

Accept the competitive challenge and keep the wind blowing

Auctions are becoming the standard instrument for granting state support in almost all European markets. In economic terms, this is the right step to take as it subjects renewables to market forces and rewards the most efficient projects. This was evident in the latest UK Government Contract for Difference (CfD) auction round, designed to support renewable energy projects being delivered in UK waters. One of the winners in the latest CfD auction round, September 2017, was innogy's Triton Knoll offshore wind farm, located off England's east coast. PES invited Richard Sandford, innogy Director of Offshore Investment & Asset Management, to give us an insight into this offshore project.

Thornton Bank wind farm (picture credit: C-Power N.V. Tom DHaenens)



Richard Sandford

‘Triton Knoll’s auction success confirms the excellent work we have done in recent years, and proved that we can successfully hold our own in a very competitive market environment,’ Richard said. ‘Thanks to our extensive know-how in the development as well as the construction and operation of complex offshore projects, as well as our varied research and development activities we have succeeded in further reducing the costs for offshore wind energy in the UK.’

The industry pulling together to reduce costs and drive innovation

innogy’s 860 megawatt Triton Knoll offshore project was allocated a CfD at a price of £74.75 per megawatt hour over 15 years. The project is expected to trigger a capex investment of around £2billion into much needed UK energy infrastructure, with

additional investment during the longer operational phase. This will enable the delivery of some of the lowest cost energy generation, with the cost of offshore wind continuing to fall at an unprecedented rate.

‘In the UK, offshore wind is now cheaper than the levelised cost of gas and nuclear according to recent figures released by the Department of Business, Energy and Industrial Strategy,’ Richard said. ‘This shows how economies of scale, increasingly extensive experience of installation and operations, and technological advancements are combining to help drive down costs.’

Triton Knoll has been successfully developed through a joint venture by innogy and Statkraft. However in October 2017 innogy took over Statkraft’s 50 per cent share in the offshore wind project and has become its sole owner. Both sides have agreed to maintain confidentiality regarding the purchase price.

‘With full control over Triton Knoll, we will now develop the project further towards final investment decision in mid-2018,’ Richard said. ‘From the outset, we have worked collaboratively with our supply chain partners, to ensure that the business case we submitted to the CfD auction is fully backed by our supply chain, and so is deliverable, effectively from the point of having won a CfD. Thanks to this we have already been able to announce a wealth of preferred suppliers across our entire project, with UK firms playing a strong role in its delivery.’

The prices in the latest UK auction round were far lower than most expected and show that developers are finding innovative ways to weave grid-build risks into lower-cost project structures. innogy for



Nordsee Ost wind farm (picture credit: innogy SE)



Greater Gabbard wind farm (picture credit: innogy SE)

example used its experience in generator-lead transmission system construction and offshore supply chain learnings to reduce transmission risks and costs for its Triton Knoll project.

‘The Triton Knoll team worked hard to reduce all costs associated with project delivery to lower the levelised cost of energy. We have, for example, explored a dynamic rating system to optimise the export system and achieve more megawatts through the network. We have been able to design out elements of the infrastructure thanks to advanced power flow modelling; and we have minimised infrastructure at both our onshore and offshore substations,’ Richard explains.

‘With our contractors, we are also looking at innovations within our foundations design which we fully anticipate will reduce the weight by at least half of those previously deployed offshore, even though we will be installing some of the largest and most powerful turbines currently on the market.’

Triton Knoll has already been fully consented. In 2018, onshore works are scheduled to begin to provide the grid

connection. Offshore construction is expected to start in 2020. According to current planning, commissioning of Triton Knoll is expected in 2021.

UK Government can help to continue development of offshore wind

For the UK to maximise the potential from this industry and its domestic supply chain, in terms of economic growth, jobs, and exports, it needs to give investors the certainty that comes with the guarantee and knowledge of future auctions. That certainty and long term vision enables the supply chain to take decisions for the future about their own investments, and growth and the development of new skills. As Hugh McNeal from RUK recently confirmed, the UK’s offshore wind sector is a world leader in a global renewable energy market currently worth \$290 billion a year.

‘The Government can help us by continuing to hold competitive auctions for future projects and by putting wind power at the heart of its upcoming Industrial Strategy, as it has done with its latest CfD allocation round announcement,’ Richard stated.

UK could be role model for emerging offshore markets

‘The offshore industry in the UK is very proactive at working together with supply chain and industry bodies, Government and politicians to deliver its aims. At national level we already have a number of working groups and robust initiatives to help us achieve this. They focus on: accelerating economic growth around port facilities; reducing consenting risks during planning processes; developing and building on innovation; and building the supply chain and skills network of the future. This could be a role model for emerging markets in Europe and worldwide,’ he said.

‘We have considerable experience in developing projects and in designing, constructing and operating renewables assets both independently, and together with project partners and investors. In terms of offshore wind, innogy is one of the world leaders. Our journey in the sector started more than 13 years ago when we commissioned the first commercial scale offshore wind farm in the UK which we developed, built and now operate.’

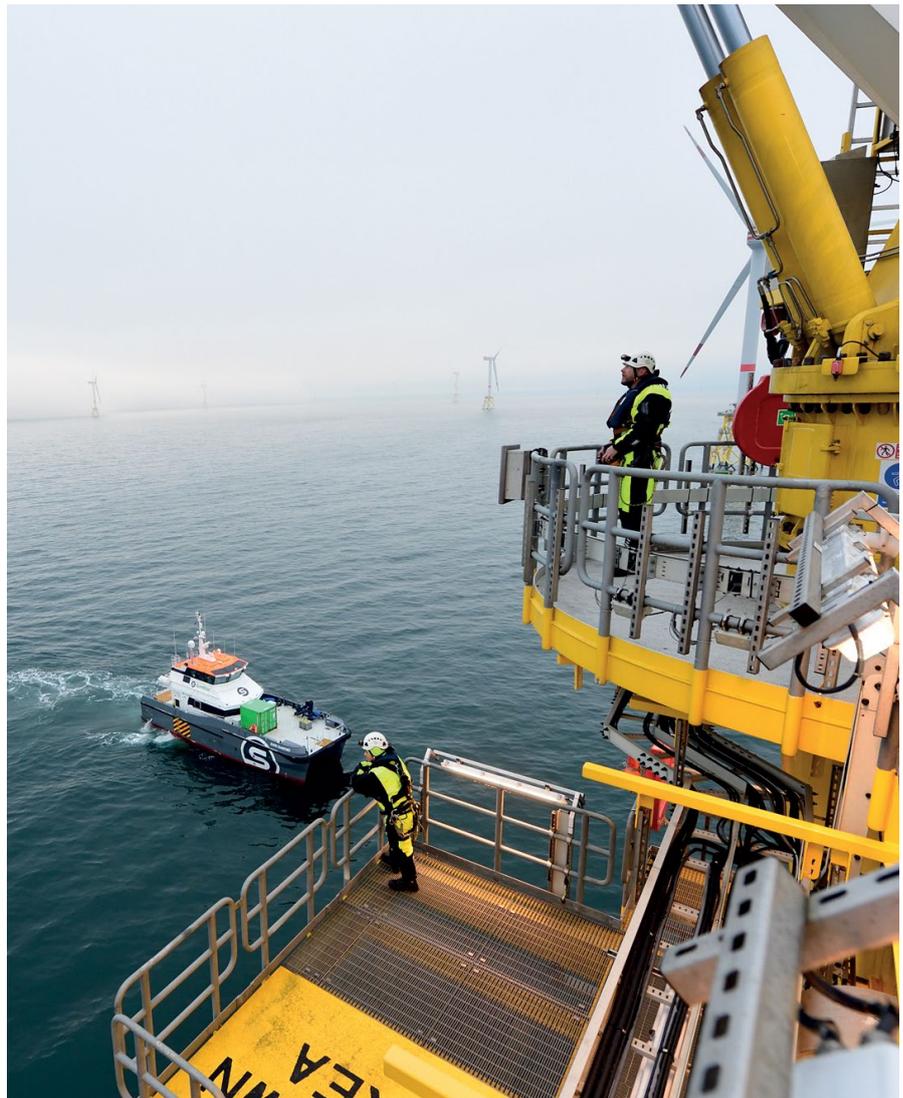
'Since that time the industry has gone through a positive learning curve around supply chain, leading to more collaboration as companies become more capable and experienced. Design is more reliable and technology has adapted to meet the industry's requirements. Installation is often quicker for both for foundations and turbines,' Richard explained.

And innogy has gained a lot of experience as well: Today innogy already operates renewable energy plants with a total generating capacity of roughly 3.7 gigawatts, including over 900 megawatts from offshore wind. Across Europe innogy has six offshore wind farms in operation, two currently in construction, and a number in development. In 2015, the company inaugurated the 576 megawatt Gwynt y Môr, in North Wales, which, at the time, was the second largest offshore wind farm in the world. Recently they announced 100% ownership of Teesside B, one of the four Forewind projects. In the years 2017 to 2019 the company intends to invest €1.5 billion to €1.7 billion in renewable energies.

'A large proportion of our planned investment in growth is intended to flow into renewable energies. We are succeeding in continuing value-driven growth in our core markets and beyond,' Richard said.

innogy is looking at entering new markets, including for example, in the US. And it's not just focused on offshore wind, but is also looking at solar and onshore. 'The US market is one of our key strategic growth areas and we believe that our experience and expertise can help realise the country's renewables potential.'

 www.innogy.com



Nordsee Ost wind farm (picture credit: innogy SE)

About innogy SE

innogy SE is Germany's leading energy company, with revenue of around €44 billion in 2016, more than 40,000 employees and activities in 16 countries across Europe. With its three business segments Grid & Infrastructure, Retail and Renewables, innogy addresses the requirements of a modern, decarbonised, decentralised and digital energy world. Its activities focus on its 23 million customers, and on offering them innovative and sustainable products and services which enable them to use energy more efficiently and improve their quality of life.

The key markets are Germany, the United Kingdom, the Netherlands and Belgium, as well as several countries in Central Eastern and South Eastern Europe, especially the Czech Republic, Hungary

and Poland. In renewable power generation, the company is also active in other regions, e.g. Spain, Italy and the MENA region (Middle East, North Africa), with a total capacity of 3.7 gigawatts.

As a leader of innovation in future-oriented fields like eMobility, they are represented in the international hot-spots of the technology industry such as Silicon Valley, Tel Aviv, London and Berlin. innogy combine the extensive expertise of its energy technicians and engineers with digital technology partners, from start-ups to major corporates. With planned capital investments of around €6.5 - €7.0 billion (2017 - 2019), innogy is building the power market of the future and driving forward the transformation of the energy market.

With an installed capacity of more than 900 megawatts in offshore wind and with over 1900 megawatts in onshore wind,

innogy is one of the major operators in Europe. innogy plans, builds and operates plants to generate power and extract energy from renewable sources.

innogy's aim is to take the expansion of renewables in Europe further in the short term, both on its own and working with partners. innogy believes that working together in this way is the key to making the energy transition a success. Currently, the company is particularly strongly represented in its home market, Germany, followed by the United Kingdom, Spain, the Netherlands and Poland.

At the moment innogy is focusing on continuing to expand its activities in onshore and offshore wind power. The company is also looking at entering new markets and technologies, such as large-scale photovoltaic plants.