

The East Angle

East Anglia Offshore Windfarm Projects

Winter 2023



Creating a better,
cleaner future
for everyone



Welcome to the latest edition of The East Angle

Did you know? News from across ScottishPower

- ▶ We have been partnering with Cancer Research UK since 2012 and have raised more than £35m. Our employees, customers and suppliers have raised funds through our Help Beat Cancer energy tariff, sponsoring Race for Life events and backing Stand Up to Cancer campaigns, alongside baking, biking and jogging.
- ▶ Our Whitelee onshore windfarm, the largest in the UK, has received its second Green Flag award after being the world's first to fly the Green Flag. Its latest award is for the partnership with the Whitelee Countryside Ranger Service to enhance ecological habitats for native bird species and restoring natural peatland.
- ▶ The Foundation, a charity which provides funding for worthy causes, is supporting the recovery of declining pollinating insect colonies around the River Tweed. It has invested in the Buglife's Pollinators Along the Tweed initiative to create, enhance and restore at least 40 hectares of wildflower-rich grassland across 50 sites in towns and villages. The Foundation also collaborates with the Playlist for Life initiative, which creates a playlist of melodies to improve the wellbeing of people living with dementia. It is working with 21 new Help Points Networks to focus on reaching individuals, who may experience higher levels of isolation and less access to support.

Marking key milestones in the development of our second offshore windfarm in the region instils great pride in our team.

Clean green electricity generated by the 95 turbines of East Anglia THREE (EA THREE) will make a huge contribution to tackling the climate emergency, strengthening the UK's energy security and bringing down energy bills.

Offshore wind continues to be the fastest, lowest cost way to secure our electricity needs and decarbonise our economy.

EA THREE – the first windfarm of the three that make up the East Anglia Hub – will join East Anglia ONE, which celebrated four years of generation in September and continues to play a critical role in bringing more homegrown green electricity on to the grid.

EA THREE will power the equivalent of 1.3 million UK homes on the journey to achieve the clean energy future we all want and need, as well as delivering economic benefits to East Anglia.

Our special feature on EA THREE tells its story so far.

Demand for green electricity will double as we change our petrol and diesel cars, electrify public transport, get rid of gas boilers, and move to electric heating for our homes, so our windfarms are vital to get renewable energy where it's needed - from power to plug.

The opportunities the wind revolution bring are showcased throughout this issue by profiles of our people and the different roles involved in offshore wind.

We need engineers and technical experts, but we also need a diverse set of skills from cyber security to accountancy, legal to human resources, project management to community engagement, and everything in between, for our 'green army' from different backgrounds.

Meanwhile, as we build upon our many worthwhile community partnerships, I had great pleasure, as a keen cyclist to be part of ScottishPower Renewables' sponsorship of the Stage 5 Tour of Britain.

Ross Owens
Managing Director
Offshore, East Anglia Hub



Construction of our East Anglia THREE windfarm is progressing quickly, bringing us closer to having more green electricity generated in the UK, for the UK.

Our second world-leading flagship windfarm off the coast of Suffolk will create a source of vital green energy to keep homes, businesses and communities powered, make a significant contribution to UK energy security, net zero targets and deliver highly-skilled jobs and investment in the region for decades to come.

Great Yarmouth business wins construction contract for East Anglia Hub

A multi-million pound contract for construction services on the East Anglia Hub has been awarded to Stowen Group, based at Great Yarmouth, delivering new jobs and investment in the local economy.

The Stowen team – who also worked on East Anglia ONE – will support offshore construction for East Anglia ONE North, East Anglia TWO and East Anglia THREE (EA THREE). Together, the projects will supply clean energy to the equivalent of 2.7 million British homes.

Stowen will provide specialist key personnel, management and coordination of interim operations and maintenance during the building programme.

It will also provide training, materials and equipment associated with the offshore work.

The partnership between ScottishPower Renewables and Stowen will start on the construction of EA THREE, which will be the world's second largest windfarm when it comes into operation in 2026.

Kieron Ford, Business Growth Director at the Stowen Group, said: "This contract award provides a solid platform for Stowen to build on our ambitions to provide safe, secure and lasting careers across the East of England through training and development that supports people coming into the industry at all levels – from apprentices through to management.

"In practice for Stowen, it means growing our workforce locally through skills transfer, apprenticeships and upskilling; solidifying our reputation as a leading services provider in the offshore wind industry, while contributing to the UK's net zero future. It is a momentous collaboration for us."

Ross Ovens, ScottishPower Renewables' Managing Director for Offshore at the East Anglia Hub, said: "Working with Stowen on this contract and supporting the business to expand and build on its ambitions is a terrific example of the transformational impact of offshore wind, and ScottishPower's projects, in this region.

"Not only are we powering a cleaner and greener future through more homegrown green electricity – we're also creating a legacy that will deliver environmental, social and economic benefits for local people and communities for years to come. That's the real power of offshore wind and a cleaner and greener East Anglia, and we're very proud to be leading the way."

EA THREE will generate enough green electricity to power the equivalent of more than 1.3 million homes, supporting more than 2,300 jobs across the supply chain during its two-year offshore construction period.



Onshore cable work all on plan

Plans and work for East Anglia THREE's (EA THREE) onshore cable route are on schedule.



Ben Vick
East Anglia THREE
Cable Installation Package Manager

Ben Vick, EA THREE's Cable Installation Package Manager, said: "We are finalising part of the cable route access strategy now so it can be signed off ready for work on the ground to start early in 2024."

EA THREE's cable ducts were laid alongside East Anglia ONE's cable route during its construction six years ago.

To lay EA THREE's cables, teams will access the route at various locations to construct jointing bays and install the cables through the pre-installed ducts, close the ducts and reinstate the soil.

"This is a massive engineering project. This year we have been focusing on the engineering processes and will continue to be for the rest of the year," said Ben.

"Major engineering milestones are being achieved. We are currently getting all the necessary information to the local authorities so all our consents can be discharged, which is a huge operation."

Public information events will be held to give people the opportunity to see the finalised cable route access strategy, detailing access points for work traffic along the cable route.

"Meeting the public, answering questions and talking about our project is part of the job we really enjoy," said Ben.

"I spent two days at the Suffolk Show in May chatting to people about our offshore windfarm, renewable energy and explaining our project. People in the region are really interested."

Throughout this year, onshore work has included many ecological surveys along the cable route, Ben said.

"We are looking forward to all our consents being met and starting work."



Clean ambition

Ship to lay East Anglia THREE offshore cables can run on biofuel

The vessel that will lay and bury the 300km of cable carrying electricity onshore from East Anglia THREE (EA THREE) under the sea has been certified to run on biofuel to cut its carbon footprint by up to 98%.

When the NKT Victoria installs EA THREE's export cables in 2025, it will still be one of the most energy-efficient cable-laying vessels in the industry.

The vessel, which installs the cables and simultaneously buries the cables into the seabed using a plough towed behind it, can now run on biofuels such as hydrotreated vegetable oil.

The move supports our mission to reduce carbon emissions from our offshore operations.

NKT, the company designing, manufacturing and installing EA THREE's export cables onshore and offshore, made the change as it moves towards its own decarbonisation targets and its customers' increasing expectations for low-carbon operations.

Green manufacture for cables

East Anglia THREE's export cables will be produced at a green manufacturing site.

Two 150km offshore cables and two 40km onshore cables in the 320kV high-voltage direct current export power cable system will be made at a factory that runs on 100% renewable energy.

The export cable is a high-voltage cable that connects the offshore substation with the onshore converter station to transmit power from the windfarm to shore.

NKT's factory at Karlskrona in Sweden and its sister site in Cologne, Germany, are powered by green power in the company's mission to reduce the carbon footprint of the high-voltage power cables produced for the global energy transformation.

NKT also recycles materials and metals from production and decommissioned power cables.



East Anglia THREE



Generating green electricity for the equivalent of **1.3 million UK homes**



Creating more than **2,300 jobs during construction**



>100 long term jobs operating and maintaining the windfarm



>£2 billion investment in the UK during construction and operation



Contracts worth nearly **£70 million** already placed with UK companies for EA3



95 **14.7MW** wind turbines

Kieran takes the helm



Kieran Gallagher is the new Package Manager for East Anglia THREE's (EA THREE) onshore converter station.

He took over in June after six months on the project and 11 years working for ScottishPower.

EA THREE is his second high-voltage direct current (HVDC) project, after spending eight years working on the £1.2 billion Western HVDC Link, the undersea system between Western Scotland and North Wales routed to the west of the Isle of Man.

HVDC technology offers the most efficient means of transmitting a large amount of power over long distances and connecting green power to the grid, he said.

A mechanical engineer, who previously worked in SP Energy Networks' transmission business, Kieran has built a career as a project manager, now carrying the responsibility for bringing the converter station to life.

"The biggest change has been the development of technology, enabling smaller onshore structures. The technology has moved on so much and become much more efficient. Equipment is getting smarter so we can use a smaller amount of space to create more compact and bespoke onshore infrastructure."

Bramford converter station taking shape

At the East Anglia THREE (EA THREE) converter station site at Bramford, the 35-strong team is expected to grow to around 60 as construction activity builds.

The converter station is a crucial link to ensure the clean energy generated by the 95 offshore turbines and carried onshore by the undersea and underground cables reaches the equivalent of 1.3 million homes and businesses.

Civil engineering works are under way to prepare for the electrical plant to be delivered and begin construction in early May 2024, with the plant ready to be energised in late 2025.

The platform for the converter station is completed and the site team will now complete the foundations, drainage and roads, followed by the converter hall, the control building and a storage building close to Bramford's existing substation.

At the onshore station, the direct current (DC) brought by the High Voltage cables from the offshore substation is converted to alternating current (AC), to join the National Grid transmission network and power to the equivalent of 1.3 million homes with clean green electricity.

Kieran Gallagher, Onshore Converter Station Package Manager, confirmed that civil contractors Kelbray, which has offices in Brentwood and Basildon, Essex, had been awarded the contract by ScottishPower Renewables' principal contractor Siemens in the summer. As well as the expanding site team, an additional 20 people are based in the site office.

EA THREE will have four transformers, each costing £8 million. Two will be installed on the offshore converter platform and used to step down the power for transfer to the onshore converter station. The others will be installed onshore and used to step up the power and convert it to AC, before it can be connected into the National Grid substation. The last transformer will be kept as a back-up. Transformer bays – large concrete bays that protect the transformers – will be delivered to the converter station site.

Wind power drives kite surfer's dream

Our stunning front-page picture against the backdrop of East Anglia ONE marks a very special visit from ten times kitesurfing world champion Gisela Pulido.

Not only is wind power driving a cleaner and greener future, it's also helping Gisela, who is an ambassador of ScottishPower Renewables' parent company Iberdrola, power her dream of reaching the Olympics next year in Paris.

Thanks to a lot of careful planning and preparation with our team at our operations and maintenance base in Lowestoft, Gisela took to the water with the windfarm as the ideal background to practice and showcase her fantastic skills.

Gisela is preparing for her qualification to represent Spain at the Olympic Games in Formula Kite, the speed discipline of kitesurfing.

Her ambition for a better future makes her the perfect ambassador and we wish her all the best for 2024.



European Beewolf

Ecology and environment

Jade Relf, East Anglia Hub's Onshore Environmental Manager, describes the latest ecological work and developments across our projects.

The protection of species and their habitats is of paramount importance when we are working on all our projects.

With construction works complete and **East Anglia ONE** operational, we are seeing the real benefits of all our extensive work to help native species thrive both in the new habitats created at the substation and the reinstated land across the cable corridor.

We have recently carried out surveys at the end of the growing season to see where we need to replace any trees and hedgerows that may have failed and which areas need maintenance, such as strimming.

Around the onshore substation area in Bramford, the habitat has really flourished with established meadow grassland, natural woodland and hedgerows.

Our sustainable drainage system (SUDS) has created a new permanent pond. Planted with naturally establishing pond plants, it is attracting lots of invertebrates, like dragonflies, and waterfowl, which have returned to nest in the reeds. It is now starting to mature well and look naturalised only a few years on from planting and it's great to see several species making their homes in the area.

Over at **East Anglia THREE**, I have been carrying out consent compliance inspections alongside my colleague Bruno Agochukwu, who has recently returned to ScottishPower Renewables as Environmental Advisor, working on our East Anglian projects.

With the weather now starting to turn, one of our main focusses is management of water onsite. At the converter station site we use a Siltbuster, a tool to process and treat water and filter out the soil particles, so we can safely discharge clean water off the site to the natural environment the same as normal field runoff.

We have also effectively mitigated for protected species such as badgers and great crested newts and continue to monitor these throughout the works.

The onshore environmental team is also responsible for continually reviewing and inputting to the documents being developed ahead of the main cable works, to ensure that all animals and their habitats are kept protected and safe across the full project.

We are also continuing to carry out surveys at the site of **East Anglia ONE NORTH** and **East Anglia TWO**, monitoring species such as breeding birds, badgers, water vole and reptiles. Offsite we have been looking at creating environments for important Suffolk species near to the projects, such as turtle dove and nightingales.

Just south of the site we would like to create seeded foraging areas for the turtle doves and some scrub planting and younger trees for the nightingales to nest in. Bats and bird boxes will also be installed in locations across the project with ecological benefits a key principle in the landscaping design.



Community investment in the region rides up a gear



Left to right - former pro-cyclist Alex Dowsett and Ross Ovens

ScottishPower Renewables' investment in the region has had another significant boost through our support as an official stage partner of the men's Tour of Britain.

As the UK's leading cycle race rode into Suffolk – home to our East Anglia offshore windfarm projects - we celebrated our role in the community by teaming up with organisers and Suffolk Growth to support stage five of the Tour, which started and finished in Felixstowe.

With 16 teams and more than 90 riders, the picturesque towns, countryside and coastlines of the county were showcased across the world.

It was an opportunity to highlight our commitment to local people, businesses and communities in the area, where we are currently constructing our East Anglia THREE (EA THREE) offshore windfarm and operate our East Anglia ONE offshore windfarm from our operations and maintenance base in Lowestoft.

In preparation for the event, our EA THREE Community Liaison Officer, Edward Rees joined local cyclists, businesses and representatives from the Tour of Britain racing teams to celebrate the race arriving in Felixstowe.

He was one of 20 riders for the 25-mile friendly ride along the Suffolk countryside from Snape Maltings to Felixstowe on 18 August.

They were led on their way by Oscar Pratt from Saint Piran Pro Cycling Team, one of only three domestic-based cycling teams that took part in the Tour of Britain.

Ed said: "It was an amazing experience to be part of the peloton for this Tour of Britain experience and showcase ScottishPower Renewables' support for the Suffolk stage of the prestigious race.

"Supporting the Tour of Britain is a great way to celebrate our role within the local community and all that this wonderful county has to offer."

Ross Ovens, Managing Director – Offshore for the East Anglia Hub, joined the experience on race day on 7 September, presenting the stage winner Wout van Aert with a prize for claiming the overall lead in the tour.

Ross said: "Our Suffolk offshore wind projects will not only help power a cleaner and greener future for us all, they will also ensure we are part of the Suffolk Community for decades to come. So as a responsible developer, good neighbour and a keen cyclist myself, it was fantastic to team up with Suffolk Growth and the Tour of Britain to celebrate all that Suffolk has to offer through this spectacular sporting event.

"We're also working with Suffolk County Council to look at how we can use the Tour to showcase how cycling can support healthy, sustainable living and encourage people to get active and on their bikes."



Ross Ovens and Stage 5 winner Wout van Aert

Karen Chapman, Partnership Manager for Suffolk Growth, said the Partnership was delighted to work alongside ScottishPower Renewables to bring the tour back to Suffolk.

"The Tour of Britain brings a significant financial boost to the county's visitor economy and wider events supply chain, and with ScottishPower Renewables' commitment to investment in the region, their sponsorship as a supporting partner of the Suffolk stage of the Tour of Britain reinforces their position as an anchor in delivering for the future of Suffolk."

Biking boost for school children

Pupils in Lowestoft are putting the pedal to the metal as part of a community cycling initiative we are supporting.

Suffolk County Council has created a Bike Library for year five and six students at Phoenix St Peter Academy during a pilot project to promote active travel.

The pupils, their parents or carers will also be offered a Bikeability training course to give them the skills, confidence and understanding they need to take their bike on the road through funding from ScottishPower Renewables.

The course will also teach them the basics of bike maintenance, including how to fix a puncture.

Richard Smith MVO*, Suffolk County Council Cabinet Member for Economic Development, Transport Strategy and Waste, said:

"I would like to thank ScottishPower Renewables for supporting this pilot project and providing the opportunity to expand what we can offer.

"This partnership is a positive legacy from the company's backing of the Suffolk stage of the Tour of Britain, and I am pleased to see them supporting active travel in the wider community."

Ed Rees, East Anglia THREE Community Liaison Officer, said: "We're really excited to be working with Suffolk County Council to deliver the pilot Bikeability programme for local school pupils. As a cyclist myself, I know only too well the joy of getting on your bike and getting out and about to enjoy this fabulous part of the country."

*Member of the Royal Victorian Order



Team effort clean up at Pakefield beach



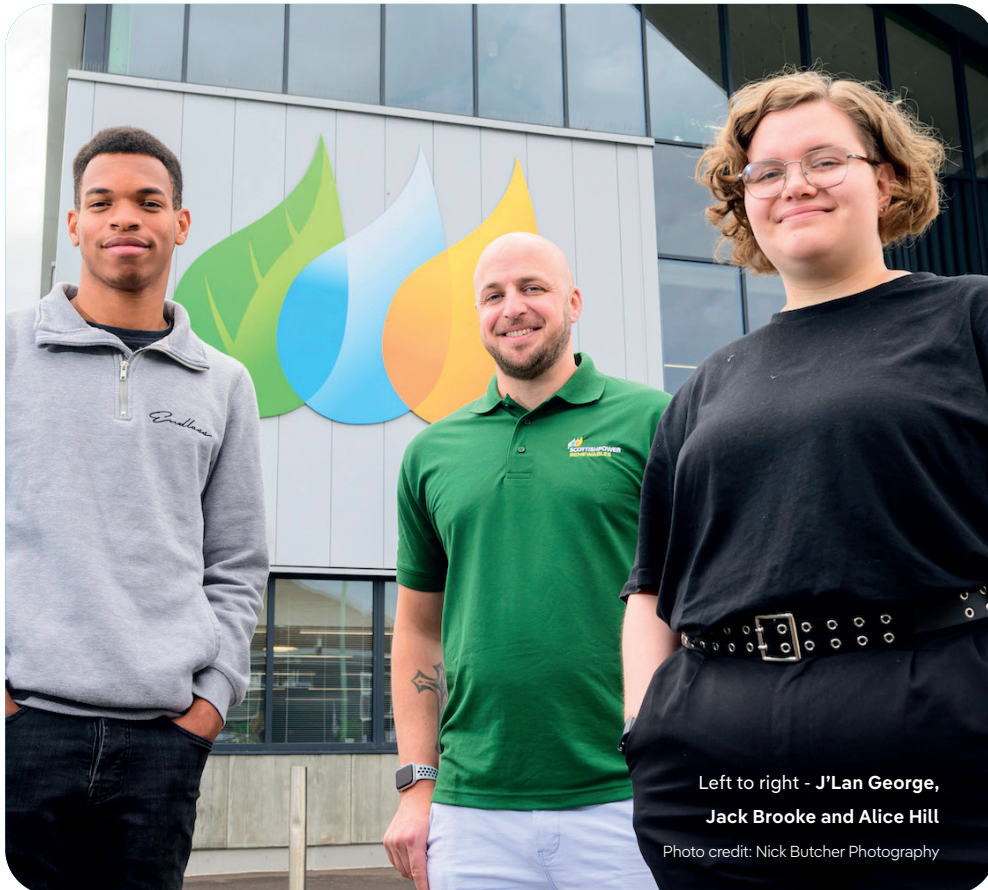
The team at East Anglia THREE (EA THREE) grabbed their litter pickers to clean up the dunes on Pakefield beach and do their bit for the community.

About 20 people from the project took part in the voluntary event on the beach, just south of our East Anglia ONE Operations and Maintenance base in Lowestoft.

During the team-building day the group collected microplastics from the dunes that run along the beach, an area that sand ploughs and tractors are unable to reach in their regular cleaning process.

Matt Woollorton, Head of Construction at EA THREE, said: "The beach is not only local to our base, but for the teams that work there. It's a real family favourite, so it was great to get together with colleagues to do our bit and help give back to the local community."

Building careers



Left to right - J'Lan George,
Jack Brooke and Alice Hill

Photo credit: Nick Butcher Photography

Students work with our experts to solve offshore challenge

Two sixth formers swapped part of their summer break for a special project recovering a control panel dropped from a vessel into the North Sea off Lowestoft.

But there's no need for alarm – it was a hypothetical scenario designed by ScottishPower Renewables to ignite the imaginations of summer interns Alice Hill and J'Lan George.

The students from East Norfolk Sixth Form College, Gorleston, spent a month working with experts from East Anglia THREE, gaining behind-the-scenes exposure to the fast-growing clean energy industry on their doorsteps.

Alice, 17 and J'Lan, 19, who both live in Lowestoft, were faced with the challenge of recovering a 50kg control panel, roughly the size of a household fridge that had been dropped from a vessel during cable laying operations.

They researched methods to recover the panel, considering other activities going on at the windfarm, health, safety, environmental factors and cost implications, before presenting a report on their findings.

Throughout the project, they were based at our offices at the town's renewable energy hub OrbisEnergy, receiving support and expertise from Global Construction Manager, Matt Woollorton, Global Technical Safety Lead, Jack Brooke and Supply Chain Strategy Manager, Alana Cairns.

ScottishPower Renewables worked in partnership with the Ogden Trust through its Coastal Internship Programme, which provides bursaries for year 12 and 13 students to take summer placements in the energy sector.

It earns students valuable CREST awards, a STEM (Science, Technology, Engineering and Mathematics) scheme run by the British Science Association, recognised by universities and potential employers.

The future is bright for our interns

Alice has recently begun a degree at Brunel University after gaining A Levels in Maths, Physics and German and a BTEC level three Extended Certificate in Engineering.

"This internship has been invaluable for me as I want to pursue a career in engineering.

"ScottishPower Renewables had such an active approach with us. It's been great being able to talk to people within the business and have an insight into the team who are in an industry at the forefront of our future."

J'Lan, 19, is studying Engineering and Information Technology after moving from the Caribbean three years ago.

"I've taken many skills away from this, such as working in an office space with other people that I don't know, team working and being more responsible doing my research. It's really helped me to socialise and build my confidence."

Dr Catherine Richards, East Norfolk Sixth Form College Principal, said:

"The opportunity to undertake an internship with such a prestigious employer and to spend time in industry is so important for our students. It helps them put what they have learnt in the classroom into practice."

Jack Brooke, Global Technical Safety Lead at ScottishPower Renewables, said:

"With a scheme such as this we can get young engineers thinking about what goes into building a windfarm. It's a brilliant mechanism for us to develop competency and futureproof our operations."



First offshore trip shapes career plan for graduate trainee Joe

Engineer Joe Whitley ticked off a key dream on his career bucket list when he made his first trip offshore to the East Anglia ONE offshore windfarm.

University of East Anglia graduate Joe, from Ipswich, in his second year of ScottishPower Renewables' graduate scheme, can now add offshore training to his qualifications.

Joe asked to shadow technicians to complete his report about turbine inspections for his operations and maintenance engineering placement.

As an office-based engineer on our graduate programme, working offshore isn't part of his role and he wanted to spend a day with turbine technicians to understand their jobs and the daily pressures they face.

"I wanted to see how it works offshore and understand a day in the life of a technician. It is easy to sit in an office and give instructions if you don't know what the situation looks like.

"One of the great things about working for ScottishPower Renewables is the endless opportunities the company helps and supports for individual development."

We provided his Global Wind Organisation (GWO) training, medical, full personal protective clothing and equipment.

Joe's next placement is on the company's first French offshore windfarm, Saint-Brieuc, off the coast of Brittany, focusing on site management, followed by six months in Berlin for an engineering management placement.

Work experience with the East Anglia ONE windfarm team at Lowestoft confirmed a renewable energy career pathway for Malachi Lawson and Josh Pitcher.

Joining the 6am-2pm shift, they discovered the range of roles at the operations and maintenance base where more than 100 people work. Both have just started their training as apprentice wind turbine technicians with turbine business Siemens.



Malachi Lawson

"The highlights of my work experience were carrying out communications with vessels, helping out in the morning, seeing all the technicians leave for the windfarm on the crew transfer vessels, and generally just getting a feel for the industry and seeing what it's about," he said.

"All the employees at East Anglia ONE (EA ONE) were so friendly and keen to give out information about the company, their jobs and a day-to-day operation."

Malachi applied for an apprenticeship with Siemens Gamesa, manufacturers of EA ONE's 102 turbines, during his work experience.

The EA ONE team helped him prepare for his interview and selection process.

"This industry is progressing massively. In East Anglia in particular, there are so many opportunities that will arise within the next five, 10, 15 years.

"My future career aspirations are to progress through the industry from technician to trouble-shooter to whatever position feels right when I'm older."



Josh Pitcher

Josh grew up hearing about the industry from his father, who has worked in various roles for 14 years.

"I've wanted to be a part of it from a young age. I have always been a very hands-on person, building and fixing things.

"The highlights of work experience for me were working in the control room, learning how everything works, such as how the control room and vessels communicate, and being taught lots about the windfarm and how it works.

"I would suggest anyone interested in getting into the industry or to see what it is about should try work experience. Everyone was so friendly and more than happy to help me gain knowledge and experience within the wind industry. This all helped me prepare for my apprenticeship."

Enjoying the Suffolk Show



Photo credit: Ashley Pickering

The East Anglia Hub team was out and about in the community at the Suffolk Show.

We always look forward to this two-day annual event at Trinity Park in Ipswich, as it gives us an opportunity to meet lots of new people, to share information about our projects and to talk about the renewable energy industry and the opportunities that it brings to everyone we welcome to our stand.

Our Power to Plug tent had visitors queuing to see who could get the furthest without buzzing the electronic wire, while children, and adults alike, were delighted with the return of Mad Science, who entertained the crowds with a variety of workshops themed around renewable energy.

The Mad Science duo – Daniel Phillips and Michael Whitaker – also provided a twice-daily Sustainability Show, encouraging audience participation and some wide-eyed reactions to a wind-powered flying toilet roll!

Dan, Managing Director for Mad Science's franchise in north-west London, said: "We have supported ScottishPower Renewables at the Suffolk Show for several years and it's always a really enjoyable experience.

"The team are so passionate about their projects, and they work very hard to be involved in the Suffolk community. We provide many workshops and live shows across the country and our renewable energy demonstrations are always a big hit because children are naturally curious about how they can impact the world and live more sustainably."

Your stakeholder team



Joanna Young
Stakeholder Manager
East Anglia
+44 (0) 7738 063259



Edward Rees
Community Liaison
Officer
East Anglia Hub
+44 (0) 7818 026934



Reecia Cullen
Community Liaison
Officer
East Anglia Hub
+44 (0) 7393 250258

If you would like to find out more about our work in East Anglia, please visit: spreastanglia.co.uk

To contact the stakeholder team, please email the relevant project at:
eastangliaone@scottishpower.com;
eastangliaonenorth@scottishpower.com;
eastangliatwo@scottishpower.com or
eastangliathree@scottishpower.com.

Follow us on X (Twitter): @SPRenewables
LinkedIn: **ScottishPower Renewables**
ScottishPower Renewables,
Room 101, OrbisEnergy, Wilde Street, Lowestoft,
Suffolk, NR32 1XH