



▶ Work to install the Dudgeon onshore cable will commence here at Weybourne Hope on the North Norfolk coast.

DUDGEON

Offshore Wind Farm

Operated by Statoil

Spring 2015



In selecting the Siemens 6MW wind turbine generator, Dudgeon Offshore Wind has been instrumental in enabling Siemens and Associated British Ports to invest more than £300 million in Hull, which will result in the creation of up to 1,000 direct jobs.



*Halfdan Brustad, Vice President
Statoil Renewables, Offshore Wind and
Chairman of Dudgeon Offshore Wind Limited*

Dudgeon Offshore Wind ...in the UK business community

All the main (Tier 1) contractors who will be responsible for the offshore and onshore construction of the Dudgeon Offshore Wind Farm have now been appointed, and the value of contracts given to UK companies is likely to exceed 50% of the total wind farm construction costs.

The company has used a multi-contacting strategy suitable for the UK supply chain, and there has been a focus to pre-qualify UK contractors. Where it has been necessary to use foreign suppliers, there is a significant UK content in those supply contracts, demonstrating the potential and competitiveness of the UK's Tier 2 suppliers.



That Tier 2 supplier competitiveness was very obvious on Wednesday 3 December 2014 when the business opportunities arising from the construction, and subsequent operation and maintenance, of the Dudgeon Offshore Wind Farm were presented by Statoil, as manager of the wind farm, and its main contractors to the UK offshore wind industry supply chain.

This Dudgeon Tier 2 Supplier Day, which was hosted by Dudgeon Offshore Wind Limited, and supported by Grow: Offshore Wind, Great Yarmouth Borough Council, EEEGR and EEZ, was held in the Assembly Room in Great Yarmouth Town Hall.

It was attended by 125 representatives of businesses and related organisations. They heard presentations by Statoil and each of the seven main contractors explaining the categories of products and services they would each require, the likely timing of their requirements and the way in which UK businesses can register or make contact with each of them as potential Tier 2 suppliers.

Olav-Bernt Haga, Facilities Manager of the Dudgeon Offshore Wind Farm, was very pleased with the event saying:

" We were delighted with the support for our Tier 2 Supplier Day from the regional and

national offshore wind energy supply chain. The feedback from both delegates and the main contractors suggested that the presentations hit just the right note, and the representatives of all the main contractors were in great demand at the one-to-one sessions after the presentations." ■

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Carillion and the onshore cable route

In Autumn 2014 Carillion Utility Services was awarded the contract to install the onshore underground cable which will carry the electricity generated by the Dudgeon Offshore Wind Farm from landfall at Weybourne Hope in North Norfolk to the Dudgeon onshore substation which will be built at Necton in the Breckland district of Norfolk.

Since that time they have carried out bat roost, water vole and ditch surveys, and have recently completed a series of meetings which each of the 44 landowners, and their tenants, along the 47km cable route. Hedge cutting and, where necessary, hedge removal, has also been completed and replanting will take place on completion of the works.

In preparation for starting construction and installation activities in March 2015, Carillion's project team has established a main compound at Egmere, Near Walsingham as well as satellite storage and work compounds at Muckleburgh, Great Ryburgh and Necton. Polyethylene (PE) piping has already been delivered and is being stored at Muckleburgh, and deliveries will shortly commence at Necton.

Due to the land drainage issues along the southern sector of the cable route, and also because of Great Crested Newt mitigation measures, construction work will start in the north at Weybourne Hope and will progress south, hopefully at the rate of around 700 metres per day.



▶ The onshore cable route across Norfolk

A Forward Team will string-out and weld the PE piping along the cable corridor, and they will be followed by a Duct Installation Team who will bind the ducting in trefoil using a specialist machine before mechanical laying trenchers install the ducts to the required depth of 1.4 metres, measuring from ground level to the top of the ducting. Marker Tile and Back Fill Teams will then move along the cable corridor and joint bay construction will commence once the ducts have been installed.

There are 10 Horizontal Directional Drills (HDD) to take place along the cable route; these will be undertaken in parallel with the duct laying works so that the cable ducts can be installed straight into the HDD ducts.

Once the cable pulling into the pre-installed ducts commences, it may be possible to achieve 3 cable pulls per day at areas closest to the cable storage.

The installation of the onshore cable is a huge undertaking but Carillion is looking to have completed the works and reinstated the cable corridor by Q1 of 2016



▶ Binding machine



▶ Mechanical trencher

Briefing the landowners

On Monday 1st December 2014 Dudgeon Offshore Wind held a Landowners Briefing Meeting and Luncheon for which the Prince of Wales Suite at Fakenham Racecourse in Norfolk was the venue.

Many of the 44 landowners, or their land agents, along the onshore cable route were able to come along. Members of the Dudgeon Offshore Wind management team provided an update regarding the progress of the project since the last Landowners meeting, and the project team from Carillion presented their plans for the programme of work to install the 47 km onshore cable.

Discussions continued after the presentations over luncheon



▶ Lunchtime discussions



▶ The presentation by Carillion

Substation construction plans presented at Necton

A public drop-in exhibition was held in Necton Community Centre at the end of January 2015 at which the plans for the construction of the onshore electricity substation which will receive the electricity generated by the Dudgeon Offshore Wind Farm were on display.

Two substations will be built on the site adjacent to the A47 highway outside the village of Necton in Norfolk. Members of both Siemens Transmission and Distribution Limited, which will construct the Dudgeon substation, and the National Grid, which will build its own adjoining substation, joined members of the Dudgeon stakeholder management team to discuss the programme of work with local residents.

Kari Hege Mørk, who is the Stakeholder Manager for the Dudgeon Offshore Wind Farm, was generally pleased with the reaction of the 87 members of the local community who attended the exhibition, saying: "The majority of the people who visited the exhibition were supportive of



▶ Dudgeon substation site



▶ National Grid substation site



▶ Meeting Necton residents at the drop-in exhibition



this offshore wind farm project. However, some concern was expressed about the visual impact of the substation development, and there were also questions about the level of noise which would be generated by the equipment when it becomes operational in 2017."

"The Fact Sheet which we had prepared for this exhibition addresses these points, along with other issues, such as site working hours and traffic management during the construction process, and I think we were able to satisfy the majority of the concerns."

The substation site has already been prepared, and construction will commence during March 2015 and be completed by November 2016.

The Fact Sheet about the Necton onshore substation can be downloaded from www.dudgeonoffshorewind.co.uk/newsandliterature

Charter contract for Esvagt for Havyard SOV

The decision by the Dudgeon operations team to use a Service Operation Vessel (SOV) to facilitate and support the maintenance of the Dudgeon Offshore Wind Farm has resulted in the award of an initial 5 year charter contract to Esvagt AS. The contract also contains options for extending the charter by up to 5 additional years.

The SOV will be a Havyard-832 design, 83.7 metres long and 17.6 metres wide. A DP-2 Class operated vessel, it will accommodate 60 people, with 40 cabins being available for use by the technicians and service personnel responsible for the maintenance of the wind farm.

A gangway system and a heave-compensated crane will be used for the safe transfer of personnel and goods to/from the wind

turbines and the offshore substation. The vessel's noise and vibration criteria will be as specified in the Clean Design and Comfort Class; this, combined with the installation of an anti-roll stabilizing system, will ensure a high level of comfort for all those on-board.

Containerising the on-board warehouse will help facilitate a quick turnaround when the SOV comes into port



▶ Esvagt AS will provide the Dudgeon SOV

The Dudgeon Team:

An interview with Rune Rønvik

Prepare for Operations Manager

In Statoil, the Prepare for Operations (PFO) process starts during the planning and development phase of a project, being an integrated, yet in some ways a parallel, component of the project all the way through the various execution phases. Rune Rønvik initiated the Dudgeon Offshore Wind Farm PFO activities in late 2012, and he has kindly provided an insight into the work of his team for this newsletter.

"The PFO tasks for Dudgeon cover a variety of topics, the most important of which so far have included the development of the marine logistics model for the operation and maintenance phase, the location of the onshore operations base, the planning of the technical infrastructure, including buildings and IT systems, and the establishment of a 5 year maintenance, service and operations agreement with Siemens, the wind turbine supplier.

"The first PFO team members will arrive in Great Yarmouth in October 2015, and I expect to be amongst them. For around 18 months, construction and installation will run in parallel with operations and maintenance activity, and my team will assume responsibility for the wind farm's technical systems as they are completed by the facilities project.

"I realise that there is considerable local interest in the employment and business opportunities that will be created through the establishment of the Dudgeon O&M base in Great Yarmouth. Statoil, as the operator of the Dudgeon Offshore Wind Farm, will work closely with the wind turbine O&M contractor, Siemens Service UK, with the teams being



▶ Rune Rønvik at the Dudgeon Tier 2 Supplier Day

an integrated operation both onshore and offshore in respect of turbine maintenance.

"Statoil's management team in Great Yarmouth will consist of a small number of individuals from the early planning stages of the project undertaking project implementation and helping to mould a locally recruited team into a stable O&M group.

"As the O&M base nears completion in 2016, I anticipate there will be opportunities for local businesses to provide a range of support services, and I am looking forward to the organisation becoming part of the business community in Great Yarmouth." ■

Dudgeon and the Community



Date for the Diary

The Greenbuild 2015 event will take place in Felbrigg Park, near Cromer, Norfolk NR11 8PR on Saturday 5th and Sunday 6th September 2015.

As the installation of the onshore underground cable for the Dudgeon Offshore Wind Farm will be taking place across North Norfolk and Breckland throughout 2015, there will once again be a Dudgeon community information marquee at this popular event.

The Dudgeon Community Support Fund

The Dudgeon Community Support Fund will be established during 2015, and it is planned that it will be in a position to open for grant applications during Q1/2016.

The sum of £100,000 per annum will be paid into the fund for the life of the Dudgeon Offshore Wind Farm. In the longer term it is intended that the grant application criteria will have a strong emphasis on education, training and skills, but in its early years the Fund is likely to encourage more general applications from community groups and organisations in Great Yarmouth and the villages along the onshore cable route from Weybourne to Necton ■

Dudgeon O&M recruitment commences for Great Yarmouth

For details of the first 7 employment opportunities for managers and engineers in Great Yarmouth, along with application instructions, visit www.dudgeonoffshorewind.co.uk/community/ingreatyarmouth and follow the link to the Statoil website

About the Owners

Dudgeon Offshore Wind Farm is owned by two Norwegian companies, Statoil and Statkraft, and Masdar of Abu Dhabi.

Statoil is an international energy company headquartered in Norway, with 21,000 employees and operations in 36 countries. Building on 40 years of experience from oil and gas production, the company is committed to accommodating the world's energy needs responsibly, applying technology and creating innovative business solutions.

Masdar is Abu Dhabi's renewable energy company advancing the development, commercialisation and deployment of clean energy technologies and solutions. The company serves as a link between today's fossil fuel economy and the energy economy of the future.

Statkraft is a leading company in hydropower internationally and Europe's largest generator of renewable energy. The Group produces hydropower, wind power, gas-fired power and district heating and is a global player in energy market operations. Statkraft has 3600 employees in more than 20 countries ■

Contact details and more information:

Dudgeon Offshore Wind Limited
One Kingdom Street
London W2 6BD

0047 9520 9191
info@dudgeonoffshorewind.co.uk
www.dudgeonoffshorewind.co.uk

