



METEC GROUP

CATHODIC PROTECTION



WRS
Cathodic protection

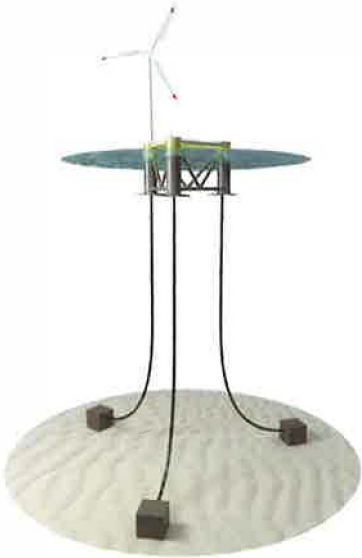


**CATHODIC PROTECTION SYSTEMS FOR
THE RENEWABLE ENERGY SECTOR**

CATHODIC PROTECTION FOR THE OFFSHORE WIND INDUSTRY



CATHODIC PROTECTION SYSTEMS FOR OFFSHORE FLOATING FOUNDATIONS



CATHODIC PROTECTION SYSTEMS FOR OFFSHORE MONO PILE FOUNDATIONS AND TRANSITION PIECES



CATHODIC PROTECTION SYSTEMS FOR OFFSHORE WTG JACKET FOUNDATIONS



CATHODIC PROTECTION SYSTEMS FOR OSS JACKET FOUNDATIONS



CERTIFICATION



LONG TERM TEST RESULTS

ALUMINIUM

ANODE ALLOY BASE	MEAN ELECTROCHEMICAL CAPACITY [Ah/kg]	MEAN ANODE POTENTIAL vs. SCE [V]	MEAN ANODE POTENTIAL vs. Ag/AgCl/SEAWATER [V]	MEAN ANODE CURRENT DENSITY [A/M ²]
Al-Zn-In BASED (0285-17)	2653 ± 19	-1.120	-1.129	0.58

ZINC

ANODE ALLOY BASE	MEAN ELECTROCHEMICAL CAPACITY [Ah/kg]	MEAN ANODE POTENTIAL vs. SCE [V]	MEAN ANODE POTENTIAL vs. Ag/AgCl/SEAWATER [V]	MEAN ANODE CURRENT DENSITY [A/M ²]
Zn-Al (TZ15140952/SHGTR14111)	796 ± 14	-1.002	-1.011	0.96

WPQRs OWNED



American Welding Society



PROJECT REFERENCES

- HORNSEA ONE FOUNDATIONS
- EAST ANGLIA ONE
- ATLANTIC WIND FLOAT
- RENTEL
- WIKINGER OWF
- HYWIND
- HORNSEA ONE OFFSHORE SUBSTATIONS

OUR PRODUCTS

STAND OFF ANODE



TYPICAL INSTALLATIONS

- ANODE CAGE/RING
- SUBSTATION JACKET
- WTG JACKET FOUNDATIONS
- TRANSITION PIECE

TP ANODE



TYPICAL INSTALLATIONS

- ANODE CAGE/RING,
- TRANSITION PIECE DIRECT INSTALLATION

PILE CLUSTER ANODE



TYPICAL INSTALLATIONS

- JACKET PILE CLUSTERS FOR INCREASED LOAD BEARING EFFECTIVENESS

ANODE STRING



TYPICAL INSTALLATIONS

- MONO PILE INTERNALS

FLUSH MOUNTED ANODE



TYPICAL INSTALLATIONS

- J TUBES
- JACKET PILE SLEEVE INTERNALS

ANODE SKID



TYPICAL INSTALLATIONS

- LIFE EXTENSION RETRO FIT

OUR SERVICES

CATHODIC PROTECTION SYSTEM TESTING

AS PER THE REQUIREMENTS OF *DNV JL-OS-J101 DESIGN OF OWT STRUCTURES SECTION 11.4.2.4*, METEC ARE ABLE TO OFFER THE COMMISSIONING OF OUR CLIENTS CATHODIC PROTECTION SYSTEMS OFFSHORE. OUR ENGINEERS ARE ALL QUALIFIED IN ACCORDANCE WITH *DNVGL-RP-0416 CORROSION PROTECTION FOR WIND TURBINES SECTION 5.1 GUIDANCE NOTE 2* WITH COMPLIANT NACE AND *EN 15257* CERTIFICATION. ALL ENGINEERS HOLD A MINIMUM OF 5 YEARS EXPERIENCE IN OFFSHORE TESTING AND THE MINIMUM INDUSTRY STANDARD FOR OFFSHORE CERTIFICATION IN ACCORDANCE WITH THE GWO CERTIFICATION SCHEME. AS STANDARD WE WILL TEST IN REAL TIME YOUR SYSTEM AND PREPARE A DETAILED REPORT OUTLINING SYSTEM PERFORMANCE AND FUTURE MAINTENANCE TO ENSURE OUR CLIENTS ASSETS CORROSION IS CONTROLLED FOR THEIR PROJECT LIFE CYCLE.

AS WELL AS POST COMMISSIONING AND ONGOING SURVEYS WE ARE ABLE TO OFFER END OF LIFE CORROSION CONTROL EXTENSION RECOMMENDATIONS.



DESIGN OF INTERNAL AND EXTERNAL CATHODIC PROTECTION SYSTEMS

METEC GROUP HAVE OVER 20 YEARS EXPERIENCE IN THE DESIGN OF CATHODIC PROTECTION SYSTEMS. THIS LEVEL OF EXPERIENCE ENSURES WE ARE ABLE TO OFFER OUR CLIENT THE MOST EFFECTIVE AND EFFICIENT CATHODIC PROTECTION SYSTEM FOR OUR CLIENTS ASSETS. OUR ENGINEERS HOLD NACE CATHODIC PROTECTION CERTIFICATION AS WELL AS CERTIFICATION IN ACCORDANCE WITH *EN 15257* AS REQUIRED BY *DNVGL-RP-0416 CORROSION PROTECTION FOR WIND TURBINES SECTION 5.1 GUIDANCE NOTE 2*.

DESIGN OF CATHODIC PROTECTION FOR RENEWABLE ENERGY STRUCTURES IS A COMPLICATED PROCESS AND SHOULD ONLY BE CARRIED OUT BY EXPERIENCED AND QUALIFIED TECHNICIANS TO ENSURE MAXIMUM PRODUCTIVITY. OUR ENGINEERS HAVE EXTENSIVE FOUNDRY AND INDUSTRY EXPERIENCE ENSURING PRODUCTION DELIVERABLES AND PRACTICALITY AS WELL AS SYSTEM EFFECTIVENESS ARE ALWAYS CONSIDERED ENSURING THAT OUR CLIENTS PROJECTS ARE DELIVERED ON TIME AND IN BUDGET TO THE HIGHEST QUALITY AVAILABLE ON THE MARKET.