

## GCRI INTERVIEW

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**Based on your research, you found that it is already possible to fully supply Germany with 100% clean energy. Why has this not happened yet?**

Our research projects have demonstrated the feasibility of renewable energy sources (RES) to cover the electric energy demand at any time, in terms of reliability and flexibility. In order to realize this, it is necessary to transform the power grids and the energy markets. Furthermore, it is crucial to link the energy sectors (electricity, heat, mobility) to reduce CO<sub>2</sub> emissions in all sectors. This would require the implementation of heat pumps, the isolation of buildings, and a massive implementation of electric vehicles.

**When will Germany be able to cover the energy demand with renewable energy?**

A 100% full supply of all energy sectors is not realistic and would require a significant effort (technical, economic, political). On the other hand, as one of the most important industrialized nations in the world, Germany should be responsible for contributing substantially to the COP 21 targets. The German roadmap for energy transition through the [Climate Action Plan 2050](#) foresees the achievement of the CO<sub>2</sub> reduction targets by 2050. This plan defines an emission reduction pathway with a final target of 80 to 95%, as well as milestones and targets for all sectors (energy, buildings, transport, agriculture) by 2030.

**Which technology offers the greatest potential to propel the renewable energy field forward in Germany?**

Wind and solar power have the greatest potential for covering Germany's energy demand in the future. However, biogas power plants, geo-thermal power plants, and other RES are needed to increase flexibility on the generation side of the market. One of the most important tasks is to detect the optimal share between on and offshore wind energy, and photovoltaics (PV) in terms of the security of supply, the economy, and public acceptance.

## **How will the energy transition affect people's lifestyle in the short and long term?**

Currently, electricity consumers are facing higher electricity prices with the transformation of the energy system in Germany. This phenomenon, however, will be corrected by a more equitable distribution of the costs to all energy consumers. Furthermore, a large proportion of German citizens are used to the increase of wind power plants.

In the future, many people will be directly involved in the energy supply business. The energy users' own production with PV systems, participation in wind farm projects or intelligent load management with heat pumps or electric vehicles will allow them to become active energy supply partners.

## **How does the Fraunhofer IWES contribute to the realization of the European super grid?**

The Fraunhofer IWES is supporting several European projects related to [ENTSO-E's Ten-Year Network Development Plan](#), like TWENTIES, WindGrid, ERA-DTOC, NSON and IRPWIND. One important project is the [North Sea Offshore Network](#) (NSON), where efficient structures of a meshed offshore grid were designed. IWES is also an active member of European bodies like [ETIP Wind](#), the [EERA Joint Program for Wind Energy](#), and the [EERA Joint Program for Smart Grids](#), which advise ENTSO-E on grid planning activities.