CREADIS innovative engineering

LIFTING & TRANSPORT EQUIPMENT

DESIGN ENGINEERING
FOR SAFETY & EFFICIENCY

OVERVIEW

Safety, ease-of-use, installation time, and reliability are all priorities when designing lifting and transport equipment for wind turbine components. The equipment can be anything used by companies to erect or maintain a wind farm and it must be designed to be compliant with strict industry standards and guidelines. This requires specialized engineering knowledge and experience in tailor-made solutions.

In regards to offshore wind farm development, Europe is ahead of the U.S. but this growing segment presents significant opportunity for innovation. CREADIS has the skills and expertise to design the safest and most efficient WTG equipment.

BUSINESS CHALLENGE

Multipurpose - Customer needed to design and verify equipment for both land and sea transport of wind turbine components.

Increase Productivity - Customer needed equipment for lifting a nacelle while maintenance is being performed on bearings.

Compliance - Customer needed various equipment designed in accordance with several EN, DNV, and GL guidelines.

THE CREADIS SOLUTION

CREADIS performed design engineering and Strength verification for lifting and transport equipment designed for a nacelle, gear box, main shaft, and drive train. The project consisted of verifying the equipment in both Ultimate Limit State (ULS) and Fatigue Limit State (FLS). A finite element model was produced, including modeling of elastic lashings for both land and sea transport.Several load cases, consolidated from DS/EN 12195, Lashcon and DNV, were also analyzed.

The customer received a detailed report, describing the relevant aspects of the strength verification. The report contained both verification of the structure in ULS, and calculation of fatigue life of bolts and welds for sea transport. The primary tools were Autodesk Inventor, Ansys Mechanical, MathCAD and Excel.

Quality Assurance - EN1990, EN1993, EN1090, EN13155, EN12195, DNV-guidelines and GL-guidelines.