

Electricity supply: Sustainable sources remain expensive

October 7 2008

Ambitious governments' environmental objectives for the electricity sector are only possible at a high price. This is one of the conclusions of researcher ir. Hans Rödel, who is to receive his PhD at TU Delft on Thursday 9 October. He recommends a combination of different modern generation technologies, CO₂ capture and storage, the use of biomass and the recycling of waste heat.

The government wants to achieve a general CO₂ reduction of 30 percent and to increase the proportion of sustainable energy sources within the total energy supply to 20 percent by 2020.

According to scientist Hans Rödel this can only be achieved at a very high price in the electricity sector. Scenarios involving a low environmental burden lead to high costs and vice versa. 'One of the conclusions is that electricity from sustainable sources will for the foreseeable future remain more expensive than electricity generated from conventional sources.'

Rödel therefore recommends a combination of different modern generation technologies, CO₂ capture and storage, the use of biomass and the recycling of waste heat. This can help create a sound environmental balance while containing costs within reasonable limits.

Rödel notes here that CO₂ capture technology is still in its infancy and requires further development. Moreover, he believes that the environmental progress made as a result of rapid technological

developments in the generation of electricity from fossil fuels is often overlooked.

Rödel developed a technological-economic simulation model which takes as its starting point the current range of generation facilities and which can be used to analyse future scenarios. He used this to create a future analysis of the Dutch electricity supply on the basis of four developed scenarios. The analysis took as its basis the existing, liberalised electricity supply and aimed to determine whether an effective balance could be achieved for the three key factors: environmental burden, cost of the electricity generation system and certainty of supply.

Rödel proposes that the government should at least determine and establish clear growth and stimulatory frameworks for the various production options. 'Choices that are made now will influence the environmental burden, cost and availability of the system for the coming 25 to 40 years.'

Source: Delft University of Technology

Citation: Electricity supply: Sustainable sources remain expensive (2008, October 7) retrieved 30 April 2024 from <https://phys.org/news/2008-10-electricity-sustainable-sources-expensive.html>

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