

Norfolk Boreas Offshore Wind Farm Norfolk Vanguard Outline Skills and Employment Strategy

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Photo: Ormonde Offshore Wind Farm

Norfolk Vanguard Offshore Wind Farm Outline Skills and Employment Strategy

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Photo: Kentish Flats Offshore Wind Farm

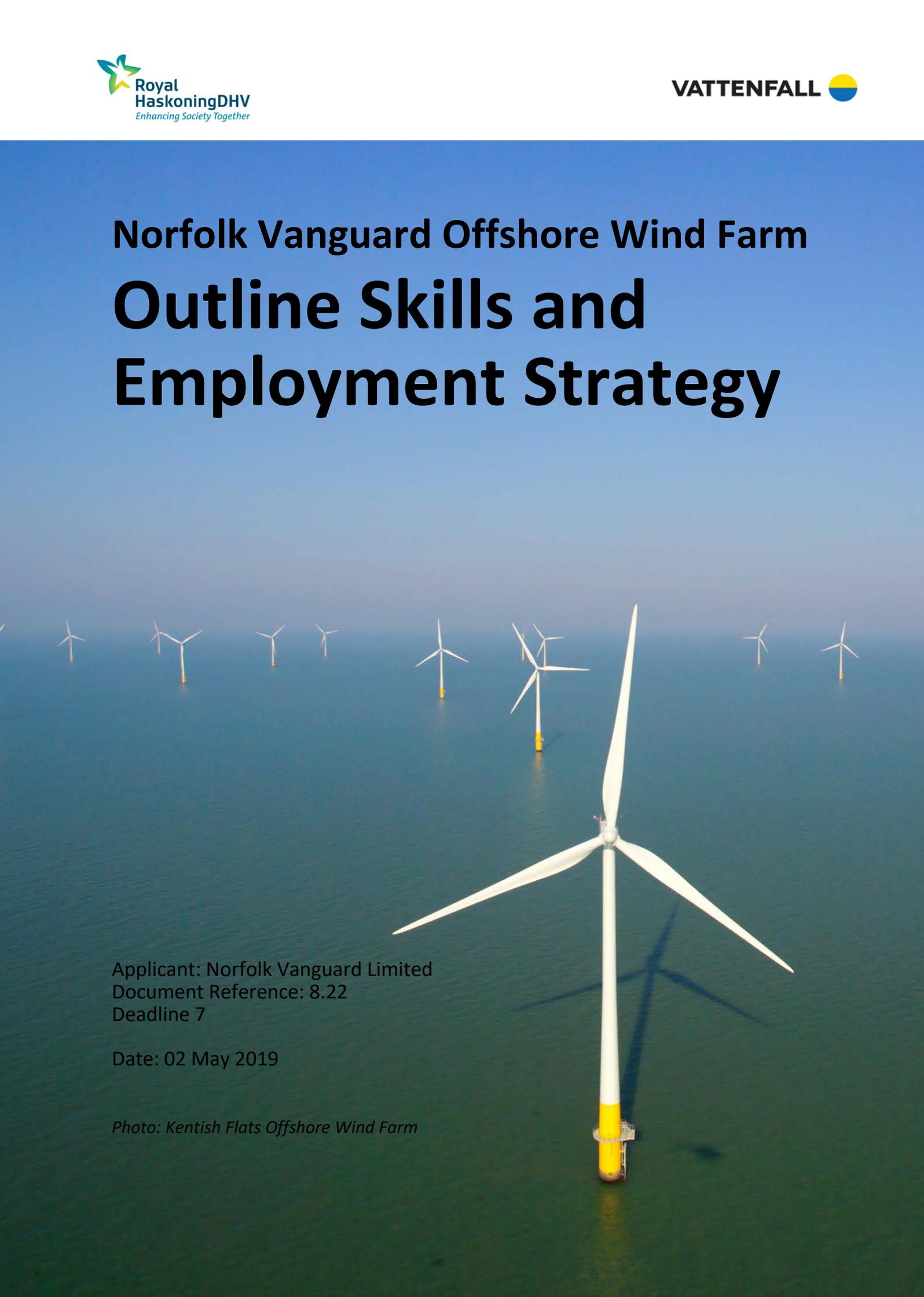


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Glossary

| | |
|-------|--|
| CfD | Contracts for Difference |
| CFN | Community Foundation Norfolk |
| DCO | Development Consent Order |
| 3DVR | 3 Dimensional Virtual Reality |
| EEEGR | East of England Energy Group |
| EOWDC | European Offshore Wind Deployment Centre |
| GW | Gigawatt |
| HDD | Horizontal Directional Drilling |
| HVDC | High Voltage Direct Current |
| ICE | Institute of Chartered Engineers |
| LEP | Local Enterprise Partnership |
| LiDAR | Light Detection and Ranging |
| NA | New Anglia |
| NCC | Norfolk County Council |
| NERC | Natural Environment Research Council |
| NV | Norfolk Vanguard |
| OWF | Offshore Wind Farm |
| SCC | Suffolk County Council |
| STEM | Science, Technology, Engineering and Mathematics |
| UEA | University of East Anglia |
| UTCN | University Technical College Norfolk |
| VWPL | Vattenfall Wind Power Limited |

1 INTRODUCTION

1. This document outlines the matters to be included in the Skills and Employment Strategy which is required under Requirement 33 of the Norfolk Vanguard Development Consent Order (DCO).
2. Prior to submission of the Skills and Employment Strategy for approval in accordance with Requirement 33(1), the Applicant must consult North Norfolk District Council, Broadland District Council, Breckland District Council, Norfolk County Council and the New Anglia Local Enterprise Partnership on the content of the strategy. The Requirement is set out in full at Appendix A. Purpose of this Document

2 THE APPLICANT

3. Norfolk Vanguard Limited is proposing to develop the Norfolk Vanguard Offshore Wind Farm.
4. Vattenfall, the parent company of VWPL and Norfolk Vanguard Limited, is the Swedish state-owned utility company and one of Europe's largest generators of electricity and heat. Vattenfall is also the second largest developer in the global offshore wind sector. Vattenfall's purpose is to power climate smarter living and the company is strongly committed to significant growth in wind energy, both onshore and offshore.
5. Vattenfall has invested over £3.5 billion in UK wind power since 2008. As of early 2018, Vattenfall operates more than 1GW of installed capacity in the UK and plans to invest €5bn in renewables, mainly offshore wind, in Northern Europe by 2020 with an overall ambition to have 4GW of operational capacity by 2020 and 7GW by 2025. The company has the ambition that the UK will continue to be a growth market for Vattenfall, with Norfolk Boreas and Norfolk Vanguard providing a significant next step towards this ambition, potentially adding up to 3.6GW to Vattenfall's capacity when fully operational.
6. Vattenfall has world leading experience in offshore wind, as owners of Kentish Flats, Kentish Flats Extension and Thanet offshore wind farms operating in the southern North Sea, the European Offshore Wind Deployment Centre (EOWDC) located in Aberdeen Bay, and Dan Tysk and Sandbank in the German North Sea, Nordzee Wind and others. In the Irish Sea Vattenfall also operates the Ormonde Offshore Wind Farm. Vattenfall is also developing a number of European offshore wind farms, including Hollandse Kust Zuid, Horns Rev 3, and Danish Kriegers Flak. Our innovative offshore wind schemes are deploying "next generation technology" and EOWDC represents just one example where Vattenfall is investing significantly in new research both in terms of technical innovation, and environmental studies.

3 THE DEVELOPMENT

7. Norfolk Vanguard Offshore Wind Farm (OWF) comprises two distinct areas, Norfolk Vanguard (NV) East and NV West ('the OWF sites'), which are located in the southern North Sea, approximately 70km and 47km from the nearest point of the Norfolk coast respectively. The OWF would be connected to the shore by offshore export cables installed within the offshore cable corridor from the OWF sites to a landfall point at Happisburgh South, Norfolk. From there, onshore cables would transport power over approximately 60km to the onshore project substation and grid connection point near Necton, Norfolk.
8. Once built, Norfolk Vanguard would have an export capacity of up to 1800MW, with the offshore components comprising:
 - Wind turbines;
 - Offshore electrical platforms;
 - Accommodation platforms;
 - Met masts;
 - Measuring equipment (LiDAR and wave buoys);
 - Array cables;
 - Interconnector cables; and
 - Export cables.
9. The key onshore components of the project are as follows:
 - Landfall;
 - Onshore cable route, accesses, trenchless crossing technique (e.g. Horizontal Directional Drilling (HDD)) zones and mobilisation areas;
 - Onshore project substation; and
 - Extension to the existing Necton National Grid substation and overhead line modifications.
10. Should Norfolk Vanguard and Norfolk Boreas both be consented and proceed to construction, this Skills and Employment Strategy would be developed on behalf of both projects. The Applicant believes the potential synergies to be derived by developing, constructing, operating and decommissioning the Project and Norfolk Boreas through coordinated approaches, including the co-location of key infrastructure for both projects, is consistent with this. Norfolk Boreas will develop a separate Skills and Employment Strategy only in the event that Norfolk Vanguard is not consented and does not proceed to construction.

4 SCOPE OF THE OUTLINE SKILLS AND EMPLOYMENT STRATEGY

11. The purpose of the Skills and Employment Strategy will be to encourage, enable and enhance a local, highly skilled workforce and diverse, inclusive talent pipeline to meet the business needs of Vattenfall and its supply chain as well as the aspirations of individuals.
12. This Outline Plan sets out the approach that will be adopted by the Applicant to maximise the economic benefit associated with Norfolk Vanguard in Norfolk and the East of England and the principles that must be adhered to, including the types of activities to be undertaken by the Applicant as part of the development and implementation of the Skills and Employment Strategy.
13. As detailed in Appendix A of this document, Requirement 33 of the Development Consent Order requires a Skills and Employment Strategy to be produced in accordance with this outline strategy.
14. Appendix B to this document provides some examples of the types of initiatives the Applicant has instigated and developed in Norfolk and continues to evolve in collaboration with others, as well as more established programmes. These represent examples of the types of activities that support skills development and enhance the employment opportunities of participants and are therefore presented as examples of the types of initiatives which will be included in the final Skills and Employment Strategy.
15. The Applicant will also be required to prepare a Supply Chain Plan in respect of Norfolk Vanguard in order to qualify to participate in a future Contract for Difference (CfD) auction. The final Skills and Employment Strategy and the Supply Chain Plan will be prepared separately; however, the Applicant has structured this Outline Strategy to ensure both documents complement each other and share common objectives.
16. The Applicant believes the Skills and Employment Strategy will be of immense value to Norfolk Vanguard, and eventually also to its sister project Norfolk Boreas, to Norfolk and to East Anglia. It aligns with and a number of partner strategies and plans, including those from the New Anglia LEP; Norfolk County Council and the Offshore Wind Sector Deal.
17. The Norfolk Vanguard and Norfolk Boreas projects are being developed via a coordinated approach, with many elements co-located. They represent the latest generation of far-offshore development and two of the largest offshore wind farm developments in the world, with innovative solutions deployed, including HVDC

transmission technology, in order to deliver coordinated development and operation, efficiencies and security of supply to the UK consumer.

18. The projects, if consented, will take up to 10 years to build and commission. This presents Vattenfall with a strategic opportunity to inspire and develop a local workforce that could be employed directly by Vattenfall or its supply chain. Early investment in education and skills, if planned effectively, will support Norfolk and the East of England in its drive to raise aspirations and to achieve sustainable economic growth. Meanwhile, high quality continuity and progression of opportunity, that meets the needs of local people, will help Vattenfall and other wind developers to attract and grow local talent for a burgeoning East Anglian low carbon, clean-tech, high-tech economy.
19. It is currently anticipated that construction of Norfolk Vanguard could commence (enabling works) in 2022/23, with operation and maintenance commencing in 2027/8. The Applicant has reserved a space at Peel Ports Great Yarmouth for an operations base. Norfolk Boreas would be expected to commence operation in 2028/29. These dates are indicative only and will be reviewed and updated in the final Skills and Employment Strategy.

5 THE APPLICANT'S APPROACH TO STAKEHOLDER ENGAGEMENT AND TO COLLABORATION ON SKILLS DEVELOPMENT

20. The Applicant recognises the importance of engaging with stakeholders, including communities through its work. The Applicant's principles, which are adhered to throughout all its projects, are:
- Openness and transparency;
 - Providing opportunities to get involved;
 - Sharing information and understanding;
 - Listening and responding; and
 - Respect
21. The Applicant considers these principles apply equally in relation to developing its understanding of, and potentially adding value to provisions and programmes supporting skills and employment in Norfolk and the East of England, as to any other development and collaborative process. Accordingly, the Applicant has been engaging early in order to better appreciate the local context, including understanding where the strengths of local provision can lead to learning to inform the strategy and be built upon, avoiding duplication, identifying any gaps in provision, and considering how Vattenfall can best add value.
22. Such is the Applicant's commitment to collaboration in Norfolk and East Anglia to appropriately support those engaged in developing skills and employability, that since early 2017 it has employed a Local Liaison Officer and Skills Champion. With a deep understanding of the education and training landscape in Norfolk and East Anglia, Vattenfall's Liaison Officer and Skills Champion has developed many important relationships among the education and skills providers of Norfolk and beyond, including representing the interests of Vattenfall, Norfolk and East Anglia in initiatives relating to skills and employment on a national level, including the Offshore Wind Sector Deal (2019), through its new 'Investment in Talent Group'.
23. Furthermore, since 2018, the Applicant has begun early engagement with the local supply chain in order to understand directly the interests and needs of potential suppliers and service providers with respect to capitalizing on the opportunities that the Norfolk Vanguard and Norfolk Boreas projects will present. An aspect highlighted by representatives of local companies, which aligns with the latest report of the Department for Education, Employer Skills Survey¹, and intelligence included in the

¹ <https://www.gov.uk/government/publications/employer-skills-survey-2017-uk-report>

“EU Skills Study: Skills and Labour Requirements of the UK Offshore Wind Industry”² is the need to recruit, retain and upskill employees with appropriate capacities and skills. There is widespread agreement and anticipation among employers that utilising the Apprenticeship Levy will help in this respect.

² <https://aurawindenergy.com/publications>

6 EARLY ENGAGEMENT INFORMING THE OUTLINE SKILLS AND EMPLOYMENT STRATEGY

24. To date, the Applicant has collaborated closely with relevant stakeholders, including the New Anglia LEP, Norfolk County Council, Breckland Council; Broadland District Council; North Norfolk District Council, Gt. Yarmouth Borough Council, Department for Work and Pension and EEEGR (specifically Skills for Energy Group). In addition, the Applicant has engaged and worked with Key Academic partners, including: University Technical College Norwich (and the Colleges on the onshore cable route), University of East Anglia, East Coast College (Lowestoft), Centre for Energy Skills, East Coast College (Gt. Yarmouth) Offshore Wind Skills Centre, and College of West Anglia. The Applicant has also participated in early dialogue in relation to the planned Eastern Institute of Technology and an industry led STEM Hub.
25. The objective of early collaboration to date has been to explore and understand the local education, skills and training landscape, and how it relates to the interests and needs of the Offshore Wind Sector, whilst collaborating over very focused delivery where there is evidence of need and where it aligns with the Applicant's priorities. This engagement has already led to some exciting developments, and collaborative projects, as described in Appendix B to this document. A summary of the early engagement undertaken to date is set out at Appendix C.
26. The Applicant has also been engaging with the local supply chain in order to understand their interests and needs in relation to the skills agenda. Details of this early engagement are provided at Appendix D.
27. The early engagement outlined above is ongoing and will not end with the agreement of the Skills and Employment Strategy.

7 RELEVANT NATIONAL (SECTOR) AND LOCAL DEVELOPMENT AND SKILLS STRATEGIES

This outline Skills and Employment Strategy identifies opportunities for individuals and businesses based within the East of England Region for skills development and employment associated with the construction, operation and maintenance of the proposed Norfolk Vanguard and Norfolk Boreas development(s); it considers:

- The emerging priorities as highlighted in the Offshore Wind Sector Deal³
- The priorities of the Norfolk and Suffolk Offshore Wind Cluster (led by the new All Energy Leadership Council) to boost trade, investment and growth⁴, and
- Energy Skills Sector: A Skills Plan for New Anglia⁵
- The New Anglia LEP New Careers Hub developments⁶
- The priorities and needs of Norfolk County Council; Breckland, Broadland and North Norfolk District Councils and; Great Yarmouth Borough Council
- Vattenfall's own priorities, purpose and existing skills programmes (national and international)

³ <https://www.gov.uk/government/publications/offshore-wind-sector-deal/offshore-wind-sector-deal>

⁴ <https://newanglia.co.uk/norfolk-and-suffolk-are-uks-leading-offshore-wind-centre/>

⁵ <https://newanglia.co.uk/wp-content/uploads/2019/01/New-Anglia-Energy-Sector-Skills-Plan-v004.2.pdf>

⁶ <https://newanglia.co.uk/east-secures-careers-hub-from-government/>

8 SUPPLY CHAIN PLANS

28. The aim of the Supply Chain Plan and assessment process (prepared under the CfD mechanism) is to encourage the development of open and competitive supply chains in the UK and to promote further innovation and development of skills, which will in turn drive down the cost of low carbon electricity generation over the long term.
29. The Norfolk Vanguard Supply Chain Plan will include commitments made by Vattenfall across the following areas:
 - Competition;
 - Innovation; and
 - Skills
30. The Supply Chain Plan must be approved by the Secretary of State for BEIS and if Norfolk Vanguard is taken forward, Vattenfall will be required to demonstrate progress in terms of implementing the Supply Chain Plan.

9 PRINCIPLES UNDERPINNING THE OUTLINE SKILLS AND EMPLOYMENT STRATEGY

31. Vattenfall believes in adding value by investing in carefully conceived and well-evaluated education and skills programmes and opportunities. Focus will be given to programmes where the potential impacts for local people and for Vattenfall are greatest. Our strategy will be underpinned by the following principles:
- Vattenfall will promote employment, skilling, upskilling and re-skilling opportunities in communities in Norfolk and the East of England most closely associated with the development of Norfolk Vanguard (and Norfolk Boreas), ensuring the efficient delivery of the Norfolk Vanguard (and Norfolk Boreas) projects and ensuring long-term benefits, e.g. enhanced productivity, for Norfolk and the East of England
 - Vattenfall will enable continuity and progression of opportunity and career pathways that build on and feed into Vattenfall's existing national and international programmes;
 - Vattenfall will work in partnership to support the industry and system as a whole to build capacity, making best use of existing local and national education and skills infrastructures, programmes and opportunities and add value to these where appropriate

APPENDIX A DCO REQUIREMENT 33

33 (1) No stage of the onshore transmission works may commence until a skills and employment strategy (which accords with the outline skills and employment strategy) has been submitted to and approved in writing by Norfolk County Council.

(2) Prior to submission of the skills and employment strategy for approval in accordance with paragraph (1), the undertaker must consult North Norfolk District Council, Broadland District Council, Breckland District Council, Norfolk County Council and the New Anglia Local Enterprise Partnership on the content of the strategy.

(3) The Skills and Employment Strategy must be implemented as approved.

APPENDIX B OUTLINE COMMITMENTS FROM STARTS OF CONSTRUCTION, UP TO FIRST POWER YEARS (1-6)

- The outline commitments described below represent well-researched and considered opportunities to contribute effectively to the skills and employment training offering in the East of England as well as opportunities to help meet the overarching needs of the Applicant as it seeks to construct and prepares to operate its projects. The commitments to be taken forward in the final Skills and Employment Strategy may relate to some or all of the commitments listed below. Relevant priorities of the Norfolk and Suffolk Offshore Wind Cluster as described in “Energy Sector Skills: A Skills Plan for New Anglia” are also noted against the outline commitments

| Commitment | Description / Examples |
|---|---|
| 1 Supporting Primary and Secondary School/College STEM work, including coordination via a STEM HUB Securing the future energy workforce7 | Building on Vattenfall pilot programmes (Primary energy outreach programme/Secondary 3DVR project and STEM HUB) in the early development years and in collaboration with LA and other partners, an agreed investment will be made which maximises learning impact and informed career choices. |
| 2 Pre-19 Work Experience and T levels Building inclusive local capacity7 | Develop expectations/targets and a framework for Vattenfall (and our Supply Chain, as appropriate) to enable ‘workplace experience’ for an appropriate number of students each year and to ‘reach out’ to students (e.g. Via the STEM Ambassador programme) to offer a range of support from training, and experience to “light touch coordination” as per Government Career Strategy |
| 3 University, Post 19 internships/traineeships and University Year in Industry Supporting the development of a higher technical engineering offer7 | a. Enable “Year in Industry” placements b. Enable Summer Graduate Internships, meeting business interests and needs c. Participate in appropriate and relevant projects with UEA and/or other relevant higher education institutions if / as opportunities arise (either directly, or via our supply chain) |
| 4 Apprenticeships* (New Standards) via the Levy Addressing overall skills fragility7 | A coherent, phased plan for Apprenticeships – utilising the Levy and maximising local content for Vanguard and Boreas. |
| 5 Employment/Employability of targeted adults Building intra-industry and inter-sector workforce transferability7 | Support 3SUN / East Coast College Offshore Wind Skills Centre transition programmes for target groups and individuals, for example by sponsoring placements. |

| | Commitment | Description / Examples |
|----|---|---|
| 6. | Networking and Collaborating Mobilising industry leadership ⁷ | Collaborate with NA LEP, the new All Energy Leadership Council/ EEEGR S4E/Enterprise Advisors Network/ Regional Centres of Expertise/ Institute of Technology so as to be informed and proactive with regards to future needs and developments. Contribute to new OW Sector Deal 'Investment in Talent Group' |

2. The Applicant considers a wide range of opportunities will feed into delivering the Skills and Employment Strategy, some more directly addressing the skills of employees, and the supply chain, while other initiatives seek to contribute to enhancing the skills base and even aspirational attitudes on a more fundamental level. Further details on each of the examples above is set out below.

⁷ The New Anglia Sector Skills Plan referred to above has been developed in partnership with a number of local Energy stakeholders including Vattenfall, as well as major suppliers to the energy industry located in New Anglia and other stakeholders, for example EDF Energy, Scottish Power Renewables, East of England Energy Group, Engineering Construction Industry Training Board, University of East Anglia and the New Anglia Further Education College Group. Vattenfall recognises the importance of collaborating in relation to skills development, and endorses the New Anglia Skills Board strategy of placing employers at the centre of decision making on skills in Norfolk and Suffolk to ensure the skills system becomes more responsive to the needs of employers, residents and the future economy.

In the table of outline commitments above, headings in blue relate to key priorities identified in “Energy Sector Skills: A Skills Plan for New Anglia”. The seeks to show how early outline commitments aim to contribute to the New Anglia Sills Board Strategy, and to inform, inspire and secure the next generation of the Energy Sector workforce. The headings in the in “Energy Sector Skills: A Skills Plan for New Anglia” are explained below. Definitions are included here as they summarise effectively the challenges and opportunities noted in the area, following extensive examination of the issues, and in consultation with relevant stakeholders.

- i. Mobilising Industry Leadership – the plan explains the importance of developing and securing a sustainable private sector led approach, overseeing skills development and investment;
- ii. Developing a higher technical engineering offer – feedback from employers has highlighted the need for a better supply of local, graduate level, mechanical and electrical engineering skills.
- iii. Building ‘intra-industry’ and ‘inter-sector’ workforce transferability – feedback from employers highlighted the need to enable businesses within the Energy sector to access skills and workers locally from other industries at key times, as much of their requirements are generic.
- iv. Addressing overall ‘Energy Skills Fragility’ – employers are aware of jobs and key functions that experience skills shortages. We have defined these as fragile areas that require an appropriate training response, accessible to learners and employers across all of New Anglia.
- v. Building Inclusive Local Capacity & Securing the Future Energy Workforce – there are a number of pressure points and key concerns identified linked to the future supply of employees into the sector overall. We have identified a series of actions to engage with schools, open up opportunities to move into jobs within the Energy sector and address imbalances in the workforce linked to age and gender. In addition, the sector often looks externally out of area for its labour supply. It is important to work with employers to tackle the barriers that inhibit the growth in local residents securing employment in the Energy sector.

Apprenticeships and Group Training – Given the implementation of the apprenticeship levy- there should be a more coordinated approach to gather and deliver apprenticeships linked to employer needs. This plan sets out steps to create a more cooperative approach towards delivering suitably trained apprenticeships.

Primary Outreach Programme⁸ (Commitment 1)

3. The current programme involves a Primary School with credibility and experience (that we have worked with over the last 2 years) outreaching to other primary schools. The commitment would be to build on the current programme (involving student peer mentors leading renewable energy hands on activities) or enable other high quality primary school opportunities through other partners.

Secondary 3DVR project⁹ (Commitment 1)

4. The current programme involves University Technical College Norfolk (UTCN) delivering a previously co-developed and evaluated wind farm activity/scenario using industry standard IT tools to other schools and colleges across the East of England. 6th Formers from UTCN and undergraduates from UEA peer mentor and support younger students to develop their understanding of the wind industry, whilst also developing interpersonal skills and information about career opportunities in the industry.

STEM Hub¹⁰ (Commitment 1)

5. The New STEMHUB is an initiative between 3 developers (Vattenfall, Scottish Power Renewables and Equinor), to help coordinate and develop STEM (Science, technology, engineering and maths) activities for schools and colleges across Norfolk and Suffolk.

Workplace experience (Commitment 2)

6. There is a recognition that there is a need for businesses to engage with schools and colleges so that young people can gain the opportunities and experiences needed to make wise career choices. We are committed to working with the new NA LEP Careers Hub to facilitate high quality experiences

Industry Placement (Commitment 3)

7. For Example, University 3rd Year, Year in Industry placements, where students have a formal paid job role within the organisation (for between 9-12 months) to develop their experience and contribute to their degree.

Summer Graduate Internships (Commitment 3)

8. Either informal 6th Form opportunities, such as the Applicant's pilot work¹¹, which has enabled 2-4 internships per summer delivering a project relating to Vattenfall's

⁸ <http://www.colby-ecohub.org.uk/copy-of-colby-eco-hub>

⁹ <https://corporate.vattenfall.co.uk/projects/wind-energy-projects/vattenfall-in-norfolk/out-and-about/3d-vr-wind-farm-design-programme/>

¹⁰ <http://stemhub.uk.com/>

needs, as part of the Ogden Trust East Coast Energy Internship and/or for graduates/post doctoral fellowships, for example through the UEA Aries Programme¹².

Apprenticeships (Commitment 4)

9. Vattenfall are already enabling new opportunities through the Apprenticeship Levy¹³ nationally, with the aim of ensuring its effective use to develop the workforce. It is also developing an Apprenticeship Strategy. We are committed to ensuring a fair and appropriate number of new Apprenticeships (aligned to the Norfolk Vanguard and Boreas project needs) as the projects develop and to work with colleges, universities and other industry partners to develop the take up of apprenticeships in the East of England

Offshore Wind Skills Centre Transition Courses (Commitment 5)

10. 3Sun and East Coast College have created 2 courses¹⁴; A 'preparing to work in the wind industry programme (12 weeks) targeted at education leavers, job seekers etc. and A Transition into Offshore Wind training for those in allied industries and the military (3 weeks). Vattenfall are committed to working with the Offshore Wind Skills Centre and East Coast College to identify and enable appropriate training

Existing Vattenfall Programmes

11. We will build on Vattenfall's existing International training programmes¹⁵, so that they become available (as far as possible) to students and graduates in Norfolk and the East of England. Opportunities will be advertised on media platforms like LinkedIn and on the East of England based Mason Trust "I can be a..." career web pages.¹⁶

¹¹ <https://corporate.vattenfall.co.uk/projects/wind-energy-projects/vattenfall-in-norfolk/out-and-about/east-coast-internship/>

¹² <https://www.aries-dtp.ac.uk/>

¹³ <https://www.gov.uk/take-on-an-apprentice>

¹⁴ <https://www.eastcoast.ac.uk/college-life/news-and-events/news/detail/2018/12/17/offshore-wind-skills-centre-launch>

¹⁵ <https://corporate.vattenfall.com/careers/students-and-graduates/>

¹⁶ <https://www.icanbea.org.uk/app/explore/organisations/vattenfall-uk-259/>

APPENDIX C: SUMMARY RECORD OF VATTENFALL'S EARLY ENGAGEMENT ON SKILLS DEVELOPMENT

| Date | Contact Type | Organisation | Topic |
|---------------------|--------------------------|---|---|
| 18th January 2017 | Joint meeting | University Technical College Norwich (UTCN) | Employer engagement meeting with other employers working with UTCN |
| 19th January 2017 | Interviewing | East Coast College | Interview skills support |
| 1st February 2017 | Interviewing | Reepham College | Support school with Career interviews |
| 18th February 2017 | Skills Career event | UEA (University) | Attend and have a stall |
| 24th February 2017 | Interviewing | Litcham School | Support school with Career interviews |
| 16th March 2017 | Exploratory meeting | University of East Anglia (UEA) | Explore engineering apprenticeships |
| 22nd March 2017 | Presentation | Reepham College | Presentation to 6th Formers on Norfolk Vanguard project |
| 19th April 2017 | Presentation/ Workshop 1 | UTCN | Deliver and support Offshore wind programme |
| 10th May 2017 | Workshop 2 | UTCN | Deliver workshop |
| 17th May 2017 | Workshop 3 | UTCN | Deliver workshop |
| 1st June 2017 | Work experience 1 | Dereham 6th Form | Enable a work experience opportunity for a 6th Former |
| 14th June 2017 | 3DW pilot 1 | UTCN | Deliver 1st 3DVR programme pilot with UTCN students and 3DW |
| 15th June 2017 | Young person's event | East Coast College (Gt. Yarmouth) | Energy Skills Foundation Interview skills. |
| 20th June 2017 | Young person's event | Reepham High School | Career, STEM programme workshops. |
| 13th July | Work Experience 2 | Dereham 6th Form | Enable a work experience opportunity for a 6th Former |
| 19th July | Work Experience 3 | Dereham 6th Form | Enable a work experience opportunity for a 6th Former |
| 15th September 2017 | Meeting | Colby Primary School) | Meeting to Explore the piloting and delivery of a Primary Science, Technology, Engineering, Maths (STEM) Programme. |
| 2nd October 2017 | Meeting | Colby Primary School | Develop Colby programme with teachers |
| 6th October 2017 | Meeting | Happisburgh School | Explore education opportunities with the head teacher |
| 16th October 2017 | 3DW programme 1 | Dereham 6th Form | Delivery of 3DVR secondary programme |
| 17th October 2017 | 3DW programme 2 | City College Norwich | Delivery of 3DVR secondary programme |

| Date | Contact Type | Organisation | Topic |
|--------------------|--------------------------|--|---|
| 18th October 2017 | 3DW programme 3 | UTCN | Delivery of 3DVR secondary programme |
| 19th October 2017 | 3DW programme 4 | Reepham College and High School | Delivery of 3DVR secondary programme |
| 19th October 2017 | Launch event in evening | Norwich Science Festival | Attend launch and understand the festival, and how it contributes to local promotion of STEM learning. |
| 30th October 2017 | 3DW programme 5 | Aylsham High (with Colby Primary) | Delivery of 3DVR secondary programme with Colby Primary visit / Integration for afternoon |
| 31st October 2017 | 3DW programme 6 | East Coast College | Delivery of 3DVR secondary programme |
| 1st November 2017 | 3DW programme 7 | Paston College | Delivery of 3DVR secondary programme |
| 3rd November 2017 | 3DW programme 8 | Litcham School | Delivery of 3DVR secondary programme |
| 17th November 2017 | Exploratory meeting | Community Foundation Norfolk (CFN) UEA | Linking "Stay Well this Winter" initiative (CFN) with UEA student & research programmes researching local fuel efficiency measures. |
| 15th November 2017 | Statutory consultation | GT. Yarmouth and Gorleston Young Carers | Workshop/support for young carers to attend the Statutory Consultation |
| 29th November 2017 | Young person's event | EEEGR 'Energise your Future' | Attend and participate at this careers event |
| 6th December 2017 | Presentation | Chartered Institute of Engineers with UTCN | Presentation by student who undertook the 3DW programme to ICE (Institute of Chartered Engineers). |
| 7th December 2017 | Deliver prog. | Colby Primary | Deliver pilot primary programme |
| 15th January 2018 | Meeting and presentation | Breckland District Council | Meeting with the Council's Skills/business representative. |
| 22nd January 2018 | Meeting and presentation | Broadland District Council | Meeting with the Council's Skills/business representative. |
| 25th January 2018 | Meeting and presentation | North Norfolk District Council | Meeting with the Council's Skills/business representative. |
| 31st January 2018 | Meeting and presentation | Great Yarmouth Borough Council | Meeting with the Council's Skills/business representative. |

| Date | Contact Type | Organisation | Topic |
|--------------------|--------------------------|---|--|
| 1st February 2018 | Telephone meeting | New Anglia LEP | Energy Sector Skills Plan collaboration for the new |
| 1st February 2018 | Drop in session | New Anglia LEP | Enterprise Advisor Network – meet team and explore input |
| 9th February 2018 | Meeting | College of West Anglia | Meet team and explore input/opportunities |
| 19th February 2018 | Meeting | New Anglia LEP | Energy Sector Skills Plan development/input |
| 19th February 2018 | Event, at Great Yarmouth | Norfolk Chamber and LEP | Contribute to consultation on NA LEP Economic Strategy |
| 21st February 2018 | Education Delivery | University Technical College Norwich (UTCN) - Wind Programme (II) | Partnership programme with other developers – Launch |
| 23rd February 2018 | Meeting | Hethel Innovation | Cleantech East Leadership group |
| 6th March 2018 | Meeting | NEXUS Engineering (and Ogden Trust) | Internship programme scoping and planning meeting |
| 6th March 2018 | Meeting | EEEGR | Skills update and discussion |
| 14th March 2018 | Interviews | UEA Careers Day (SELECT) | Support UEA Engineering Students with Interview technique |
| 15th March 2018 | Conference | NALEP Careers and Enterprise Conference | Attend, contribute and network |
| 21st March 2018 | Education Delivery | University Technical College Norfolk | Deliver 3DVR programme |
| 21st March 2018 | Meeting | Norfolk County Council | Skills strategy work/development |
| 23rd March 2018 | Telephone meeting | NALEP (Natasha Waller) | Ref Skills programmes and partnership opportunities |
| 26th April 2018 | Meeting | Colby Primary and NEXUS | Planning for 8 Primary schools programme delivery |
| 17th April | Education Delivery | Charles Darwin Primary school | Planning session and share kit |
| 19th April 2018 | Education Delivery | One of Opening Presentations at UTCN event x 2 | Parental Engagement event |
| 23rd April 2018 | Interviews | Ogden Trust Internships | Interview Applicants for summer internship programme |
| 23rd April 2018 | Education Delivery | UEA presentation to Masters Env. Economics Class | Economics of Green Energy for Environmental Economics Students |
| 30th April 2018 | Education Delivery | UEA presentation to Masters Engineering Class | Vanguard and Boreas Engineering presentation for Energy Engineering students |
| 2nd May 2018 | Meeting | STEM HUB | Explore partnership opportunity to create an East of England STEM hub |

| Date | Contact Type | Organisation | Topic |
|------------------|---------------------------------------|--|--|
| 3rd May 2018 | Interview | UEA, Cambridge Uni and NERC | Interview for NERC projects |
| 9th May | Interviews | Reepham College | Support with College Enrichment interviews |
| 10th May | Working Group Meeting | EEEGR skills for Energy | Meeting and presentation |
| 16-17th May 2018 | Conference | EEEGR South North Sea '18 | Exhibit and enable opportunity for UEA undergraduate to work shadow colleagues |
| 23rd May 2018 | Conference and workshop/presentations | NEXUS Pathways to engineering event | Support and exhibit |
| 29th May 2018 | Meeting | Apprenticeships meeting with City College Norwich | Apprenticeships for more vulnerable young people |
| 1st June 2018 | Meeting | Young Carers from Gt. Yarmouth and Gorleston | Career event 'reach for the sky' – at Horsted Activity Centre |
| 1st June 2018 | Meeting | STEM Awards Meeting with Simon Fox (EN6thF) | STEM (Science, Technology, Engineering and Maths) AWARDS – explore how to contribute |
| 6th June 2018 | Event | East Coast College (Energy Skills Foundation prog) | Celebration event |
| 6th June | Meeting | UTCN Industry Liaison Group | UTCN Industry Liaison Group |
| 13th June | Conference | NCC | Armed Forces Covenant Conference (Exploration/learning) |
| 14th June 2018 | Meeting | East Coast College and Skills strategy | Meet with Paul Warmington (SCC) + Cheryl Willis – East Suffolk Councils (later) |
| 18th June 2018 | Event | Reepham High Careers event | Present to 4 groups over the morning |
| 19th June 2018 | Education Delivery | Colby Primary deliver to Happisburgh Primary (1) | Students peer mentor other schools |
| 20th June 2018 | Education Delivery | Colby Primary deliver to Hevingham Primary (2) | Students peer mentor other schools |
| 20th June 2018 | Meeting | Meet with UEA to prep UEA student input into 3DW programme (3 day event) | Plan for 10 students to mentor 3DW programme in colleges |
| 21st June 2018 | Education Delivery | NEXYUS and OGDEN trust | Internship briefing for students |
| 22nd June 2018 | Celebration event | Offshore Wind Training Centre | Launch at Orbis |
| 2nd July 2018 | Education Delivery | NEXUS + Ogden Trust Internship programme | Delivery Internship Day 1 and 2 |
| 2nd July 2018 | Education Delivery | Charles Darwin Primary (Alana) | Presentation by students in assembly |
| 3rd July 2018 | Education Delivery | Nexus + Ogden Trust Internship Programme | Delivery Internship Day 3 ad 4 |

| Date | Contact Type | Organisation | Topic |
|-------------------------------|-------------------------------|---|--|
| 1st August 2018 | Meeting | EEEGR Skills for Energy | Skills and Employment Strategy development |
| 7th August 2018 | Meeting | Breckland District Council – Cassie Ruffell | Discuss Skills Strategy and education work + alert to supply chain |
| 8th August 2018 | Meeting | Meet with Celia Anderson, STEM HUB | STEM HUB set up |
| 8th August 2018 | Meeting | Meet Gavin Cowley (NCC) | Community programmes discussion focused on Breckland opportunities |
| 16th August 2018 | Working group | EEEGR skills for Energy | Meeting and presentation |
| 23rd August 2018 | Meeting | Hethel Innovation | Clean Tech Leadership Group |
| 28th August 2018 | Education Delivery | NEXUS and Ogden Trust Internship | Celebration and presentation event |
| 3rd September 2018 | Conference | Hethel and UEA | Support conference (as Clean Tech Leadership group) |
| 13th September 2018 | Education Delivery | UTCN | 3DVR programme |
| 14th September 2019 | Celebration | Mason Trust | Support for and networking – ref the Mason Trust Charity and ‘I and be a..’ website |
| 19th, 20th and 21st September | Education and skills delivery | UEA | Developing trained mentors for the 3DVR programme, so as to build capacity for more outreach |
| 28th September 2018 | Meeting | EEEGR, People with energy | Apprenticeship meeting |
| 10th October 2019 | Meeting | Great Yarmouth Borough Council | Skills opportunities discussion with Council leads |
| 19th October 2018 | Meeting | Meet Necton Primary Headteacher and Governor | Explore partnership work ref energy opportunities |
| 24th October 2018 | Festival | Norwich Science Festival at the Forum | Man stand and deliver workshops all day with 2 Interns |
| 6th and 8th November 2018 | Education Delivery | Support Students UTCN to prep for 3DW session | Support student peer mentoring approach |
| 13th November 2018 | Meeting | Hethel Innovation | Cleantech Leadership group |
| 15th November 2018 | Meeting | Breckland District Council and DWP | Deliver presentation to Council and DWP colleagues on skills and Offshore Wind |
| 23rd November 2018 | Education Delivery | 2 Interns deliver to OWW | Use learning from Internship programme – Interns present at Offshore Wind event |
| 28th November 2018 | Skills event | EEEGR and East Coast College | EEEGR Skills for Energy Careers event Vattenfall sponsor |
| 13th December 2018 | Meeting | Meet Dereham 6th Form | Ref partnership work opportunities |
| 12th – 19th December | Bid writing | NCC and Chamber | Collaboration over NALEP bid |

| Date | Contact Type | Organisation | Topic |
|--------------------|---|---|--|
| 14th December 2018 | Celebration | East Coast College Offshore Wind Centre Opening | Attend, network and explore input/opportunities |
| 9th January 2019 | Workshop (Education Delivery) | City College Norwich Engineering Students | Project, skills, careers workshop |
| 18th January 2019 | Meeting | STEM HUB for EofE | Development/set up meeting |
| 24th January 2019 | Workshop (Education Delivery) | Reepham High School (year 7) | Careers workshops and discussions |
| 25th January 2019 | Presentation (Education Delivery) | UEA Masters Students (School of Economics) | Presentation ref wind farm economics |
| 25th January 2019 | Meeting | Necton Little Oaks nursery | Discuss further opportunities to support |
| 1st February 2019 | Meeting | Nicholas Hamond Academy, Swaffham | Exploration ref partnership work |

APPENDIX D: SUMMARY RECORD OF VATTENFALL'S EARLY ENGAGEMENT ON SUPPLY CHAIN PLANNING

1. Engagement with sector and supply chain organisations, including information gathering and exchange relating to the skills development needs of the supply chain.

| Date | Event / Organisation | Topic | Estimated number of suppliers met |
|-----------------------|--|---|-----------------------------------|
| February / March 2018 | SNS (South North Sea) 2018 | Early exchanges between Norfolk Vanguard and Norfolk Boreas procurement team / VWPL UK procurement manager and local stakeholders | |
| March 2018 | Norfolk kick-off event | VWPL UK procurement manager meeting local suppliers | 12 |
| April 2018 | Seabed Scour Control Systems | | 1 |
| April 2018 | Dunkerque | | 25 |
| April 2018 | Dunkerque Aberdeen event | | 25 |
| May 2018 | EEEGR organised Southern North Seas Conference & Stakeholder event | Applicant presented to conference and also participated in "meet the buyer" and other activities | 50 |
| June 2018 | Norfolk (EEEGR support) | Presentation to the offshore wind special interest group. | 1 |
| June 2018 | RUK Manchester | | 30 |
| July 2018 | GHD (Gutteridge, Haskins & Davies) meet Hexham | Onshore Design & Contracting strategy optimisation. | 1 |
| July 2018 | DKQ Paris | | 4 |
| September 2018 | Kent Chamber of Commerce event | Thanet extension and Norfolk Vanguard share a similar consenting / development timetable and many civil engineering and other relevant companies participate in meetings across the South and East. | 45 |

| Date | Event / Organisation | Topic | Estimated number of suppliers met |
|---------------------------------------|--------------------------------------|---|-----------------------------------|
| 20 th September 2018 | UEA Norfolk Workshop | Workshop with representatives from the offshore wind industry, local education, local government and young people, on collaborative action to ensure Norfolk and the East of England maximise on the socio-economic and environmental opportunities created by the Norfolk Boreas and Norfolk Vanguard projects (evidence and examples of skills and supply chain engagement was provided in response to Examining Authority written question 19.12, document reference ExA;WQApp19.1;10.D1.3). | 15 |
| October 2018 | Greater South East offshore event | | 35 |
| October 2018 | Norfolk Chamber | | 6 |
| October 2018 | North Norfolk Chamber | | 2 |
| October / November 2018 | BVG | | 1 |
| November 2018 | RUK/Parliament | | 10 |
| November 2018 | Norwich suppliers/chamber | | 2 |
| November / December 2018 | Kent Construction | | 30 |
| 5 th December 2018 | Norfolk Onshore Works Workshop | Develop local supply chain understanding of the Norfolk Vanguard and Norfolk Boreas onshore works, the services required and the timeframe for delivery. Began to develop collaboration between Tier 1 contractors and SMEs (the follow up report was submitted as Appendix 19.2 to the Applicant's response to the Examining Authority's written questions, document reference ExA;WQApp19.2;10.D1.3). | 50 |

| Date | Event / Organisation | Topic | Estimated number of suppliers met |
|--------------------------|--------------------------------|-------|-----------------------------------|
| December 2018 | MHI Vestas | | 1 |
| January 2019 | Norfolk (Skills) | | 2 |
| March 2019 | Norfolk (Forces & Schools) | | 4 |
| 1 st May 2019 | All UK Van, Bor & Thanet Event | | Approx. 250 |