The Full Rage Test Site for Offshore Wind Power

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Publication date:
2007

Document Version
Publisher's PDF, also known as Version of record

Link to publication from Aalborg University

Citation for published version (APA):
NearshoreLAB Frederikshavn

THE FULL RAGE TEST SITE FOR OFFSHORE WIND POWER

Joint venture established by: DONG energy

The test field at Frederikshavn

The test field is placed in the northern part of the harbour, where DONG in 2002 have established 4 prototype wind turbines which is now a part of the NearshoreLAB complex.

The NearshoreLAB complex:

- A prototype of the bucket foundation placed under a Vestas V90 3,0 MW turbine. The foundation and tower is equipped with accelerometers and monitored for on-line frequencies analyses.
- 4 "0-series" wind turbines ranging 2,3–3 MW, two Vestas, one Siemens and one Nordex.
- A 35.000 sq. m test pit with undisturbed seabed used for scale test with 2x2 / 4x4 meter test buckets and 100 tons pull tests.
- A 20.000 sq. m m test pit with undisturbed seabed which can be used for further test purposes.
- The near shore sea in front of the prototype wind turbines, which can be used for scale test of structures and energy systems.
- An offshore test field, 5–6 km of the harbour, is in the application process for establishment of 6 "0-series" wind turbines. Approval expected June 2008.

At the nearshore site it is planned to initiate demonstrations of different systems, concepts and products. The plan is to carry out the demonstrations projects in close cooperation with relevant stakeholders e.g. suppliers, constructors, installators, etc.

Interesting issues for these demonstration projects:
- Up to 6 different "0-series" turbines
- Up to 6 different foundation concepts
- Installation concepts
- Cabling, cable protection
- Scour protection
- Access systems
- Power system adaptation
- Etc.

The extent of the test site area and the positions of the wind turbines

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