

THE LATEST NEWS FROM SCOTTISHPOWER RENEWABLES

THE ZONE

MARCH 2016

Lost German WWI submarine discovered

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Cover Photo: River Deben Survey activity



Welcome

Welcome to our East Anglia Newsletter. We have been busy carrying out lots of surveys across Suffolk, both on land and at sea, as well as undertaking East Anglia's largest ever archaeological survey, in preparation for the development of our East Anglia ONE windfarm.

I hope this newsletter will tell you everything you would like to know about our plans, but if you would like to know more please visit www.spreastanglia.co.uk

We will be in touch again later this year with our next update.

Best wishes

Charlie Jordan,
 East Anglia ONE Project Director










Become a ScottishPower Renewables supplier

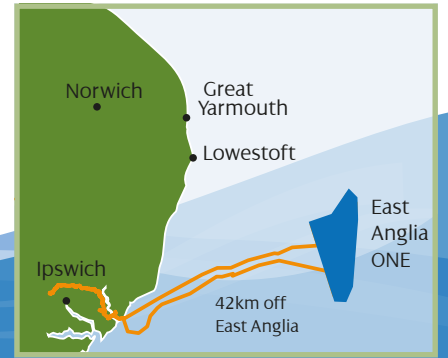
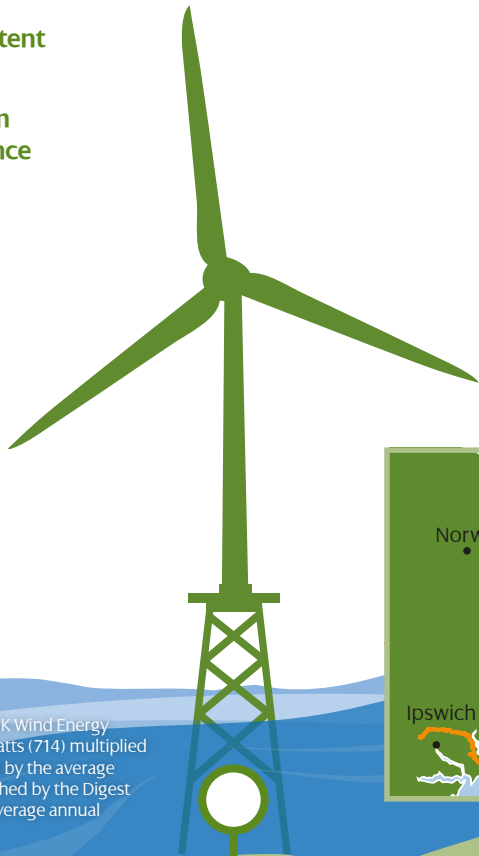
If you would like to become a ScottishPower Renewables supplier we would love to hear from you.

Please visit:
spreastanglia.co.uk

East Anglia ONE at a glance

-  **£2 billion investment**
-  **Committed to 50% UK content**
-  **Providing skilled long-term operations and maintenance jobs for 30 years**
-  **3,000 construction jobs**
-  **102 turbines generating 714 megawatts**
-  **Almost 15% of the UK's current offshore capacity¹**
-  **Powering 500,000 homes²**

[1] UK offshore capacity 5.04 GW at November 2015 (UK Wind Energy Database) [2] Calculated taking the number of megawatts (714) multiplied by the number of hours in one year (8,766), multiplied by the average load factor for offshore wind for 2014 (34.88 %, published by the Digest of United Kingdom Energy Statistics), divided by the average annual household energy consumption (4,115 kWh), giving an equivalent of powering 530,162 homes.



Ecological Clerk of Works to monitor ecology and specific protection activities such as:

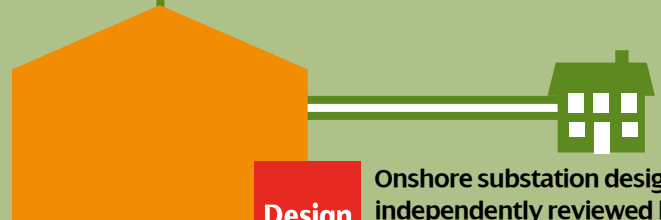
-  **Formation of hazel hurdles for bats**
-  **Detailed monthly aerial bird surveys over a two year period**
-  **Relocating badgers to an artificial sett**
-  **Creation of a reptile area**

Investing to put 37km of onshore cables underground, removing the need for pylons

Underground cables routed to avoid important habitats and woodland



£1 million invested in South East England's largest ever archaeological trial trenching exercise



Onshore substation design independently reviewed by the Design Council

Onshore substation

We will transport the power generated by East Anglia ONE from the offshore windfarm 110km to the onshore substation. The onshore underground cable route will run from Bawdsey across the River Deben to Woodbridge then along the North of Ipswich to Bramford.

We will construct the substation adjacent to the current National Grid substation, working closely with Suffolk County Council and the Design Council to minimise the visual impact to the community. The Design Council has made several recommendations and we are carefully considering the best design for the building.

Working to minimise the visual impact to the community

Using innovative technologies we have already found ways to halve the size of the building and we are also planning to landscape the immediate area surrounding the substation to minimise its visibility.

[+ Find out more online](#)

To find out more on this story, please visit our website:

spreastanglia.co.uk



Update on our onshore survey works



Over the past few months you may have seen us and our contractors out and about across Suffolk undertaking a large number of surveys along the cable route, from Bawdsey to Bramford. It has been a huge investment, taking a total of 5,500 man hours, with an average of 10 people on site every day.

These surveys have been a mixture of ecology and site investigation works, including activity such as

creating boreholes to extract soil samples and measure the water level. We also had a barge (see front cover) based on the River Deben for a few weeks in the autumn collecting riverbed samples, which Felixstowe Harbour Master, John White, and the Martlesham Creek Boatyard kindly assisted us with.

One of the most interesting parts of our survey work has been undertaking East Anglia's largest ever archaeological survey. We

have dug approximately 800 mini trenches at different points along the cable route to see whether there is anything of historical importance in areas where we have work planned, although nothing significant has been found to date.

With all our surveys we have worked hard to keep disruption to a minimum and we are hugely grateful to the landowners along the cable route for their assistance.

These surveys are part of the massive investment we are making to put the cable route underground, as agreed with the local communities during the windfarm's development.

[+ Find out more online](#)

To find out more on this story, please visit our website:

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Funding for four postgraduate scholarships at UEA

It has recently been announced that the University of East Anglia (UEA) is the latest university to benefit from the ScottishPower Foundation's scholarship programme and as an extra boost to the region ScottishPower Renewables is going to fund four scholarship places specifically at UEA. The places will be available to postgraduate students keen to continue their education in energy engineering and environmental studies.

UEA will take its place alongside six other well respected universities in this innovative scholarship programme. The Foundation has already announced 14 new postgraduate energy and environment scholarship grants in the UK for the 2016/17 academic year and these grants will be available at the seven universities, including on relevant courses at UEA.

The funding from ScottishPower Renewables will provide a further four places, only open to students wishing to study at UEA. This investment further cements ScottishPower Renewables' commitment to the East Anglia region and is part of its strategy to support the education of young professionals with the capabilities and vision to lead the energy industry into the future.

The scholarship places at UEA will be looking to support postgraduates keen to study courses including: MSc Energy Engineering with Environmental Management, MEng Energy Engineering with Environmental Management (integrated masters), MEng Energy Engineering (integrated masters), MEng Engineering (integrated masters) and MSc Environmental Sciences.

More details on the UK scholarship programme can be found at: **scottishpowerfoundation.com**

To find out more about applying for one of these scholarship places at UEA please email: **admissions@uea.ac.uk**, or call **01603 591515**.



ScottishPower Foundation is a registered Scottish charity (SC043862) and a company limited by guarantee (SC445116). Registered Office: 1 Atlantic Quay, Glasgow G2 8SP.

Right Image:
Ignacio Galán, Chairman of Iberdrola with Michael Bush, ScottishPower Foundation scholar



Lost German WWI submarine discovered

In the early stages of our investigative work assessing the suitability of an area for windfarms we always undertake detailed seabed scanning. It was whilst conducting this scanning in the East Anglia Zone that the team discovered something very exciting, an 'uncharted' wreck of a WWI German submarine, missing in action since 1915.

The scanning team were expecting to see wrecks, but such a discovery was quite a surprise and has been extremely interesting.

The team used advanced sonar technology to scan more than 6,000km² of the seabed, nearly four times the size of Greater London. Whilst it is a sizeable undertaking, it is critical that we conduct these detailed scans to really understand the 'makeup' of the seabed and thus plan the layout of the windfarm.

The scanning was undertaken with Dutch owned company Fugro which made us aware of the Dutch Navy's hunt for its last remaining WWII submarine. We were all extremely keen to see if this could be the answer to their quest.

GoPro footage taken by the Dutch Navy divers highlighted clear images of the conning tower and deck layout, which suggested the wreck was of German origin. From German drawings it was identified that this was a WWI German submarine. After several dives clear footage was achieved and the wreck was finally identified as U-31, which left for patrol on 13 January 1915 never to return.

The wreck lies 91km from shore at a depth of only 30 metres. It is thought that U-31 had struck a mine off England's east coast and sank with the loss of its entire complement of four officers and 31 men.

The discovery was reported to all the relevant UK authorities and as an official military maritime grave, the wreck of U-31 will remain in its final resting place with no further disturbance to the area.

Unravelling the story behind the submarine has been fascinating and has really captured the attention of the media, from as far afield as the USA. It's heartening to know that the discovery will provide closure to relatives and descendants of the submariners lost who may have always wondered what had happened to their loved ones.



← Left Image:
Teri Nicklin,
ScottishPower
Renewables (left) and
Jouke Spoelstra, Retired
Commander of the
Royal Netherlands Navy

+ Find out more online

To find out more please visit our website:

 spreastanglia.co.uk

Thirty year deal agreed with Port of Lowestoft



Following discussions with Associated British Ports we are delighted to have agreed a thirty year deal with the Port of Lowestoft to act as the construction management base for East Anglia ONE, and also as the main operations and maintenance hub for the anticipated 30 year lifespan of the windfarm.

The £25m deal will see an initial investment in establishing the new operations facility as well as upgrades and modifications to the port and the surrounding harbour area.

We are keen to work with local suppliers wherever possible and are really pleased to be working

with the Port of Lowestoft as this will support highly skilled, long-term jobs across the region, both directly and across the supply chain.

This will support highly skilled, long-term jobs across the region

During the construction phase of the project the number of jobs created will be around 3,000. Once East Anglia ONE is completed approximately 100 people will be employed full-time at the port, with thousands of contractors and supply chain operators working from the site every year and therefore contributing substantially to the local economy.



Jonathan Cole, Offshore Managing Director, ScottishPower Renewables speaking at an event in Lowestoft.

We hope this deal with the Port of Lowestoft will help to make the East Anglia region the leading destination for investment and job creation in the UK's offshore wind industry.

+ Find out more online

To find out more on this story, please visit our website:

spreastanglia.co.uk

Trials of pioneering offshore wind monitoring technology

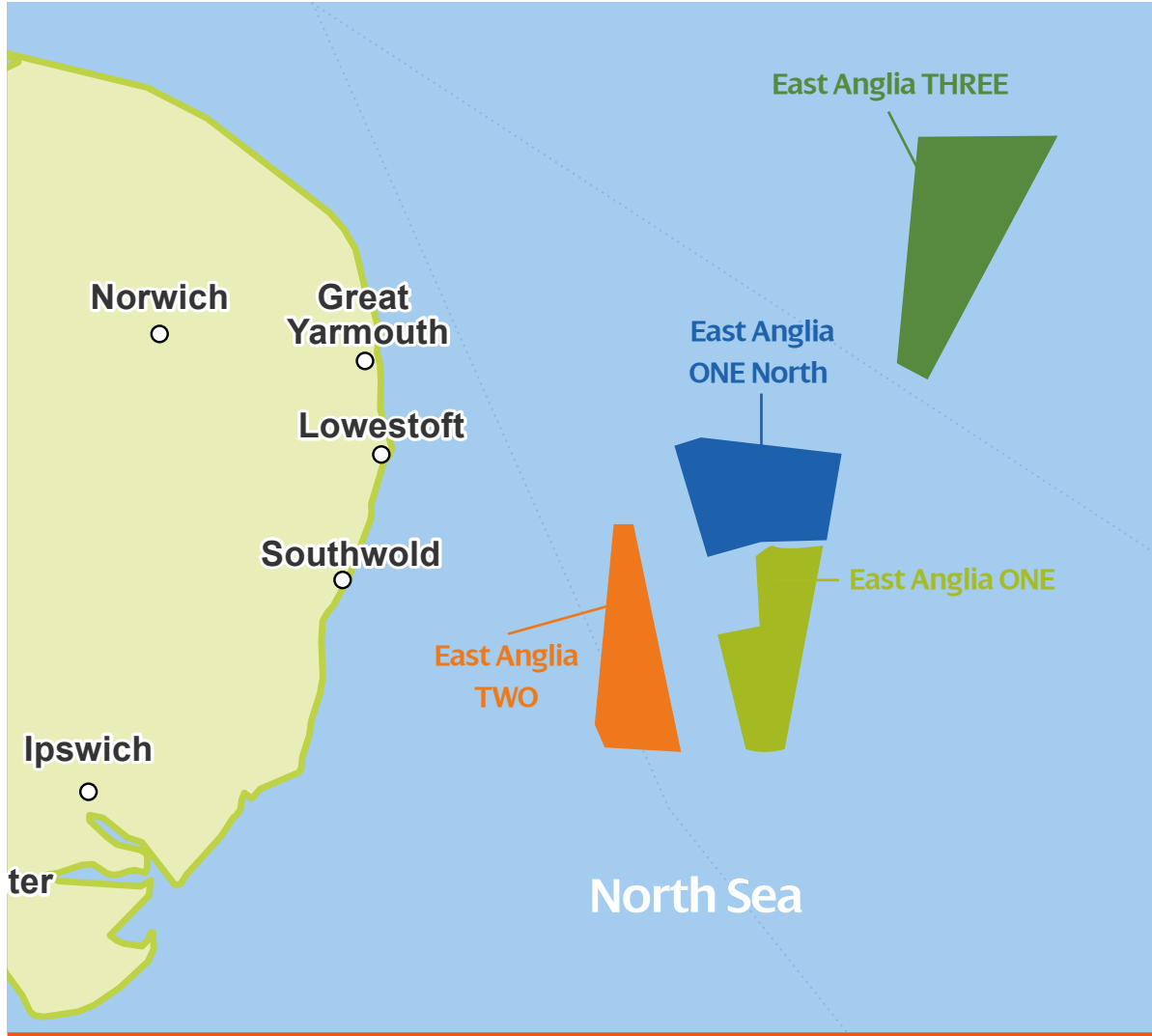


With the assistance of local vessel *Suffolk Spirit* and Lowestoft-based marine engineering company, Small & Co., we have successfully installed a floating wind monitoring device in the East Anglia ONE zone.

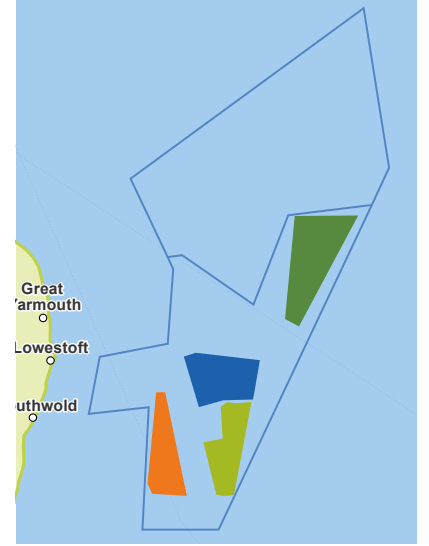
The project is part of the Offshore Wind Accelerator (OWA) programme, managed by the Carbon Trust. Using *Suffolk Spirit* we

deployed a floating LiDAR (Light Detection and Ranging) system to test and validate wind, wave and climate data.

This innovative LiDAR system, based on the traditional buoy design, is compact and mobile and could in time replace more expensive meteorological masts, putting East Anglia at the forefront of driving down costs in renewable energy.



Splitting up the East Anglia Zone



We were originally awarded development rights for the East Anglia Zone as a 50:50 joint venture partnership with Vattenfall. Since then we have been working together to identify the best areas to develop within the zone and the order in which they will be progressed.

Whilst we will still work closely with Vattenfall we are now splitting the zone equally between us. Vattenfall will progress projects in the North of the zone, whilst we will progress projects in the South of the zone: **East Anglia ONE**, followed by **East Anglia THREE** and later **East Anglia TWO** and **East Anglia ONE North**.

For more information please visit spreastanglia.co.uk

Plans submitted for East Anglia THREE

We have now officially submitted plans to the Planning Inspectorate for the East Anglia THREE offshore windfarm and associated infrastructure. The windfarm will be located approximately 69km off the Suffolk coast and will be connected via underground cables to the existing National Grid substation at Bramford.

East Anglia THREE will consist of up to 172 turbines and generate up to 1,200MW. Once completed this offshore windfarm could power the annual electricity demands of the equivalent of 850,000 homes*, which is virtually all of the houses in Suffolk and Essex.

It is anticipated that East Anglia THREE could support up to 4,800 jobs during the construction phase, which would represent an additional £400m for the UK economy. Approximately 2,900 of these jobs could be supported in the East Anglian region alone, adding a

potential £248m to the regional economy during construction.

These plans for East Anglia THREE perfectly demonstrate our ongoing commitment to renewable energy generation in the East of England.

The planning application will now be examined by an expert panel under the requirements of the Planning Act 2008 and if approved, onshore construction could begin as early as 2021, with offshore work starting in 2022 and the first generation in 2023.

Offshore wind contributes to a more secure energy supply and from UK waters it already powers the equivalent of 3.5 million homes per year**. With wind around our coast in plentiful supply, it has the potential to play an even more significant role.

*Calculated taking the number of megawatts (1,200) multiplied by the number of hours in one year (8,766), multiplied by the average load factor for offshore wind for 2014 (most up to date figure available) (34.88 %, published by the Digest of United Kingdom Energy Statistics), divided by the average annual household energy consumption.

**Source: RenewableUK



Become part of our energy future

We can offer a wide range of careers for people with different skills, expertise and ambitions, including apprenticeships, graduate programmes and engineering foundation programmes.

Visit: scottishpower.com/pages/careers.asp

Developing a skilled local workforce

Having shared details of our Supply Chain Plan in our previous newsletter, we are pleased to report that the majority of major contract tenders are now underway.

We are leading the way with our approach of actively working towards our UK supply chain content target of 50% for the lifetime of the East Anglia ONE project. It is brilliant to have already worked with lots of companies across East Anglia and we look forward to working with many more.

Over the last year we have held a number of successful supply chain events across the region and have been encouraged to see so many people attending and keen to be involved.

It is brilliant to have already worked with lots of companies across East Anglia and we look forward to working with many more.

We recently agreed a 2016 sponsorship arrangement with the East of England Energy Group (EEEGR) for five important industry events in East Anglia this year. David Rowland, our new business director, also sits on the EEEGR Board of Directors to share and utilise his significant industry experience within the region.

We are also delighted that our Skills Strategy for East Anglia ONE has now been agreed with the local councils across Suffolk and we very much aim to develop a local skilled workforce who can access future employment opportunities within the offshore wind industry. This will include funding student places at technician and college courses in the local area and launching a STEM ambassador programme.

More information

For information about our contracting strategy, opportunities for suppliers and much more please visit: spreastanglia.co.uk

East Anglia ONE Construction Timeline



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