Sheringham Shoal
by Scira Offshore Energy
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NEWSLETTER

Sheringham Shoal officially opened

Norway's Crown Prince Haakon meets students from Alderman Peel High School.

Media await the arrival of the helicopters at Holkham Hall.

His Royal Highness, Crown Prince Haakon of Norway officially opened the 317MW Sheringham Shoal Offshore Wind Farm at a ceremony at historic Holkham Hall, Norfolk in late September.

He arrived via helicopter with representatives from the wind farm's owner companies, Statoil and Statkraft, and Norwegian and British Ministers and Ambassadors. He was greeted by students from the local Alderman Peel High School, which has close links to the operator, Scira.

Holkham Hall owners Viscount and Viscountess Coke welcomed the Crown Prince, dignitaries and around 100 invited guests to their stately home, located just outside Wells-next-the-Sea where the wind farm will have its operations and maintenance base.

North Norfolk District Council CEO, Sheila Oxtoby

Scira and the Wells-next-the-Sea Harbour authority have signed an agreement confirming that the developer will use the harbour as its operational base for up to 50 years.

Also speaking at the event were UK Secretary of State for Energy and Climate Change, Edward Davey; Norwegian Ministers of Petroleum and Energy, Ola Borten Moe; and of Trade and Industry, Trond Giske; the owners' presidents and CEOs, Helge Lund from Statoil and Christian Rynning-Tønnesen from Statkraft, and North Norfolk District Council CEO Sheila Oxtoby.

UK economy

Mr Davey took the opportunity to say that the UK needs to get the economy moving again and a massive expansion in home-grown, clean and renewable energy capacity is central to this.

"Sheringham Shoal will play an important part; supplying power to 220,000 homes, and providing jobs in the local community," he said. "Today's opening also illustrates the strength of the UK's strategic relationship with Norway. Investment in the UK's energy mix needs to come from increasingly new and diverse sources, and this project is an excellent example of that."

The wind farm has been generating electricity since August last year when the first turbine began producing power. However it was poised to start full operation just before the opening, as the final turbines were in the commissioning phase.

The local Scira organisation has been preparing for the operational takeover for the past three years and now some 60 local people are employed full-time to operate and maintain the wind farm.

Energy and motivation

Scira General Manager, Einar Strømsvåg made the closing remarks and said local recruitment began in 2010 and now two years later Scira has, together with its contactors and partners, established a team of highly motivated people.

"I thank you for participating in this important celebration as such positive attention will provide us with the extra energy and motivation to keep improving," he said,

The opening event included musical performances by Alderman Peel students, mediated interviews by BBC presenter Sonali Shah and a show entitled A Windy World by The Boxettes with dancers from Cirque Bijou.

It was also well covered by local, national and international media with reports in the Eastern Daily Press and on BBC, Anglia TV, Channel 4 and Norwegian TV channels and newspapers.

Contents:

Turning on the turbines

Commissioning is the final stage of the construction process.

Once wind turbines are installed it is not as simple as flicking a switch to get them operating, there is a complex and systematic process to undertake before they can start generating green power for UK energy users.

It takes up to three weeks to prepare the turbine for operation after it has been erected on top of the transmission piece.

Starting with mechanical completion, including checks that all the bolts are tightened, safety systems are working, ladders are fitted, and so on, as well as electrical completion including the termination of the cables into a 440 volt switchboard, the turbine needs more than 50 certificates of verification before it can progress to the commissioning phase.

Checklist tick off

Commissioning Manager Paul Harbottle said every item on a checklist covering each area of the turbine's operation has to be ticked off to ensure it is in order – both mechanically and electrically.

"The Sheringham Shoal turbines are standardised 'plug and play' machines so once we completed the checklist and pre-checks, we basically had to give each one a test run for up to a week to ensure that the systems were working and there were no problems," he said.

A team of up to 10 people has worked on the whole commissioning phase to systematically check that the blades turn, the switchgear works, the panels operate and the whole turbine is as it should be.

"Like when you build a house, there are generally a number of snagging issues, or items that need fixing, before the turbine can safely start operating," Paul said. "Some snags were more serious than others and could be 'showstoppers' which means the turbine can not proceed to the next stage without them being addressed."

Walkdown undertaken

A walkdown, or manual inspection, has to be undertaken along with a 72 hour test to enable the turbine to receive its commissioning completion certificate from Siemens, and then finally a ready for operation certificate.

"There has been a very precise set of steps to undertake before the turbine can start a 500 hour service run and then finally be handed over the Scira team," he added. "Almost all the Sheringham Shoal turbines are now handed over to operations. However some tests are expected to continue into November when the last vessel, floating hotel Regina Baltica that accommodates offshore personnel, is scheduled to leave the field."

Turbines can be switched on and off manually from inside the tower, automatically or remotely via computer from the Wells-next-the-Sea operations office or from Rheidol, Wales, the location of Sheringham Shoal's control station which also manages the Salle substation.

The Siemens 3.6MW turbines main parts are:

Rotor: *three-blade cantilevered and mounted upwind of the tower. The power output is controlled by pitch regulation and the rotor speed is variable.*

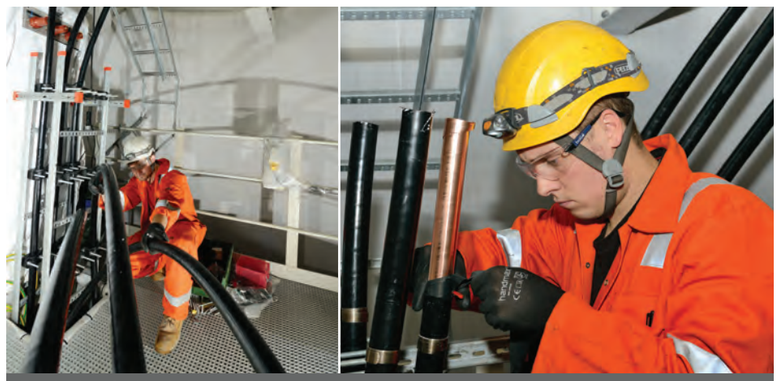
Blades: *made of fibreglass-reinforced epoxy resin and manufactured in a single operation without glue joints so there are no weak points.*

Gearbox: *a custom-built 3-stage planetary-helical design, mounted on the nacelle and fitted with a fail-safe mechanical brake at the high-speed shaft.*

Generator: *has a rotor construction and stator windings that are specially designed for high efficiency at partial loads.*

Tower: *the 80m tower has an internal lift and direct access to the yaw system and nacelle for wind turbine technicians.*

Controller: *a microprocessor-based industrial controller with switchgear and protection devices.*



Termination of cables inside a turbine.

Export cable corridor clear for fishing

Work along the export cable corridor, from the wind farm site to shore at Weybourne, was completed, and the area cleared for fishermen to return in early September.

Different vessel and equipment spreads were used to complete the export cable trenching. Seabed specialists Modus, employing the Toisa Warrior and trencher CT1, carried out the bulk of the work.

Shallow draft vessel MV Elektron trenched the cable nearest Weybourne beach.

Cable contractor Nexans was brought in to complete the nearshore section with shallow draft vessel Elektron using a trencher called the Capjet. Once these vessels demobilised, subsea supplier Canyon Offshore arrived with the Maersk Launcher and trencher T1200 to carry out the remedial trenching.

The trenching work took around 12 months, which was longer than anticipated due to delays arising from poor weather conditions, strong tidal currents, areas of stiff chalk and sections with shallow water sections.

Fishermen were not able to fish the corridor during the trenching phase though disruption payments were agreed and they were continually updated with progress reports throughout the process.

"Having taken longer than anticipated, we were grateful for the fishing community's understanding, cooperation and patience," said Scira's Marine Manager, Peter Sommerfield.

Market research results online

A telephone community research survey has been completed in Wells-next-the-Sea, following on from a similar survey carried out in July 2010.

Scira engaged market researchers Atticus to conduct telephone interviews with more than 100 local residents, workers, small business owners, opinion leaders and second homeowners, and is grateful to all those who took part.

The aim was to determine awareness, perceptions and levels of satisfaction with the wind farm development and gauge public opinion as the construction phase nears completion.

The report's executive summary giving an overview of the results and comparing them with the 2010 figures is now available at **www.scira.co.uk**.

Scira's new home almost complete

The operations and maintenance base now under construction at Egmere, just south of Wells-next-the-Sea is well on track to be complete by early December.

Externally, the environmentally-friendly roof was finished in summer, the block work and brick work is in its final stages, windows are being installed and road works are well underway.

Inside, the electricians and plumbers are hard at work and internal finishes are being undertaken.

Manager of the construction project, Anita Holgerson said the local contractors had done an excellent job and the facility would be ready for the Scira team to occupy from December.

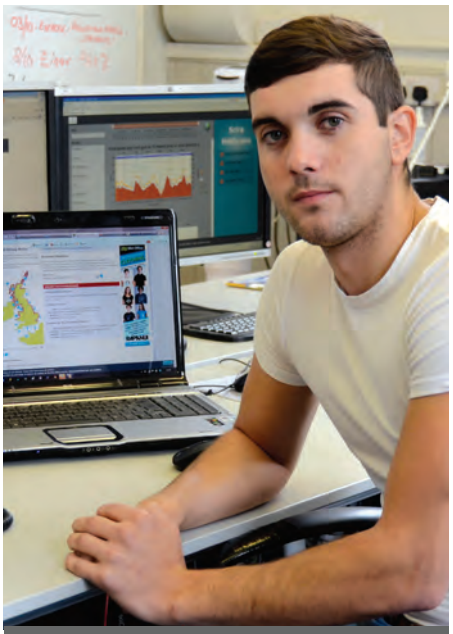
The new address will be Wind Farm Place, Edgar Road, Walsingham, NR22 6EJ.

Construction of the operations and maintenance base at Egmere.

First trainee joins marine crew

With its focus clearly on encouraging Norfolk young people into a career in renewables, Scira has employed its first trainee recruit, 22-year-old Gary Lorimer from South Creake.

Gary began working with the Scira marine coordination team in September and will undergo a comprehensive two-year training programme to become a fully skilled marine coordinator.



Gary Lorimer, Scira's first trainee.

He comes to the role with experience on fishing vessels working out of Wells, as a deckhand on a survey vessel based in Edinburgh and also a period at London Array Offshore Wind Farm. He is thrilled with the appointment and said: "This is a great opportunity for me and I'm going to work hard to make the most of it."

Scira's trainee programme is an ongoing initiative and the organisation will shortly begin the recruitment process for a second trainee, to join the engineering team. The successful candidate, and future trainees, will also benefit from a structured two-year training programme.

HR & Communication Manager Liz Hancock said the trainee programme comes in advance of Scira's complete takeover of wind farm operations from the construction team.

"Gary's appointment, and the programme overall, shows we are committed to supporting the development of local people to fill the roles that will be created by the offshore wind industry in this region".

Bursary update...

Scira earlier this year announced its bursary programme for budding engineers from low income families who wished to study at one of three Norfolk colleges – College of West Anglia in Kings Lynn, Great Yarmouth College and City College in Norwich.

The bursary provides £500 per annum to up to 20 students to assist them with travel or other course-related costs as they undertake the BTEC Diploma in Engineering Level 3.

The application process is now underway and to date the uptake looks promising with a strong level of interest reported by each of the colleges.

Contact details and more information

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The Sheringham Shoal Offshore Wind Farm is owned equally by Statoil and Statkraft through the joint venture company, Scira Offshore Energy Limited, the wind farm operator.

Questions from the community

What will happen at the end of the wind farm's life?

As part of the wind farm's initial consent, a decommissioning plan was included. This outlined exactly what would happen to each of the components at the end of the wind farm's life span.

Wind turbines and generating equipment will be completely removed from the site and recycled as possible. The 90 steel foundations will be cut off at, or below, seabed level and removed for recycling, as will the offshore substations. The lengths of inter-array and the export cables will however be left buried in situ to avoid seabed disturbance.

Health, Safety and Environment performance management will be central to the decommissioning process, with risks identified and mitigated throughout. The methods used for removal will be those which provide the most benefit or least damage to the environment as a whole, at an acceptable cost, and will of course consider other sea users.

As mentioned above, decommissioned materials, such as metal, will be recycled wherever possible. While unused oils, chemicals and working machinery such as motors, will be returned to the supplier for reuse, treatment or recycling.

The wind farm components will mostly be recycled.

If you would like a question answered in the next newsletter, please email info@scira.co.uk

Statkraft

Statoil