

Ph.D. candidate: Roberts Proskovics

Home Institution: Doctoral Training Centre on Wind Energy, University of Strathclyde, Glasgow, UK

Supervision at Home Institution: Bill Leithead, Olimpo Anaya-Lara

Description of external stay at NTNU (August-September 2011)

The objective of this stay is to conduct the project “Power balancing in a multi-terminal HVDC offshore network in the North Sea”, developing a model in Matlab/Simulink that would represent a scenario where a large offshore wind farm (GW scale) is connected both to the UK and Norway. Excess power that is not needed in the UK is sent to Norway where it is stored as a kinetic energy of water in pumped storage schemes. This energy is released to either meet a peak demand in the UK or when the output from the wind farm is very small and not sufficient. This involves designing controllers for voltage source converters (VSC), so as to guarantee a smooth power flow between the countries.

Supervisor at NTNU: Kjetil Uhlen, Temesgen Haileselassie, Olimpo Anaya-Lara

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