

December 2020

Vattenfall in Norfolk Newsletter

Welcome to the 10th edition of Vattenfall in Norfolk

In this edition:

- Norfolk Vanguard and Norfolk Boreas' progress through planning and next steps: preparing for detailed design and procurement
- 2020 Round-up
- Meet our Land Manager and learn why building relations with local landowners and farmers is his priority
- Giving young people a stake in our industry and supporting career transitions into the offshore renewable energy sector
- Looking forward - how you can continue to be a part of the projects
- New Year: New Conversation. We'd like your help shaping the Norfolk Zone Community Benefit Fund

Season's greetings - the Norfolk Vanguard and Norfolk Boreas team wish you all a happy and heathy 2021

For all of us, 2020 has been a year like no other.

When the pandemic first struck, our immediate focus as a company was to implement health & safety measures to ensure operations at our wind, solar and battery operations continued, allowing us to contribute electricity and balancing services to the National Grid - energy is a key service we can't do without. Quickly too, project development work, from "home offices" and kitchen tables up and down the country, was delivering at the same pace and with the same dedication as before.

Even when we are unable to visit you in person or gather in groups, we have been able to remain in contact and let you know about local activity and hear your news, ideas or concerns relevant to our projects. Thank you for working with us, taking up the offer to join our "catch-up calls", webinars, sending e-mails and

participating in various digital events - to keep the lines of communication open and effective.

Many people have found some changes liberating, like the move to increasingly online communications, as they avoid travel, and can slot meetings or events in to their other routines. We won't withdraw these options in the future. So, even as we continue to adapt to a new 'normal', now with hope that vaccines will help us overcome the worst effects of the virus, we look forward to continuing to link, chat and learn from you through 2021.

Vattenfall and the sector as a whole are stepping up efforts to improve diversity and inclusion within the offshore wind industry. New best practice guidelines¹ have been agreed and the drive is to ensure the workforce of the future is not only representative of the population as a whole, but embraces the diverse talents that are needed to reach our climate-smart goals. If you are interested in a career in the sector, find out more here: www.owic.org.uk/careers and <https://www.renewableuk.com/page/Careers>

Here's to a better and happier New Year!

Ruari Lean

¹ www.owic.org.uk/bpg

2020 Round-up

Development consent awarded for Norfolk Vanguard

On Wednesday 1st July 2020, the Secretary of State for Business, Energy, and Industrial Strategy granted development consent for Vattenfall's application to build and operate the Norfolk Vanguard Offshore Wind Farm.

Danielle Lane, Country Manager and Head of Offshore Wind for Vattenfall in the UK, Co-Chair OWIC, reflected on the positive decision:

"This is a great step forward in the battle against climate change, to increase jobs and skills in the East of England, and for the offshore wind industry as a whole."

The Norfolk Vanguard Offshore Wind Farm will generate 1.8 gigawatts of clean electricity when built. That's enough to power almost two million homes each year while saving over three million tonnes of carbon dioxide emissions annually.²

The decision is also great news for people living locally, who we've been working with over the last four years to develop this project. They can look forward to a multi-billion pound economic boost, bringing with it hundreds of new long-term jobs, driving forward a green revolution and helping to

level up UK opportunities. Thank you for all your thousands of contributions – you have influenced our thinking and encouraged us to innovate. The sector as a whole will benefit from the developments you have encouraged us to lead on, like coordinated projects, and duct installation for our entire Norfolk Zone at once, as well as adoption of HVDC transmission technology, which reduces environmental impacts overall."

We now move to a new phase of activity for Norfolk Vanguard, which will inform our procurement and construction process and ensures we meet our scheduled date for providing low carbon, home-grown electricity into the National Grid by mid/late-2020s.



Country Manager and Head of Offshore Wind for Vattenfall in the UK, Danielle Lane



² The same as taking approximately 1.6 million (combustion-engine) cars off the road

Norfolk Boreas reaches the end of its DCO examination

Following extensive pre-application consultation on the Norfolk Boreas Offshore Wind Farm, with thousands of interactions and a rich breadth and depth of feedback influencing our plans, we submitted our application for Development Consent to the Planning Inspectorate (PINS) in June 2019. PINS formally accepted our application, and the normally six month examination process began in Autumn 2019.

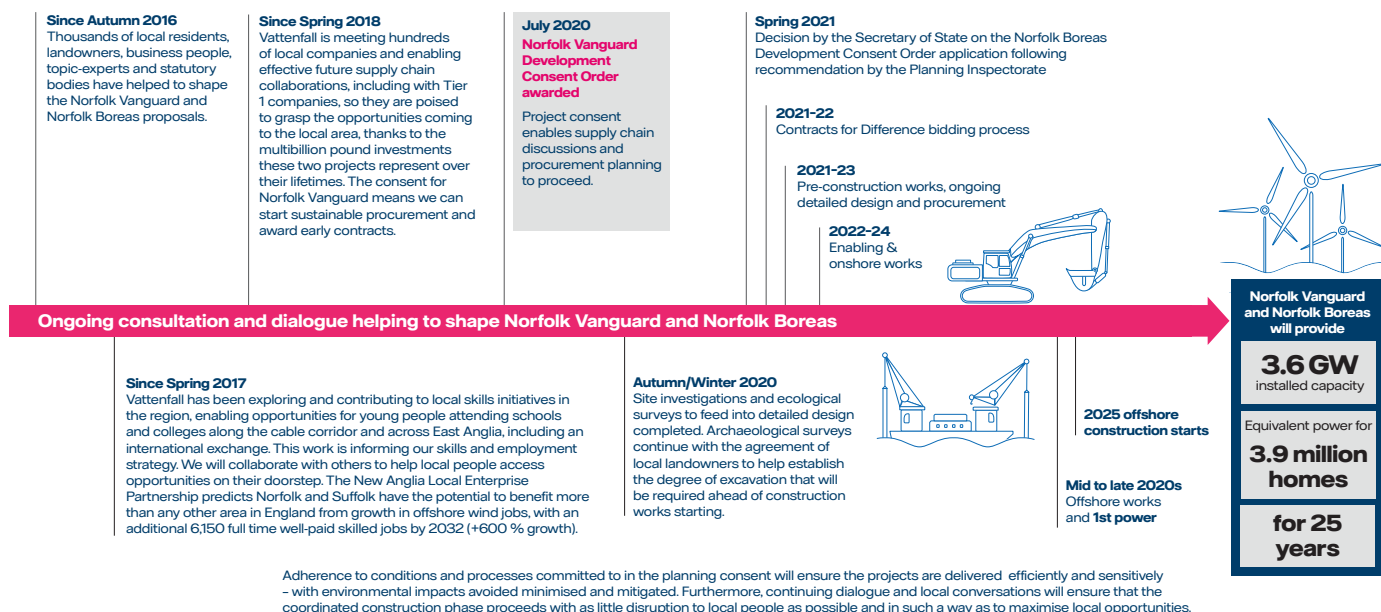
Scheduled for Spring 2020, the last hearings were postponed, as Covid-19 led to widespread public health restrictions. The examination period for Norfolk Boreas eventually closed five months later than anyone could have predicted at the start, on the 12th October 2020. The Examining Authority now has three months to review all the evidence³ and make a recommendation to the Secretary of State. We expected the Minister's decision in April 2021.

Should Norfolk Vanguard and Norfolk Boreas both proceed to construction and operation, it will mean double the clean energy is presented to the grid and twice the emissions reductions.

These projects would be delivered in a highly coordinated, efficient and optimized way, and deliver huge benefits and economic opportunities to the region.



Norfolk Projects' Indicative Timeline



³ All relevant information concerning the Norfolk Boreas project DCO application process can be found here: <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/norfolk-boreas>

What do early steps to address climate change look like in your neighbourhood?

One of the first obvious signs of progress on our Norfolk projects, visible from Happisburgh beach was the jack-up vessel Haven Seariser2, owned by Red7 Marine, of Ipswich.



Jack-up barge

Some of the eagle-eyed among you may have spotted in a field, a borehole drilling, window sampling or a Cone Penetration Testing (CPT) rig. We collect the soil samples and undertake CPT tests to learn about local soil types and properties of the sub-surface. Samples have been sent for testing in Fugro's world-class soil testing laboratories in Wallingford, UK, and Nootdorp in the Netherlands.



Example of a window sample drilling rig

Of course, you'll note from the timeline (on p3), and maybe through your own involvement in shaping the project by providing information and local knowledge since 2016, that lots of research and a significant amount of on-the-ground and offshore survey work has happened already. This Autumn/Winter, with appropriate Covid safety precautions in place, we have been adding to our understanding of the local baseline. This is so important because it adds detail as we plan the most efficient turbine locations within the array, the most appropriate foundation design, as well as the final cable route from the turbines to landfall. Similarly, we are adding to our detailed understanding of the onshore cable corridor up to the connection point into the National Grid substation, and at the onshore project substation site.

The majority of this supplementary site investigation work was completed in October 2020. You may have missed these sights for this year, but construction when it starts in 2022, will be more visible, and intense. Laying cables to bring power equivalent to 10% UK domestic electricity needs ashore is a huge undertaking, and our methodology is designed to impact on the Norfolk way of life as little as possible. It will involve installing ducts and reinstating land quickly in short sections.



Typical archaeological trial trench



Example of a CPT rig



Land reinstated following archaeological inspection

In order to move along the cable corridor quickly during construction, we are also in the process of undertaking archaeological trial trenching now. Norfolk, like much of the UK, is rich in historic and cultural heritage, and we are keen to identify if there are sites along our route that we should excavate, thereby bringing buried knowledge to light before we proceed to build tomorrow's vital infrastructure. Weather and land-use dependant,

this work is expected to be completed in early 2021.

All this field work is carried out in close liaison with landowners, farmers and their agents, enabling normal agricultural activities to continue as far as possible. We are grateful for their collaboration, and have learnt valuable lessons which will feed into subsequent undertakings.

Meet Vattenfall Norfolk Projects Land Manager - Oliver Humphrey

Hello,

I trained and qualified as a Rural Practice Chartered Surveyor specialising in advising farmers and landowners on all matters including Rural planning. I then spent several years working with renewable energy developers around the United Kingdom, on behalf of railway interests. Now, I'm on the other side of the table, representing Vattenfall. I joined Vattenfall's offshore wind team in February 2020, just before Lockdown struck, but am happy to be able to make more trips to Norfolk to meet landowners and their agents, as lockdowns have eased.

I joined Vattenfall because as a land agent we are encouraged to think about the planet as an asset that we are custodians of; it's not ours, we are looking after it for future generations. I have always felt that it's really vital that renewable energy gets delivered, so that we can pass on a *healthy* planet.

I was attracted to Vattenfall because, despite falling into the category of a 'big developer' they respect landowners and their land stewarding role. Since joining, my feelings have been vindicated, I can confirm, at Vattenfall we try our hardest to ensure that the interaction between what we need to do and what's best for the land and it's owners and occupiers is as balanced and fair as possible, ensuring that affected landowners are engaged with as much as possible, and work with us to find appropriate ways of working. I also work with a superb team of consultants who are regularly out on foot on various parts of the cable route, ensuring our Norfolk projects doing as much as we can to avoid, reduce or mitigate any potentially lasting impacts.



We have a cable corridor which is nearly 65km long, this means that the project interacts with over 100 directly affected landowners. There's also 2 railway lines, several roads and a number of other underground utility pipes and cables, all of which we will have to build over, under or around without disrupting the important services that they are providing as part of the UK's infrastructure. Thankfully, I find that my engineering colleagues are adaptive, and listen to lots of ideas including from local land experts.

As we move into 2021 and beyond, you're likely to see more of our contractors out on site. We will continue to work proactively and closely with farmers and landowners along the route to cause as little disruption both to their everyday use and management of the land and also to the ecosystems that exist within it.

Thank you for your welcome to Norfolk, and I look forward to strengthening relationships and mutual understanding as the project progresses.

In November, the Government confirmed its commitment to Offshore Wind as the back-bone of our clean energy revolution

Covering clean energy, transport, nature and innovative technologies, the Prime Minister has outlined a “ten point plan” to eradicate the UK’s climate-damaging CO2 emissions by 2050, and it is music to the ears of many organisations, companies, students and individuals in East Anglia, all rearing to get going, as the region builds on it’s proven strengths.

The plan – part of the PM’s mission to level up across the country – will mobilise £12 billion of government investment to create and support up to 250,000 highly-skilled green jobs in the UK, and provide investor confidence to encourage over three times as much private sector investment by 2030.

Why is offshore wind No.1 in the ten point plan?

The growth and continued, rapid innovation of offshore wind is vital because it can contribute at sufficient scale and at a fast pace, relative to other low-carbon energy technologies, to the electrification of our power systems, on which many other points in the plan hinge, including:

- Generating low carbon hydrogen for industry, transport, power and homes;
- Electric vehicles;
- Jet zero and greener maritime transport solutions;
- Homes and public buildings;

Just as offshore wind delivers climate and environmental benefits, we recognise other elements of the green recovery blueprint, from enhancing public transport, enabling cycling and walking, supporting nature to new innovation and finance measures, will also help us all live climate-smarter lives.

What kind of share of this investment can East Anglia expect, and why?

Quadrupling the amount of offshore wind energy we produce from 10GW today to 40GW by 2030, will mean extending the UK’s global leadership in offshore wind, and becoming the first to produce enough capacity for all our country’s domestic energy needs, with clean, secure, inexpensive wind energy.

This is a stretching target, but it can be done. The southern North Sea has long been a UK powerhouse, and today, it is the leading edge of our transition to a sustainable, long-term energy future. If all advanced projects proceed to operation approximately a quarter of the UK’s offshore wind power will be generated off East Anglia. Norfolk Vanguard and Norfolk Boreas are set to deliver more than 40% of the operating capacity in the southern North Sea.

This growth requires multi-billion pound investments and will create and support up to 60,000 jobs.⁴ Developers, like Vattenfall, and local stakeholders like the New Anglia Local Enterprise Partnership, are collaborating and stepping up to realise opportunities for green job creation and sustainable supply chain businesses. But we can’t afford further delays, pauses of even a few months can set big infrastructure projects back years.⁵ The resultant breaks in economic activity – as we’ve learnt painfully over recent times – can be difficult for the supply chain too. And to reach our net zero targets, we need to move fast.

Over the last few months, Vattenfall has held talks with a number of local organisations, businesses and research groups. We’ve held exploratory conversations to inform early research and development projects related to supporting nature at offshore wind farms, and in harmony with onshore transmission infrastructure installation. We have also held dialogues with innovative local supply chain companies. We are very excited at the prospect of ongoing local collaboration, enhancing the regional offer, and delivering a sustainable sector that goes from strength to strength bringing new prospects to the entire region.

⁴ <https://www.gov.uk/government/news/pm-outlines-his-ten-point-plan-for-a-green-industrial-revolution-for-250000-jobs>

⁵ <https://group.vattenfall.com/uk/newsroom/News/2020/vattenfalls-response-to-the-prime-ministers-ten-point-plan-for-a-green-industrial-revolution>

Successful offshore wind cluster attributes in East Anglia

Driving productive collaboration for decades

Key specialisms



Fabrication



Innovation
and Business
Incubation



Subsea
Innovation



Decommissioning

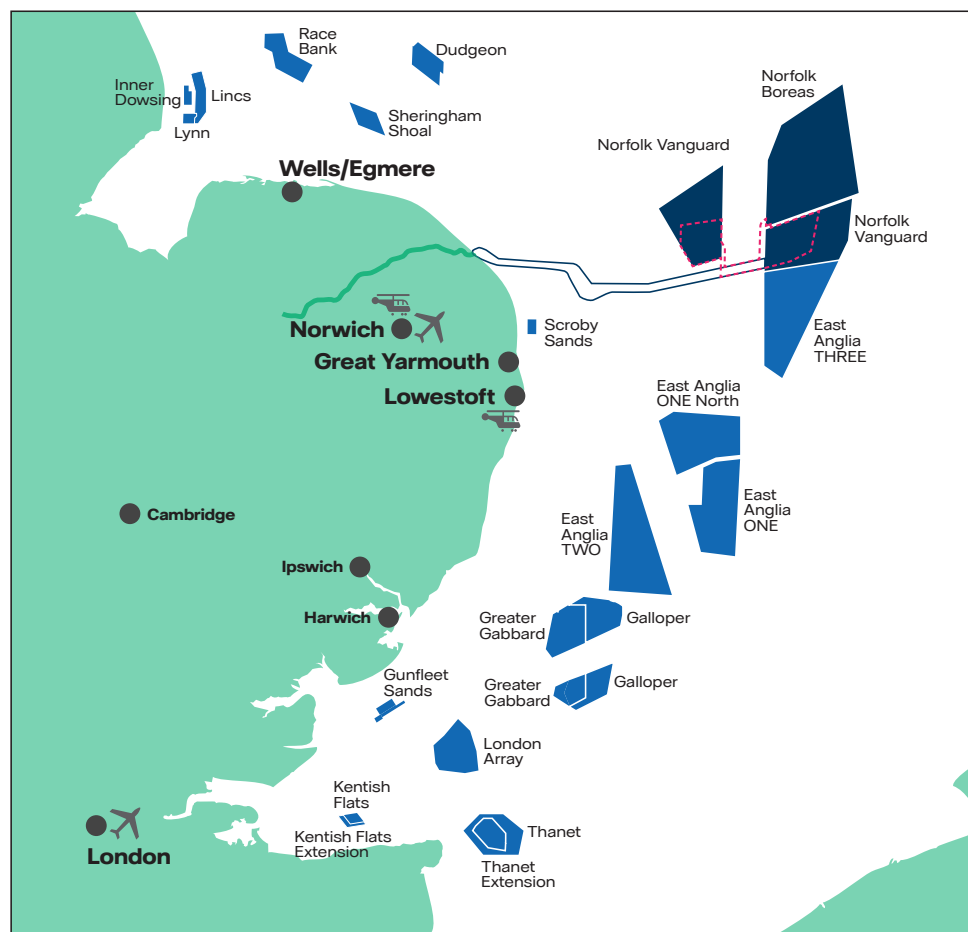


Specialist
Engineering



Operations
and Maintenance

- Strong links with local industrial strategy
- Related industry / cross sector links - thanks to a long offshore energy story and established local supply chain
- Entrepreneurial drive, centered in Norwich
- World class physical infrastructure & ports
- Skilled workforce & ongoing investment in skills
- Geographical proximity to market
- Research, development & innovation - commercial and academic institutions like Hethel Engineering, UEA and spin-offs supported by new arrivals to the region like Offshore Renewable Energy Catapult
- Supporting organisations - public and private sector & membership groups acting to foster collaboration
- International recognition and exporting skills and services
- IT, digital and communications strengths



Vattenfall's Norfolk Zone will be the biggest coordinated offshore wind zone in the world, and constitute >40% of the East Anglia cluster's installed capacity by 2032*.

Note the coordinated and streamlined High Voltage Direct Current (HVDC) transmission system - a single cable corridor, landfall and connection into the National Grid to deliver the equivalent of 10% of UK domestic electricity needs.

*when all currently proposed projects, including from other developers will come onstream.

Vattenfall in the community - giving young people a stake in our industry

Southern North Sea 2020 and Offshore Wind Week

Lots of regional and business conferences have moved online this year, and Vattenfall has been proud to sponsor some truly inspiring events.

September saw the SNS conference opened by Kwasi Kwarteng, Energy Minister. Danielle Lane Vattenfall's UK Country manager was among the industry leaders responding to his address. Norfolk Vanguard and Norfolk Boreas' Project Director introduced himself to the region's offshore wind community - Rob Anderson has joined the team to lead the crucial technical and commercial aspects as the projects transition from development to realisation. Susan Falch-Lovesey our Local Liaison Officer and Skills Champion joined a panel discussing some of the key challenges the sector and infrastructure development generally faces, including looming shortages of suitably qualified people to join the workforce. She outlined also how the sector is

collaborating to address this gap, and to provide opportunities for greater diversity and inclusion to strengthen the workforce.

Wind Week comes around every Autumn with RenewableUK coordinating nationwide celebrations and networking. For the 6th year running, the East of England Energy Group brought back its East Anglia Offshore Wind celebrations. This year, thanks to the new "virtually connected world" as well as welcoming developers, operators, supply chain companies and training providers to the event to celebrate all things offshore wind in the East, anyone with an interest in the sector was invited to join in too. With free entry, we're sure that lots of new visitors listened to local leaders share their vision for the region's burgeoning green revolution, browsed virtual exhibition stands, and were inspired by films from offshore wind operators and developers created especially for the event. You can see the Vattenfall film here: https://www.youtube.com/watch?v=u_o_y9QLI40.



Vattenfall in the community - Giving young people a stake in our industry

RESTART - The Norfolk Enterprise Festival

Earlier in September this year, we participated in the New Anglia LEP's RESTART festival - a fantastic, annual initiative aimed at encouraging businesses and entrepreneurs across Norfolk to connect, showcase their offering and challenge/develop ways of progressing economic recovery in the region in a friendly, informal and social environment.

We are committed to playing our part in UK and East Anglia green recovery, and used our sponsorship of the event to showcase the achievements of the students we work with through our partnership with University Technical College Norfolk (UTCN) in Norwich.



UTCN students past and present led the presentation titled 'Giving young people a stake in your business' and they showed through their flexibility, resilience and innovative attitudes how young hands can also be very safe hands in which to entrust part of your operation.

They even delivered some fun audience participation, showing off their ability to collaborate and draw people into the vision of a greener future. This was based on work they have done to enable a roll-out of peer-mentored learning to keep young people engaged and connected, despite the pandemic and its potentially limiting effect.

If you'd like to see the recording of the students RESTART session, please use the following link: <https://bit.ly/3ooajNQ>.

Lucy Coubrough, an ex-student of UTCN herself, was commissioned by Vattenfall to coordinate our contribution to RESTART. We think she did a great job - she outlines her involvement with the industry in the film we produced for Wind Week.

Necton Primary School engagement

In October 2020, children from Years 5 and 6 at Necton Primary School joined us by video call to hear about the onshore survey work we had been undertaking in their area. The students had some brilliant questions about wind energy in Norfolk and beyond. Their curiosity, enthusiasm for learning and interest in the technologies that can help address climate change is fantastic.

Well done and thank you to Necton Primary School for getting involved. If your school or group would like to do have a similar online session, please get in touch by email: info@norfolkvanguard.co.uk.



Two Norwich-based energy engineering students embark on a year in industry working on our Norfolk projects.

Vattenfall project teams were so impressed with last year's first Year in Industry student, Angus Binnian, we decided to give two students the chance this year.

Former RAF aircraftsman-turned mature student Sebastian Everett's placement reflects the company's commitment to bring ex-military personnel into the industry in line with its Armed Forces Covenant pledge. Matthew Keal, is a former student at Bungay High School Suffolk. Both students are passionate about addressing climate change and working in new power generation. They are valued members of the team, and are delivering alongside our more experienced staff.

Exciting spin-offs from peer-mentored 3D-VR Wind Farm Design Programme - your turn to learn?

Since 2018 we have been working with UTCN and UEA to develop a peer-mentored wind-farm design programme.

During the pandemic, current student-programme-leaders have adapted to support groups' learning without the face-to-face workshops and hi-powered hardware used previously. Are you a teacher/tutor of year 10-12 students? Do you coordinate a group interested in the offshore wind sector? If you would like to experience a 2 hour, fun and challenging Interactive Renewable Energy Careers and Skills Programme led by UTCN mentors, please contact sophie.skipp@utcn.org.uk

UEA Careers Talks

Two Vattenfall colleagues who have themselves studied for high level degrees, presented and chatted to graduate students at the UEA, as part of the careers support programme offered by the university to its students. Vattenfall wouldn't be surprised to hear in a few months' time that several of those participating find specialist roles in the sector. As the fourth largest infrastructure investor in the UK, delivering in ever more challenging environments, and designing ever more sustainable projects, research and development led by individuals with advanced *knowledge and passion is important.*

Previous peer mentors update

Joanna, Maisie, Jovita and Sarah – have all left UTCN and begun new, exciting chapters in their lives. They have won places at the Dyson Institute, UEA, and apprenticeships, with Nestle in Wisbech and another with Scottish Power Renewables working on their East Anglia 1 Offshore Wind Farm – well done ladies!



Supply chain views & next steps

Vattenfall has conducted a number of supply chain meetings with UK companies since 2018. One-to-one meetings, “meet-the-buyer” sessions, and workshops bringing hundreds of stakeholders together enable a broad and deep exploration of opportunities as well as some challenges currently faced by the offshore wind sector. Have a look at our latest supply chain report published in April 2020, and listen to our supply chain podcast to find out more about the work already being done by Vattenfall to engage with businesses in the East Anglia region here: www.vattenfall.co.uk/supplychain.

More supply chain opportunities will be shared over the coming months. Please register your interest if you think you have something to offer the projects.



Vattenfall Poppy Appeal for Royal British Legion

Vattenfall is proud to be a signatory of the Armed Forces Covenant. Around 10% of Vattenfall's UK workforce have entered the renewable and low carbon energy sectors following careers in the Armed Forces. This year the Royal British Legion's appeal was 'every poppy counts', and people were asked to back the Poppy Appeal in new ways, while adhering to social distancing rules. Below is our response. Read more here: www.vattenfall.co.uk/poppyturbine.



Illuminated 125m poppy wind turbine at Swinford Wind Farm in remembrance of Armed Forces and raising money for the Royal British Legion's Poppy Appeal.

Keeping in touch

Book a slot to catch-up via video call

As part of our commitment to keeping the local community informed about our works, we have been holding online video surgeries – “kitchen table catch-ups” – for local people and interested parties to ask any questions about our Norfolk projects or the works taking place in their area. These are an opportunity for anyone who is interested to join a call at their convenience, speak directly to members of our project team informally, and get answers to any questions they might have.

We plan to continue holding these surgeries during 2021, with the next ones planned for:

- **Wednesday 20th January, 10am - 7pm**
- **Wednesday 17th February, 10am - 7pm**

To book a timeslot, please visit: <https://vattenfallnorfolk.simplybook.it>.

If you would prefer to talk to us over the phone or do not have access to internet, please call or email us and we will arrange a time for a member of our team to call you back.

If you would like to receive regular updates about Vattenfall's projects in Norfolk and their progress in general, please do sign up to our e-newsletter here: <https://bit.ly/3eSV4sM>.

The latest information and updates are also always posted on our website: www.vattenfall.co.uk/vattenfallinnorfolk.

As always, if you have any questions or would like to discuss our work in more detail ahead of our regular video surgeries, please do not hesitate to get in touch.

Contact us



Local Liaison Officer,
Susan Falch-Lovesey

Community enquiries

Email: susan.falch-lovesey@vattenfall.com

Landowner enquiries

Email: vattenfallinnorfolk@consentssolutions.com

Maritime enquiries

Email: jonathan@brownmay.com

Supply Chain enquiries

Email: futuresupplychain@vattenfall.com

Vattenfall in Norfolk genral enquiries

Email: info@norfolkbores.co.uk

or

Email: info@norfolkvanguard.co.uk

Freephone: 0800 019 3517

Vattenfall's Norfolk Zone Community Benefit Fund

- let's start talking about and shaping the fund in 2021

We want to acknowledge the role of local communities, who have helped shape our Norfolk projects and who will host and accommodate vital infrastructure – crucial to delivering the UK's move to a net zero CO₂ emissions future. And we want to encourage you, by supporting your local initiatives that also move us all forward together towards ever climate smarter living.

What kind of Community Benefit is Vattenfall proposing for Norfolk?

It is a voluntary contribution to the local communities who have an interest and a stake in our projects. We want you to help shape the fund.

We aim to talk to lots of you – we want this conversation to be inclusive – and we'll dive deep into some topics that you tell us are the most interesting.

Every fund is to benefit a unique area, acknowledging local connections with a unique wind farm. There are two main topics we'd like your thoughts on.

We need to think about governance: who should benefit, and who should not. For example, should applications for support be open to all of East Anglia, all of Norfolk, or follow closely the project's infrastructure, along the cable corridor, to the connection point with the National Grid? Should only certain types of groups be eligible to apply for funding, and others not? We will need to consider how best the fund could be administered and managed, and who by.

We also want your ideas about what this funding might help communities do!

What inspiring and inspired ideas need support? Do you have innovative initiatives for greening community living near you? We'd like to explore with you, local interests and needs and local pathways to climate-smarter living.



We'd like to be ready to make the first awards when our onshore construction works are underway, so probably during 2023/24. In our experience, this process of exploring and defining how the fund will work and thinking about the first ideas that could be eligible for funding, takes many months. So, let's get started. Our first questions will be coming in 2021. We're looking forward to this.

You may like to learn more about how established wind farms benefit local communities, from skills, employment and supply chain opportunities to community benefit funds, read more, here: www.vattenfall.co.uk/communityinvestment.

And to learn more about the inspiring "Unlock our futures fund", associated with the European Offshore Wind Deployment Centre, look here: <http://bit.ly/2IXMXnB>.



Wishing you a safe, healthy and happy holiday season