

Test infrastructure in Denmark – an updated strategy

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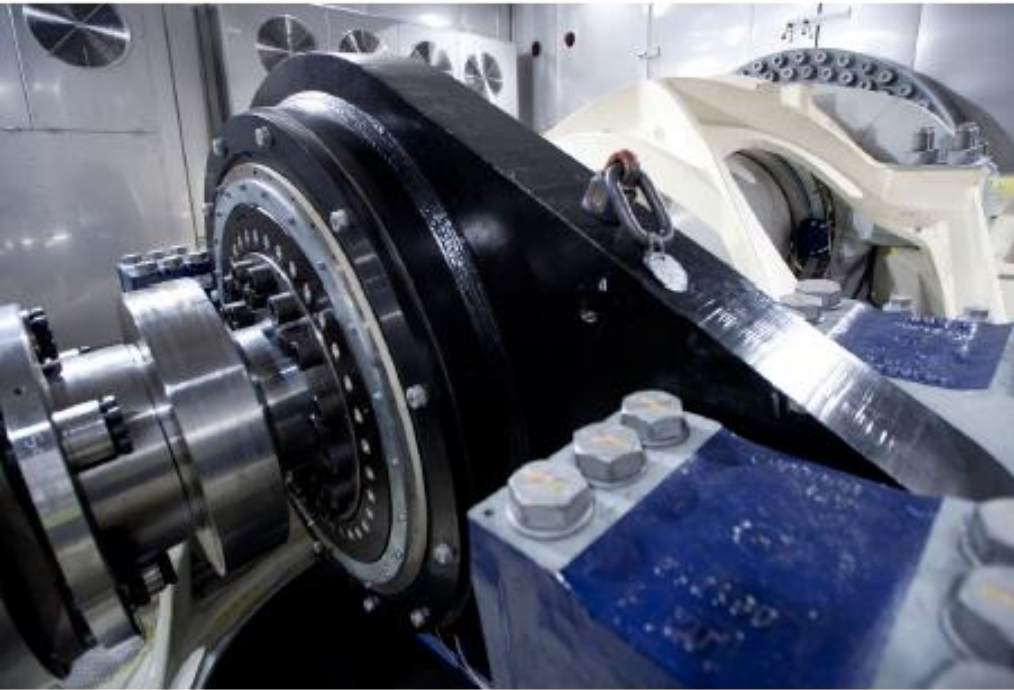
Per Hessellund Lauritsen, Research Manager, Siemens Gamesa
Renewable Energy



LINDØ COMPONENT AND STRUCTURE TESTING.

TEST & DEMONSTRATION FACILITIES

TO MAINTAIN DENMARK'S POSITION AS A GLOBAL HUB FOR WIND ENERGY IT IS ESSENTIAL THAT DANISH-BASED INDUSTRIES CONTINUE TO HAVE ACCESS TO WORLD-CLASS STATE-OF-THE ART TEST



Test and Demonstration Facilities for Wind Energy
Needed to Promote a Competitive Wind Industry
in Denmark

In 2016 Megavind recommended:

- More test pads for full scale wind turbines ✓
Result: 2 at Østerild and 2 at Høvsøre
- A converter-based grid test facility for test of wind turbine generators ✓
Result: Grid test at the Functional nacelle test at LORC
- New full scale nacelle testing of future turbines ✓
Result: Nacelle test facility for 16 MW turbines at LORC
- Test facilities for 100+ metre blades ✓
Result: New 120 m test facility at Blaest



FULL SCALE TESTING

- 2 X 2 EXTRA TEST PADS AT HØVSØRE AND ØSTERILD ARE NOT ENOUGH (11 BIDS FOR 5 PADS)
- NEED FOR PROTOTYPE AND 0-SERIE TESTING WITH FLEXIBLE ACCESS. EASY ACCESS TO SITES IS IMPORTANT TO SHORTEN TIME-TO-MARKET.
- THE EXACT SPECIFICATIONS FOR THESE SITES WILL BE DISCUSSED AND AGREED UPON IN THE WORKING GROUP AND INCLUDED IN THE STRATEGY RECOMMENDATIONS



"Det er ikke muligt at undervurdere vigtigheden af testpladser. For nylig blev testcentrene i Østerild og Høvsøre udvidet, hvilket er vigtigt. Dog har vi også behov for adgang til test i kommercielle rammer, og behovet er voksende," sagde Anders Vedel og understregede hertil, at et fortsat dansk marked for land- og havvind samt stabile, ambitiøse rammer for forskningsbevillinger er essentielle for, at Danmark forbliver verdensførende inden for teknologiudviklingen"



"Der er mulighed for en række forbedringer af mulighederne for test i Danmark. Mange steder er kommuner interesserede i at lægge jord til kommercielle testvindmølleprojekter og i disse tilfælde skal adgangen til pladserne fremmes, eksempelvis gennem bonus til de kommuner der løfter opgaven. Min pointe her er meget direkte: Der er behov for en national strategi, der prioriterer muligheden for test af vindmøller," sagde Anders Vedel, og understregede samtidig, at den nuværende danske højdebegrænsning på 150 meter for landvindmøller, også kan sætte en stopper for at teste fremtidens møller i Danmark"



ALSO TO BE DISCUSSED..

DO WE NEED:

- MORE NACELLE TEST FACILITIES?
- BIGGER BLADE TEST FACILITIES?
- COMPONENT TEST FACILITIES?
- NEW TEST FACILITIES AT UNIVERSITIES AND GTS?
- HYBRID TEST FACILITIES: EG WIND, PV, STORAGE?

POUL LA COUR WIND TUNNEL AT DTU WIND ENERGY.
A SECTION OF THE 6000 WEDGES IN THE CHAMBER
WITH LENGTH 13M, WIDTH 11M AND HEIGHT 11.5M
THAT SURROUNDS THE TEST SECTION TO ABSORB THE
NOISE AND THAT CREATE THE ANECHOIC CHAMBER.

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Fraunhofer plans 115-metre blade tests

11 February 2019 by Craig Richard

The Fraunhofer Institute for Wind Energy Systems (IWES) has received €11.6 million in funding for a new hall and test bench capable of evaluating blades of up to 115 metres.

businessLive

REGIONS WALES SECTORS OPINION PARTNER CONTENT

B Ports & Logistics Technology

World's longest wind turbine blade arrives at Port of Blyth's ORE Catapult for tests

The 107m blade will be put through its paces ahead of planned commercialisation of the technology in 2021

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By **Coreena Ford** Chronicle and Journal business writer
12:48, 15 AUG 2019 | UPDATED 10:40, 16 AUG 2019

PORTS & LOGISTICS



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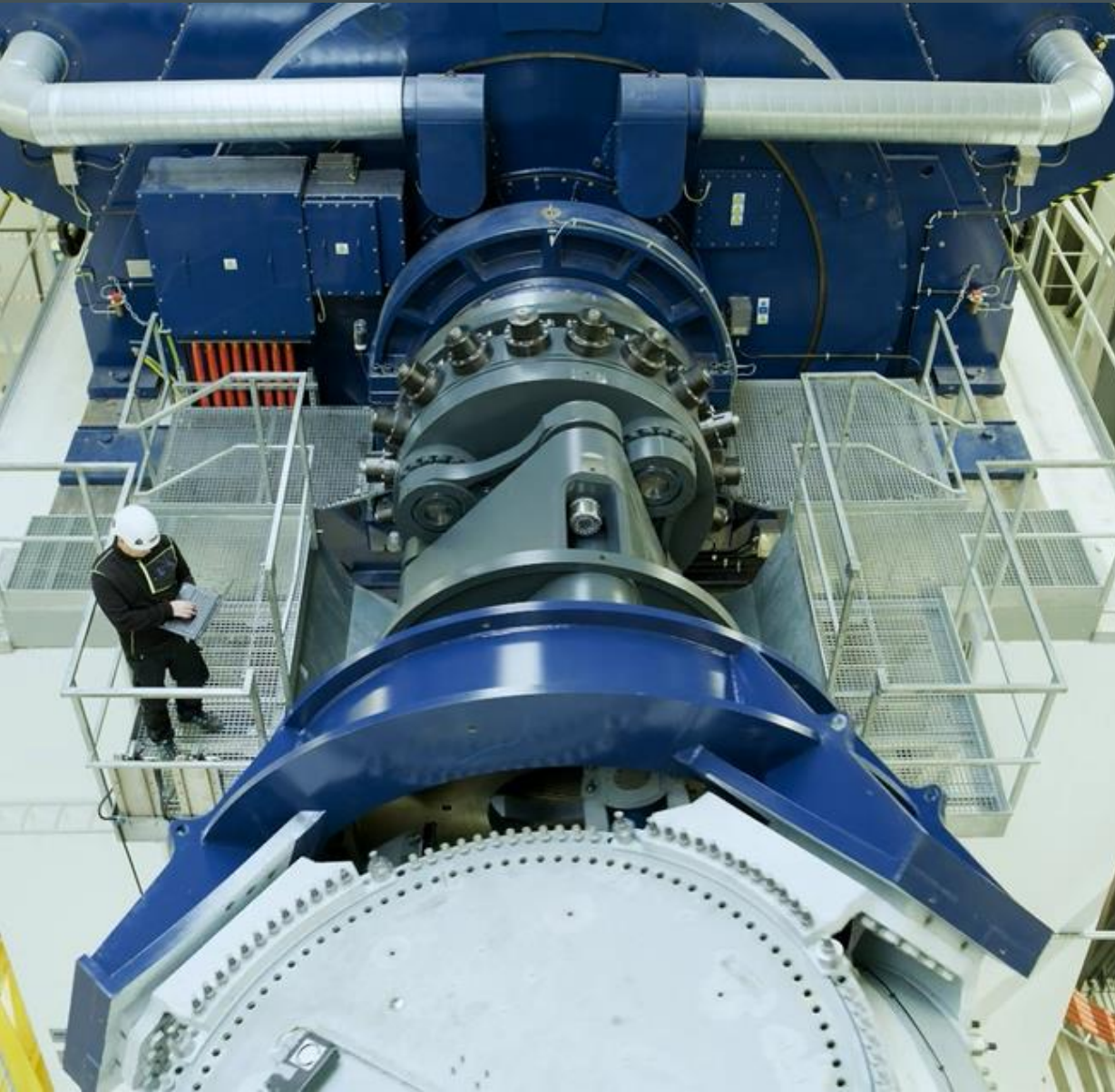
ENERGIWATCH

Forside Energiselskaber Olie & Gas Renewables Cleantech Politik & Mark

MHI Vestas snupper testcenter for næsen af Siemens Gamesa

Møllerne på 10-12 MW er knap blevet fæstnet til havbunden, før MHI Vestas vil begynde at teste møller på op til 20 MW. Vestas lejer sig ind i ny testhal, der forventes at stå klar i januar 2021.

HUMAN RESSOURCES



IS THERE A NEED FOR ADDITIONAL TEST COMPETENCES AND CAPABILITIES? E.G.:

- DEDICATED TEST PROGRAMMES AT THE TECHNICAL UNIVERSITIES
- SUPPLEMENTARY TRAINING COURSES FOR ENGINEERS
- ???
- ???



WORKING GROUP

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THANK YOU

More information: <https://megavind.winddenmark.dk/>

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