

Press Release No. 39/2010

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Energy goal for 2050: 100% renewable electricity supply

New UBA study shows that electricity supplied entirely from renewable energies is realistic

Germany's electricity supply could make a complete switch to renewable energies by 2050. The technology already available on the market could make this possible even today, but it requires that electricity be used and produced very efficiently. These are the results of the *Energieziel 2050: 100% Strom aus erneuerbaren Quellen [100% renewable electricity supply by 2050]* study done by the Federal Environment Agency (UBA). In order to achieve this goal by 2050 UBA is calling for timely political support. "The earlier we take decisive action the more time there will be to make the necessary technological and social adaptation," says Jochen Flasbarth, President of the Federal Environment Agency. Moreover, Germany could drastically reduce its great dependence on imports of primary energy sources if electricity were produced with renewable energies only.

The Federal Environment Agency explores the conversion to a 100% renewable energies power supply in three basic scenarios. The study now published is based on the 'region's network' scenario, in which all the regions in Germany largely tap their potentials to use renewable energies and a country-wide electricity conversion results. Only a very small share of electricity would then need to be imported from neighbouring countries. The calculations needed were carried out by the Fraunhofer Institute for Wind Energy and Energy System Technology (IWES) on behalf of UBA. The researchers at IWES modeled this scenario for four seasons and according to hours. UBA President Jochen Flasbarth says, "The results of the study demonstrate that electricity supply can be generated completely from renewable energies by 2050 and that secure supply can be guaranteed at all times." The various means to generate power from renewable energies, storage, and load management are explored in more explicit detail in the region's network scenario, showing that fluctuations that may occur in supply of renewable energies can be safely compensated at all times. According to UBA, the power supply switch requires that renewable energies, networks and storage systems be expanded large-scale. Furthermore, the means to save electricity must also be used to the fullest extent.

The insulation of buildings must be greatly improved so as not to consume too much power to supply their heating. Load management potentials must also be developed in order to better adapt demand for electricity to fluctuating supply, especially from wind and solar energy.

Electricity supply is responsible for about 40% of Germany's total energy-related CO₂ emissions. "If we are to reduce greenhouse gas emissions by 80-95%, we must switch to electricity supply from renewable energies as it is the only way to reduce the GHG emissions generated in

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electricity supply to zero", explained Jochen Flasbarth. In a follow-up study the Federal Environment Agency will investigate two possible alternatives to the 'region's network' scenario, namely 'International large scale application of technology' and 'Local Energy Autarky'.

The UBA *Energieziel 2050: 100% Strom aus erneuerbaren Quellen [100% renewable electricity supply by 2050]* study is available for free download at www.uba.de/uba-info-medien/3997.html.

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