

Offshore Wind Supply Chain Opportunities with Innogy Renewables UK Ltd



Help us continue
to shape the future
of offshore wind

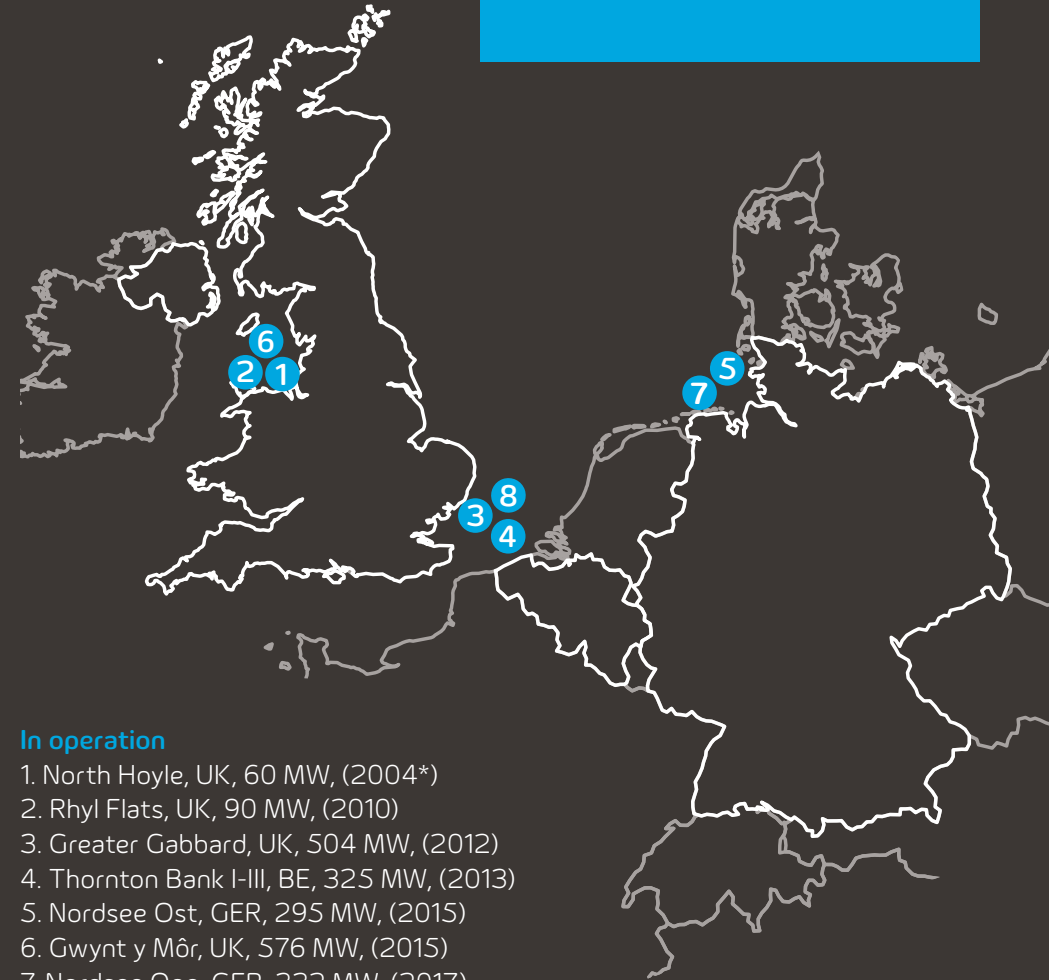
innogy - shaping the future of offshore wind

innogy SE is a leading European energy company. With its three business divisions Grid and Infrastructure, Retail and Renewables, innogy addresses the requirements of a modern, decarbonised, decentralised and digital energy world. We develop, build and operate plants to generate power and heat, and extract energy from renewable sources. Our portfolio includes wind and hydro power plants as well as solar and biomass plants. Our aim is to expand our renewables business further, both on our own and working with partners.

In the last five years, innogy Renewables has delivered, either on its own or with partners, new renewables energy projects in the UK with a total investment of around £4 billion. Projects in the pipeline, totalling around 3 gigawatts (GW), have potential for around a further £4 billion of investment. While offshore wind represents innogy Renewables' largest investment, in the UK we also operate 17 onshore wind farms and 24 hydroelectric power stations.

In terms of offshore wind, innogy is one of the world's leading operators of offshore wind farms, with more than 1,000 megawatts (MW) of installed capacity; a trailblazer in the industry since 2004. Together with investment partners, the company owns seven operational offshore wind farms off the UK, German and Belgian coastlines.

World leading operator
of offshore wind farms



In operation

1. North Hoyle, UK, 60 MW, (2004*)
2. Rhyl Flats, UK, 90 MW, (2010)
3. Greater Gabbard, UK, 504 MW, (2012)
4. Thornton Bank I-III, BE, 325 MW, (2013)
5. Nordsee Ost, GER, 295 MW, (2015)
6. Gwynt y Môr, UK, 576 MW, (2015)
7. Nordsee One, GER, 332 MW, (2017)
8. Galloper, UK, 353 MW, (2018)

MW represent total installed capacity. Dates highlight when projects became completely commissioned. Projects are a mix of partnership and wholly innogy owned - please go to www.innogy.com for further information.
*In July 2016, innogy SE sold its stakes in the Zephyr portfolio. innogy SE provides O&M services to North Hoyle offshore wind farm.



"At innogy we aim to be one of the most cost-competitive offshore wind developers globally, seeking best value in all aspects of delivery. The UK supply chain has an integral role to play in shaping the future of our offshore wind industry both here and globally as we seek to share our expertise."

Paul Cowling, innogy Renewables' Managing Director in the UK and Director of Offshore Wind, innogy SE

The background of the slide is a photograph of an offshore wind farm. In the foreground, the large, white, curved blades of several wind turbines are visible, extending from the top of the frame down towards the horizon. The sky is a clear, pale blue. In the distance, the dark blue sea stretches to the horizon, where several more wind turbines are visible as small silhouettes against the sky. The overall scene is a low-angle shot looking up at the turbines, emphasizing their scale.

Offshore wind represents innogy Renewables' largest investment



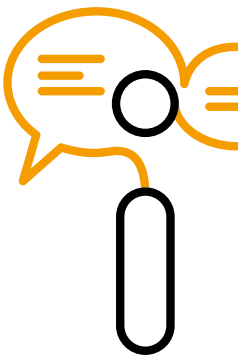
innogy procurement - fast, efficient, innovative

Our UK offshore wind farms can act as a catalyst for the UK supply chain. Skills, economic growth and the development, construction and maintenance of our offshore wind farms represent important opportunities for the supply chain across the entire project lifecycle.

We're already working hard to make sure those opportunities are visible to the UK supply chain supply chain, working closely with Local Enterprise Partnerships, industry bodies, membership organisations and local authorities. We also work closely with establishments including schools, colleges, Universities, STEM providers and Job Centre Plus.

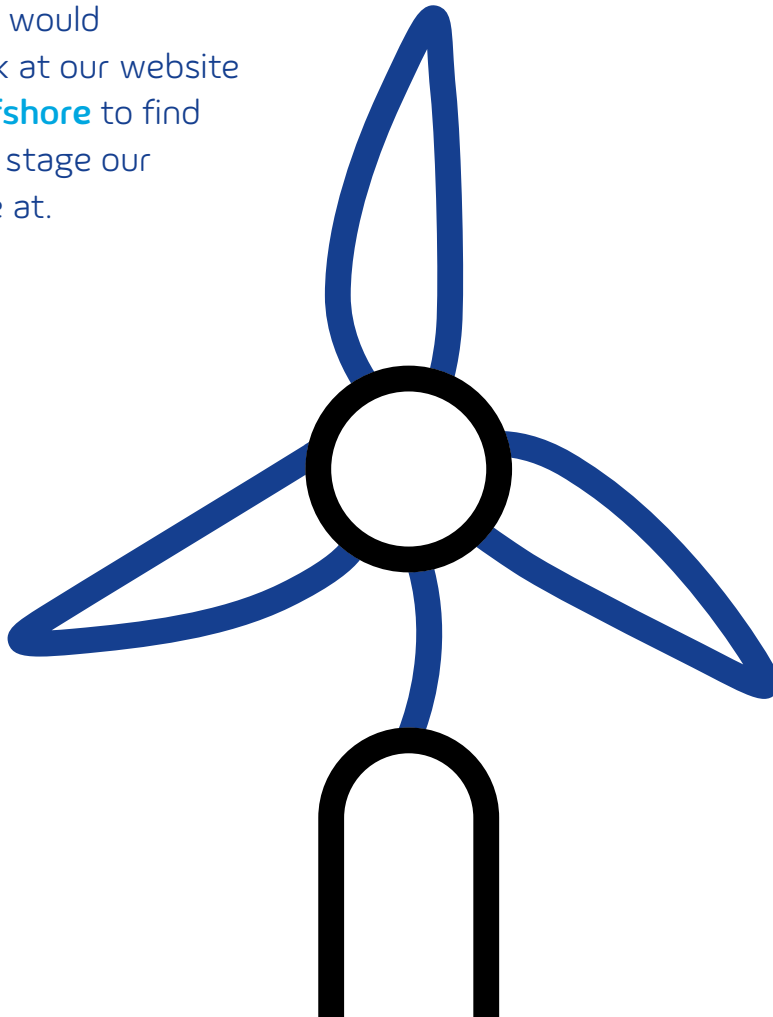
This brochure offers an overview of some of the supply chain activity which can be anticipated during the lifetime of an offshore wind farm and therefore some of the potential opportunities the sector offers. It also highlights some of the expertise and skills innogy Renewables expect to require to help us deliver our ambitious offshore wind vision.

Regardless of your company's size or experience, we hope you find the information in this brochure useful. There are details at the end of the brochure that explain how you can register your interest in our supply chain opportunities and we hope to see you at one of our future supply chain events. Come and talk to us about your ideas and aspirations. We can't do it alone and we expect some of the best innovations will come from you, the experts in your field!



Current offshore opportunities in the UK

We currently have three UK projects at different stages of development and construction. We would encourage you to look at our website www.innogy.com/offshore to find out more about what stage our individual projects are at.



Galloper Offshore Wind Farm

The construction phase of the 353MW Galloper Offshore Wind Farm, 30km off the coast of East Anglia was completed in early 2018 and the 23 years operational phase of the wind farm has now commenced. During the operations phase of the wind farm there will be ongoing supply chain opportunities. During construction of the £1.5billion wind farm around 700 full time equivalent jobs were created.

Triton Knoll Offshore Wind Farm

Our 860MW Triton Knoll Offshore Wind Farm is a consented project located 32km off the coast of Lincolnshire and 45km from the coast of north Norfolk. Construction of the onshore Triton Knoll Electrical System is underway, with offshore work due to start in 2019. The project has appointed its Tier 1 contractors, which will be responsible for the majority of contracting opportunities, while some of the longer term opportunities during the operation and maintenance phase will be directly with innogy and Triton Knoll. Triton Knoll is committed to maximising its investment for the benefit of local businesses. It is working closely with its Tier 1 contractors to ensure that local and regional businesses are fully aware of, and have the opportunity to bid for contract opportunities directly with Triton Knoll or the key suppliers on the project.

The project has established a database of Interested Suppliers which it shares regularly with all of its top tier contractors, and is a first point of call when seeking suppliers. Local companies are invited to register their details online at www.tritonknoll.co.uk/supply-chain

Sofia Offshore Wind Farm

In August 2017 innogy, which was previously one of four Forewind partners, secured 100% ownership of Teesside B. The project has since been renamed Sofia Offshore Wind Farm. The Sofia Offshore Wind Farm site is 165km off the coast of the North East of England and is expected to have a generating capacity of up to 1.2GW, making it innogy's largest renewable project to date. It is located on the shallow central area of the North Sea known as the Dogger Bank. It has a National Grid connection agreement with the connection point at the existing National Grid Lackenby substation located in Teesside.

Projects such as Sofia and Triton Knoll can offer many supply chain opportunities either directly or via Tier 1 suppliers. On Triton Knoll there were several Tier 1 suppliers. As the Sofia project progresses we will be engaging with business networks and bodies to raise awareness of potential opportunities for Teesside and UK businesses, either directly with us or our top tier contractors. We encourage potential suppliers to register their details so we can share information with our top tier contractors once they are appointed.

To find out more about the project; register on the Sofia Offshore Wind Farm supply chain portal; or to access a link to the planning documents on the Planning Inspectorate website go to www.innogy.com/renewablesUK/sofia



Sofia Wind Farm is innogy's largest renewable project to date with an expected generating capacity of up to 1.2GW

Finding your opportunity

Offshore wind farms go through development, preconstruction, construction, and operations and maintenance phases.

Opportunities in development and pre-construction

The development of a project can continue throughout all phases of a wind farm lifecycle. Pre-construction is the period following on from consent award, up to start of construction.

Opportunities at pre-construction stage can include:

- Further environmental survey work offshore and onshore, including ecology, archaeology and environmental monitoring
- Engineering design and feasibility studies for all aspects, onshore and offshore, of the wind farm
- Site investigation works offshore and onshore;
- Port studies
- Topographic surveys, and
- Environmental auditing and inspection.



Opportunities in construction

Our offshore projects can bring a multitude of opportunities - associated with the onshore and offshore cable routes, onshore and offshore substations, grid connection and associated infrastructure. In addition, there are of course significant opportunities offshore. Construction opportunities include the procurement of components and their installation and commissioning.

Normally, when building an offshore wind farm, we will appoint one or two very large contracts to companies known as Tier One suppliers – for example the turbine supplier and electrical package supplier. Therefore many supply chain opportunities during the construction phase will be subcontracted directly by these suppliers. Where appropriate we encourage them to work with local firms. We also encourage businesses to register with top tier suppliers who may be looking to sub contract aspects of work or services.

Onshore enabling works

- Road and track works, including metalling, bridging and upgrading
- Full site and compound works, from building, brick-laying, fencing, signage and security
- Extensive landscaping works, including land clearance, excavations, ditching, drainage and landscaping
- Habitat works, including hedgerow management and habitat restoration
- Transportation of materials and staff
- Environmental monitoring and survey works, and
- Cabling works, including excavation, jointing pits, concreting, and reinstatement works.

Grid connection work

- Subcontracts to National Grid or the relevant grid organisation
- Transport of components and equipment.

Turbine and balance of plant supply

For some of our offshore projects there is the potential for the supply chain to engage with the project or Tier One supplier within the area of turbine supply and balance of plant. Balance of plant includes the transition pieces, foundations, array cables, export cables and offshore and onshore substations. It covers both civil works and electrical works.

We encourage our main contractors to appoint local companies to these roles wherever possible, and where skills are appropriate:

- Supply of materials, including concrete, general materials, sand, paints
- Detailed civil and electrical design and studies
- Secondary steel supply, including beams, railings, ladders
- Cable storage, cable route systems and ancillaries
- Hire services, including equipment, plant, vehicles, fuel
- Office and site accommodation, security, welfare and support.
- Offshore and onshore substation, across the full spectrum of the electrical system
- Onshore and offshore cabling, including trenching, installation and protection, and
- Transformers.

Offshore installation and commissioning

Major component installation is often contracted to Tier 1 suppliers, which would then typically look to establish their supply chain, both locally and further afield, and often expect to use highly-skilled and experienced teams. Many potential opportunities remain to support the following offshore installation activities:

- Installation support vessels
- Crewing services
- Remotely operated vehicles
- Vessel mobilisation and vessel maintenance
- Construction port and full service provision
- Sea-based support, including crew transfer vessels
- Diving services
- Plant and equipment supply, and
- Commissioning services.

Opportunities in operations and maintenance

Operations and maintenance will generally be ongoing for the operational life-cycle of an offshore project which is typically between 20 to 25 years. It includes regular planned maintenance and servicing of components, and responding to unplanned maintenance.

Onshore

- Onshore habitat management works, including managing ecology, tree regrowth and maintenance
- Building maintenance works
- Fencing
- Landscaping
- Ecological surveys
- Land management consultancy
- Civil works maintenance
- Security
- Statutory inspection, such as fire, security, electrical, mechanical plant inspections, and
- General supplies, such as hardware, IT and materials.

Offshore

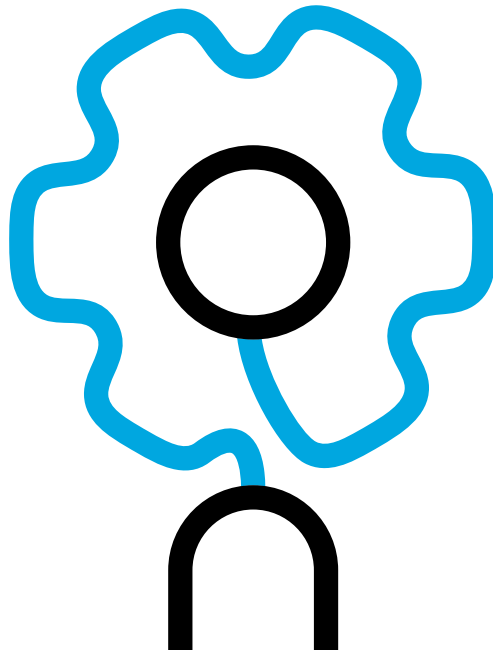
- Operations and maintenance port, including administration facilities and operations room
- Lifting equipment, including forklifts, cranes, clamping equipment, workbench areas and tool storage, provision of wet and dry rooms, fuel bunker
- Communications providers
- Statutory inspection
- Marine coordination of technician and equipment transfer, and
- Electrical and mechanical component maintenance and repair.



Opportunities in support services

While many opportunities are related to a wind farm phase, there are also significant opportunities providing support services to the project across all phases, you just need to find where you fit in.

- Resident engineers
- Ecological Clerk of Works
- Environmentalists
- Archaeologists
- Ornithologists
- Technical specialists
- Snagging and reinstatement works
- Hotels and other local accommodation
- Restaurants
- Vessels
- Catering services
- Hardware suppliers, including fuels and lubes, paints and bespoke fabrication
- Health and safety equipment providers
- Specialist coatings providers
- Training services
- Building merchants
- Vehicle hire and taxi services
- Public relations, design and marketing services



What do we look for in a supplier?

- Best in class health and safety management
- Competitive cost model
- Balanced risk
- Industry knowledge and insight
- Reliability
- Prompt service
- Local benefits
- Location specific to services required
- Innovative ideas
- Mutual co-operation
- Commitment to quality

Our approach to contracting

- Assessment of the market
- Determine contract terms and length
- Develop technical or functional specification
- Invite tenders
- Negotiate and select
- Monitor, manage and reflect

Register with us

General innogy registration

You can register your interest in opportunities to work with innogy across all projects and technologies, via the innogy procurement portal at: www.innogy.com/suppliers
Please also register on this portal if specifically interested in Galloper Offshore Wind Farm supply chain opportunities.

Triton Knoll Offshore Wind Farm registration and supply chain opportunities

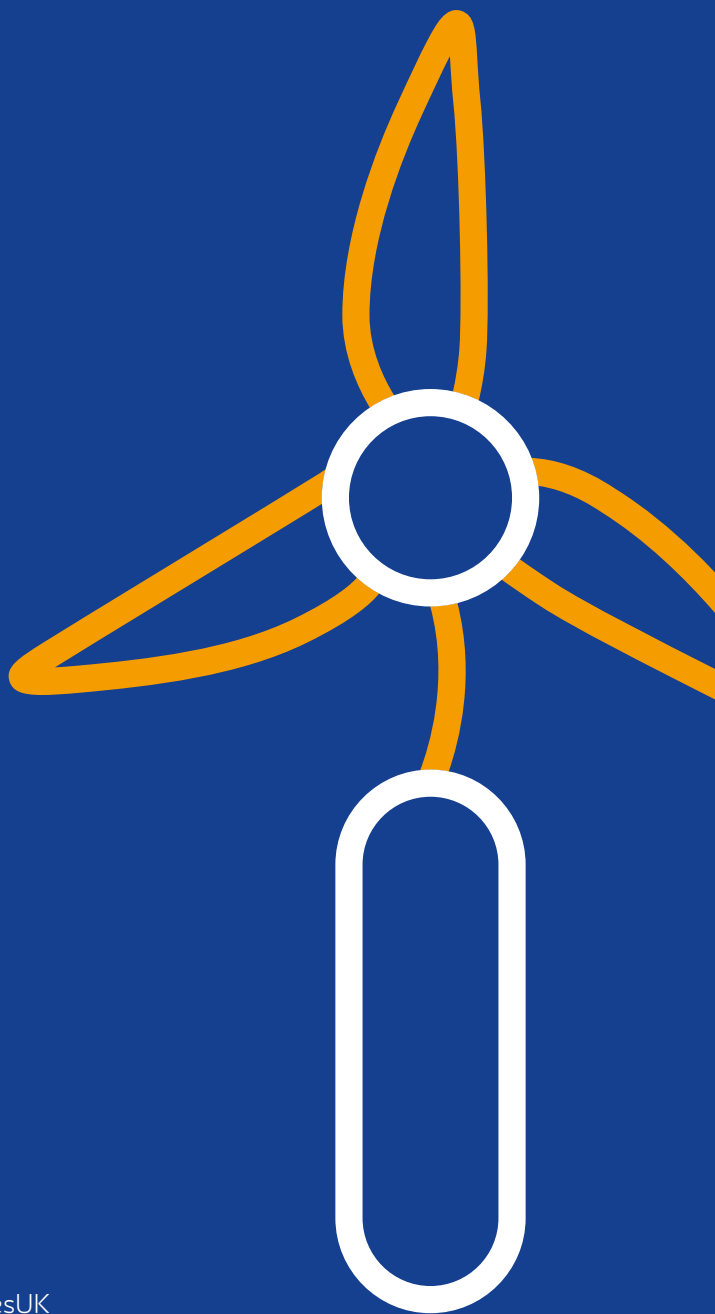
To register your interest in supply chain opportunities specifically related to Triton Knoll Offshore Wind Farm please complete the supply chain online form at:
www.tritonknoll.co.uk/supply-chain

Sofia Offshore Wind Farm registration and supply chain enquiries

To register your interest in supply chain opportunities specifically related to Sofia Offshore Wind Farm, please complete the supply chain online form at:
www.innogy.com/sofia

You can also contact the Sofia Offshore Wind Farm procurement team by emailing: procurement_sofia@innogy.com. Whether you are a highly experienced or a new entrant to the offshore wind sector, we'd like to hear from you and about what you can offer.





**Innogy Renewables
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www.innogy.com
www.innogy.com/renewablesUK

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