A new joint project aims at the improvement of generators for offshore wind parks

For the project “Wingy-Pro” Bremen Scientists and their partners receive 2.500.000 Euro of grants by the European Commission

With the increasing number of offshore wind parks, the requirements to the performance of the wind energy plants are rising as well. However, a problem resulting from the better performance can be found in the higher weight and volume of the generators in the nacelles. A strongly reduced carried load offers possibilities of smaller nacelles or, due to the better power/weight ratio, a higher generator power without increasing the weight.

In a new joint project scientists of the Bremen Centre of Mechatronics (BCM) at the University of Bremen in cooperation with Lloyd Dynamowerke and other international partners work on the reduction of the generator weight and volume. The aim is to lower both up to two thirds without a loss of performance. The European Commission supports the international joint project “Increasing efficiency of wind power plants for the production of energy” (Wingy-Pro) in the following four years with around 2,5 million Euro.

Within the project an innovative synchronous generator with transversal flux path is to be constructed. In comparison to conventional wind energy generators which usually have a weight of far more than 100 tonnes, the new machine’s weight and volume shall be reduced up to two thirds. Altogether the new construction allows extensive material savings for copper, lamination stack and for the steel construction of the tower and its base. Furthermore, the omission of a gearbox which is required for conventional wind energy generators reduces the expenses for maintenance. Beyond that, by means of an intelligent control noise and vibrations during the operation can be avoided almost completely.

The partners in Bremen and the Centre for innovative process engineering (CENTIV) in Stuhr accomplished that this ambitious task will be realised in the north of Germany. In addition, several international partners participate in the project. The intelligent power electronics for the energy supply will be developed by Converteam, a worldwide operating company for electrical drive engineering and power electronics and a system supplier for energy producers. Another important factor is the development of reliable permanent magnets for the machines, as the generators in offshore constructions are permanently exposed to moist and salty air as well as to high fluctuations of temperature. Atlas Magnetics Europe form the Netherlands is a competent partner with the necessary specialist knowledge to solve this problem. To enable the technology transfer to producers and operators of wind energy plants in Eastern Europe and to find new investors the Romanian technology consulting agency TRITECC also takes part in the project “Wingy-Pro”.

Website: www.wingypro.com

Further information and photos:

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