

AT THE HEART OF ROUND 3

From innovative high growth companies to global operations, the South East offers significant attractions for business:

Fast rail, road and air links to London and Europe

A large pool of skilled workers

Potential research partners - universities, scientific institutions and businesses

Flexible employment market regulations

Low utility costs

Advanced telecommunications infrastructure

These assets have encouraged many of the pioneers of offshore wind with a major stake in Round 3, to make the South East their home base.

Vestas and Siemens have dominated the offshore turbine market to date and both have their main UK operations in the region. Vestas Technology's new £80 million rotor facility will be one of Vestas' seven global R&D centres. With £5 million funding from SEEDA and a £5 million grant from central Government, Vestas has begun developing this facility which will ultimately lead to employment for around 400 people. Its presence will further boost a composites cluster that includes aerospace

giant GKN and composites supplier Gurit, as well as a number of specialist SMEs with long track records in the wind industry.

The region's status as the preferred UK destination for headquarters (outside London) is reflected in the fact that it is home to major Round 3 players Centrica, Fluor and Forewind (a joint venture between four leading international energy companies). Together they are driving forward almost half of Round 3 capacity.

Leatherhead-based KBR is another company with a wind industry track record, co-developing the Barrow Offshore Wind Farm with Vestas.



TALENT AND INNOVATION

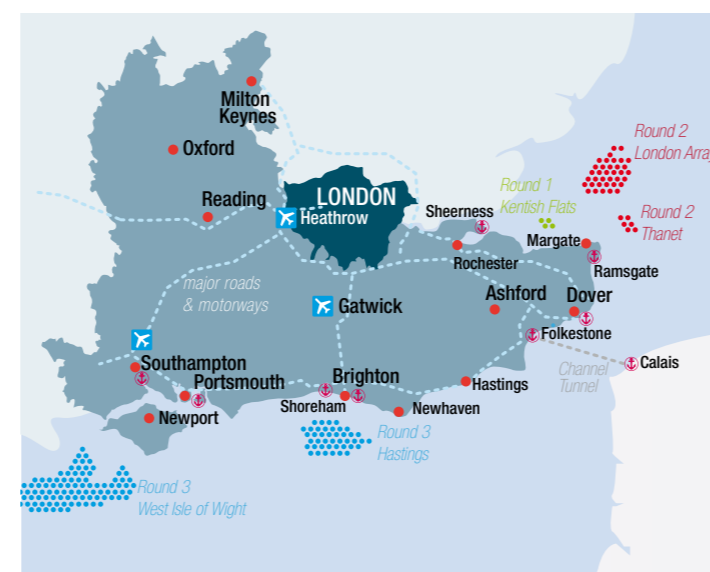
The South East is one of the world's leading regions for innovation.

It is home to **25 world-class universities** and higher education institutes / colleges and two of Europe's best business schools.

These establishments excel in providing intelligent and skilled graduates (**74,000 per annum**) to fuel the region's growing industries. They drive innovation through research and actively seek and engage in collaborative partnerships with companies. Over **2,800 research contracts** are won annually.

The region has the **largest engineering talent pool (450,000)** outside London. Key engineering strengths are mechanical, electronic and electrical. In addition more than **100,000 engineers** commute from outside the region to jobs in the South East, which brings the total number of engineers employed in the region to over 500,000.

The South East's manufacturing output is **£18.5 billion**, higher than any other UK region.



There are over **23,000 manufacturing companies** in the region **employing almost 321,000 people**.

High tech sub-sectors include marine, electronics, med-tech, aerospace and automotive manufacturing.

Established research facilities in the Solent include: the National Oceanographic Centre, Southampton; Marine Regional Resource Centre, Southampton; Regional Centre for Manufacturing Industry, Portsmouth University; Research Institute for Industry, Southampton University Engineering Sciences; and the GKN Aerospace Composites Research Centre, Isle of Wight, that is pioneering processes that also have applications in the marine field.

The National Centre for Advanced Tribology (nCATS) is a multidisciplinary research centre to enable surface interactions to occur with minimal energy loss and impact on the environment. nCATS links world class research groups in key disciplines at the University of Southampton, to develop enhanced capabilities in advanced computational and experimental tribology.

QinetiQ's test tanks at Haslar near Portsmouth provide one of Europe's best facilities for testing offshore foundations.

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OFFSHORE WIND ENERGY



The opportunities for wind energy from the South East Coast

INTRODUCTION

The South East of England can be considered a pioneer of offshore wind. Kentish Flats was one of the first developments in the UK, and by the end of 2013, generation from Kentish Flats, London Array and Thanet could make the region one of the largest centres of offshore wind operations in the UK.

The South East is home to the headquarters of many of the Round 3 developers with Centrica, Forewind, and Fluor, who between them represent almost half of Round 3 capacity, located here. This reflects the highly skilled labour force in the region and its international transport links. These developers rub shoulders with major turbine manufacturers Siemens and GE Energy, both with operations in the South East.

Supply Chain

The region has a strong presence in all areas of the supply chain. For the developing and consenting phase, companies such as Searoc, PMSS, Metoc and RPS are among the leading providers of environmental consultancy services. In addition, EMU in Hampshire is one of the top providers of site surveys to the offshore wind industry.

In turbine component supply, Vestas' new rotor R&D facility has made the Isle of Wight a global development hub for blade technology in an area already well known for its composites and marine technology excellence. The South East also has a strong manufacturing tradition; indeed the South East has the highest manufacturing output of any region in the UK.

Farnborough is an international aerospace, R&D, materials and manufacturing hotspot with many tier 1 suppliers strengthening their capability in wind. BAE Systems and QinetiQ are leaders in radar mitigation solutions, but alongside them, many of the capabilities of aerospace technological companies in aerodynamics, composite and nano materials, condition monitoring and systems integration, are transferable to wind.

The Solent area's renowned marine industry complements this expertise, with a significant sector supporting the oil and gas industry. South Boats, located here, is the leading supplier of offshore wind workboats in the UK.

Infrastructure

The South East region is well served in coastal infrastructure for project construction, operations and maintenance with Kent and Medway, Newhaven and Southampton well placed to meet the needs of Round 3 developers. Medway also offers sites within striking range of North Sea projects, making it one of the most attractive locations in the UK for integrated turbine manufacturing and assembly.

This brochure only touches the surface of the region's capability to support the growth of the offshore wind industry. It provides a starting point for any company wishing to understand how they can benefit from working in one of Europe's largest and most dynamic regional economies.

The South East region is well served in coastal infrastructure for project construction, operations and maintenance

MARINE

The marine economy in the UK is valued at £46 billion and represents 3.3% of the total UK economy. The sector provides 890,000 jobs in areas as varied as shipping, research, oil and gas production and renewable energy.

The South East's marine economy is worth £14.05 billion, 22.8% of the UK's marine economy (1% of the overall economy) making the South East the most economically important marine region in the UK. The marine cluster in the South East is located in the Solent along the Hampshire and Isle of Wight coasts with nearly half of all ships and boats produced in the region being manufactured here. There are 140 boat and ship manufacturers in Hampshire alone.

The Solent marine sector accounts for nearly 20% of the value of the Solent economy and contributes about 18% of the GDP. It is a very diverse industry and while marine leisure and port activities dominate economic activity, this established cluster is well suited to support the requirements of emerging marine technologies, such as marine renewable energy.

Deep Water Foundations

A partnership between two South East companies is at the forefront of efforts to meet the challenges of developing offshore wind turbine foundations in deep water. The team of Gifford and BMT Group, along with Freyssinet Ltd, is one of seven design

concepts out of more than 100 entries chosen by the Carbon Trust for further development and is the only British-led consortium to reach this far.

The team's design centres on a concrete foundation rather than steel, with a large base allowing the structure to self-stabilise under forces of gravity in water depths of up to 45 metres. The team has also devised a transportation and installation system using submersible barges that are towed out to position. The offshore structures which typically weigh over 3,000 tonnes are then settled into place.

South Boats

South Boats have used the heritage of shipbuilding skills within the Isle of Wight to develop vessels that are actively used within the offshore wind farm industry. South Boats have approximately 100 vessels from 15 to 20 metres currently in service.

South Boats has a worldwide customer base, including E.ON Climate & Renewables UK Ltd, MPI Offshore Ltd and several of the leading marine charter companies. With a reputation for building the best boats in their class, their catamarans are strong and durable, and can be used in extreme weather conditions. The company is actively involved as vessel consultants and developing vessel specifications to ensure they are at the forefront of vessel design and safety to meet the growing demands of wind farm owners and contractors.



PORTS

The South East provides coastal facilities to support the full range of offshore wind activities, from major sites for integrated manufacturing to flexible and convenient locations from which to base wind farm operations.

We have one of the UK's most established offshore wind operation bases at Whitstable which supports the Kentish Flats array. When the Vattenfall-owned Thanet array starts operation later in 2010, the Port of Ramsgate will provide the O&M base for the largest operational offshore wind farm in the world.

Prime Sites

The South East also has one of the country's prime sites for any manufacturer looking to invest in the UK. Located at the confluence of the River Medway and the Thames, Sheerness is a deep water port with no lock restrictions, offering easy access for shipping. Up to 120 hectares of land could be released for development for offshore wind use.

Adjacent to Sheerness, the Isle of Grain offers a substantial brownfield site. With up to 300 hectares available, a major manufacturer could be accommodated, alongside some of its suppliers, to form an integrated manufacturing facility to support the whole of the European offshore wind market.

Transport Links

For inward investors, Medway's transport links with high speed rail and road access to Continental Europe and London make the region one of the best places to take advantage of the UK's leading position in offshore wind development.

South East Powerhouse

Manufacturing is a significant component of the Kent and Medway economy. Often quoted as the "powerhouse of the South East", Kent and Medway manufacturing has an estimated output worth some £3.5 billion, 17% of the region's total output. There are over 3,500 manufacturing companies in Kent and Medway, employing almost 70,000 people.

AEROSPACE & COMPOSITES

The UK has the world's largest aerospace industry outside the USA. It is the biggest in Europe and accounts for 23% of the European market by value. It has a globally competitive manufacturing sector, supporting more than 276,000 jobs with a turnover of around £22 billion per annum.

South East England is home to some of the most successful and innovative aerospace and defence companies in the world. Between them they employ over 93,000 people and generate an output of over £5 billion. Over one fifth of all UK companies involved in the manufacture of aircraft and spacecraft are based in the region and between them they employ nearly 10,000 staff.

Straddling the South East's combined leadership in the marine and aerospace industries is its excellence in composites.

The GKN Aerospace Composites Research Centre on the Isle of Wight is one of five National Composites Network centres of excellence. This is a £5.5 million facility development, with a 5,500 square metre manufacturing centre and a 1,400 square metre research facility.

QinetiQ and Vestas

With 9GW of potential wind generation currently subject to concerns from radar operators in the UK alone, QinetiQ has been working with

Vestas to develop a stealth blade solution. Using a jointly designed 44 metre prototype turbine blade manufactured by Vestas, the technology was demonstrated at full scale for the first time at a wind farm in Norfolk, as part of a programme part-funded by the UK Government Department for Business Innovation and Skills.

The five year project has developed 'Stealth Turbine' technology that can significantly reduce the size of the radar signature made by individual turbines. They can be effectively 'factored out' of air traffic control and air defence systems.

The Stealth Turbine solution uses a portfolio of radar absorbing materials (RAM) that are integrated into the current manufacturing processes for turbine components – blades, nacelle and tower – and which can be designed to operate at aviation and maritime frequencies. These include modified composites for nacelle and blades, and sprayable RAM coatings that can be applied directly onto the tower and other static surfaces.

Solent Composite Systems

SCS designs and manufactures bespoke composite solutions using composite materials and technology for high performance applications. The company has a track record in designing engineering solutions for highly demanding industries particularly in the energy sector, coupling composite materials with

innovative designs and advanced mould and tooling technology.

The SCS production facilities in Cowes on the Isle of Wight proved invaluable in the rapid delivery of many blade moulds ranging from 25 to 40 metres for leading wind turbine manufacturers worldwide. A new waterside facility is planned nearby in Southampton to manufacture rotor blade moulds up to 80 metres long destined for offshore wind farms.

SCS has also developed its ProTek™ passive fire and blast structural composite panel system for the protection of critical assets on offshore wind substations. SCS has 20 years experience in this field in offshore oil and gas in the harsh North Sea environment.

Blade Dynamics

The Blade Dynamics rotor is lighter, more powerful and more cost effective than existing blade and hub systems. Equipped turbines produce more power, more reliably, over a longer service life. The BD44 is the lightest blade of its size available and is easily transportable in multiple pieces.

The company has patented many innovative technical solutions for wind turbine rotors and is in the early stages of manufacturing blades.

These technologies enable the production of blades as long as 80 metres which are both easily transportable and lower cost than traditional blades.



Southampton, Eastern Dock