

SOFIA
OFFSHORE WIND FARM



RWE

Newsletter

Spring 2022

This is the latest newsletter from Sofia Offshore Wind Farm, one of the world's largest single offshore wind farms. This edition carries the most recent news about project and with more information to be found at www.sofiawindfarm.com.

New contractor moves onto converter station site

The initial enabling works at Sofia's Teesside converter station are now complete and a new contractor – Kier Infrastructure – has moved into the site to start on the construction of the converter station itself.

High on the action list, Kier will establish new welfare facilities for their team to the north of the site, create additional roads within the site and begin building this key wind farm component that will convert the power generated by the wind farm from direct current to alternating current, ready to enter the national grid. Monthly

drone surveys will monitor progress of the works from the air.

In the coming months Kier will ramp its team up to a total of 150 workers, with a number of new team members already hired from the North East. Kier has been keen to engage with the local community and to date have attended a Grangetown Hub Jobs Fair and offered T-Level placements to Middlesbrough College students.

Kier is contracted by GE's Grid Solutions, responsible for delivering Sofia's electrical transmission system.



Working at the Sofia site in new roles with Kier are Richard Brown from Stockton-on-Tees, Matt Siddle from Hartlepool, Chris Malbon from Saltburn, and Luke Groom also from Stockton-on-Tees.

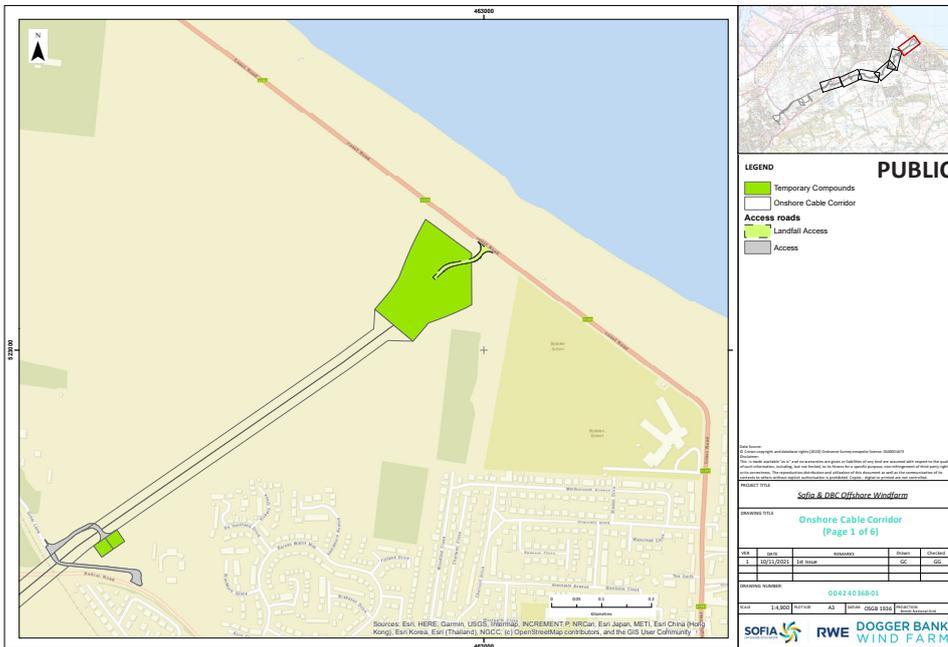
Work starts on cable route from the coast

Civil engineering work on the seven-kilometre onshore cable corridor – from the coast between Marske-by-the-Sea and Redcar, to the new onshore converter station adjacent to Wilton International, north east of Lazenby – is now underway.

Engineering contractor J. Murphy & Sons Limited will carry out the work for both Sofia and Dogger Bank C, the third phase of Dogger Bank Wind Farm. Although these are independent offshore wind projects, both their converter stations and export cables (which carry the power from the wind farms sited on Dogger Bank to the Wilton International site) are co-located so the teams are working closely together to improve efficiency and reduce disruption. Sofia will lead these works on behalf of both projects.

Known as the civil works, activity began to prepare the cable route in February this year and will be ongoing until the end of 2024. For more on the works see page 2.

The process to prepare the cable route



Map of the landfall construction compound

For the coming 18 months work along the onshore export cable route will be geared towards preparing for the installation of the cables that will bring the power from the wind farm to the new converter station.

Fences are now being erected and temporary access roads and working compounds established at the landfall next to the Coast Road (A1085) and other locations along the cable route including a main compound off the A174 and the satellite compound in Wilton International.

Topsoil will be removed and stored for later replacement. Next trenches will be dug along the length of the cable route using a mechanical excavator. The trenches will be around 1.5 metres deep and up to 1.5 metres wide at the base, with tapered walls for stability.

Ducts for the cables will be placed along the bottom of the trenches and then the trenches will be backfilled before the cables arrive from mid-2023 to be pulled

through the ducts. Cables will be delivered to site via heavy goods vehicles with some abnormal loads expected.

Like at the converter station site, there will be monthly drone surveys along the cable route to monitor the work and record progress.

Joint bay watch

The offshore export cables that bring the power to shore, will connect to the onshore export cables at the coast at a 'transition joint bay'. This coastal transition joint bay will be one of several along the route where sections of the onshore cables will be connected.

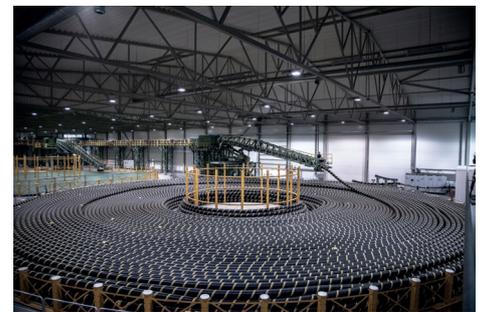
Joint bays are small buried pits, around 1.5 metres in depth and lined with concrete, where the

jointing of the cables can take place in a clean, dry environment, and be protected once completed. They will be covered and the land above reinstated once the work is done.

Installation techniques

At cable route locations where there are roads or other significant features, including at the beach, a technique called horizontal directional drilling will be used to install the ducts and cables under the ground. This is a trenchless construction method whereby a bore is drilled under the feature so the ground above remains undisturbed.

At one section along the cable route, where a bridge and railway line cross, the ducts and cables will be installed via a tunnelling technique.



A bridge weight of copper

Sofia's export cables are now under construction at Prysmian Group's Finnish plant. Once complete they will weigh a total of 20,000 tonnes and include 7000 tonnes of copper, almost the same weight as Newcastle's Tyne Bridge.

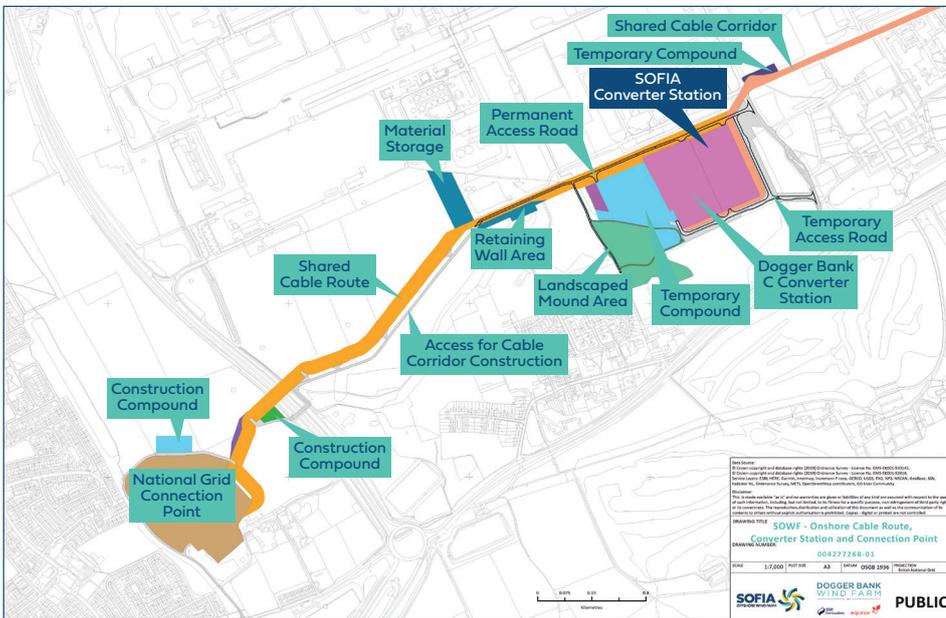
April start for connection cable route works

April will see the start of work to build the two-kilometre long cable connection that will carry the power from Sofia's new converter station to the existing National Grid substation at Lackenby.

The electricity generated by the wind turbines offshore on Dogger Bank will be converted

to alternating current (AC) so it is able to enter the national grid and from there will be distributed to homes and businesses.

For Sofia this AC connection work will be undertaken by GE's Grid Solutions utilising contractor VolkerInfra and it will continue for approximately two years.



Map of the alternating current cable route for both Sofia and neighbouring Dogger Bank C

Teesside supply chain event

Around 200 delegates from Tees Valley businesses and organisations attended a supply chain event at Kirkleatham Walled Garden to hear from engineering contractors Kier Infrastructure and Murphy, now working on the project in Teesside.

The networking event hosted by Teesside Engineering Network (TEN), was organised by NOF and Energi Coast and gave local firms with an interest in working on the project the chance to find out

more about Sofia and any local contracting opportunities. The presentations from the event are now available on the website.



Attendees finding out about supply chain opportunities with the project.

Sofia in the community

Inviting applicants for community fund grants

Community groups and charities in East Cleveland are invited to apply for grants from the Sofia Offshore Wind Farm Construction Fund, now in its second year.



Owlets monitored as part of a Tees Valley Wildlife Trust initiative, supported by the fund.

The first year of the fund provided grants to 10 local groups including the Tees Valley Wildlife Trust, Marske Leisure Centre and Kirkleatham Hall School Friends. It resulted in a range of positive initiatives addressing key community issues such as social isolation, impacts of poverty, well-being and the environment.

Interested applicants should visit www.teesvalleyfoundation.org and follow the "apply for a grant" links specifying the 'Sofia Offshore Wind Farm Construction Community Fund'.

Organisations requiring any help or support with their application can contact TVF on email: grants@teesvalleyfoundation.org with their enquiries.

Redcar secondary teacher champions

Five Redcar teachers have signed up to be part of the second cohort of Sofia's secondary school education initiative, Champions for Wind, which supports teachers to develop subject-specific curriculum materials.

The local teachers have been tasked with designing resources to teach their students – aged from 12 to 18 – about offshore wind and its career opportunities.

They join the original five teacher 'champions' who are now into the second year of the programme.

A total of 10 teachers, plus two support teachers, from eight local secondary schools are now working on the development of curriculum materials in subjects including: science, engineering, geography and history, as well as general careers.

New recruit Mike Reid from Redcar and Cleveland College said: "The college is planning on being a regional central hub for clean renewable energy-based courses and Sofia is one of the partners in this project, so many engineering lessons are delivered with the local area's future and present career needs in mind".

Blade challenge for Teesside students

Almost 60 Teesside University engineering students will take part in an innovation project set by Sofia, challenging them to develop new ways to inspect the blades of offshore wind turbines.

The Foundation Year Engineering Degree students, working in teams, have created their own 'start-up companies', and will devise inspection techniques that reduce turbine downtime and minimise or remove the need for personnel to climb with ropes or work from height.

The project has been integrated into the student curriculum but as an added incentive the teams that develop the top two concepts will receive cash prizes.



Visiting Siemens Gamesa's blade factory in Hull as part of the innovation challenge.

The challenge is being overseen by Gill Lacey, Senior Lecturer at the School of Computing, Engineering & Digital Technologies who said: "The students are enjoying working with a real-life project, delivered by working offshore wind engineers from Sofia and wider RWE. They are able to develop their engineering design skills on a genuine problem, which is very motivating."

Primary teacher professional development

Sofia's education team ran a series of continuous professional development sessions for teachers to spread the word about the primary school teacher resources that are now available to download from the project website.

The suite of high-quality teaching materials for primary-age children was created by Spark Tees Valley as part of an initiative by multi-school academy trust Tees Valley Education to bring renewables to life via geography, science and other subjects.

A total of more than 40 teachers from 27 schools from across Teesside and beyond attended the online sessions to find out how the resources can be used across different subject areas within the existing curriculum.

If you would like to remain updated about Sofia, please a request to be included on the distribution list to comms_sofia@rwe.com. For hard copies please send your name and postal address, for electronic versions please only send your email address.