Innovation category
TRL 4

Wind turbine electrical interactions

Innovation description

Library of wind turbine models for analyses of electrical interactions and control developed by SINTEF Energy Research and NTNU

These are models for different analysis environments that can be applied in new studies with modest efforts.

Models include

- **Matlab: Deepwind – Simulink model of floating vertical axis turbine, including controls**
- **Fortran: Deepwind – Model of floating vertical axis turbine, including wind inflow and controls**
- **Matlab: Fuglseth – Model of floating Hywind-type turbine for control analyses**
- **Matlab: Lindeberg – Model of floating Hywind-type turbine for control anayses**
- **Matlab: Hydraulic – Model of turbine with hydrostatic drive**
- **Matlab: Vindsim – Library of Simulink block diagrams for wind turbine electrical systems**
- **Matlab: Nordheim – Direct drive PM generator model with tower oscillations**
- **Simpow: Wind, oil and gas platform model**
- **PSCAD: Mo/Næss/Suul – Component models**
- **PSCAD: HiPRwind – Model with 1 GW offshore wind farm and multi-terminal HVDC transmission**

Further development

Control strategies are being further developed outside NOWITECH in industry projects

Impact

- **Speed up simulations by using already tested models**

Further development

Models are refined and developed further depending on project demand. New models are added to the library when they are made.