

Accelerated Implementation of a Renewable Electricity supply in the Netherlands (AIRE)

Coordinator:

Ir. E.H. Lysen

Involved organisations:

Universiteit Utrecht

Technische Universiteit Delft

Universiteit Maastricht

Energieonderzoek Centrum Nederland

Program term:

2000-2006

Summary of problem definition:

The objective of the AIRE project was to undertake multidisciplinary research into the technical and non-technical factors affecting the implementation of the different renewable electricity sources in the Netherlands, as well as into the mutual effect they have upon each other. This with the aim to deepen the knowledge of implementation issues in renewable energy sources and to apply existing knowledge in the area of the diffusion of technical innovations to the energy field. This objective has been realised by the multidisciplinary work undertaken by the three PhD students in AIRE, at Delft University and Utrecht University, supported by additional work at ECN and the supervisory activities at Delft University, Utrecht University and Maastricht University. The three resulting PhD thesis and the numerous papers, articles and presentations underlying the PhD work, have provided deeper understanding and concrete practical results in a range of areas, such as:

- The modelling of wind turbines, leading to concrete recommendations for stable grid connection (directly applied by the international wind industry).
- Learning in renewable energy technology (the resulting experience curves and insights are used worldwide).
- Insight in the social and institutional conditions affecting the implementations of wind power (resulting in new concepts, such as the Implementation Capacity, and in concrete recommendations for Dutch policymakers).

Subprojects:

- Research on the economical-technological performance and future perspectives of several renewable electricity technologies, H.M. Junginger.
- Research on social and institutional setting of implementation of renewable energy sources, S. Agterbosch.
- Research on impact of renewable generation, particularly wind power, on grid system dynamics, J.G. Slootweg.

Results:

- Agterbosch, S. (2006), Empowering wind power: on social and institutional conditions affecting the performance of entrepreneurs in the wind power supply market in the Netherlands. PhD thesis. Copernicus Institute, Utrecht University.
- Junginger, M. (2005), Learning in renewable energy technology development. PhD thesis. Copernicus Institute, Utrecht University.
- Slootweg, H. (2003), Wind power: modelling and impact on power system dynamics. PhD thesis. Delft University of Technology.
- See the NWO-website for a full list of publications, www.nwo.nl/energieonderzoek