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Environmental research can ensure that the Low Carbon Economy becomes sustainable

A sound societal and economic development that does not compromise the environmental prospects for future generations, has turned out to be extremely difficult to achieve. The grand challenges of water security, energy security, food security, social wellbeing and a prosperous economy all have major environmental components that are significantly driven by climate change and loss of ecosystem services. A low carbon economy with greenhouse gas emission reductions of 80-95%² is an important goal. However, climate policy and efficient carbon economy is complex. Biomass production for power and fuel competes with food and fibres, forestry, nature and urban land-uses in its claims on limited land and water resources. Natural resources management must be based on a scientific analysis of the environmental links and feedbacks between the grand challenges and the potential negative side effects of implementing partial solutions in disconnected policy areas.

The strategy Europe 2020³ recognises that climate and resource challenges require the introduction of far-reaching social and technological innovations throughout society. The roadmap to a low carbon economy 2050 needs support from environmental research that focuses on the links between the grand challenges and develops methods for dealing with and adapting to risks and uncertainties. Such research deepens understanding of the interactions between social and ecological processes and creates the foundation for transformative social and technological innovations that the roadmap requires. Research should deliver advice for different policy areas and bring them closer to one another to avoid inconsistencies, conflicting incentives and adverse side effects. Innovation is a prerequisite for EU to take the global lead in building a low carbon economy and to realise the advantages of being the first to move into the emerging low-carbon marketplace. The global market for low carbon technologies is predicted to be very large and low carbon innovation is expected to deliver additional benefits for job creation, energy security, and economic productivity in the EU.

A low carbon, resource efficient, green and competitive economy will only be developed with the support of research and technological development that takes a broad view of the environment and the interdependencies between natural processes and societies. These closely related systems have to be analysed with new tools and knowledge that can identify and highlight chains of environmental impacts rather than singular effects. The PEER centres have unique data sets and have also developed integrated methods and approaches for e.g. life-cycle-assessments, land use change, ecosystem service, sustainability analysis, and policy integration. The innovations needed for societal transformations require close co-operation between the research community and different levels within government, businesses, education and the civil society at large. The PEER centres are ready and eager to contribute with their expertise and innovation skills to this fascinating initiative.

¹ General information about PEER is presented at the back cover. Note: JRC-IES - being part of the Commission - was not involved in the production of this PEER statement on LCE.

² Roadmap for moving to a low carbon economy in 2050.

³ Europe 2020: A strategy for smart, sustainable and inclusive growth; and the Conclusions of the European Council 25/26 March 2010 EUCO 7/10, CO EUR 4 CONCL 1.

General information about PEER

The Partnership for European Environmental Research was founded in 2001. The seven PEER members together employ 5,000 persons; the combined annual budget is 430 Million Euro. They have a long-standing experience in strategic environmental research for national governments, research councils and other central or regional public organisations, as well as for the European Commission and international bodies. Part of the research is carried out in public-private partnerships, or directly commissioned by private companies and NGOs. PEER is highly interested to share its experiences with integration of research activities and to discuss with our partners in the European Research Area how to further improve on our joint performance in this field.

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