



VSE™ IMPRESSED-CURRENT ANODE CATHODIC PROTECTION FOR WIND FARMS & SHALLOW WATER ASSETS

The VSE buries itself below the seabed to protect assets in shallow water.

The VSE (Vaulted Seawater Envelope) is an impressed-current anode designed to overcome the problems of shallow-water cathodic protection. Normally, in shallow water where tides come and go and water levels rise and fall constantly, anodes cannot properly polarize a structure, leaving it unprotected. In the process of self-burying, the VSE creates a small pocket of water inside the anode frame. This undisturbed electrolyte allows the impressed-current anodes to deliver consistent cathodic-protection current through the mud on the sea floor even if the tide goes completely out.

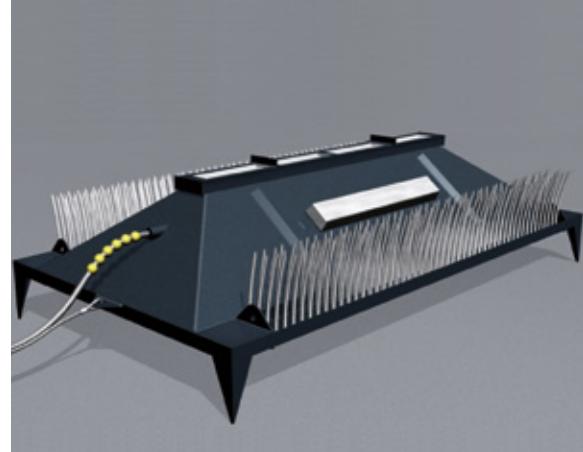
CP designed for wind turbines

Environmentally safe and electrically efficient, impressed-current cathodic protection is an elegant solution for offshore wind turbines. The VSE was designed in response to a commission from GE Wind in 2004 to retrofit failing corrosion-prevention measures on offshore wind farms near the coast of Ireland. Leveraging our extensive experience in the cathodic protection of large oil and gas offshore structures, Deepwater's cathodic protection engineers were able to provide a reliable, cost-effective design for use in this new market.

Ideal for many shallow water assets

The VSE buries itself in a matter of weeks (see picture at left), allowing the MMO impressed-current anodes to provide reliable long-term cathodic protection to subsea and underground metal nearby. This makes it a useful cathodic-protection system tool suitable for many other applications in addition to wind farms. As long as a power source is available, VSE anodes can protect shallow-water structures, inshore structures, docks, wharves, piers, jetties and even some offshore pipelines..

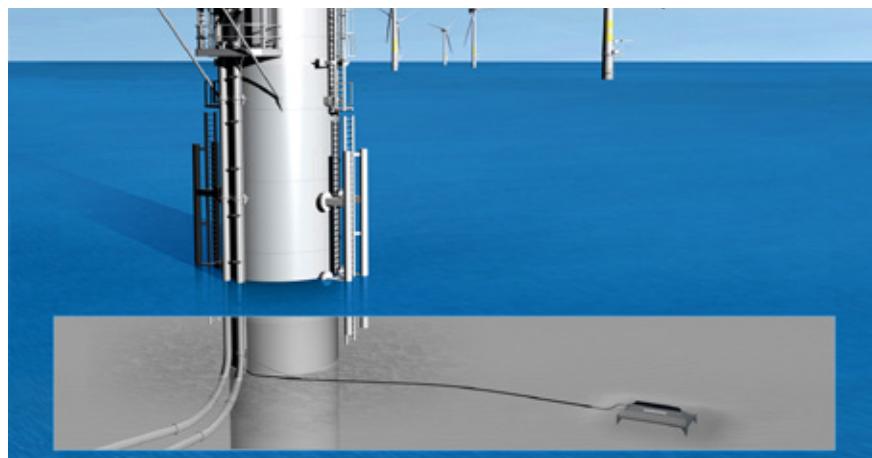
More info at www.stoprust.com



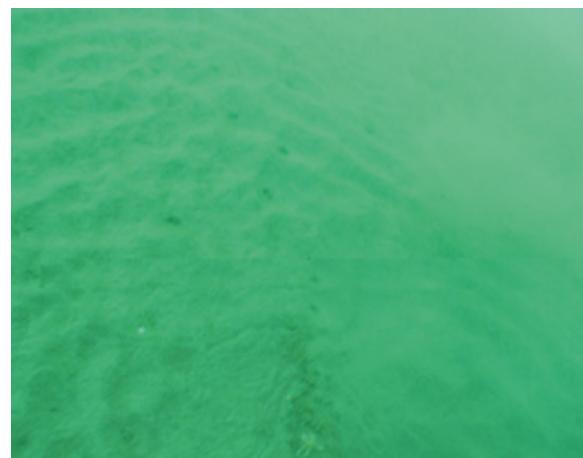
THE VSE ANODE SYSTEM DISCHARGES CURRENT FROM ITS BASE
Anode gases vent through the upper ridge



INSTALLATION
VSE anode installed on bottom: it is already beginning to silt over



A CUTAWAY VIEW OF THE VSE ON AN OFFSHORE WIND TURBINE
The VSE can still polarize the structure through the mud even when the tide goes out.



NINE MONTHS LATER
VSE anode completely buried after 9 months, photographed on a service visit