

The Siemens logo, consisting of the word "SIEMENS" in a bold, teal, sans-serif font.

Ingenuity for life

A wide-angle photograph of an offshore wind farm at sunset. The sun is a bright, glowing orb in the center of the horizon, casting a warm, orange and yellow light across the sky and the water. Several wind turbines are visible, their silhouettes and three-bladed rotors standing against the vibrant sky. The water in the foreground is dark and calm, reflecting the light from the sky.

We are servicing your assets – no matter where they are

The highs and lows of my job

My offshore deployment will start soon again. In mid-August I'll be setting off to sea, so to say. Actually, a Siemens maintenance vessel will pick me up at Eemshaven in the Netherlands and will take me to the Veja Mate offshore wind farm. When I arrive, about 95 kilometers from the mainland, north-west of the island of Borkum, some fascinating tasks will be waiting for me once again. These tasks will take me deep down to the sea bed – and sometimes way up high, to the 67 meter high rotors. My last visit at site was in May for an underwater inspection campaign. I'm an Operations Manager for Siemens Energy Management and an expert in underwater structures and together with my colleague Jens Wiegand, a Service Project Manager; we ensure a safe and reliable electricity supply of the wind farm. You could say we are the interface between the office in Hamburg and the technical teams working offshore at the wind farm.

Looking for indications on the sea bed

This time, while I'll be on the spot for diving operations – admittedly, I won't be doing the diving myself, since a remotely operated vehicle (ROV) will do the dangerous parts – Jens will hold the fort in Hamburg. That's where Siemens Energy Management runs the Operation Control Center to monitor and control all the switching sequences at the Veja Mate offshore wind farm. The Operation Control Center is occupied around the clock, seven days a week, to ensure our operators can keep an eye on everything happening out on the open sea. And there is a lot going on over there. The traffic is quite busy at the wind farm, especially in summer. So, if you think that it might become lonely, you are wrong. Cruising maintenance vessels, helicopters flying overhead – there can be more than 50 technicians on the move at the wind farm. In the distance you can see wind turbines of another offshore wind farms rotating against the light and the platform Borwin Beta on the horizon. The high-voltage direct-current (HVDC) connection supplied by Siemens converts the alternating current into direct current in order to transmit the electricity with low losses back to mainland.

Our ROV will be soon diving in this scenery again – and if all runs according to plan, it will send from a depth of 40 meters ultra-sharp HD images of the elementary components of the underwater steel constructions. In other words from

the wind turbine foundation structures – here monopiles, which have been piled in the sea bed as well as the Jacket-structure of the offshore platforms. The measuring points that need to be investigated are marked out together with their GPS positional data, so that they can be directly identified on the screen in the ROV control room on the vessel while the dive is still in progress. In case of a storm or higher wave heights, the sea will be turbid which complicates the works as the visibility will be limited. So far, we haven't discovered any concerning structural damages or damage to the corrosion protection in our surveys. I expect no findings this time as well. But still, we always have to work safe and need to investigate whether the huge forces have an impact on the foundation or if the marine-growth exceeds the design boundaries of the structural engineering.

Working at heights

We promised to our customer – within a contract term of five years - to investigate the subsea structures of all installed assets in the wind farm at least once a year. However, we are actually climbing more often upwards; we are landing with the Service Operation Vessel (SOV) at the foundation and cross over to the wind turbine via a bridge and climb up to the top through a series of ladders. All that in a lifejacket and climbing gear that can easily weigh 20 kilograms. It's both demanding and adventurous. Especially when the waves are high. However, at a significant wave height of approximately two meters, it is not possible to work. Especially in winter months wave heights may reach up to 12 meters, where even the waiting times due to bad weather become challenging. But for our offshore technicians it's all part of the usual daily routine. In case of a critical component failure at bad weather conditions our service technicians will be transferred by helicopter from the SOV to the wind turbine or the offshore substation.

Whereas I am only spending a week offshore at the wind farm once in a while, our technicians are permanently offshore. We have two teams rotating in a two weeks shift - two weeks offshore and two weeks at home. And if I say “offshore”, I mean offshore at sea. They sleep on the SOV, since there's no accommodation at the offshore platform and the operational base onshore is too far away. Crew changes take place from Eemshaven, Jens and I are heading out there whenever a crew change takes place to talk to the teams. This is very important, since when you are working so closely together and have to deal with each other around the clock, interpersonal relationships need to have a very high priority on the agenda. This can also be very fascinating. But that's another story ... for now, I have to go out next week to focus on other matters and I am looking forward to it. For anyone interested in finding out more about our services and what we do at Siemens Customer Services, here's a link to our official website
www.siemens.com/grid-access-services



My view from the SOV, looking at the 67 rotors of the Veja Mate offshore wind farm.



When a storm approaches, the waves can reach up to a height of 12 meters.



View from the Service Operation Vessel (SOV) during landing to one of the offshore platforms. In the background at right, the remotely operating subsea robot is diving below the surface for an inspection.