

# FiGS® CP survey on wind structures



## Background

How do you know if your offshore wind structure is protected from corrosion? With high resistivity in low saline water, high water currents, as well as a constricted anode placement on monopile structures, this can be especially challenging.

Anodes at offshore jacket structures, which are normally well distributed, have a longer current throwing range than the monopile. This is due to its constricted base, where anodes are typically congested on the transition piece. This makes cathodic protection more challenging.

## FiGS® CP survey & assessment

The FORCE Technology developed field gradient sensor - FiGS®, detects electric currents in seawater by measuring electric field gradients. It performs accurate measurements with a resolution and detection level beyond any other field gradient sensor available in the market. A FiGS® CP survey allows for a baseline survey of the external CP system and determines the current and potential distribution. It also quantifies the current flow to buried parts of the monopile.

With this information, we can confirm whether the structure is protected, and provide a baseline for a future inspection plan.

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“Conventional methods for inspecting anodes do not provide the current density and current output from the anodes. In order to measure the actual current output from the anodes, as well as drain to buried steel, a FiGS® inspection is the only solution available today that can predict the remaining life of a CP system with an acceptable accuracy,” says Jens Christofer Werenskiold, lead engineer on the development of the FiGS® sensor at FORCE Technology Norway.

## Optimise cathodic protection system

A FiGS® CP survey provides an accurate condition of the CP system of offshore wind structures. We use data from the survey as input to our CP modelling software SeaCorr™, to assess the current condition of the CP system and estimate its future performance.

The predictive power and capabilities of this software enables studies of scenarios such as coating breakdown, loss of anodes and other structure-threatening possibilities. This is an essential to optimise the planning of offshore inspection and maintenance, avoiding consequences of unplanned failures; such consequences could include loss of energy production, damage to other components, and other malfunctions that can cause negative impacts.

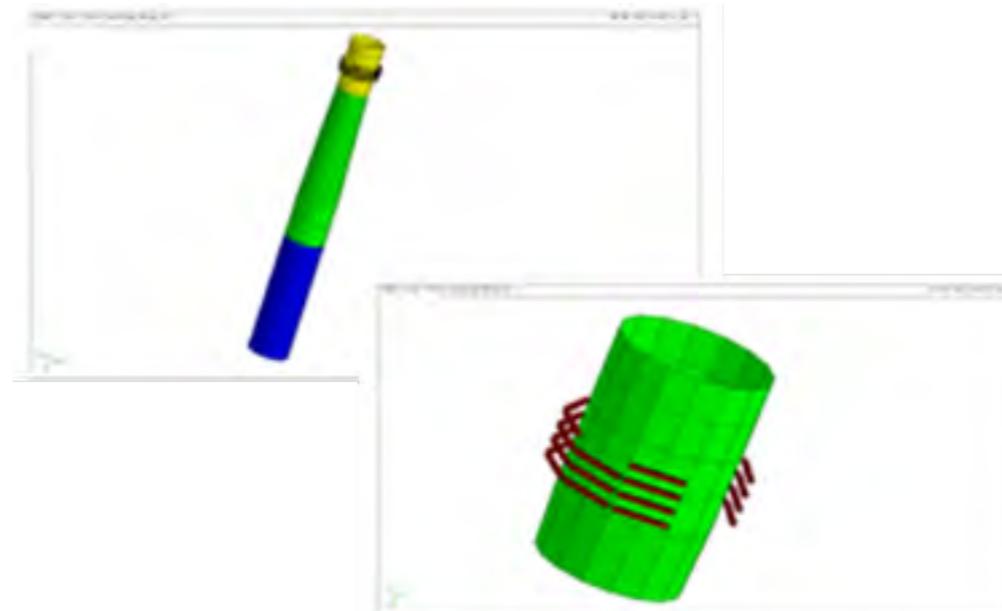


# FiGS<sup>®</sup> CP survey on wind structures



## Comprehensive solutions

FORCE Technology combines the latest within CP inspection technology with highly trained personnel to provide our customers with a comprehensive inspection report detailing the CP status along the submerged parts of the structure-. The survey results and accompanying report are based on highly accurate field gradient data from the FiGS<sup>®</sup> CP survey, analysed with in-house software tools. Based on this, we assess the integrity of the asset and make recommendations on proactive actions and future inspection intervals to prevent failures and help ensure continuous service.



*Figure: Anode configuration on monopile.*