

Renewable electricity: the cheapest energy source for Europe by 2050

On the basis of calculations for 36 countries in Europe and Northern Africa the German Advisory Council on the Environment (SRU) concludes that a power supply completely based upon renewable sources by 2050 is achievable at average costs of 65 €/ Mwh. “Renewable electricity will become the cheapest source of energy throughout Europe”, says the lead author of the report Prof. Dr. Olav Hohmeyer. The calculated costs are significantly lower than the pessimistic assumptions of the draft EU Energy Road Map 2050, which has been leaked to the media recently.

The SRU launches the scenario results for each of the 36 countries in the European and Northern Africa region together with the English version of its special report „Pathways towards a 100% renewable electricity system“. The scenarios assume a cost-optimized mix of renewable energy sources and a high level of national self-sufficiency. A completely renewable electricity system, that guarantees security of supply at every moment throughout the year, is achievable at system costs of 65 €/Mwh including the cost for grid expansion and storage. In countries with comparatively greater renewable potentials costs can even be lower. The pump storage potential in Norway is sufficient to function as the “green battery” of Europe.

A leaked draft of the Energy Roadmap 2050 of the European Commission has been recently discussed in the press. The European Commission compared different low carbon scenarios. It concluded that to achieve its climate targets until 2050 a share of renewable energy in the electricity mix between 59 – 86 % by 2050 is necessary, which implies that in any case renewables would become the most important source. However, the scenario with the highest renewables shares appears as the most expensive one. The Commission results are at a level considerably above the calculations for a 100% renewables based scenario calculated by DLR (German Aerospace Center) on the basis of the ReMix-Model for the SRU.* „The European Commission systematically underestimates the low cost potential of renewable energies for a truly sustainable power system“, comments Prof. Dr. Hohmeyer at today’s presentation of the results in the House of Commons in London. „The cost pessimism of the European Commission is scientifically not well grounded.“ Exaggerated cost estimates may undermine political acceptance for further expansion of renewable energy in the EU.

The special report emphasizes the need for a EU directive

In his special report, the SRU emphasizes that a supportive European framework is pivotal for a

national energy transition towards renewable energies. The SRU recommends that the EU formulates ambitious binding targets for renewable energy for the year 2030 and that the future European electricity grid systematically has to match the needs of growing shares of renewable sources in the electricity mix. However, the SRU considers the harmonization of support schemes not appropriate, as the conditions in member states are too different.

The scenarios and the full report can be downloaded from the homepage of the German Advisory Council.

Press release

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