

WindForS Network Strengthens Wind Energy Research in South Germany

Partners in Baden-Wuerttemberg and Bavaria start cooperation



Energy from wind: The WindForS Competence Network strengthens research in South Germany. (Photo: Markus Zscheile)



KIT Energy Center: Having future in mind

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Today, six universities and research institutions are founding the Wind Energy Research Network South (WindForS). The University of Aalen, Karlsruhe Institute of Technology (KIT), the University of Stuttgart, the University of Tübingen, the Technical University of Munich, and the Center for Solar Energy and Hydrogen Research Baden-Wuerttemberg are pooling their competences in the field of wind energy in research as well as in education, qualification, and advanced training. Cooperation will focus on developments for using wind power at mountainous locations in South Germany.

Many wind-rich mountainous regions exist in South Germany. However, use of wind energy there is a complex task associated with big challenges in planning, construction, and operation: The wind reservoir is more difficult to measure than in the plain, wind acts on the plants in an irregular manner and blows from various directions, transportation of the gigantic rotor blades onto a

mountain ridge often appears impossible. Improved methods of wind measurement, other aerodynamic profiles, and new fabrication techniques are in great demand.

To solve these and a number of other problems, the six partners will cooperate in WindForS in the future. On a presently planned test field in a complex, mountainous region in South Germany, joint applied research will be conducted. Cooperation will not only be limited to South Germany, but address a variety of problems associated with the use of wind energy. Several partners are already involved in national and international offshore research projects, e.g. the RAVE research initiative in the offshore test field "alpha ventus" in the North Sea.

The participating 14 institutes and university chairs from Baden-Wuerttemberg and Bavaria supply their know-how covering the complete spectrum of wind energy research. Research will cover the areas of meteorology, soil mechanics and foundation engineering, design and calculation of structures and frames, materials, construction methods and fabrication technology, testing and measurement technology, quality assurance and maintenance as well as operational management, grid connection, and grid integration.

Scientists of Karlsruhe Institute of Technology (KIT) will concentrate on the stability and usability of offshore facilities and are involved in the joint project "Geotechnical Robustness and Self-healing of Foundations of Offshore Wind Energy Plants" funded by the Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety. Research also includes the investigation of flow processes in the atmospheric boundary layer (building aerodynamics, environmental aerodynamics). In addition, KIT studies pole construction of the facilities, the reliability of gears and materials for rotor blades, and develops weather models. On the part of KIT, the founding members of the research network are the Institute of Soil Mechanics and Rock Mechanics, the Institute of Meteorology and Climate Research, and the Research Center for Steel, Timber, and Masonry.

WindForS is aimed at strengthening South German wind energy research and making it more visible through joint cooperation projects for fundamental and applied research as well as through cooperation with international research institutions and industry. It is also planned to advise public authorities and to participate in bodies

and standardization committees. None the least, the partners intend to cooperate in the important education and training of young engineers.

More information:

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Karlsruhe Institute of Technology (KIT) is one of Europe's leading energy research establishments. The KIT Energy Center pools fundamental research with applied research into all relevant energy sources for industry, households, services, and mobility. Holistic assessment of the energy cycle also covers conversion processes and energy efficiency. The KIT Energy Center links excellent competences in engineering and science with know-how in economics, the humanities, and social science as well as law. The activities of the KIT Energy Center are organized in seven topics: Energy conversion, renewable energies, energy storage and distribution, efficient energy use, fusion technology, nuclear power and safety, and energy systems analysis.

Karlsruhe Institute of Technology (KIT) is a public corporation according to the legislation of the state of Baden-Württemberg. It fulfills the mission of a university and the mission of a national research center of the Helmholtz Association. KIT focuses on a knowledge triangle that links the tasks of research, teaching, and innovation.

This press release is available on the internet at www.kit.edu.