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Riding on the wind: Synergies in the deployment of renewable energy and electric transport

Renewable energy sources, as wind and solar energy, can support the further development of clean and efficient road transport systems, and vice versa. This is the outcome of a study, commissioned by the International Energy Agency Implementing Agreement for Renewable Energy Technology Deployment - IEA-RETD. This RETRANS study sheds new light on the missing link between the transport and electricity markets by focussing on electric and plug-in hybrid vehicles. The report suggests a strategic step towards using electric cars as a key solution for a broad structural utilisation of renewable energy sources.

The co-evolution of the transport and electricity sector is an opportunity that leads to imminent synergies .

Electric vehicles can bridge the gap between electricity demand patterns and the variable supply patterns of renewables like wind and photovoltaics. Use of electric cars as grid-connected buffering capacity would save grid operators and energy suppliers money. Besides, by connecting the vehicles to a renewable electricity supply, electric cars can become truly zero-emission-vehicles. By balancing the feed-in and use of renewable electricity, electric car manufacturers can reduce fleet emissions, provide marketing incentives for early-adopting customers and further increase the demand for renewable energy.

Coordination of policies and between the energy and transport sectors is required now.

A coordinated approach for energy and transport policies as well as a thorough technical system integration is urgently needed. Early action in standardisation, grid code design, and system architecture is absolutely necessary for any chance of efficient technology utilisation. The authors urge policy makers to define and coordinate an approach with stakeholders considering all of the many facets laid out in detail in the report. Innovative policy instruments are also discussed in the report as stimulants for additional renewable energy production in conjunction with the market uptake of electric vehicles. By taking action now, policy makers can effectively push a future growing market in renewable energies.

Electric vehicles drive sustainable mobility.

To reduce greenhouse gas emissions and dependency on fossil and other finite fuels, electric vehicles need renewable energy sources. Stimulated by proper policies and by existing and new market drivers, electric vehicles rev up the transition towards sustainability in the energy system. Renewable sources are far more flexible in installation size and location, giving them the edge over large conventional power plants. However as electric vehicles have limitations in range. Alternatives, like biofuels and hydrogen cars, are likely to also have a place in the future sustainable transport system.

The report, prepared by TNO and its partners ECN Policy Studies and RWTH Institute for High Voltage Technology, provides a first guide to the future of renewable energy in transport.

More information:

The report can be downloaded via the following link:
http://www.iea-retd.org/files/RETRANS_PolicyMakersReport_final.pdf

About RETD:

The Renewable Energy Technology Deployment (RETD) Implementing Agreement is one of the Implementing Agreements on renewable energy under the framework of the International Energy Agency (IEA). RETD aims to accelerate the deployment of renewable energy through international cooperation. The RETD is comprised of ten countries: Canada, Denmark, France, Germany, Ireland, Italy, Japan, the Netherlands, Norway, and the United Kingdom. It is chaired by Hans Jørgen Koch, Deputy State Secretary, Danish Ministry of Climate and Energy.

http://www.iea-retd.org

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The secretariat of the IEA-RETD is managed by Ecofys (Netherlands' office) with support from FactorCO2 (Spain).

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