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GUNFLEET SANDS 1 & 2 OFFSHORE WIND FARM

MAIN SUPPLIERS

Siemens plc
Wind turbine supplier

MT Højgaard A/S
Contractor on foundations

Prysmian PowerLink S.r.L.
Cable supplier

**Visser & Smit Marine Contracting and
CT Offshore A/S**
Supplier of cable installation

Bladt Industries A/S
Supplier of offshore substation

Fugro Seacore Ltd
Supplier of vessel (Excalibur) for installation of monopiles

A2SEA A/S
Supplier of vessel (Sea Worker) for erecting turbines and foundations

Ballast Nedam N.V.
Supplier of vessel (Svanen) for installation of transition pieces
and turbines

DONG Energy A global market player

DONG Energy is one of the leading energy groups in Northern Europe. We are headquartered in Denmark. Our business is based on procuring, producing, distributing and trading in energy and related products in Northern Europe. We generated just under £6 billion in revenue in 2009.

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GUNFLEET SANDS 1 & 2 CLEAN ELECTRICITY FOR 125,000 HOMES



The Gunfleet Sands Offshore Wind Farm is located approximately 7km south-east of Clacton-on-Sea, Essex. The offshore wind farm consists of two phases, Gunfleet Sands 1 with 30 turbines and Gunfleet Sands 2 with 18 turbines. The capacity of each turbine is 3.6MW, giving a total capacity of the Gunfleet Sands Offshore Wind Farm of 172MW. The total area of phase 1 is 10km² and 7.5km² for phase 2.

With the completion of the Gunfleet Sands Offshore Wind Farm, the UK has now installed more than 1GW of offshore wind power, a considerable contribution to the domestic UK target of reducing CO₂ emissions.

Experienced market player

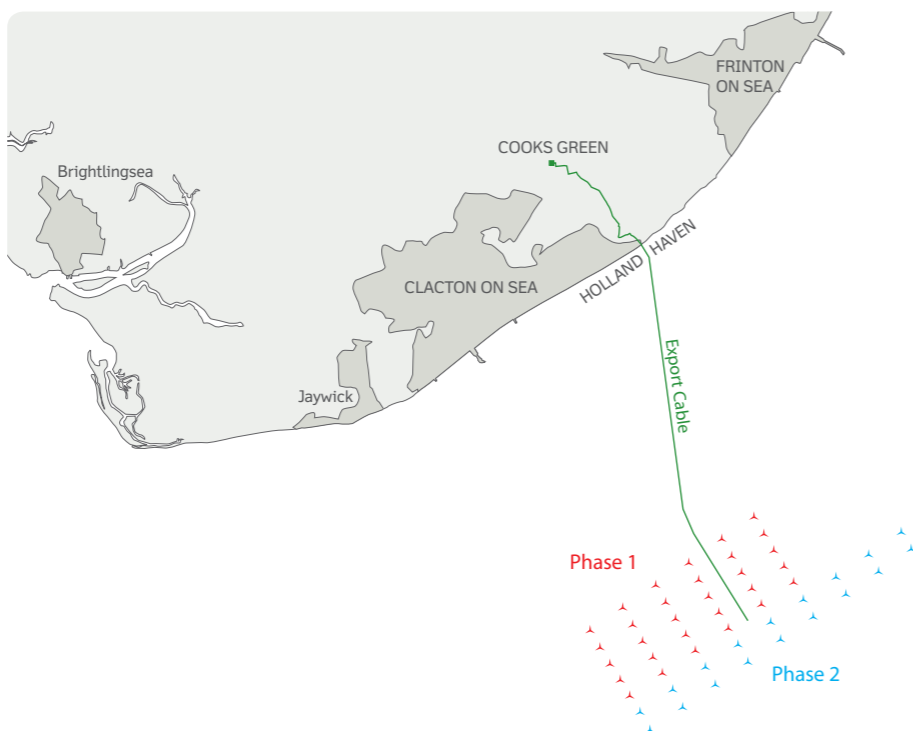
The development within offshore wind farms is moving very fast and DONG Energy is one of the driving forces. At Gunfleet Sands we have applied experience from other wind farms to optimize installation, operation and maintenance.

Globally, DONG Energy is a market leader in offshore wind power, and we have more than 19 years of experience in planning, erecting and operating offshore wind farms. Gunfleet Sands Offshore Wind Farm is the fifth largest offshore wind farm which we have constructed in the UK, and we currently have an additional 657.5MW under construction in the UK.

Project commissioning

The wind farm was commissioned in phases as the turbines became available for energy production. Commissioning started in 2009, and the wind farm reached full production during the spring of 2010.

The total area of development is 17.5km². The turbines are positioned with a spacing of 435m x 890m.



FACTS ABOUT THE WIND FARM

Turbine type:	SWT-3.6-107	Weight, foundation:	225-423 tonnes
Number of wind turbines:	48	Weight, transition piece:	160-200 tonnes
Capacity of each wind turbine:	3.6MW	Total weight of each turbine (excl. foundation) approx:	426 tonnes
Total capacity of the wind farm:	172MW	Cut in wind (light winds):	4m/s
Estimated annual production:	570GWh	Full production (strong winds) from:	13m/s
Hub height:	75.5 metres	Cut out wind (storm):	25m/s
Total height including blades:	129 metres	Water depth on location (approx):	0-15 metres
Blade length:	52 metres	Distance to shore:	7 kilometres
Foundation below sea bed:	27-38 metres	Distance between turbines:	435x890 metres
Rotor diameter:	107 metres	Offshore wind farm site:	17.5km ²
Nacelle (engine housing):	13.09 metres long	Construction period:	2008-2010
Weight, blade:	15.9 tonnes	Operational:	2010
Weight, nacelle:	138 tonnes		
Weight, tower:	193 tonnes		

FROM SUBSTATION TO LOCAL GRID

Each of the 48 turbines generate electricity at a voltage of 33kV. The offshore substation collects the electricity from all the wind turbines and steps the voltage up to 132kV for the local grid. From the substation the power is transmitted to shore via a 8.5km long submarine cable which comes ashore at Holland Haven and connects to the Clacton substation at Cooks Green.

OPERATION AND MAINTENANCE

The Gunfleet Sands Offshore Wind Farm will be operated and maintained from the town of Brightlingsea only 35 minutes away by vessel. Gunfleet Sands will be maintained in cooperation with the turbine supplier Siemens.

DONG Energy has built their operation base in Brightlingsea and together with Siemens recruit staff locally, thus committing to a long-term relationship with Brightlingsea.

