

# Breaking new ground with offshore solutions



Corrosion and anti-fouling, in particular, are challenges coming more and more to the forefront as everything moves further offshore and into ever deeper waters. The need for innovation, and quickly, has never been greater. OES Group is a company in its infancy, but its pioneering thinking has led to fast growth and an abundance of new ideas. We sat down with Commercial Director Frits Verbruggen to find out more.

**PES:** It's great to speak with you Frits and I'm looking forward to learning more about OES Group and how it serves the wind industry. Could you give a little background to how the company was formed and what it is that you do, to start off with?

**Frits Verbruggen:** OES Group was founded in 2018, and I became a shareholder in 2019, along with my business partner Robert Forsyth. Originally we offered anti-fouling systems for the wind, oil and gas industries and because of our reputation within the industry as corrosion specialists we began to be asked for help with this too.

**PES:** Can you explain a little more about the services you offer the wind industry in particular?

**FV:** We have taken advantage of one of Rob's areas of expertise, which lies in casting aluminium anodes. We combine that with my own expertise to specialise in anti-fouling and anti-corrosion systems in different sectors, including wind.

We have different types of systems that we use to prevent fouling on the heat exchangers. This means they can actually perform properly because they don't lose cooling capacity. For harbour projects, we use lot of sacrificial anodes, as well as ICCP systems, with a little bit of work in oil and gas too, but that's not a main focus. And then of course, we work in offshore wind. Successfully, I might add.

**PES:** That brings me nicely on to the next

question, because it's fair to say that OES is a relatively new company, but you've witnessed quite fast growth in the industry haven't you?

**FV:** It's been crazy. We started off with nothing and I think two years ago, we were a team of five, and now we're at 25. By the end of the year, there'll be around 35 to 40 of us. We've just opened a Dutch office of 600m<sup>2</sup> in Holland. In addition to the already operational UK office of 1200m<sup>2</sup> of factory and 3000m<sup>2</sup> of yard.

We were aiming to double our annual turnover by the end of 2022 and have succeeded. A challenge now is that we are struggling to find skilled people to join the team.

**PES:** What would you say is the main reason for this quick success? Is it mostly down to innovation?

**FV:** Innovation is important, yes. We have identified the gaps in the market and we focus on providing fully customized solutions for our customers, combining our strengths to deliver not only technically superior solutions, but also cost-effective ones in the long term.

We also focus on building strong relationships with our customers and work with them as a team. We want to lead, rather than comparing ourselves to others. We've now started our own foundry, so we're casting sacrificial anodes as well, and making ICCP systems, as well as a lot of different anti-fouling systems. This makes us a player



Frits Verbruggen

not previously seen in the market.

All our staff are ISO certified, thus ensuring our customers know they can count on certain levels of competence. We are also a member of the Institute of Corrosion, which shows we're not biased towards any one system. Our aim is to give neutral advice on projects.

In all that we do, we constantly strive to improve and move forward. We know that there are sometimes challenges, so we strive to create solutions for the industry. Just to give you an example, in collaboration with a well-known company called MacArtney, and their Dutch office, we developed an underwater connector that took us a year and a half to develop. This means that now if something fails, the anode can be disconnected and the cable reconnected whilst in the water.

From a health and safety perspective, this is extremely interesting and it drastically reduces diver time, which makes it very attractive to operators.

Another example is there are a lot of ropes floating around in the North Sea, particularly, which harm the anodes and the cables of the ICCP system. We were asked to come up with a solution. We did. It's very simple, and effective; we put a conical section on our anodes, called an anti-snagging sections, which stops ropes from damaging the ICCP system under water.





**PES:** How important is it, particularly in such a fast developing industry as renewable energy, to ensure that as a company you are forward thinking and always a few steps ahead of what is happening right now?

**FV:** It is very important, yes. Which is why we constantly improve and evolve. We listen to our customers and take note of what they want, instead of just trying to push for one type of system and just sticking to that.

**PES:** Can you explain how OES helps with monopiling and cable management?

**FV:** One of the areas we have really revolutionised is around monopiles. The sacrificial anode is ultimately a big steel cage with aluminium anodes on it which is installed over the MP. These large cages have a high load on the monopile, so they require more steel work compared to an ICCP system. And also, it's very bad for wave loads. And you probably need two, maybe three of these case constructions depending on water depth.

We have developed the world's first ICCP ring that is positioned over the monopile, effectively getting rid of the sacrificial anodes. It's a ring construction that goes on top of the monopile and as such is something that has never been done anywhere before. From the outside, it's just looks like a ring, but it's really so much more than that.

Our R&D team have done a lot of work around this, and we have done a lot of trials with our clients and other stakeholders. For example, the ROV operator Bluestream has a basin where we have trialed a lot of things before implementing them offshore, including the CPS system. Essentially, the cable needs to go inside the monopile, so we've developed a cable protection system (CPS). It's made in such a way that the ROV can grab it and push the cable



bundle into the monopile, to make sure that the cable integrity is there for its lifetime.

This is important when you consider that it will be under water for 30 years. When you're designing a system, it's important to take into consideration its lifetime. So the devil's in the detail. The cable in particular is extremely important for us, because if the cable gets damaged, the system doesn't work.

**PES: The challenges of maintaining and optimising turbines seem to get greater the deeper the water and as the wind industry moves further offshore innovation in terms of solutions is important here too isn't it?**

**FV:** Absolutely. The depths are getting bigger and bigger. We're talking 50 to 60m water depths now. As this happens you need to protect more of the surface against corrosion, because more of it is underwater. Deeper water requires different solutions, which is where we innovate and grow with the industry.

**PES: What are you seeing as some of the common problems associated with corrosion, where you've found it particularly important to innovate?**

**FV:** Of course, the struggle we always have is everything that we do is on the water. So it's always difficult to know what is happening exactly. That's why we have sensors, or reference electrodes, to measure the protection values of the steel in the water. But because we need to rely on them so heavily over the lifetime of the windfarm/30 years. It's important to constantly improve even the sensors that we use. We have done this by changing to another, more reliable and accurate, type of reference electrode and carefully choosing the supplier. It may be just a small detail really, but it shows that we want only the best for our clients' wind farms.

**PES: How important is sourcing environmentally friendly solutions when serving the renewables market?**

**FV:** It is tricky because we never want to push customers towards one particular system



over another. But if you look at it from an environmental aspect, some customers will place importance on the carbon output value and of course, there is a big difference between an ICCP system and aluminium.

**PES: What do you think the next innovation**

**might be for the industry. Obviously it's been a busy few years so far for OES Group, but what's next for you in terms of innovation and building on your early success?**

**FV:** I think we'll be pushing innovation to see how we can optimise systems even further by looking at different designs. The ring, for example, is a good solution but it still requires a lot of installation time. Our aim is to reduce this drastically, so it becomes even more interesting for operators to engage with.

One way or another, in the future everyone is going to move away from transition pieces and boat landing ladders, therefore reducing installation time of ICCP systems is vital. It's important for us to think about how we can give added value with that.

**PES: So if we catch up again for a future issue there will no doubt be more OES Group innovations to talk about?**

**FV:** Without a doubt!

[www.oesgrouppltd.com](http://www.oesgrouppltd.com)

