SIKA AT WORK
WEST OF DUDDON SANDS
IRISH SEA, UNITED KINGDOM

OFFSHORE & MARINE CONSTRUCTION
RENEWABLE ENERGY

BUILDING TRUST

WEST OF DUDDON SANDS
IRISH SEA, UNITED KINGDOM

PROJECT DESCRIPTION

The West of Duddon Sands offshore wind farm, built by DONG Energy and Scottish Power Renewables, is 14 km off Walney Island. One of the larger European offshore projects, it features 108 monopile foundations, providing clean energy to over 300,000 UK homes.

Project name:	West of Duddon Sands 389 MW Offshore Wind Farm
Location:	14 km off Walney Island, Irish Sea, United Kingdom
Year:	2013
Application:	Monopile foundations
Product:	SikaGrout®-9500

PROJECT REQUIREMENTS

At the time, the West of Duddon Sands wind farm involved one of the biggest offshore grouting contracts ever built in UK waters. The foundation installation was carried out by Offshore Wind Force, a joint venture of Dutch-based contractors Volker Stevin Offshore and Boskalis Offshore. The 108 turbines were mounted on monopile foundations, requiring specialized grouting to fill the annular gaps between monopiles and transition pieces. Installation and grouting took place in challenging offshore conditions, with short weather windows and tidal variations exceeding 8 meters.

SIKA SOLUTIONS

After securing the monopile foundations in the seabed, transition pieces are placed and aligned for turbine tower installation. Pre-installed grout lines on the transition pieces enable flexible hose connections at the access platform, extending to the turbine deck. This setup allows the grouting contractor to efficiently connect grout hoses via a flexible boom arm from the vessel.

Over 4,770 tons of SikaGrout®-9500 grout was pumped into the monopile transition piece connections using the FoundOcean Super Pan Mixer. This mixer is proven to double current grout output rates when compared with other high-strength grout mixers on the market. Installing the 108 foundations, including the grouting works, took just 5 months to complete, averaging 21 foundation installations per month. This is a world record in the industry, and a new benchmark for future offshore wind farms.

CUSTOMER BENEFITS

- The high-efficiency mixing and delivery system enabled a record 8.8-hour foundation installation, including the monopile installation, levelling of the transition piece, and the grouting works.
- SikaGrout®-9500's rapid strength development reduced the required weather window by 25% to 18 hours, significantly improving project efficiency.

PROJECT PARTICIPANTS

Certified Grouting Contractor: FoundOcean Ltd.

QUICK FACTS

Amount of material used:	4,770 tons
Number of turbines:	108 × Siemens 3.6 MW
Windfarm total capacity:	389 MW
Homes equivalent:	300,000
CO_2 reduced per year:	43,586 tons
Turbine tip height:	up to 150 meters above mean sea level
Area of wind farm:	67 km^2
Foundation type:	Monopile / Transition Piece
Typical water depth:	18 - 24 m

SIKA SERVICES AG
Tueffenwies 16
CH-8048 Zurich
Switzerland

Contact
Phone +41 58 436 40 40
www.sika.com

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