



Grouted Connection Remediation

ENGIE Fabricom delivers full turnkey solution to offshore windfarms preventing slippage between monopile and transition piece.

Over recent years, one of the biggest challenges to the offshore wind industry has been the failure in the grouted connection between the monopile and transition piece on wind turbine foundations.

In 2010 this was recognised as a design fault and subsequent changes were required resulting in a conical monopile to transition piece design solution.

The remedial solution determined the transition piece would have to be supported by elastomeric bearings. This involved the designing of new support side plates welded onto the inside of transition pieces that would enable the elastomeric bearings to transfer the load – from the transition piece and grouted connection - onto the monopile.

With this came another challenge to the industry; the requirement to implement this remedial solution within the confined working space of the lower internal turbine section.



In response to this challenge, leaders in the offshore wind industry, ENGIE Fabricom has developed a full turnkey solution which has already proved successful on 200 monopiles.

The turnkey offering includes:

- Total project management solution, risk assessment and method statement development
- Complete arrangement of the foundation and confined space including rescue equipment, manual handling and lift plans
- Operations support – management of change, project management, logistics, safe isolation of plant and equipment, etc.
- Welding completed to DNV standards with 100% NDT
- Support of the transition piece during all work
- Painting and inspection to NORSOK M501 international standards
- Quantitative risk assessments and project audits
- Punch out and hand over to client
- Vessel charter and refuelling and associated onshore support

Our Approach

- Collaboration is key and, as such, we work in partnership with our clients and their design team from the very offset
- Attention to detail is of paramount importance and is adopted by all staff at ENGIE Fabricom. We ensure safety is met at every level of a project from consideration of safe access and egress to the turbines being available at all times, right through to certifying robust rescue procedures are in place before work commences;
- During the early stages of projects, we offer experienced engineering input to develop a safe system of works and ensure a smooth and suitable installation process for the project type taking into consideration the high-risk working environment and minimising operational down time
- As highly experienced experts in procurement and fabrication, we ensure that all materials and services for remedial solutions meet stringent international standards
- Our technicians verify all solutions onshore making sure they meet all quality and safety standards
- Complete inspection is carried out prior to delivery to offshore locations
- All documentation is handed over to clients within two weeks of mechanical completion
- Adopting a streamlined approach to operations, our one team approach – with a positive safety culture – means that we can complete tasks as quickly and efficiently as possible without compromising quality and safety

Additional Support Services

- Where required, ENGIE Fabricom has their own dedicated renewables facilities comprising a large open plan workshop to carry out any onshore trials

Why ENGIE Fabricom

- Dedicated management team with a proven industry track record
- Over 200 employees experienced in the offshore industry
- Team of highly trained personnel with an extensive skillset to deliver total mechanical installation services within the offshore environment for any grouted connection remediation project
- Range of specialist skills including, but not limited to: project management, engineers, inspectors, HSE, planners, riggers, platers, welders, mechanical fitters and painters;
- ENGIE Fabricom has successfully developed weld procedures which have a proven track record within the offshore environment. These are utilised above and below the water line allowing welding to be completed in a controlled, efficient and cost-effective manner
- An unrivalled safety record within a demanding and challenging environment, recognised by the award of the ROSPA Patron's standard – 26 consecutive Gold awards – and presented only to those organisations demonstrating a consistent commitment to health and safety management, leadership and workforce collaboration
- A proven and developed methodology in completing grouted remediation works
- Ability to deliver a one stop solution with a 100% successful track record of grouted connection remediation



To discover more about how we can support you, please visit our website:

engie-fabricom.co.uk