# SIKA AT WORK

# GWYNT Y MÔR OFFSHORE WIND FARM, NORTH WALES, UNITED KINGDOM

OFFSHORE & MARINE CONSTRUCTION
RENEWABLE ENERGY

BUILDING TRUST

# GWYNT Y MÔR OFFSHORE WIND FARM

## PROJECT DESCRIPTION

The €2 billion project consists of 160 turbines and was built by RWE power renewables in Liverpool Bay, off the coast of North Wales. RWE Innogy funded the project in partnership with Stadtwerke München GmbH and Siemens AG, with the wind farm becaming fully operational at the end of 2014.

Gwynt y Môr generates 576 MW using Siemens 3.6 MW turbines, supplying enough energy to power approximately 400,000 homes annually.

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| Project name: | Gwynt y Môr 576 MW Offshore Wind Farm Installation |
| Location: | 13 km off the North Wales coast, United Kingdom |
| Year: | 2012-2013 |
| Application: | Monopile foundations |
| Product: | SikaGrout®-9500 |

## PROJECT REQUIREMENTS

The main challenge was reducing the overall installation period of the foundations by maximizing the time for grouted connections between monopiles and transition pieces. Equally critical was designing a foundation strong enough to support the tower and turbine while enduring dynamic loads over its 25-year lifespan.

Harsh offshore conditions–wind, waves, and low temperatures–impact installation windows and grouting operations. Given the high cost of specialized vessels, optimizing their use is essential. Effective cost control remains a top priority for clients throughout the project.

## PROJECT PARTICIPANTS

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| Main Contractor: | RWE Innogy, in partnership with Stadtwerke München GmbH, and Siemens AG |
| Certified Grouting Contractor: | FoundOcean Ltd. |

## SIKA SOLUTIONS

RWE prioritized a grouting material capable of low-temperature application to align with their installation vessel's enhanced wave height capability. SikaGrout®-9500, operable at 0°C, was the clear choice.

FoundOcean, Sika's certified grouting contractor (CGC), has been grouting transition pieces aboard RWE's vessel throughout winter, handling ambient temperatures as low as 2°C. The rapid strength development and low-temperature suitability of SikaGrout®-9500 accelerated foundation installations, maximizing vessel efficiency.

## CUSTOMER BENEFITS

- SikaGrout®-9500 enabled grouting in harsh offshore conditions, optimizing vessel use.
- Improved cost control and reduced expenses for vessel operations.
- Fast foundation construction ensured timely wind turbine installation.
- Turbines began producing electricity by August 2013, just 6–7 months after grouting, ensuring a quick return on investment.

## QUICK FACTS

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| **Amount of material used:** | 6,100 tons |
| **Number of turbines:** | 160 × Siemens 3.6 MW |
| **Windfarm total capacity:** | 576 MW |
| **Homes equivalent:** | 400,000 |
| **Turbine tip height:** | up to 150 m above mean sea level |
| **Area of wind farm:** | 79 $km^2$ |
| **Foundation type:** | Monopile / Transition piece |
| **Size of monopile:** | Steel tube between 50 and 70 m long, approx. 5 m diameter, weighing between 500 and 700 tons each |
| **Size of transition piece:** | Steel tube 22 m long, approx. 5 m diameter, weighing 200 tons each, fitted with 4 levels of platforms and ladders |
| **Typical water depth:** | 12 - 28 m |



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