

Sustainable Energy Landscapes

Designing, Planning, and Development

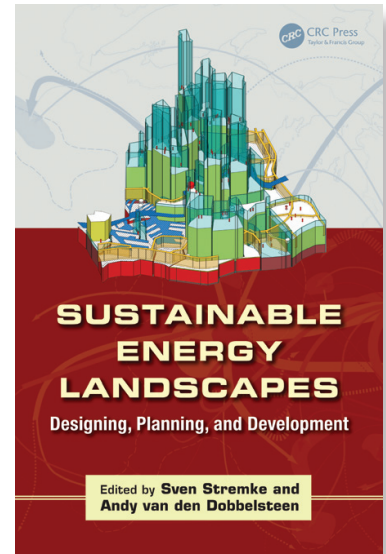
With experts from different related fields discussing their approaches to energy-conscious planning and design, this comprehensive book presents state-of-the-art research, education, and design practice with respect to sustainable energy landscapes. It also addresses how to quantify the impact of energy transition both on landscape quality and energy economy, issues of growing importance. Focusing on the municipal and regional scale, where energy-conscious interventions are effective and stakeholders can participate actively in the transition process, the text illustrates practical applications of emerging methods using case studies from across the globe.

Features

- Discusses energy-conscious spatial planning and landscape design
- Presents long-term transformation of entire municipalities and regions to renewable energy sources
- Describes how to develop sustainable rather than 'just' renewable energy landscapes (for example, preventing loss of biodiversity)
- Presents new complete theories and state-of-the-art practices
- Includes numerous modern case studies developed by well-known ecologists and planners

Contents

Introduction. Energy and time: Evolution of human energy systems. Energy and space: Atlas of energy consumption. Theories: Energy potential mapping for sustainable energy landscapes. Five-step approach for sustainable energy landscapes. Swarm planning for sustainable energy landscapes. Collaborative design approach for sustainable energy landscapes. Multi-criteria decision analysis for sustainable energy landscapes. GIS based visualization of sustainable energy landscapes. Education and best practice: Energy potential mapping: Examples from the Netherlands. Five-step approach: Application in graduate students education in the Netherlands. Energy-conscious design: Zero+ Campus in the United States. Energy and the city: Post graduate energy conscious education in Sweden. Architectural imagination and energy transition in the United Kingdom. Energy-conscious planning and design practice in Asia. Regional ecologies of energy and mobility in the United States. Developing renewable energy villages in Germany. Planning local and regional energy landscapes in Austria. Planning local and regional energy landscapes in Austria. Exergy balance for the island of Samsø in Denmark. Carbon model for the region of Siena in Italy. Conclusions.



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Reviews

"This book is a wonderful opportunity to lift your view on sustainable design to a whole new level. It is the first serious effort at exploring the interplay between energy systems, on the one hand, and physical landscapes on the other. ... a 'tour de force'. It fearlessly integrates a broad range of perspectives, disciplines and case studies. It re-frames the discussion on sustainable design by asking deep questions. How might the transition to renewable energy systems be accommodated in a crowded world? Does the integration of sustainable energy systems require that we redefine our approach to urban and rural planning and design? Does it help to see all landscapes as energy landscapes? The book is at once playful and revealing."

—Sebastian Moffatt, Executive Director of the CONSENSUS Institute, British Columbia, Canada

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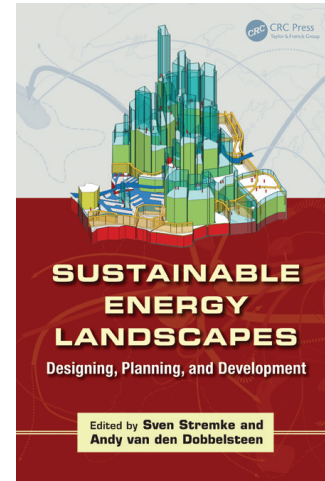
"This book is an important contribution towards a fruitful discourse about alternative routes which build on and deviate away from a fossil driven society. It points out various paths towards a more sustainable and resilient future, making use of a variety of sources of energy being available as a unique set of opportunities at the local and regional level. This book provides the best guide yet towards 'Sustainable Energy Landscapes'."

—Gert de Roo, Professor in Planning, University of Groningen, The Netherlands, and President of the Association of European Schools of Planning

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"Human history can be told through the lens of energy and landscape, and in the coming decades we will have some very stark choices to make with regards to both. Sven Stremke and Andy van den Dobbelsteen have done a splendid job to illustrate the breadth of ongoing research efforts and the relevance of diverse and interdisciplinary approaches to the energy-landscape nexus. This comprehensive book fills a gap in the literature and will be invaluable to a growing number of researchers, practitioners and educators engaging with this topic."

—Dan van der Horst, University of Birmingham, UK of the Association of European Schools of Planning



"... builds upon principles of new landscape/ecological science and exergy, and combines attention to material processes with social process, process approach with spatial approach, substantial issues with procedural issues, all of which in turn [are] tested through participatory case study. I recommend this book highly to spatial planners, urban designers as well as landscape architects who are engaged with sustainability."

—Jusuck Koh, Professor of Landscape Architecture, Wageningen University, The Netherlands

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"... fills a very significant gap in the literature. ... We desperately need to improve our understanding of sustainable energy landscapes at an international scale, and to develop better approaches to their planning and design. We need to improve our understanding of the complexities of landscape and the way its functions are affected by renewable energy production. We need to devise strategic and detailed methods to evaluate and implement proposals that are ethical and effective, and which have fortunate social and aesthetic side-effects. Sustainable Energy Landscapes is, to date, the only book that provides us with critical insights into these challenges."

—Paul Selman, Emeritus Professor, Department of Landscape, University of Sheffield, UK

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