

INNWIND.EU-AVATAR event within EWEA2015

18th November 2015 (3.00-6.30pm), Paris

Agenda

- 3.00 - 3.05 **Welcome note** (Peter Hjuler Jensen, Deputy Head of DTU Wind Energy)
Opening presentation from the INNWIND.EU project coordinator
- 3.05 - 3.15 **Introduction to the projects INNWIND.EU and Avatar** (Peter Hjuler Jensen, Deputy Head of DTU Wind Energy and Gerard Schepers, Project coordinator at ECN Wind Energy)
- 3.15 - 3.25 **Design of 10+ MW offshore wind turbines at 50m water depths** (Anand Natarajan, Senior Scientist at DTU Wind Energy)
This presentation introduces the reference turbines used in the Avatar and INNWIND.EU projects
- 3.25 - 3.45 **“Soft or tough – when growing rotor size?”** (Flemming Rasmussen, Head of Aeroelastic Design Section – DTU Wind Energy)
This presentation highlights the challenges, barriers and perspectives for further upscaling of rotors from 8 towards 20 MW. It also describes innovations from the INNWIND project that facilitates this development covering new high speed aerodynamic concepts, thick and dedicated airfoils, light weight structural design, flexibility, long slender blades, aeroelastic tailoring, stability, and passive and active load control and alleviation.
- 3.45 - 4.05 **Superconducting versus pseudo direct drive generators - test results and perspectives** (Asger Abrahamsen, Senior Researcher at DTU Wind Energy)
The presentation focuses on test results of superconducting direct drive generators and magnetic pseudo direct drive generators for wind turbines and the perspectives these results give for the wind industry.
- 4.05 - 4.25 **Novel experiment results enabling new 10 MW support structures designs** (Martin Kühn, Professor Wind Energy Systems at University of Oldenburg)
The presentation focuses on results from new experiments on a floater in a wave tank. Innovations to reduce cost of energy for bottom mounted structures will be shown.

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4.25 – 4.45 **Assessment of Innovations and Integration** (Takis Chaviaropoulos, Senior research associate, NTUA)

More than 10 innovative component designs for blades, drive trains and deep offshore support structures are comparatively assessed using INNWIND.EU key performance indicators and cost models. The potential of individual designs and their combination in reducing the levelised cost of electricity is justified and quantified.

4.45 – 5.10 *break*

5.10 – 5.20 **Low induction reference rotor design** (Giorgios Sieros, Senior research associate, CRES)

The reference turbines used in the Avatar and INNWIND.EU projects are already presented in general. This presentation focuses at the low induction rotor. A low weight rotor design.

5.20 – 6.05 **Wind tunnel measurements** (Ozlem Ceyhan, Researcher ECN and Oscar Pires, Research Specialist CENER)

The small wind tunnel size generally leads to Reynolds numbers in the order of 3-6M, much lower than the Reynolds number on a large wind turbine (15M). Measurements will be presented taken in a pressurized tunnel in which Reynolds numbers of 15M could be reached. The measurements have been compared with calculations which are carried out under 'blind conditions' i.e. without knowledge of the measurements.

6.05 - 6.25 **Discussion**

Chaired by Peter Hjuler Jensen, Deputy Head of DTU Wind Energy

6.25 -6.30 **Closing remarks**

Peter Hjuler Jensen, Deputy Head of DTU Wind Energy

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