



Preface

The IPCC Fourth Assessment Report (2007) indicated that anthropogenic warming over the last three decades had likely had a discernible influence at the global scale on observed changes in many physical and biological systems. The Copenhagen Accord reached at COP15 confirmed in accordance with the IPCC Report that in order to avoid dangerous anthropogenic interference with climate systems, it would be necessary to hold the increase in global temperature below 2 degrees Celsius compared with the preindustrial level (UNFCCC, 2009). The Cancun Agreements adopted in 2010 explicitly referred to the importance of a paradigm shift towards creation of a low-carbon society (LCS) offering substantial opportunities and ensuring continued high growth and sustainable development (UNFCCC, 2010).

The realization of LCSs in Asia is imperative in order to achieve both sustainable economic growth and stabilization of climate change. Greenhouse gas (GHG) emissions from the Asian region accounted for approximately 36% of global emissions in 2005. Considering the rapid economic growth expected in the coming decades, the share of emissions from the Asian region is projected to rise further, accounting for about 50% of global emissions in 2050. Realizing an LCS entails radical changes in technologies, energy systems, production and consumption patterns, social value systems, and lifestyles, in addition to policy changes that mobilize finance and the willingness of people to achieve such transitions.

The present special issue is dedicated to finding pathways towards LCSs in Asia. The first and second papers discuss the required GHG reductions in Asian countries to achieve climate stabilization, and analyse their feasibility. The third paper assesses the implementation plan of the CO₂ intensity target in the 12th Five Year Plan of China. The fourth paper focuses on the effects of urbanization on CO₂ emissions, reflecting the enormous future potential for urbanization in Asia. The fifth paper reviews literature on limiting GHG emissions from the resource consumption associated with economic growth, which would also avoid resource depletion through the efficient and cyclic utilization of resources. The sixth paper proposes a backcasting method to macroscopically design measures to realize a low-carbon land-use transport system. The seventh and eighth papers focus on international cooperation and transfer of technologies. LCS scenarios are explored in the ninth to eleventh papers, with the ninth paper analyzing the feasibility of LCS scenarios and their economic impacts, the tenth paper focusing on energy-scenario development, and the eleventh paper proposing a methodology to create quantitative roadmaps towards LCSs. The final three papers describe LCS scenarios that show the feasibility of LCS development in China, India and the Indian city of Bhopal, respectively.

It is my sincere hope that the present issue will promote LCS studies and contribute to sustainable development and climate stabilization.

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References

- IPCC (2007) *Climate Change 2007: Summary for Policy Makers*.
- UNFCCC (2009) Report of the Conference of the Parties on its fifteenth session, held in Copenhagen from 7 to 19 December 2009, FCCC/CP/2009/11/Add.1, 30 March 2010.
<<http://unfccc.int/resource/docs/2009/cop15/eng/11a01.pdf>>
- UNFCCC (2010) Report of the Conference of the Parties on its sixteenth session, held in Cancun from 29 November to 10 December 2010, FCCC/CP/2010/7/Add.1, 15 March 2011.
<<http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=4>>