

# Coherent Energy and Environmental System Analysis

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## Authors

Henrik Lund (Edt.)  
Frede Hvelplund  
Brian Vad Mathiesen  
Poul A. Østergaard  
Per Christensen  
David Connolly

Erik Schaltz  
Jayakrishnan R. Pillay  
Mads Pagh Nielsen  
Claus Felby  
Niclas Scott Bentsen  
Niels I. Meyer

Davide Tonini  
Thomas Astrup  
Kai Heussen  
Poul Erik Morthorst  
Frits M. Andersen  
Marie Münster

Lise-Lotte P. Hansen,  
Henrik Wenzel  
Lorie Hamelin  
Jesper Munksgaard  
Peter Karnøe  
Morten Lind

The CEESA project (Coherent Energy and Environmental System Analysis) presents technical scenarios as well as implementation policies and a road map of Denmark's transition from a fossil fuel-dominated energy system to a supply system based completely on renewable energy with a dominating part of intermittent sources like wind and solar power. Energy conservation and a certain technological development are prerequisites for this transition. The CEESA scenarios show how the transition can be performed before the year 2050 mainly by the use of known technologies combined with significant energy conservation.

The CEESA project has a focus on, among others, transport, electricity power systems and environmental assessment. The need for new systems thinking and new planning principles for energy investments is among the important observations in this scenario project. With dominant contributions from intermittent sources and limited amounts of biomass available, storage problems are solved by integrating the electricity, heat and transport sectors much more than in traditional supply systems based on fossil fuels. The CEESA project shows how this can be done in an efficient and economical way.

CEESA is a multidisciplinary co-operation which combines the forces of leading Danish researchers in the fields of energy and environment. The project is financed by the Danish Council for Strategic Research together with the participating parties and was conducted in the period 2007-2011.

The results of the CEESA project are presented in 5 background reports and a main summary report.

CEESA main report:

- Coherent Energy and Environmental System Analysis

CEESA background reports:

- Part 1: CEESA 100% Renewable Energy Scenarios towards 2050
- Part 2: CEESA 100% Renewable Energy Transport Scenarios towards 2050
- Part 3: Electric power systems for a transition to 100% renewable energy systems in Denmark before 2050
- Part 4: Policies for a Transition to 100% Renewable Energy Systems in Denmark Before 2050
- Part 5: Environmental Assessment of Renewable Energy Scenarios towards 2050



Aalborg University  
University of Copenhagen  
Technical University of Denmark  
Risø DTU National Laboratory for Sustainable Energy  
University of Southern Denmark  
Pöyry Energy Consulting  
Copenhagen Business School

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