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ZSW and S&G Engineering Join Forces to Set Up Wind Power Field-Test Site

S&G Engineering GmbH and the Centre for Solar Energy and Hydrogen Research Baden-Württemberg (ZSW) have agreed to collaborate with a deal clinched at this year's German wind energy conference DEWEK and the WindEurope Exhibition in Amsterdam. S&G experts will share their insight into SG750.54-type wind turbines to help ZSW build a field-test site to research wind energy.

ZSW, one of seven WindForS institutions, will set up this site, the first testing facility in complex mountainous terrain, and operate it over the next three years as part of two research projects funded by the federal government and the state of Baden-Württemberg. The facility will help to gain insights that will enable the industry to develop new technologies to harvest wind energy in this globally significant market segment.

Research findings transferable to large wind turbines

Scientists are to have unrestricted access to the site's most prominent features, two wind turbines. Much the same goes for the members of the WindForS cluster, who will also be entitled to tap S&G Engineering's know-how and use all construction and plant data for future projects. Researchers will have full control over these systems and be free to adjust operating modes to suit each investigative pursuit. S&G Engineering specializes in these SG750.54-type wind turbines, which are being manufactured under license by ATB Riva Calzoni SpA in Italy. They have a nominal output of 750 kW, a rotor diameter of 54 meters and a hub height of around 73 meters.

The scientists set out in search of a system with three separately controlled motors to adjust blade angles. They found what they were looking for in the SG750.54-type turbine. Combining compact dimensions with powerful performance, this research plant provides the perfect platform for developing and testing components and technologies. New insights and innovations can then be scaled up to large commercial wind farms.

Testing new sensors and control algorithms

Funded by the German Federal Ministry for Economic Affairs and Energy and coordinated by ZSW, the WINSENT (FKZ 0324129A-F) project aims to develop aeroelastic computer models in various levels of detail for this type of system. S&G Engineering's expertise will be used to this end. The University of Stuttgart and TU Munich are also taking part to develop a dedicated basic controller that will allow researchers to test new sensors and control algorithms in future research and in-

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dustrial projects. An extensive array of metrological equipment will be installed in and around the field-test site to capture electrical, mechanical, seismic and acoustical data.

S&G Engineering and ZSW's agreement in principle also benefits other research and academic institutions at home and abroad who will be able to acquire and use this systems expertise for their R&D efforts.

----- WindForS info box -----

WindForS – the wind power research cluster

WindForS is a wind power research cluster in southern Germany that investigates wind energy in complex mountainous terrain. It consists of 23 research groups from 7 regional institutions. WindForS is seeking to find more technically and economically efficient ways of harvesting wind energy, while taking the ecology and landscape of complex mountainous terrains into account. Dr. Andrew Clifton is Managing Director of Windfors (clifton@windfors.de, www.windfors.de).

Contacts for technical matters

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The Zentrum für Sonnenenergie- und Wasserstoff-Forschung Baden-Württemberg (Centre for Solar Energy and Hydrogen Research Baden-Württemberg, ZSW) is one of the leading institutes for applied research in the areas of photovoltaics, renewable fuels, battery technology, fuel cells and energy system analysis. There are currently around 230 scientists, engineers and technicians employed at ZSW's three locations in Stuttgart, Ulm and Widderstall. In addition, there are 90 research and student assistants.

The ZSW is a member of the Innovationsallianz Baden-Württemberg (innBW), a group of 13 non-university, applied research institutes.





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Dr. Andrew Clifton (WindForS Managing Director), Andreas Rettenmeier (Team Leader Wind and WINSSENT Project Manager, ZSW) and Dr. Thomas Stötter (CEO, S&G Engineering GmbH) at the 2017 DEWEK [Photo: Michael Bahlo].

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