Developers working on the UK’s planned 32GW of Round 3 offshore wind farms face a massive components black hole that will jeopardise project timetables. Building the necessary manufacturing and fabrication facilities will require an investment of several hundred million pounds and take around 18 months, according to some of those hoping to tackle the challenge.

“Investment decisions need to be made soon because 2014 (when most developers say they plan to make the call on turbines) is too late if the planned construction deadlines are to be met,” said Heerema Hartlepool managing director Frank Moran at a site visit in the North East last week.

PD Ports development director Paul Barker agreed: “If someone comes to you and says we want you to strengthen the quay, which is the thick end of a £10m investment for us, it’s do-able but it takes time. There’s not just a 26-week period of work to do, there’s another lead-in period of 20 weeks to get permission.” Developers have failed to take these concerns as seriously as they should, added Heerema manager of projects Ian Jackson. “There’s just no co-ordination of anyone looking forward to see what we really need to meet these targets.” The 2020 online date for R3 projects will not be met, he said, unless that changes soon.

Heerema is talking to PD Ports about acquiring more land to expand its Hartlepool operation, but suppliers cannot foot the bill for new facilities alone, the company argued.

JDR is involved in supply cables to major offshore projects such as offshore wind farm inter-array and export cables. It is currently working on the last few Greater Gabbard cables which will be ready within the next month while the London Array wires, amounting to 200km of cable in total, each 2km to 3km in length, are due for final delivery this time next year. “We have taken the step from oil and gas into renewables. There are other people working in oil and gas that make umbilicals and subsea but which are not making power cables. “So if this is all about power cables then they have to start thinking now to install the capacity.” Currently JDR’s main competition is international. “There isn’t actually a key competitor in the UK.” JDR will add power export cables to its business early next year.

Early alarm bell on R3 supply chain

Heerema Hartlepool and PD Ports bosses call on developers to get the investment ball rolling now. Heerema manager of projects Ian Jackson.

“The big focus is making sure we get the manufacturing capacity for offshore wind farm inter-array and export cables is woefully underpowered. “Round 3 is going to be the big push,” said Steven Parfitt, JDR Cable Systems general manager at Hartlepool.

“When you go from a 150 turbines to 300 turbines to 2000 turbines and you think of the infrastructure, the supply chain you need to supply that, it’s not here.” The company has already made a head start in the sector, supplying inter-array cables for Greater Gabbard and the London Array project near the Outer Thames Estuary out of its Hartlepool Dock facility. The last few Greater Gabbard cables will be ready within the next month while the London Array wires, amounting to 200km of cable in total, each 2km to 3km in length, are due for final delivery this time next year. “We have taken the step from oil and gas into renewables. There are other people working in oil and gas that make umbilicals and subsea but which are not making power cables. “So if this is all about power cables then they have to start thinking now to install the capacity.” Currently JDR’s main competition is international. “There isn’t actually a key competitor in the UK.” JDR will add power export cables to its business early next year.
Developers must extend their supply concerns beyond the generation end of the offshore chain, according to Heerema. “Everyone talks about the nacelles, the turbine, the tower it sits on. Not many people talk about what it sits on in the sea, the jackets,” said the company’s Ian Jackson.

Heerema, a long-time supplier of substructures to the oil and gas industry, sees fabrication of jackets and foundations for offshore turbines as a natural expansion of its business. Its main foray into offshore wind so far has been to design and produce substations, including a pair for Areva T&D that will shortly head out to Statoil and Statkraft’s 315MW Sheringham Shoal project. The engineer hopes to secure further substation contracts down the line and is already talking to other developers including the Forewind Consortium behind the 9GW Dogger Bank project.

Jackson said he estimates that 5000 to 7000 turbine jackets and substructures will be needed for R3 projects by 2020. The key questions, he said, are who is going to build them all, where, and where will the money come from?

The company is confident it can meet a significant chunk of the demand but nowhere near all of it within the 2020 timeframe. “It doesn’t take a rocket scientist to work out that something needs to happen pretty quickly in terms of fabrication facilities,” said Heerema Hartlepool managing director Frank Moran. “From a fabricator’s point of view there’s a huge mountain to climb.”

The company believes some 50 to 70 substations will be needed for R3, and these major pieces of hardware take around 18 months to design and build. “We only have the facility to do three to four substations at any one time, so again who’s going to do the rest?” asked Moran. “We need a Bremerhaven for fabrication here in the UK.”

Who will build army of jackets and substations?

Developers of R3 projects need these things to ensure their projects are completed, so they should help,” Moran said. The government should also make a contribution, it was suggested.

This is what happened at the Bremerhaven port in Germany, although government finance was issued in line with its social rather than purely economic agenda.

“I think there has to be government money in it somewhere just to kick start the thing,” Barker said.

“UK plc needs to get on with it rather than let it slip off to China,” Moran warned.

Adding to its oil and gas business: Heerema designed and built the substations for Sheringham Shoal

Photo: Areva

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