

WUPPERTAL SPEZIAL 53

Realising long-term transitions towards low carbon societies

24 concise original articles by leading experts provide impulses for the transitions to low carbon societies

All articles base on contributions to the 8th Annual Meeting of the International Research Network for Low Carbon Societies (LCS-RNet)

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This publication delivers insights into cutting edge research on the necessary transitions towards low carbon societies. Thereby, it aims to contribute to international as well as national policymaking.

The topics covered in the 24 articles are among the most important issues for progressing solutions for climate change and sustainable development:

- Governance of the long-term transitions in the context of potential unknown developments,
- Policy instruments for financing the transition to low carbon economies
- Integrated strategies for three of the most important arenas of global decarbonisation: Cities, energy-intensive processing industries and science as a whole

Realising long-term transitions towards low carbon societies

Background

In spite of current multiple political crises, global warming will remain a prime issue on the global agenda. The adoption of the Paris Agreement in 2015 and its quick ratification in 2016 have created a strong momentum for worldwide action against climate change. As global greenhouse gas emissions must decline towards levels close to zero by the middle of the century, the rapid decarbonisation of energy systems is high on the agenda of most countries around the globe.

Aim

This publication delivers insights into cutting edge research on the necessary transitions towards low carbon societies and by this aims to contribute to international as well as national policymaking.

Content

The topics covered in more than 20 concise original articles are among the most important issues for progressing solutions for climate change and sustainable development. The papers discuss recent findings and case studies in the following subject areas:

- **Governance** of the necessary long-term transitions in the context of potential known and unknown adverse developments;
- **Policy instruments** and strategies that allow **for financing the transition** to low carbon economies and, at the same time, respond to today's economic and social challenges;
- **Integrated strategies** for three of the most important arenas of global decarbonisation: **Cities**, as much of the change and necessary investment for low carbon societies must take place, be planned, be financed and be built in cities;

industry, particularly the energy-intensive processing industries, which are at the core of society's metabolism and are responsible for a large and growing share of global emissions and

science as a whole, which must become more solutions-oriented because the transitions needed will rely heavily on research providing solutions for technological as well as societal problems.

As a contribution to these great challenges and at the request of the G7 Environment Ministers, the Low Carbon Society Research Network (LCS-RNet) acts as a forum aimed at fostering research and policymaking to jointly achieve decarbonised energy systems in countries around the world. It convenes leading scientists, practitioners and policymakers and aims at supporting governments in proceeding jointly towards the design and implementation of climate-friendly low carbon societies.

Editors

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Editorial: Key issues for the implementation of the Paris Agreement and the long-term transformation towards low carbon societies (*S. Lechtenböhmer & K. Knoop*)

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- What disruptions are looming in the areas of environment, energy and geo-policy? What strategies could counter them? (*K. Smith Stegen*)
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