



ROBIN RIGG WIND FARM
800M HDD LANDFALL
E.ON CLIMATE
& RENEWABLES UK

Scotland's first offshore wind farm.

STOCKTON

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“Stockton Drilling continually demonstrated great care and consideration whilst working within environmentally sensitive areas. I can confidently recommend them as a potential Design and Build Contractor for Horizontal Directional Drilling works.”

IAN JOHNSON
SENIOR PROJECT MANAGER
E.ON CLIMATE & RENEWABLES

PROJECT SUMMARY

- Design project, prepare all documentation and assist in obtaining NR approval
- Preparation of entry area, removing top soil, installing terram and bringing in stone chippings for hard standing
- Supply, welding and installation of 2300m of 6" PE drilling fluid return line
- Mobilise drilling and marine spread
- Directionally drill 800m, ream and pull 350mm HDPE pipe
- Gauge pipe and install steel messenger wire for cable pull

THE PROJECT

E.ON is developing the Robin Rigg wind farm at the Solway Firth, with 60 turbines and a total energy production of 180MW. Each of the 60 turbines will be connected to the offshore substations by subsea cables. These substations will then be connected to the local electricity distribution system via two 132Kv cables. These two cables come ashore near Workington, Cumbria, and then travel a further 2 km inland to a newly built substation.

HDD

Stockton utilised their 250 tonne rig to install the 800m long by 355 mm diameter duct, through a layer of gravels near the entry point and a mixture of clay and sand under the beach and sabellaria reef.

For the reaming phase a jack up platform was installed offshore as a working platform, to deal with a tidal range of up to 8 metres. A 750mm riser pipe was installed on the seabed and extended for 85 metres at an angle of 9 degrees. 2 large temporary supports had to be accurately driven into the seabed by Stockton to support the 750mm riser pipe between the seabed and the jackup platform 12 metres above.

The pilot hole was initially drilled through the gravel section into the sand and clay layers. An 18" casing was then installed from the HDD entry point through the gravel section to support that section of the hole for the duration of the pilot hole and most of the reaming.

The drill string was guided through the riser pipe up to the deck of the jackup platform. The 500mm reaming stage could now commence, with Stockton's offshore crew attaching drill pipe behind the reamer as it advanced under the sabellaria reef and railway line. After removal of the 450mm entry side casing, the reaming phase was completed.

The 355mm HDPE duct was towed offshore by 2 tugs and attached to an anchor close to the 750mm riser pipe offshore, it was then ballasted with water and attached via a swivel to a 500mm pullback reamer. 8 hours later, the 350mm HDPE duct was successfully installed.

DESIGN

Stockton was fully responsible for the design, and assisted E.ON in obtaining the necessary permits, especially providing all drawings, method statements and calculations required for the Network Rail permit. The installation of this 2nd cable was critical to E.ON and the pressure to speed up the project was great. The whole period from the preliminary design, the permits and final design through the mobilisation to site with a jackup platform and full drilling spread to the construction of the drill was only half a year.

ENVIRONMENT

Stockton carried out the HDD with great care to the environment. Although the entry point was located in a field, a strip of land adjacent to the railway was a designated breeding area for migratory birds, where limited activities were permitted.

CONTACT US

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