

# Renewable energy can be a lot cheaper

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Dutch energy policy is directed at 17 percent of electricity demand being covered by renewable energy sources by 2020. Martin Junginger has demonstrated that this can be achieved at considerably lower costs than is the case now. He also found that it might be more financially advantageous to realise part of the objective outside of the Netherlands because, for example, more space is available there for wind turbines or because more biomass is available there.

Renewable electricity can make a significant contribution to reducing greenhouse gas emissions and decreasing the dependence on fossil fuels. In particular the rate at which the production cost of electricity from land-based wind turbines can decrease, is something which most calculations and energy models have considerably underestimated up until now says Junginger in his Ph.D. thesis Learning in renewable energy technology development. Also the costs of electricity from wind parks at sea could fall by 25 to 39 percent by 2020. However several pilot plants will need to be constructed to realise this, and an improved exchange of knowledge will have to take place for the development of these technologies at a European level. The same applies to advanced power stations that gasify biomass with a high efficiency for electricity production. Therefore, the researcher also advises that learning processes and knowledge exchange for these technologies should be further stimulated at a European level.

Junginger used the experience curve approach in his research. This approach describes the cost development of a product or a technology as a function of the cumulative production. Researchers can use this to

quantify cost reductions achieved in the past and to analyse possible future cost reductions. In addition, Junginger carried out a qualitative analysis for various sustainable electricity technologies to determine which learning mechanisms can bring about further cost reductions.

The doctoral research was carried out at Utrecht University via the Utrecht Centre for Energy Research and it formed part of the programme Accelerated Implementation of a Renewable Electricity supply in The Netherlands (AIRE) financed by NWO/SenterNovem. This programme is a joint initiative of SenterNovem and the NWO Social Sciences Research Council. Its aim is to develop knowledge in the natural sciences and humanities that will support the transition towards a more sustainable energy supply.

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