards and targeted investment programmes (e.g. to upgrade the housing stock). Whilst measures to increase energy prices could provide incentives for more energy efficiency, they are unlikely to be sufficient on their own – and they will have distributional impacts on low-income consumers and energy intensive industries that need to be mitigated. Policy evaluations and assessments should therefore focus on the impact of 'policy packages' rather than on single policies.

Low carbon transition through innovation, integration and behaviour change

Energy transitions are unlikely to be achieved without public consent and social change. It is already clear from the experience in some countries that there is significant potential for opposition to some technologies, and for debates about policy goals or the most desirable means to meet these goals. Public engagement is therefore an essential component of any energy transition to ensure that low carbon strategies take public values into account.

A low carbon society will come about through a transition that will inevitably produce winners and losers. The economic and social impacts of this transition need to be better understood and anticipated, and the negative factors will require special attention, particularly at the country level. At the city level too, more consistency needs to be apportioned to transition processes in terms of both time and geographical scope (short, medium, long term; from individual to global level).

Actual improvements towards LCS will emerge from remodelling the present paradigm of production and consumption, and involve tailored strategies for materials and basic material production systems. Changes in modes of consumption will require system transformations, since consumption is affected by technology, behaviour, infrastructure, social norms and values, culture, laws, regulations and standards, as well as knowledge.

Co-benefits and adaptation under climate change agenda

As noted above, low carbon societies also need to take into account other policy goals such as energy security, affordability, air quality improvement, health protection and the enhancement of comfort and well-being. Where possible, synergies between these goals should be exploited – and climate change measures that also help to meet other policy goals should be prioritised. To inform the prioritisation process, co-benefits need to be assessed and measured.

Integration of adaptation and mitigation policies should be mainstreamed within urban planning. The climate change agenda will require adequate financial flows in order to support mitigation and adaptation efforts, as well as the low carbon development of emerging and new economies.

Enhancement of resource efficiency and circular economy

Resource efficiency is a priority both for the environment and the economy. It requires a framework for policies to support the transition to a resource-efficient, low-carbon economy. The main objectives must include boosting economic performance, while reducing resource use and ensuring strategic and critical resource supply security, and to achieve a 'recycling society'.

Whilst energy efficiency is very important, it is not the only answer. A broad set of mitigation options beyond energy efficiency measures are required, including emissions efficiency, material use efficiency, recycling and re-use of materials and products, product service efficiency, and demand reductions. Initially, these measures need to be pursued in parallel, while acknowledging that some of them are inadequately addressed by policy and also suffer from weak economic drivers.

Adequate financial flows to support mitigation and adaptation

Low carbon development will require significant changes to the way that economic and financial systems operate, for example by rerouting public spending and private investment, modifying the procurement system, and greening energy use. It also requires a low carbon and climate-resilient infrastructure ('hardware'), related laws and regulations ('software') and domestic and international capital flows (finance). Climate finance should emphasise the re-orientation of existing 'mainstream' financial flows so that they support climate change actions across economies.

More risk-sharing structures, involving both public and private stakeholders, are required to foster long term investment and innovation processes entailed by the transition to a low carbon economy.

Laying the path to low-carbon resilient development

Technology transfer to developing countries can only provide short- and medium-term solutions. Improving the capacity and skills for low carbon innovation in these countries is critical for long term transformation. Funding for such developments cannot be evaluated using typical metrics such as \$ / tonne of CO₂ abated. This means that new frameworks are required to assess the impact of capacity building initiatives – and the extent to which they have helped to underpin low carbon development.



History of LCS-RNet

At their meeting in Kobe in May 2008, G8 Environment Ministers recognised the need for countries to develop their own visions towards low-carbon societies, and supported the establishment of the International Research Network for Low Carbon Societies (LCS-RNet). In the G8 Environment Ministers Meeting (G8EMM) held in April 2009 in Siracusa, Italy, high expectations were placed on LCS-RNet, and the network was asked to report back its outcomes periodically. Currently this network is composed of 15 research institutes from seven countries.

