

Assessment of Power System Inertial Support on Wind Turbine Mechanical Performance

Yanchang Liang
University of Warwick



Image from: <https://www.rechargenews.com/wind/enbw-grid-connects-germany-s-biggest-offshore-wind-farm/2-1-735883>

The capability of wind power plants (WPPs) to provide inertial support is strongly dependent on wind speed conditions, mechanical/electrical limitations and the proprietary control strategy of the wind turbine. Repeatedly providing frequency support may result in severe implications to the turbine mechanical structure. This project will focus on the assessment of power system inertial support on wind turbine mechanical performance and on the existing WPP control strategies, and then proposing and developing an advanced inertial control system that can mitigate or minimise the identified impact(s).