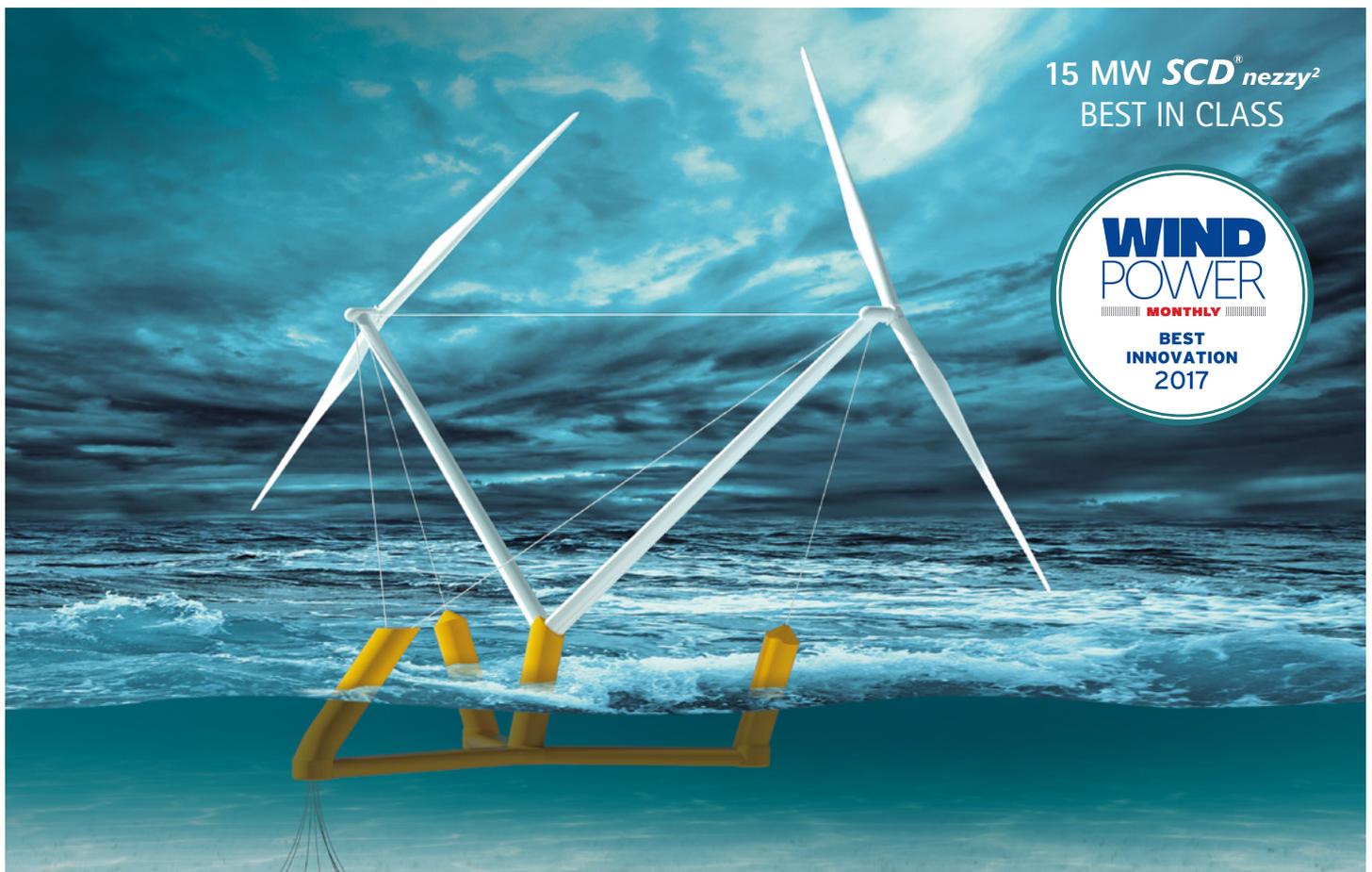


## WindPowerMonthly: "SCD<sup>®</sup> nezzy<sup>2</sup> provided a glimpse to offshore's future"



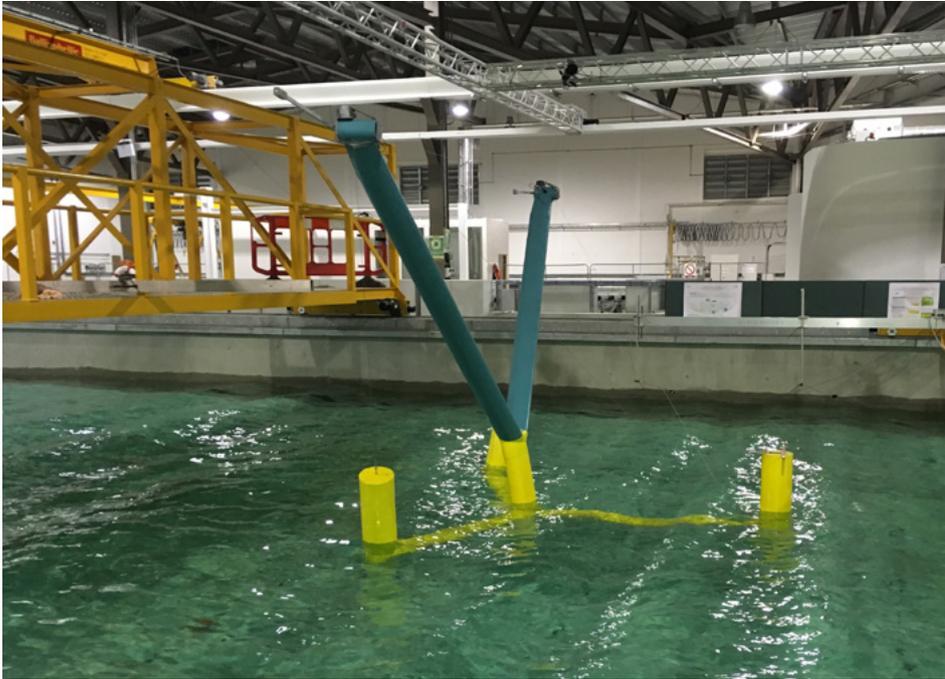
On 2<sup>nd</sup> January 2018 Wind Power Monthly wrote: "The 15 MW SCDnezzy<sup>2</sup> fully integrated twin-rotor concept is aerodyn engineering's radical vision of next generation large-scale floating power plants. The closely interspaced two-bladed downwind turbine counter-rotate to balance opposing Coriolis forces, and relative blade positions are offset by 90 degrees to minimise rotor-blade interaction causing tip vortices related performance loss. SCDnezzy<sup>2</sup> has a specific power

rating of 425 W/m<sup>2</sup>. The twin 150-meter rotor solution lowers the centre of gravity substantially compared to a larger single rotor with the same specific power rating, positively impacting floater mass and cost."

15 MW SCDnezzy<sup>2</sup> overcomes the complex handling of large wind turbines, because large size induced the increase in weight and hub height. The mass moment over water line and the

lever arm affect the cost of the floating foundation significantly. Comparing the twin-rotor configuration of SCDnezzy<sup>2</sup> with a single large wind turbine, when both turbines are at the same energy yield and technology level, then the weight of SCDnezzy<sup>2</sup> will be reduced to 80% and the hub height to 70% of a single large wind turbine. Both facts lower the investment costs and the LCoE for the twin-rotor solution of SCDnezzy<sup>2</sup>, significantly.

## New findings at the wave tank in Cork/Ireland with **SCD<sup>®</sup> nezzy<sup>2</sup>**

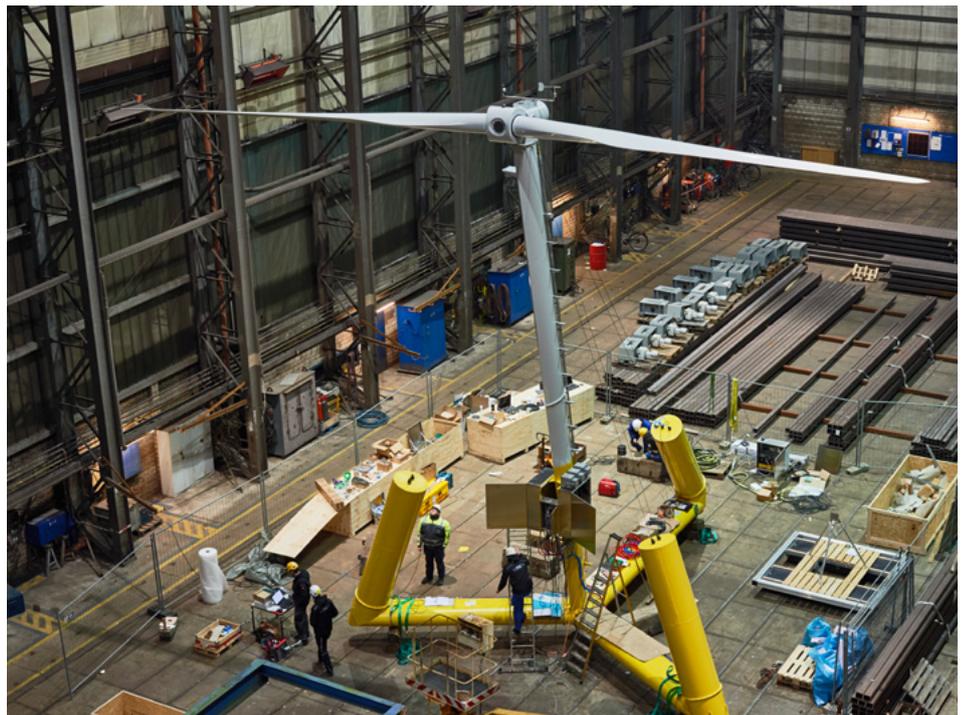


Within a development time of 6 months, we finished a first optimized geometry for the 15 MW SCDnezzy<sup>2</sup>. Based on that, a 1:36 model of SCDnezzy<sup>2</sup> was build, scaled in geometry and mass. Two rotating beams were installed in addition to the two thrusters at the tower top, to simulate the mass moment of inertia of the twin-rotor configuration, to evaluate the dynamic behaviour. Numerous tests were performed under regular and irregular wave conditions, combined with different loads and rotating directions. The measurement campaign assists us, to verify our calculation models and impacts further optimizations. The next step will be the 1:10 open sea model of SCDnezzy<sup>2</sup>. Therefor the design works are mostly completed.

## Final assembly of **SCD<sup>®</sup> nezzy 1:10** model at Nobiskrug shipyard in Rendsburg

In summer 2017, we finished the detailed design works for the 6 MW SCDnezzy, a single-rotor configuration. After that we started the design of an 1:10 open sea model of SCDnezzy, also a single-rotor. Parts of the requirements were, to scaled the geometries and the masses, as well as to use the planned materials. That's why the foundation was done in concrete, the tower in steel and the guy wires in carbon fiber. To realize the blades with a scale weight of 1:1000 an extreme light weight design in carbon fiber was chosen. A weight of 26 kg for each of the 7.3 m long blades was derived and reached during the manufacturing. The model provides all elements that a large turbine systems consists of.

The entire system was assembled and tested at Nobiskrug Werft in Rendsburg.



## The new General Data Protection Regulation GDPR will come into force on May 25, 2018

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## Together at the Tvind turbine, now Joachim Spengler joined aerodyn as CTO

In February 1978 Joachim Spengler and Soenke Siegfriedsen, founder of aerodyn, went to Denmark during the semester break of the University of Applied Sciences Lübeck to see the largest wind turbine in the world at that time - the Tvind turbine. With 54 m diameter and 2.0 MW power rating it was a monster 40 years ago. Joachim and Soenke were so excited about it, that they decided to focus their studies on wind energy systems. Joachim's thesis was about vertical turbines and Soenke's about horizontal

one. At that time, it was tough to get a job in the wind energy industry, so Joachim worked in different industries areas (machinery, IT) and gained a lot of experiences. Soenke founded aerodyn in April 1983, which he has successfully managed for 35 years. Both did not lose contact over the years, and Joachim's heart continued to beat for wind energy. Therefore, it was quite certain that Joachim could not refuse the offer from aerodyn, to take over the position as CTO. We are happy to have him on board and

are convinced that he will bring new momentum to develop the company further.



## Conference and Trade Fair in Hamburg

To promote our trendsetting technology, we will have a booth on the important WindEnergy fair in Hamburg from

25. to 28. September 2018. We would appreciate your visit and detailed discussions about SCDnezy2.

Visit our stand: B4 EG400



aerodyn engineering gmbh  
Hollerstraße 122 · D-24782 Büdelsdorf, Germany  
phone: +49-43 31-86 940 00 · fax: +49-43 31-86 940 40  
email: [info@aerodyn-engineering.com](mailto:info@aerodyn-engineering.com) · [www.aerodyn-engineering.com](http://www.aerodyn-engineering.com)

Responsible for the content:  
Concept: Soenke Siegfriedsen  
Layout: bartsch design GmbH