

Wind energy supply to oil and gas platforms

Innovation description

For wind supply to Oil & Gas a set of strategies for integrating wind power with isolated or grid-connected offshore petroleum systems have been developed by SINTEF Energy Research.

This includes

- Operational strategies for reduced fuel costs and carbon emissions
- Operational control for frequency and voltage stability in isolated systems
- Operational control for frequency and voltage stability in mainland grid connected systems

Further development

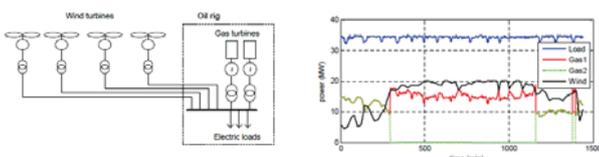
Control strategies are being further developed outside NOWITECH in industry projects

Impact

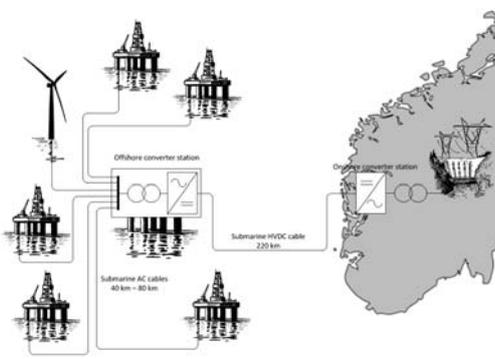
- These strategies can be applied to ensure safe and economic operation of the integrated system, lowering carbon footprint of extracted oil and gas and lowering fuel costs.
- Results have led to increased industry attention and the concepts are being further developed by industry, DNV GL and Statoil.

References

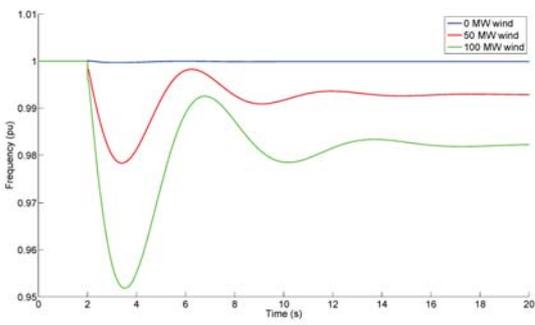
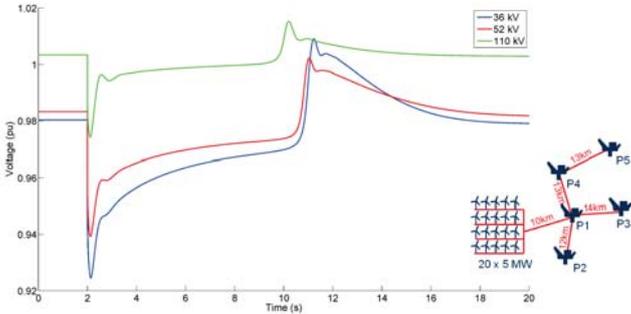
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- Korpås et al., Energy Procedia 24 (2012) 18-26, DOI: 10.1016/j.egypro.2012.06.082
- Svendsen et al, IEEE PowerTech 2011, DOI: 10.1109/PTC.2011.6019309



Fuel saving by shutting down one gas turbine in high wind cases



Multiple platforms supplied by wind energy



Dynamic response to fault