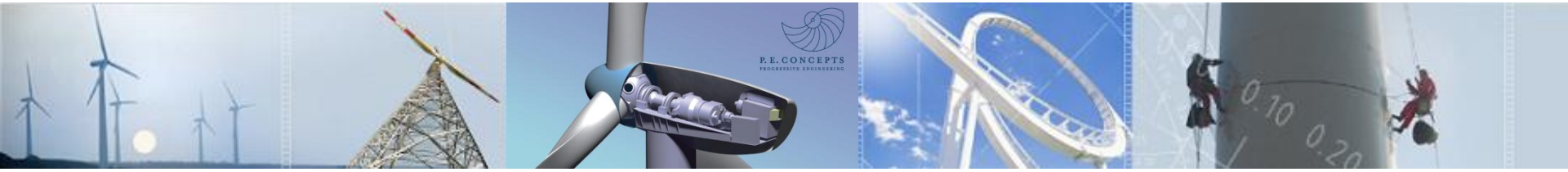

References

Offshore

Project:	**Offshore Wind Farm in the German North Sea, 48 OWEA's (6MW), 25m water depth (2010-2012)**
Service:	Owner's Engineer
Details:	• Generation of tender documents • Complete structural analysis of an offshore support structure (Jacket) incl. Transition Piece and Pile Interface • Support for the approval process through German authorities (BSH, BAM) • Conformity assessments during production phase
Project:	**Offshore Wind Farm in the German North Sea, 48 OWEA's (6MW), 25m water depth (2010-2011)**
Service:	Special load simulation of turbine and jacket foundation
Details:	• Integrated load simulation taking into account wind and sea states • Modal analysis of jacket structure and complete turbine • Impact of various pile geometries on mode shapes and loads
Project:	**Offshore Wind Farm in the German North Sea, 80 OWEA's (5MW), 40m water depth (2010-2011)**
Service:	Certification Support
Details:	• Complete structural analysis of an offshore support structure (Tripod) • Inner structural integrity of the foundation (Piles), structural analysis of the outer access platform of the tower • Structural analysis of the foundation for the substation

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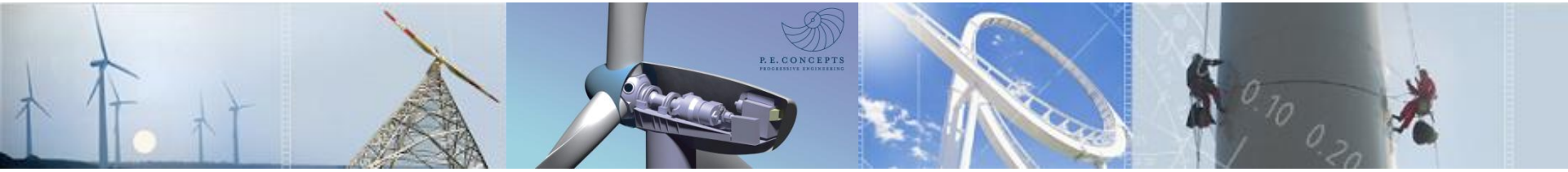

Offshore

Project:	**Offshore Wind Farm in the German North Sea, 80 OWEA's (5MW), 25 - 35m water depth**
Service:	Certification Support
Details:	• Complete structural analysis of an offshore support structure (Tripod) • Inner structural integrity of the foundation (Piles)

Project:	**Offshore foundation structure for OWEA (5MW)**
Service:	Design Review
Details:	• Complete structural analysis of an offshore support structure (Tripile)

Project:	**Generic offshore site in the German North Sea** **3-year joint research project with WeserWind GmbH and Alfred Wegner Institute for Polar and Marine Research**
Service:	Weight reduction of a tripod foundation
Details:	• Use structural examples from biology as design basis • Comparison of biological approach with engineering approach • Load assessment within various numerical optimization loops

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