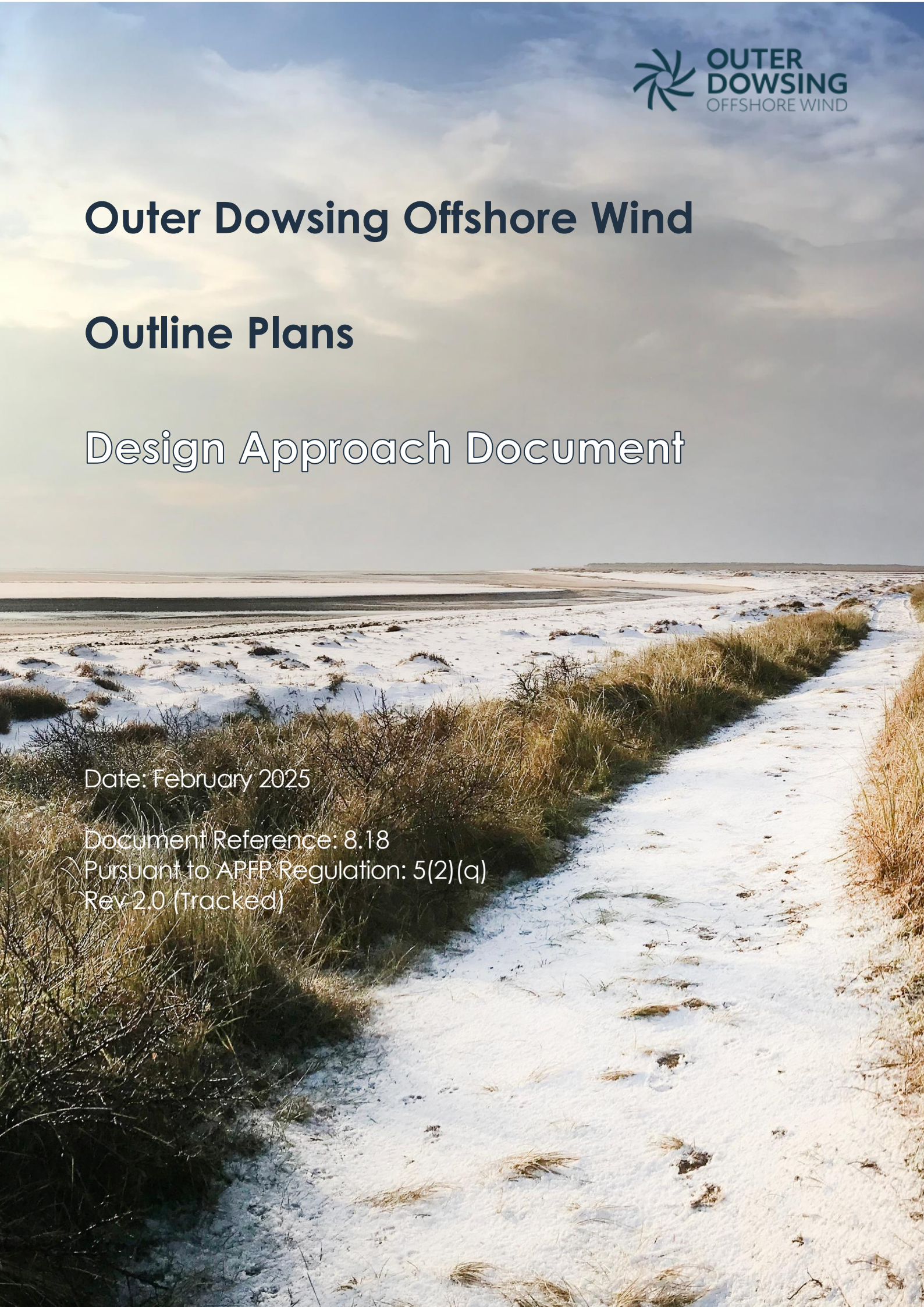
Outer Dowsing Offshore Wind

Outline Plans

Design Approach Document



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Acronyms & Definitions

Abbreviations / Acronyms

Acronym	Expanded name
DAD	Design Approach Document
DCO	Development Consent Order
DPS	Design Principles Statement
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EPP	Evidence Plan Process
ES	Environmental Statement
ETG	Expert Topic Group
~~GT R4 Ltd~~	~~The Applicant. The special project vehicle created in partnership between Corio Generation (a wholly owned Green Investment Group portfolio company), Gulf Energy Development and TotalEnergies. The Applicant. The special project vehicle created in partnership between Corio Generation (a portfolio company of Macquarie Asset Management operating on a standalone basis), Gulf Energy Development and TotalEnergies~~
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternating Current
IDB	Internal Drainage Board
NGSS	National Grid Onshore Substation
nm	Nautical Mile
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind (The Project)
OnSS	Onshore Substation
ORBA	Offshore Restricted Build Area
ORCP	Offshore Reactive Compensation Platform
PEIR	Preliminary Environmental Information Report
TJB	Transition Joint Bay

Terminology

Term	Definition
400kV cables	High-voltage cables linking the OnSS to the NGSS.
400kV cable corridor	The 400kV cable corridor is the area within which the 400kV cables connecting the OnSS to the NGSS will be situated.
Array Area	The area offshore within which the generating station (including wind turbine generators (WTG) and inter array cables), offshore accommodation platforms, offshore transformer substations and associated cabling will be positioned, including the ORBA.
The Applicant	~~GT R4 Ltd. The Applicant making the application for a DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation (a portfolio company of Macquarie Asset Management operating on a standalone basis), TotalEnergies and Gulf Energy Development), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation (a portfolio company of Macquarie Asset Management operating on a standalone basis), TotalEnergies and GULF Energy Development~~.GT R4 Ltd. The Applicant making the application for a

Term	Definition
	DCO. The Applicant is GT R4 Limited (a joint venture between Corio Generation (and its affiliates), Total Energies and Gulf Energy Development (GULF)), trading as Outer Dowsing Offshore Wind. The Project is being developed by Corio Generation, TotalEnergies and GULF.
Baseline	The status of the environment at the time of assessment without the development in place.
Connection Area	An indicative search area for the NGSS.
Development Consent Order (DCO)	An order made under the Planning Act 2008 granting development consent for a Nationally Significant Infrastructure Project (NSIP).
Effect	Term used to express the consequence of an impact. The significance of an effect is determined by correlating the magnitude of the impact with the sensitivity of the receptor, in accordance with defined significance criteria.
Environmental Impact Assessment (EIA)	A statutory process by which certain planned projects must be assessed before a formal decision to proceed can be made. It involves the collection and consideration of environmental information, which fulfils the assessment requirements of the EIA Regulations, including the publication of an Environmental Statement (ES).
Environmental Statement (ES)	The suite of documents that detail the processes and results of the EIA.
Haul Road	The track within the onshore ECC which the construction traffic would use to facilitate construction.
Impact	An impact to the receiving environment is defined as any change to its baseline condition, either adverse or beneficial.
Joint bays	An excavation formed with a buried concrete slab at sufficient depth to enable the jointing of high voltage power cables.
Landfall	The location at the land-sea interface where the offshore export cables and fibre optic cables will come ashore.
Link boxes	Underground metal chamber placed within a plastic and/or concrete pit where the metal sheaths between adjacent export cable sections are connected and earthed.
Mitigation	Mitigation measures are commitments made by the Project to reduce and/or eliminate the potential for significant effects to arise as a result of the Project. Mitigation measures can be embedded (part of the project design) or secondarily added to reduce impacts in the case of potentially significant effects.
National Grid Onshore Substation (NGSS)	The National Grid substation and associated enabling works to be developed by the National Grid Electricity Transmission (NGET) into which the Project's 400kV Cables would connect.
National Policy Statement (NPS)	A document setting out national policy against which proposals for Nationally Significant Infrastructure Projects (NSIPs) will be assessed and decided upon
Offshore Export Cable Corridor (ECC)	The Offshore Export Cable Corridor (Offshore ECC) is the area within the Order Limits within which the export cables running from the array to landfall will be situated.
Offshore Restricted Build Area (ORBA)	The area within the array area, where no wind turbine generator, offshore transformer substation or offshore accommodation platform shall be erected.

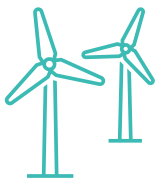
Term	Definition
Onshore Export Cable Corridor (ECC)	The Onshore Export Cable Corridor (Onshore ECC) is the area within which, the export cables are routed within to the landfall to the onshore substation will be situated.
Onshore substation (OnSS)	The Project's onshore HVAC substation, containing electrical equipment, control buildings, lightning protection masts, communications masts, access, fencing and other associated equipment, structures or buildings; to enable connection to the National Grid
Outer Dowsing Offshore Wind (ODOW)	The Project.
Order Limits	The area subject to the application for development consent. The limits shown on the works plans within which the Project may be carried out.
The Planning Inspectorate	The agency responsible for operating the planning process for Nationally Significant Infrastructure Projects (NSIPs).
Preliminary Environmental Information Report (PEIR)	The PEIR was written in the style of a draft Environmental Statement (ES) and provided information to support and inform the statutory consultation process during the pre-application phase.
The Project	Outer Dowsing Offshore Wind, an offshore wind generating station together with associated onshore and offshore infrastructure.
Project Design Envelope	A description of the range of possible elements that make up the Project's design options under consideration, as set out in detail in the project description. This envelope is used to define the Project for Environmental Impact Assessment (EIA) purposes when the exact engineering parameters are not yet known. This is also often referred to as the "Rochdale Envelope" approach.
Receptor	A distinct part of the environment on which effects could occur and can be the subject of specific assessments. Examples of receptors include species (or groups) of animals or plants, people (often categorised further such as 'residential' or those using areas for amenity or recreation), watercourses etc.
Statutory consultee	Organisations that are required to be consulted by the Applicant, the Local Planning Authorities and/or The Planning Inspectorate during the pre-application and/or examination phases, and who also have a statutory responsibility in some form that may be relevant to the Project and the DCO application. This includes those bodies and interests prescribed under Section 42 of the Planning Act 2008.
Transition Joint Bay (TJBs)	The offshore and onshore cable circuits are jointed on the landward side of the sea defences/beach in a Transition Joint Bay (TJB). The TJB is an underground chamber constructed of reinforced concrete which provides a secure and stable environment for the cable.
Trenched technique	Trenching is a construction excavation technique that involves digging a trench in the ground for the installation, maintenance, or inspection of pipelines, conduits, or cables.
Trenchless technique	Trenchless technology is an underground construction method of installing, repairing and renewing underground pipes, ducts and cables using techniques which minimize or eliminate the need for excavation. Trenchless technologies involve methods of new pipe installation with minimum surface and environmental disruptions. These techniques may include Horizontal Directional Drilling (HDD), thrust boring, auger boring, and pipe ramming, which allow ducts to be installed under an obstruction without breaking the open ground and digging a trench.

1 Executive Summary

*"Environmental stewardship and community engagement are central to Outer Dowsing Offshore Wind's vision. Our aim is **to have a long term positive environmental impact** through responsible design optimisation of the project, honest and transparent engagement with local communities and stakeholders, and proactive mitigation solutions."*

- Outer Dowsing Offshore Wind, 2021

1. "Good design" has been at the forefront of decision making throughout the evolution of the Project; strongly influencing site selection and the design commitments and principles which the Applicant has been able to reach at this stage. This Design Approach Document (DAD) summarises the key processes, consideration of design solutions and decisions made to date that have informed the design principles and commitments, including how these will be implemented through to detailed design.
2. This DAD is supported by a number of key documents; the key design related aspects of which have been summarised and referenced throughout this document. While the design of the Project is a cornerstone to the project's development phases and design decisions to date and therefore it could be argued that much of the Environment Statement (ES) supports this DAD, a handful of key documents submitted with the Application are considered to have the most relevance:
   - Design Principles Statement (DPS) (document 8.19);
   - Outline Landscape and Ecological Management Strategy (OLEMS) (document 8.10);
   - ES Chapter 3 Project Description (document 6.1.3);
   - ES Chapter 4 Site Selection and Consideration of Alternatives (document 6.1.4);
   - ES Chapter 27 Landscape and Visual Impact Assessment (LVIA) (document 6.1.27);
   - Consultation Report (document 5.1); and
   - The Planning Statement (document 9.1).
3. The DPS~~esign Principles Statement~~ outlines how the various elements of the project have been integrated into a holistic design, how the design has evolved and how the project will add value by positively creating a sense of place as defined by the National I~~i~~nfrastructure Commission guidance.



Climate

Mitigate greenhouse gas emissions and adapt to climate change

People

Reflect what society wants and share benefits widely

Place

Provide a sense of identity and improve our environment

Value

Achieve multiple benefits and solve problems well

Plate 1.1 The Four Design Principles for National Infrastructure (National Infrastructure Commission, February 2020~~)~~

4. The DAD and DPS also align with the Planning Inspectorate's recently published 'Nationally Significant Infrastructure Projects: Advice on Good Design' (October 2024) in respect of the process of good design, the components of good design and the delivery of good design.
5. 'Advice on Good Design' (October 2024) sets out the following four stages of the design process; assemble, research, co-ordinate and secure, as illustrated in the flow diagram presented below (Plate 1-2). The steps which the Project has undertaken to secure and deliver good design are outlined below in respect of these four stages.
6. **Assemble:** The Applicant has assembled a multi-disciplinary team of specialist consultants that has ensured all environmental, social and economic issues have been given the detailed consideration they require, and, through collaborative working, these considerations have been combined to achieve a holistic and systems wide response.
7. **Research:** The research stage of the Project has involved extensive baseline assessments, site selection, preparation of the EIA Scoping Report, Preliminary Environmental Information Report (PEIR) and Environmental Statement (ES) and ongoing collaboration and consultation internally within the Project Team and externally with statutory consultees, stakeholders and local communities. The process has been evidence-based, has followed an iterative process of testing out and refining alternatives, has involved a huge degree of collaboration between the client, the engineers and the specialist consultants and, through regular consultation, has enabled meaningful and valued contributions from statutory consultees, stakeholders and local communities.
8. **Co-ordinate**: The Project will benefit from the ongoing involvement of the engineers and specialist consultants who have accumulated an extensive base of knowledge throughout the scoping, PEIR, ES and Examination stages. A programme of consultation will be prepared that will ensure that collaboration with statutory consultees, stakeholders and local communities will be ongoing and that engagement with the independent Design Review Panel (DRP) will be targeted at key stages in the design process.
9. **Secure**: 'Secure' has been a key consideration for the Applicant from the outset. The early commitment expressed through the design vision and detailed in this DAD and the DPS has ensured that that plans to secure good design have become embedded in every aspect of the Project. The draft DCO (REP3-006) includes provision to deliver the design principles through Requirement 9.
10. 'Advice on Good Design' (October 2024) is also referenced in the DPS in respect of the components of good design and how they have been developed through the design process.

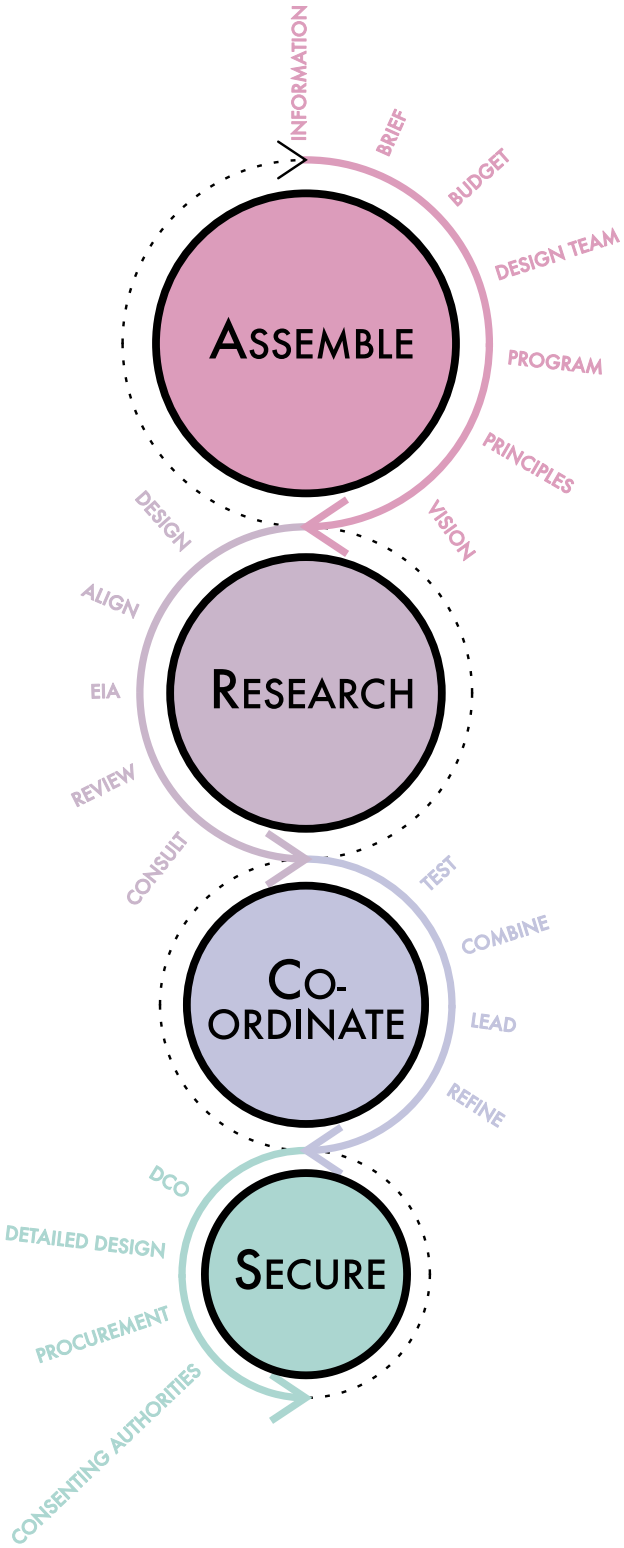


Plate 1-2 A good design process diagram (Planning Inspectorate, 2024)

2 Design Evolution Process

2.1 Vision

~~4.~~11. The project has had a clear Project vision from its inception, as demonstrated throughout this DAD and supporting documents; this vision has been reinforced throughout the design development.

> "Our next generation offshore wind farm will help form the backbone of the UK's net-zero energy system, engaging communities, delivering opportunities, and empowering transformational environmental change."

2.2 Objectives

~~5.~~12. The Project developed the below objectives in line with their vision:

> *"Our objective is to deliver renewable electricity equivalent to the annual electricity consumption of over 1.6 million households and play a critical role in achieving the UK Government's ambition to deliver 50 GW of offshore wind by 2030 and to achieve net zero by 2050."*
>
> *"Environmental stewardship and community engagement are central to Outer Dowsing Offshore Wind's vision. Our aim is to have a long term positive environmental impact through responsible design optimisation of the project, honest and transparent engagement with local communities and stakeholders, and proactive mitigation solutions."*

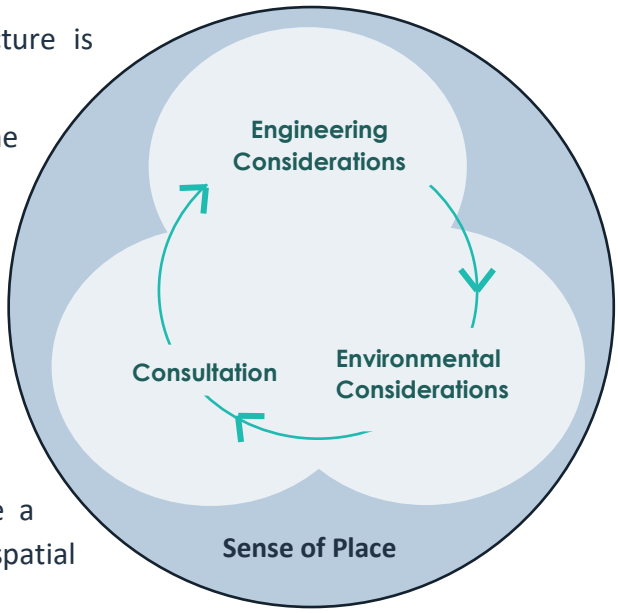
2.3 Design Principles

~~6.~~13. The ~~Design Principles Statement~~DPS sets out the key design principles adopted by the Project as well as the design elements that will be agreed through the Design Review Process and how these will be implemented throughout the detailed design of the Outer Dowsing Offshore Wind (hereafter referred to as 'the Project') onshore substation (OnSS). ~~-~~A separate ORCP Design Principles Statement (document reference 21.16 submitted at Deadline 4) sets out the Design Principles that will be adopted in relation to the ORCPs.

Site Selection

~~7.~~14. The siting of the Project's landfall, onshore ECC, ~~and~~ OnSS, Offshore ECC, offshore reactive compensation platform (ORCP) and array area have incorporated design considerations from the outset. The Project took a reactive and dynamic approach to the site selection process in both the consideration of alternatives and in the final refinement of the Order Limits for both the offshore and onshore elements of the Project. While there are a multitude of factors that are considered in this process, these can be summarised into three driving principles:

- Engineering considerations – what infrastructure is required to achieve the Project's purpose.
- Environmental considerations – how can the engineering be achieved to avoid or minimise adverse impacts on the environment without compromising the Project's overall purpose.
- Consultation – how has the Project taken on board the feedback from stakeholders and the local communities to deliver the Project in best possible way.
- Sense of Place – how the Project can create a distinctive place that delivers beneficial spatial outcomes for the local community.



Design Choices

~~8.~~15. Each project element is influenced by different considerations, it is the governing and project adopted processes that ensure the design choices made in relation to each of these elements align with the Project's Vision and objectives. Section 4.1 outlines the key processes and influencing factors for each of these elements in relation to design.

~~9.~~16. The ~~Design Principles Statement (~~DPS~~)~~ sets out the key design principles adopted by the Project in reference to the OnSS as well as the design elements that will be agreed through the Design Review Process and how these will be implemented throughout the detailed design of the Project. The ORCP Design Principles Statement (document reference 21.16 submitted at Deadline 4) sets out the Design Principles that will be adopted in relation to the ORCPs.

2.3.1 Beneficial Outcomes

~~10.~~17. The Project's purpose is to provide c. 1.5GW of renewable energy to the UK. The Project's overarching aim is to deliver this energy in the most sustainable, cost effective and environmentally and socially sensitive way. Such that the local communities that have the potential to be impacted by the construction and operation of the Project, also play a key role in the project's development and design phases.

~~11.~~18. It is acknowledged within the NPS EN-1 (DESNZ, November 2023) that *"that the nature of much energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area".*

~~12.~~19. The Project has aimed to minimise adverse impacts as much as practicable throughout the EIA and consultation processes. While it is the responsibility of the Project to ensure the development of the Project results in not only sustainable, but affordable energy, it also recognized that is it the responsibility of the Project to pursue beneficial impacts where practicable.

~~13.~~20. The beneficial outcomes to the project are therefore considered to be three-fold. Ultimately, the purpose of the Project is to realise the below outcomes:

- Enhance the UK's energy security;
- delivering on the government's renewable energy targets; and,
- helping to address the climate emergency.

~~14.~~21. The above outcomes are considered a benefit to the UK as a whole and in reali~~z~~sing these government energy targets this will ultimately benefit the energy consumer with respect to the "cost to consumer", noting the competitive pricing of the offshore wind. It is, however recognized by the Project that there is a need to consider benefits to those local communities who may be directly impacted by the project's development in their local area.

~~15.~~22. Below are some examples of other ways in which the Project will benefit the UK and the local area:

2.3.1.1 Local Area benefits

- Environmental stewardship and community engagement are central to Outer Dowsing Offshore Wind's vision. Our aim is to have a long term positive environmental impact through responsible design optimisation of the project, honest and transparent engagement with local communities and stakeholders, and proactive mitigation solutions. While the purpose of the planting scheme is to establish a visual screen for the OnSS, in doing this the Project will be adding 130,000 trees and shrubs to the Lincolnshire landscape. This helps connect wildlife corridors, enhance the visual amenity of the landscape of the Surfleet area and improve the local tree equity score1 (a Woodland Trust initiative). The nearest tree equity score to the substation area is 70 for South Holland as it only has 12% canopy cover and is listed as high priority.
- The Project will pursue opportunities to explore whether, taking consideration of the existing land use of the area and the landowner agreements in place, within this newly created environment (the planting scheme), there are further opportunities for local benefit such as; public art; signposting and interpretation facilities.
- The Project have committed to pursuing opportunities with respect to Biodiversity Net Gain (BNG) by establishing partnerships with local nature conservation bodies.
- The Project has also partnered with local organisations to fund local conservation projects, for example with the Boston Woods Trust to preserve wildflower meadows for the benefit and enjoyment of the local population.
- During the Construction phase it is estimated there could be 1,810 UK jobs created on average over a three year period. During the operations phase it is estimated that there will be 560 UK based jobs for a period of 35 years. Many of these jobs will be available to those in the local area.

[1] https://uk.treeequityscore.org/map#9.44/52.8399/0.0056

- Regular presence of the team in the area and a commitment to volunteering will help bolster STEM skills across the project zone while also raising awareness of the career opportunities available in renewable energy.

2.3.1.2 National benefits

- Outer Dowsing Offshore Wind will invest approximately £5-7billion across the lifetime of the project, 45-60% of which could be spent in the UK, thus providing significant value to the UK while also boosting the wider offshore supply chain and improving the potential for local content in future projects.
- There are studies to show that access to well-paid employment results in a ripple effect, also benefitting local businesses as employees spend their salary locally. It is anticipated therefore that The Project will generate significant Gross Value Add for the UK.
- Investment into local supply chain and jobs will provide skill development opportunities that will bolster the UK talent pool available to other jobs, thus creating broader value.

3 The Key building blocks of “good design”

3.1 Key design considerations

~~16.~~23. The Project are dedicated to achieving all the building blocks that constitute “good design”. A strong foundation of engagement and design refinement has been laid by the Project to date and the key design approaches as outlined in Table 3-1~~Table 3.1~~ set the scene for how the Project intend for this to be achieved. The design considerations below provided the starting point for establishing the design process to be followed and the development of Design Principles for the Project.

Table 3-1 The Project’s approach to “good design”

Design Approach	Design Consideration	Achievement Example
Vision	*Environmental stewardship*	We have proposed the creation and long-term maintenance of: **130,000 trees and hedgerows added to the Lincolnshire landscape.** **19 hectares will be planted, equivalent to 27 football fields with long term management plan.** **1.6 miles of Hedgerow containing diverse species that support bats, birds and other species.** • The commitment to c. 216 trenchless crossings has also meant the Project has managed to avoid the removal of up to 17,280m of hedgerows along the Onshore ECC and 400kV cable corridor. • The Project has committed to no construction works during the key wintering bird period within a minimum of 400m of the Wash Special Protection Area (SPA). • The Project has committed to HDD at landfall to avoid impacts on the coastal features and habitat in the area, as well as the existing infrastructure, sea defence and ornithological and ecological receptors.
	Honest & Transparent Community engagement.	• Four phases of Project wide consultation and a targeted consultation • 16 Public Information Days, 6 Rounds of Community Liaison Group (CLG) Meetings (4 CLGs) and over 50,000 leaflets issued to local residents.

Design Approach	Design Consideration	Achievement Example
		• Where requested, over 90% of feedback forms identified our consultation information and engagement as "Just Right" • Reactive to feedback; this is demonstrated by the number of rounds of consultation, we have listened, refined and re-consulted at each phase of refinement.
	Our aim is to have a long term positive environmental impact through responsible design optimisation	The Project have contracted a team of specialists across all of the various disciplines of Environmental Impact Assessment (EIA) and offshore wind farm development. The team have strived to gain as much knowledge as possible to optimise the Project Design through experience and lessons learned. For example: • Appointment of a local drainage specialist. • Appointment of an onshore construction engineer with years of experience working on the neighbouring Triton Knoll Project. • Appointment of a soils specialist • Consideration and active responsiveness to local feedback regarding ground conditions leading to, analysis, review, proposal, consultation, and adoption of an alternative onshore ECC route.
	Proactive mitigation solutions	The Project has taken the approach of, wherever practicable; Mitigation by design. The Project design has been led from the outset by assessment of environmental receptors and potential impacts; engineering considerations and project feasibility are key factors in the optimisation of any route or siting proposals that have been defined by key environmental considerations. Some examples of proactive mitigation solutions: • Adoption of alternative onshore ECC • Commitment to adopt trenchless techniques on all major roads, rivers and IDB owned and managed drains • Commitment to utilise trenchless techniques at an area of archaeological interest (Slackholme Village) • The Onshore ECC has been designed to follow existing field boundaries wherever practicable to reduce severance to agricultural land. • Removal of northern route option for the offshore ECC to avoid conflicts with other seabed users and ensure co-existence with marine aggregates sites. • Introduction of the Offshore Restrictive Build Area to reduce impacts on birds and further reduce risks to shipping and navigation.

Design Approach	Design Consideration	Achievement Example
		• Commitment to HDD at landfall to avoid open trenching and works on the beach. • ORCPs sited outside of the Inner Dowsing Race Bank North Ridge (IDRBNR) SAC to minimise benthic impacts.
Skills	*Expertise from around the world, across the UK, Lincolnshire including the locals themselves!*	**The Project is a joint venture between TotalEnergies, Corio Generation (a portfolio company of Macquarie Asset Management operating on a standalone basis) and Gulf Energy Development. The in- house Project team made up of over 50 specialists, all of whom are champions of the Project's vision.** **A highly experienced team of EIA Consultants (GoBe Consultants (APEM Group) and SLR Consulting, were contracted from the Project's inception to help guide the evolution of the Project and its Design. The consultants were appointed on the basis of their vast experience in offshore wind project development with a view to bring on board as much experience and lessons learned as possible to ensure our Project is supported by this EIA expertise.** **Local specialists have been contracted and appointed at key stages in the Project's development. Including a local drainage specialist, a soils specialist and an onshore construction engineer with years of experience working on the neighboring Triton Knoll Project.** **Statutory bodies such as the county council and LPAs, environmental nature conservation bodies along with many more. Through the Project's Evidence Plan Process and Section 42 Statutory Consultation phases the Project has sought technical advice that has helped to shape the project's design from the very earliest phases.** **The local people and communities of Lincolnshire! Local expertise and advice was sought from the local residents and communities including potentially affected landowners and local interested parties that have lived and worked in the region for years.**

Design Approach	Design Consideration	Achievement Example
Analysis & Integration	*To ensure "good design" is considered from the outset*	The siting of the Project's landfall, onshore ECC, ~~and~~ OnSS, offshore ECC, ORCP and array area have incorporated design considerations from the outset. The Project took a reactive and dynamic approach to the site selection process in both the consideration of alternatives and in the final refinement of the Order Limits for both the offshore and onshore elements of the Project. An underpinning design phase that enabled the first phase and influenced the following iterations of the project boundaries was the environmental constraints mapping which was undertaken at the outset and ensured that the Project was designed to avoid or minimise impacts as much as reasonably practicable from the initial design through to continue at each phase of refinement. A balancing act was sought to ensure that the individual impacts and receptors were considered in line with the Project's overall site selection criteria. It was concluded that to ensure "good design" the Project must follow the three driving principles of engineering considerations, environmental considerations and consultation until a refined solution was identified.
Response	*Managing* ***Significant effects***	As is often the case for similar projects in the UK the key significant effect that is often not able to be readily mitigated is **Landscape and Visual.** Due, however, to the sensitive site selection process that has taken account of the relative positioning of the OnSS within the defined search zone, coupled with the Project's commitment to minimise landscape and visual impacts as well as champion the environment and habitat creation, the landscaping architects were able to work with the current landscape and the existing screening to remove all significant effects after 15 years, and at a number of locations these are likely to be mitigated between Year 5 and 10. See ES Chapter 27 Landscape and Visual Assessment (document 6.1.27) for more information. **Surfleet Marsh (where the OnSS is sited) and the surrounding area is characterised by flat and low-lying arable farmland that has been reclaimed from marshland. There is also limited woodland and hedgerow cover, leaving much of this area open and exposed.**

Design Approach	Design Consideration	Achievement Example
		This landscape poses some challenges in relation to producing an effective screen; the Project have worked with this characterisation to develop their proposals. As a result of the Project's siting work and commitment to pursue offsite planting; the effectiveness of placing screening further away from the OnSS and nearer to the receptor(s) has led to effective screening after the planting has established (from as early as 5 years). The Project received positive responses to the Landscaping scheme as presented at the Autumn Consultation; the Project also recognise that all consultation responses in relation to this infrastructure have sought to screen it and an underlying concern has been how this could be achieved given the flat landscape. The Project took the feedback of the community on board when designing the landscaping scheme. Further feedback from the OnSS Design Review Process (DRP) (Section 5) kick off meeting held in February 2024 included feedback from Lincolnshire County Council in relation to the extensiveness of the Planting scheme against the existing landscape character and whether the Project might consider reducing this, alongside feedback from landowners with respect to the Potential Impacts on agriculture (which is considered to be both beneficial such as in relation to protection against soil erosion and flood resilience, and adverse in relation to attracting birds that could impact crop yield). The Project will therefore develop the detailed design of the mitigation in line with DRP. The specific query on whether 'screening' as opposed to 'celebrating' the OnSS was considered the preferred approach at the February 2024 meeting with which the members of the LDP present confirmed it was. A further Local Design Review Panel meeting was held in July 2024 and outlined in Section 5. The Project has committed to design changes for the offshore elements of the Project, to mitigate and reduce potential impacts. The array area, following consultation with shipping and navigation stakeholders, was reduced post PEIR prior to DCO application submission to avoid shipping routes and reduce navigational constraints.

Design Approach	Design Consideration	Achievement Example
		The array post submission then had the introduction of the ORBA. The ORBA was a mitigation measure for offshore ornithology, predominantly guillemot, removing wind turbines and offshore platforms from a zone in the northern of the array where the highest densities of birds have been identified. This design change also reduced impacts on shipping and navigation receptors. Following feedback and consultation from Natural England, The Applicant developed the design and location of the ORCP. Initially the ORCPs were to be located 6km off the coast, which raised concerns regarding visual impacts. As a result of this the Project moved the ORCP to be at least 12km offshore. Pending acceptance of the recently submitted change request (The Applicant's Change Request February 3rd 2025 (ORCP & Lead in Times / Breeding seasons) (document reference 21.19)), the height of the ORCP (excluding the mast) has also been reduced from a maximum height of 90m to 59.2 above LAT, as mitigation for offshore ornithology displacement and to reduce visual impacts. The Project has additionally made design considerations for the benefit of benthic impacts. The Project has committed to a maximum of 50% of foundations being gravity-based structures. The Applicant has also committed to the use of removeable cable protection within the IDRBNR SAC, for cable protection installed on the sandbanks.
Our design evolution	*How has your design evolved?*	The Design evolution process is outlined in Section 2. These key phases that inform the design development process have been considered by the Project from the outset. This is supported by the Design Principles Statement (DPS) (document 8.19) and ES Chapter 4 Site Selection and Consideration of Alternatives.
Delivery of the final design and the Design Principles	*How will the final design be delivered?*	The DPS includes a Roadmap to how the Project's Design Principles will be adhered to throughout the detailed design phases through to implementation of the design. The DPS is secured within the DCO and outlines the design principles that will be adhered to when undertaking detailed design. Updates to the DPS will be made if/ where considered required throughout examination. The final design will be compliant with the DPS with the final design being subject to approval by the Local Planning Authority (in consultation with Lincolnshire County Council) in accordance

Design Approach	Design Consideration	Achievement Example
		with the relevant DCO Requirement, prior to the commencement of the construction works. The Project has appointed a Local Design Panel as part of the Design Review Process (Section 5) being undertaken. The Design Review Process is a mechanism secured within the DCO to ensure the continued engagement with the local community following the DCO Application and through to detailed design. The local Design Panel is primarily comprised of the members who sat on the Project's OnSS Community Liaison Group (CLG). To ensure representation across the specialist disciplines a number of technical representatives (such as LVIA consultants) also sit on the panel to help facilitate discussion and provide an expert view on relevant design considerations. See Section 5 of this document for further information.
Place	*How will the Project provide a sense of identity and improve our environment*	The Project have been active and visible within the local community since the initial Phase 1 Consultation (Project Launch) in October/November 2022. As described in 4.2 the Project has undertaken five Statutory Consultation phases, four phases of which were Project wide and the most recent of which was an onshore targeted consultation. The Project have been dedicated to ensuring their presence in the local areas to create an open and transparent relationship with the community. This engagement has included 20 Public Information Days (PIDs) and 20 Community Liaison Groups (CLGs). The relationships built over this time with the community has set the foundations for the next phases of the design to be approached holistically to ensure the overall construction presence of the Project and the enduring presence of the OnSS is sympathetic with the needs of the local community. The Project are dedicated to maintaining this positive relationship throughout the remaining development phases of this Project including detailed design and construction. The landscaping proposals have taken consideration of the existing landscape with a purpose of enriching the existing natural features of the Surfleet area. As well as for the purposes of screening, the Project will be adding approximately 130,000 trees and hedgerows added to the Surfleet area bolstering biodiversity, the recovery of nature corridors across southern Lincolnshire.

Design Approach	Design Consideration	Achievement Example
NPSs	*How have the requirements for good design in the relevant NPS(s) been met?*	The NPSs relevant to good design are outlined in Section 2.4.
NIC Principles	*How has the Project met the NIC four principles of good design*	The NIC Principles as outlined in Plate 1.1~~Plate 1.1~~.  **Climate: Outer Dowsing Offshore Wind is a circa. 1.5GW Project and the design will optimise the generation of renewable energy to displace carbon emissions and help meet national and international carbon reduction and renewable energy targets.**  **People: Listening to the local communities and involving them in the Project's evolution from the outset has enabled us to design the Project with the local community in mind.**  **Place: The commitments the Project have made in relation to their landscaping scheme and the design review process is targeted at enhancing the local environment and supporting the sense of identity within the landscape.**  **Value: The Project is designed to achieve multiple benefits primarily related to the landscaping in the OnSS area providing additional habitat & connectivity, protection against soil erosion, storage of carbon and many more! The overall aim of the Project is to deliver 1.5GW of renewable energy, enhancing the UKs energy security, delivering on the government's renewable energy targets and helping to address the climate emergency.**

3.2 National Policy Statements

~~17.~~24. The Project is a Nationally Significant Infrastructure Project, as defined by the Planning Act 2008, under which an application for consent will be made in order to obtain a Development Consent Order (DCO), authorising the Project. Section 10 of the Planning Act 2008 applies to the formulation of National Policy Statements (NPS)'s by the Secretary of State (SoS). The SOS is under a duty when formulating the policy to have regard to the desirability of achieving good design.

~~18.~~25. Existing policy for the Project, set out within the Overarching National Policy Statement for Energy (NPS-EN-1, DESNZ, November 2023) and National Policy Statement for Renewable Energy Infrastructure (EN-3 DESNZ, November 2023), makes clear the requirements for good design in energy projects, with key considerations including those outlined in Table 3-2~~Table 3.2~~.

Table 3-2~~3.2~~ Design compliance with relevant NPS's

NPS	Relevant Text	Where is this addressed
EN-1 Paragraph 4.7.1	*"The visual appearance of a building, structure, or piece of infrastructure, and how it relates to the landscape it sits within, is sometimes considered to be the most important factor in good design. But high quality and inclusive design goes far beyond aesthetic considerations. The functionality of an object – be it a building or other type of infrastructure – including fitness for purpose and sustainability, is equally important.* *Applying good design to energy projects should produce sustainable infrastructure sensitive to place, including impacts on heritage, efficient in the use of natural resources, including land-use, and energy used in their construction and operation, matched by an appearance that demonstrates good aesthetic as far as possible. It is acknowledged, however that the nature of energy infrastructure development will often limit the extent to which it can contribute to the enhancement of the quality of the area."*	• ~~Design Principles Statement (~~DPS~~)~~ (document 8.19)
EN-1 Paragraph 4.7.10	"In the light of the above and given the importance which the Planning Act 2008	• DPS (document 8.19)

NPS	Relevant Text	Where is this addressed
	places on good design and sustainability, the Secretary of State needs to be satisfied that energy infrastructure developments are sustainable and, having regard to regulatory and other constraints, are as attractive, durable, and adaptable (including taking account of natural hazards such as flooding) as they can be."	• ES Chapter 4 Site Selection and Consideration of Alternatives (document 6.1.4)
EN-1 Paragraph 4.7.5	*To ensure good design is embedded within the project development, a project board level design champion could be appointed, and a representative design panel used to maximise the value provided by the infrastructure. Design principles should be established from the outset of the project to guide the development from conception to operation. Applicants should consider how their design principles can be applied post-consent.*	• Section 5.3 *(Design Champion)* • Section 5.2 *(local design panel)* • DPS (document 8.19) *(Design Principles and application of these Principles post-consent)*
EN-1 Paragraphs 5.10.5 and 5.10.6	"Virtually all nationally significant energy infrastructure projects will have effects on the landscape. Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."	• Section 3.1 • DPS (document 8.19) • Site Selection and Consideration of Alternatives (document 6.1.4) • ES LVIA (document 6.1.27) • ES SLVIA (document 6.1.17) • OLEMS (document 8.10)
EN-3 Paragraph 2.5.2	"Proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence/co-location with other marine and terrestrial uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage."	• DPS (document 8.19) • Section 3.1 • Site Selection and Consideration of Alternatives (document 6.1.4) • ES Offshore Ornithology (document 6.1.12) • ES LVIA (document 6.1.27)

NPS	Relevant Text	Where is this addressed
		• ES SLVIA (document 6.1.17) • OLEMS (document 8.10) • Environmental Report for the Offshore Restricted Build Area and Revision to the Offshore Export Cable Corridor (document 15.9)

4 Design Approach

4.1 Key Project Elements and Design Processes

~~19.~~26. The Applicant has considered their approach to the design of each of the offshore and onshore elements in a holistic way. This is detailed in ES Chapter 4 Site Selection and Consideration of Alternatives (document reference 6.1.4). The chapter considers each offshore and onshore design element, its relationship to the other elements of the design as well as the consultation responses received to inform their optioneering works and ultimately refine the Project design to the Order limits.

~~20.~~27. Plate 4-1~~Plate 4.1~~ includes an overview of the onshore design development in relation to the Project's consultation phases, as this is where the local community and engagement has played a key role in shaping the Project.

~~[~~

4.2 Consultation Phases and Key design refinements

~~21.~~28. The Project has undertaken five phases of public consultation that have been key to the development of the design and the design principles (as outlined in the DPS, document 8.19) to date.

~~22.~~29. All components of the Project will be subject to detailed design and will be developed, constructed and operated in accordance with the outline documents submitted alongside the application (Parts 8 and 9 of the Application documents). In particular key documents that will inform the Project's detailed design and approach to the construction are:

- ~~Outline~~ Design Principles Statement (DPS)~~)~~ (document reference 8.19);
- ORCP Design Principles Statement (document reference 21.16 submitted at Deadline 4);
- Outline Code of Construction Practice (CoCP) (document reference 8.1);
- Outline Construction Traffic Management Plan (CTMP) (document reference 8.15), Outline Travel Plan (TP) (document 8.16) and Outline Public Access Management Plan (PAMP) (document 8.17);
- Outline Landscape and Ecological Management Plan (OLEMS) (document reference 8.10); ~~and~~
- Outline Operational Light Emissions Management Plan (document reference 8.11);~~.~~ and
- Outline Offshore Reactive Compensation Platform Lighting Management Plan (document reference 8.23 submitted at Deadline 4).

~~23.~~30. The onshore above ground infrastructure is limited to; the potential ground raising of the TJB sites at landfall (subject to detailed design and engagement with the Environment Agency); link boxes along the onshore ECC (these are typically ground level with manhole-type covers) and the OnSS.

~~24.~~31. The OnSS is considered the only significant permanent above ground infrastructure (onshore) to which local community engagement for the detailed design phases is appropriate. This engagement will therefore be focussed on this infrastructure and will be achieved by the Design Review Process (DRP) as described in Section 5 of this report.

~~25.~~32. The consultation phases to date and how they have helped inform the design and development of the onshore infrastructure is outlined in Plate 4-1~~Plate 4.1~~ and described in Table 4-1~~Table 4.1~~.

~~26.~~33. As discussed throughout this report, “Good design” has been at the forefront of decision making throughout the evolution of the Project; strongly influencing site selection and the design commitments and principles which the Applicant has been able to reach at this stage. Community engagement has been key to this development and as demonstrated in Plate 4-1~~Plate 4.1~~ and Table 4-1~~Table 4.1~~ the Project has been very reactive to this feedback and the design of the project has been a collaborative process between the Project, Statutory and non-statutory stakeholders and the local communities.

~~27.~~34. For more information on each of the consultation phases refer to the Project’s Consultation Report (document 5.1).

Plate 4-1 Consultation Phases and Onshore Design Development

Project Component

Project's Consultation Phases

Phase 1

November 2022
Section 47 Consultation & Project launch

Phase 1a

January 2022
Section 47 Consultation on Alternative Onshore ECC

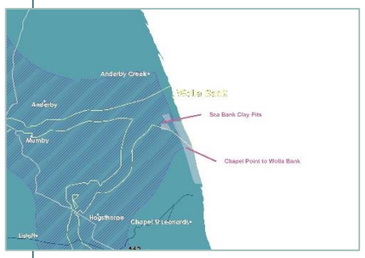
Phase 2

June/ July 2022
Section 42 Consultation on the PEIR

Grid Connection Confirmed August 2023

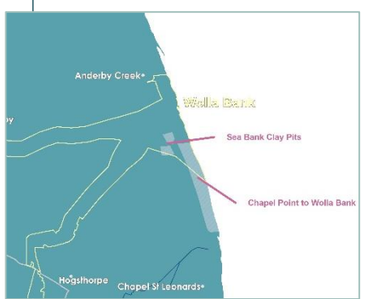
Landfall

Landfall search zone



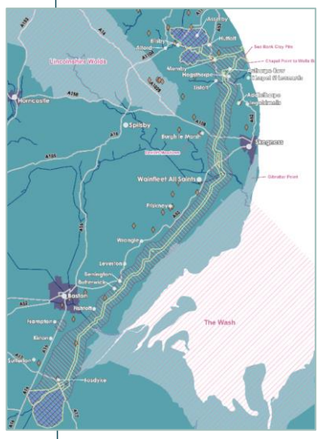
No change

Landfall refined search zone & Indicative 80m corridor



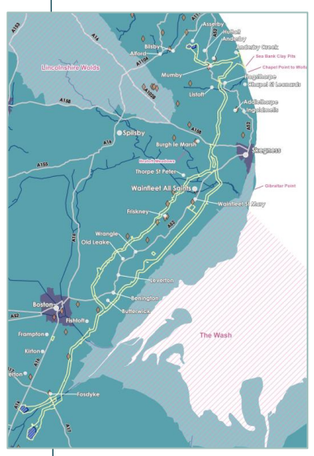
Onshore ECC

Onshore ECC (Route east of the A52) & Lincs Node c. 1km wide search zone



Phase 1 ECC & alternative ECC (Route west of the A52) & Lincs Node 1km wide search zones & Indicative 80m corridor

All Onshore ECCs refined down to 300m wide search zones



OnSS

Lincs Node & Weston Marsh OnSS Search Zones

No change

Lincs Node, Weston Marsh & Surfleet Marsh Refined Search Areas

Project's Consultation Phases

Project Component

Landfall | **Onshore ECC** | **OnSS**

Grid Connection Confirmed August 2023

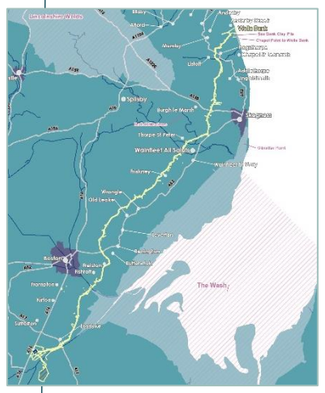
Autumn

Oct / Nov 2022

Section 42 Consultation on Project Refinements

Landfall site at Wolla bank

Onshore ECC (Route West of the A52) c. 80m wide corridor including access tracks



Surfleet Marsh OnSS site, addition of 400kV & Planting Proposals

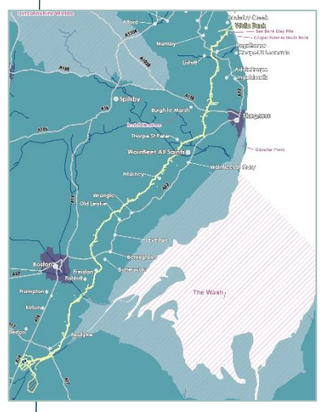
Targeted Winter

Dec/ Jan 22/23

Section 42 Consultation on Project Refinements

Landfall site refinement

Onshore ECC refinement of enabling accesses & compounds



OnSS Planting refinements

Submission

Mar 2023

Final Order Limits

Onshore Order Limits for Landfall

Onshore ECC Order Limits

Onshore Order Limits for Surfleet Marsh OnSS site

Table 4-1 Onshore Project Refinement and key Consultation Feedback in relation to design elements

	Landfall		Onshore ECC		OnSS, Landscaping & 400kV	
	Key Feedback	**Key Refinements made following feedback**	**Key Feedback**	**Key Refinements made following feedback**	**Key Feedback**	**Key Refinements made following feedback**
Phase 1 (Section 47) November 2022 Project launch	It was highlighted by Lincolnshire Wildlife Trust (LWT) that the Anberby Marsh Local Nature Reserve (LNR) will need to be assessed for potential impacts from the HDD. There were concerns around the impact of the landfall on the beach in relation to tourism and that the landfall area was located in the Lincolnshire Coastal Country Park (LCCP).	The Project committed to working with LWT to ensure the management of impacts on the ornithological features The refinements were made with the feedback in mind and the Project reinforced the commitment that they would be HDD-ing under the beach, Anderby Marsh LNR and Roman Bank road to avoid direct impacts on tourism and the LCCP.	Landowners & Members of the Public highlighted the presence of "running silts" within the central portion of the Onshore ECC search zone presented. Landowners & Cllrs highlighted concerns with the amount of Grade 1 & "Toft" Land that would be affected by this route.	It was noted that should the presence of running silts be verified by ground investigations this could alter the anticipated engineering and environmental considerations. An Alternative Route was therefore proposed. This route also affected less Grade 1 land than the original route. Both routes were taken forward for assessment.	At this early stage, the Project was in the early phases of the OnSS site selection and consultation was based on relatively wide search zones. The feedback from the community was primarily centred around visual impacts and how this will be mitigated within the local landscape and the Project explained that this will be done through further siting refinements and development of a landscaping plan.	Further environmental and engineering studies were undertaken to help refine the search zones for the PEIR assessments and Phase 2 Consultation. These refinements were made with LVIA as one of many driving factors to ensure the refined search zones reflected the feedback received.
Phase 1a (section 47) Jan 2022 Alternative Onshore ECC to Weston Marsh	This consultation was targeted on the Onshore ECC Weston Marsh alternative route option		Landowners & Members of the public were generally receptive to the proposed alternative route and concerns were focussed around potential impacts of noise and traffic and micro-siting of the alternative route option.	The Project undertook refinement works based on feedback for the two Weston Marsh onshore ECC Routes. Following the generally positive and receptive feedback to the alternative route it was agreed to take both route options to a point of equivalence in terms of consultation, survey data and assessment to help inform which route should be adopted.	This consultation was targeted on the Onshore ECC Weston Marsh alternative route option	
Phase 2 (Section 42) June/ July 2022 Section 42 Consultation on the PEIR	Concerns were focussed around the beach access shown passing in proximity to Anderby Creek Village. It was noted that a SSSI area of geological interest was located within the landfall zone. Concerns around the impacts of noise on the Anderby Marsh LNR.	The Project committed to no construction access to the beach and removed the access entirely from the project envelope. The Project committed to avoidance of the SSSI and this was embedded within the Project design. The Project undertook further detailed assessments and included the construction of a noise bund in the Landfall compound area (in the agricultural land west of Roman Bank road) The Project also noted that if the duct is to be "pushed" from the landward side, a linear compound would facilitate this work and therefore the project included a duct assembly compound at the landfall.	The key local feedback focussed on micro-siting of the route to optimise and minimise impacts on landowners. There was also feedback relating to concerns around impacts from traffic and transport on the local road network in particular traffic at Wainfleet. Landowner concerns were centred around agricultural drainage and soil management How would land parcels be accessed prior to the development of the haul road. It was highlighted that the site went through an unscheduled area of Archaeological interest – Slackholme Village.	The Project finalised their Ground Investigation campaign and environmental assessments and confirmed that the alternative route option would be taken forward. The Project undertook further transport optimisation studies following additional survey data and managed to avoid Wainfleet in its entirety. These studies also allowed for the inclusion of passing bays, widening of accesses and visibility splays to reduce potential impacts on traffic and transport. The Project committed to utilising trenchless techniques to avoid Slackholme village, with the entry/ exit pits to be informed archaeological investigation.	Key feedback in relation to LVIA was centred around the importance of the landscaping for the screening of the substation and to ensure the species comprise of native species. How would the Project champion biodiversity How is flood risk being taken account of in the siting of the OnSS.	The Project were able to refine the location of the OnSS following further studies and engagement in relation to flood risk and following the confirmation in August of the grid connection option being located in the vicinity of Weston marsh and following further engagement with the National Grid. Planting proposals were developed which considered offsite planting, the Project are committed to pursuing extensive offsite planting which would both provide effective screening for the OnSS and enhance the diversity of the local area.
August 2022 - Confirmation of Grid Connection at Weston Marsh						

	Landfall		Onshore ECC		OnSS, Landscaping & 400kV	
Autumn (Section 42) Oct / Nov 2022 Section 42 Consultation on Project Refinements	Concerns around the use of the Roman Bank road by construction vehicles.	As a result of further engineering studies, refinements to the location of the Transition Joint Bays (TJBs) were made which reduced the overall proposed landfall footprint. It was clarified that the haul road between the A52 and the landfall will be the main construction access for the landfall works. The use of Roman Bank road will be limited to enabling works and the construction of the noise bund as this is seasonally constrained. A bell mouth will be constructed off Roman Bank Road into the landfall area and following completion of the HDD and reinstatement works, the bell mouth will be retained to allow for operational access to facilitate routine maintenance activities (anticipated to be 1 visit per annum).	Following the Autumn Consultation phase, the Project received feedback from landowners that the suitability of a number of accesses could be improved. It was raised as part of the Autumn Consultation phase that two of the proposed construction compounds could be refined to reduce severance of surrounding land.	This has resulted in the removal, addition, and re-location of a number of accesses. In some instances, the access has been amended to abut the extent of the publicly maintainable highway. The Project also undertook more detailed ground truthing site visits that helped inform the removal of some of the accesses and corroborate the refinements as proposed in the feedback. As a result, the Project relocated two construction compounds and were able to remove two construction compounds from the Project Design Envelope. In response to avoiding sensitive locations, a small number of passing places were re-designed or removed from the Project Boundary.	It was highlighted by a number of landowners that in some instances the landscaping areas proposed could be adjusted to better align with the landownership boundaries and prevent severance of agricultural land. It was also raised that due to the scale and type of planting proposed (see FAQs below), there was the possibility for potential impacts on agricultural drainage. The communities were receptive to the landscaping proposals and species list proposed and feedback in relation to this was focussed on ensuring the inclusion of native species.	As a result, the landscaping areas have been moved slightly to better align with landownership boundaries. Where an IDB drain is present, a buffer of 9m is required for access by the IDBs for maintenance activities. In these instances, the planting strips were refined to accommodate this with an additional 1m buffer. In addition, it was identified by the Project that the landscaping proposed may not allow access for maintenance activities related to the landscaping. As a result, the Project's Order limits now incorporate sufficient land to allow access for maintenance.
Targeted (Section 42) Dec/ Jan 23/24 Targeted Section 42 Consultation on Project Refinements	No consultation responses in direct relation to site selection and consideration of alternatives as ~~s~~part of the Winter Targeted consultation were received.					
Submission						

Table 4-2: Offshore Project Refinement and key Consultation Feedback in relation to design elements

	Array Area		Offshore ECC		Offshore Reactive Compensation Platform	
	Key Feedback	**Key Refinements made following feedback**	**Key Feedback**	**Key Refinements made following feedback**	**Key Feedback**	**Key Refinements made following feedback**
Phase 2 (Section 42) June/ July 2022 Section 42 Consultation on the PEIR	Following hazard workshops with shipping and navigation stakeholders, the array area was reviewed for areas of concern.	Reduction of the array area from 500km^2 to 436km^2, through reductions on the western boundary and an introduction of an angle to the northern boundary to avoid shipping routes and constraints.	Following PEIR and further technical consultation with relevant stakeholders several minor refinements were made to remove areas from the offshore ECC and ORCP areas. Stakeholders raised concerns about the use of cable protection within the sandbank features in the IDRBNR SAC.	Part of the offshore ECC and ORCP area was removed to reduce the spatial extent of the overlap between the ECC, southern ORCP area and aggregate area 1805. Part of the ECC was removed to avoid a spatial overlap with aggregate area 515/1. Further minor refinements were also made to avoid any spatial overlap with Race Bank OWF and Triton Knoll export cable assets. The Project introduced the commitment to the use of removeable cable protection on sandbanks within the IDRBNR SAC.	Natural England concerns in Section 42 advice about potential seascape and landscape visual impacts from the ORCP. Following hazard workshops with shipping and navigation stakeholders, the ORCP area was reviewed for areas of concern.	The Project increased the minimum distance of the ORCP from 6km offshore to 12km. The northern ORCP area was reduced to maintain a minimum 0.5nm setback from commercial shipping routeing to the east.
Autumn (Section 42) Oct / Nov 2022 Section 42 Consultation on Project Refinements	Statutory Nature Conservation Bodies, including Natural England, in their Section 42 advice raised that the minimum tip height should be raised as mitigation for offshore ornithology. It was also raised that the worst-case scenario	Minimum tip height of blades raised from 30m above LAT to 40m. A maximum of 50% of GBS foundations.	Not applicable	Not applicable	Not applicable	Not applicable
Targeted (Section 42) Dec/ Jan 23/24	This consultation was targeted on onshore refinements					
Submission and Examination	Concerns raised by stakeholders (Chapter 6 Appendix 1 Evidence Plan Process APP_149; APP-052) regarding the high numbers of birds to the north of the array area.	The Offshore Restricted Build Area (ORBA) was introduced at the Procedural Deadline (September 2024). The proposed ORBA covers the northern section of the array area and would restrict the installation of wind turbine generators and offshore platforms. The smaller area reduces the number of birds at risk of displacement, to all key species through a simple reduction of the footprint, and also targeted to guillemot by removing a portion of the array that held high densities of birds (the main driver for the introduction of the ORBA). The introduction of the ORBA equates to an approximately 12.5% reduction in the predicted guillemot mortalities using the Applicant's approach.	A marine licence was granted for aggregates area 1805. As the developer of Area 1805 has rights to the seabed and intends to exercise those rights in due course, the northern route, which passed through the aggregates area, was no longer viable; the leaseholder has priority with regard to seabed rights and informed the Project that they intend to use the whole of the lease area for aggregates extraction, which is not compatible with cable installation and ongoing operation and maintenance.	The Project amended the Order Limits to exclude this section of the offshore ECC from the draft DCO. This included the northern ORCP area which was positioned along this section of the offshore ECC. The ORCP area within the southern route was also refined to remove areas that were not technically feasible.	Written Question Q1 SV 1.5 in the Applicant's Responses to The ExA's First Written Questions (ExQ1) (REP2-051), questioned the maximum design scenario of the ORCP in regards to the predicted significant effects identified in relation to visual receptors on the closest parts of undeveloped sections of the coastline, as reflected by Viewpoint 5 at Chapel Six Marshes (Chapter 17 Seascape Landscape and Visual Impact Assessment (AS1-044)). Feedback was also received from Natural England in Responses to ExQ1 (REP2-074), row Q1 SV 1.9, stating that reducing the height of the ORCP may assist in mitigating the potential displacement effects of the ORCP within the Greater Wash SPA.	A reduction in the height of the ORCPs to 59.2m above lowest astronomical tide (LAT), with any mast or antenna located on the ORCPs to be a maximum height of 79.2m above LAT was proposed as a change notification, submitted on 13 December 2024. The proposed change has not yet been accepted by the Examining Authority.

5 The Onshore Substation (OnSS) Design Review Process

5.1 The Design Review Process

~~28.~~35. The Design Review Process is a mechanism secured within the DCO to ensure the continued engagement with the local community following the DCO Application and through to detailed design.

~~29.~~36. The Design Review Process was initiated in early February 2024 (Annex A), the purpose of the DRP was discussed with the attending members of the Local Design Panel (Section 5.2) and the Terms of Reference (ToR) for the group were agreed. The Project utilised this initial phase to consult on the more architectural aspects of the design such as cladding colours and finishes. At this stage an indicative design and layout is used as a visual aid, however as the design develops during the Project's detailed design phase, the model will be updated accordingly to reflect the design decisions made and demonstrate adherence to the principles as outlined in the DPS and as agreed throughout the examination phase. A second Local Design Panel meeting was held in July 2024, after submission of the DCO application. As well as providing attendees with project updates, the meeting included a session on the design review process, which included attendance from the Design Review Panel (DRP), who had been appointed to provide external feedback on the onshore substation design. The session covered the process of design review, onshore substation technology options, planting proposals and feedback from the external review undertaken by DRP (see section 5.4).

~~30.~~37. The slides and minutes from both these meetings are included in Annex A and Annex B.

~~31.~~38. The finalisation of design will take place post consent within the parameters secured within the DCO (and relevant plans). The Project commenced the design and consultation process in the pre-application stage, and this will continue to be developed throughout the examination, when the parameters and principles will be confirmed, with the detailed design being undertaken post consent. The ongoing design review process will be informed by the Planning Inspectorate's 'Advice on Good Design' (October 2024).

5.2 Local Design Panel

~~32.~~39. The local Design Panel (Plate 5-1~~Plate 5.1~~) is primarily comprised of the members who sat on the Project's OnSS Community Liaison Group (CLG). To ensure representation across the specialist disciplines a number of technical representatives (such as LVIA consultants) also sit on the panel to help facilitate discussion and provide an expert view on relevant design considerations. See Section 5 of this document for further information.

~~33.~~40. The Project is dedicated to working with the local community to develop the design of the OnSS, while there are certain areas of the design that the Project will not be able to consult on or, provide flexibility for as they are driven by other considerations such as: adherence to safety standards; technical constraints (size, type and suitability of equipment); legislative requirements; and interfaces with other key receptors (e.g. ecology and ornithology). However, where elements are not controlled by external constraints, the Applicant has committed to the design review process to ensure the continued participation of the local community, where the local knowledge and experience of the group will be essential to delivering a design that adheres to the key building block of "good design" as outlined in Table 3-1~~Table 3.1~~.

~~34.~~41. To ensure a holistic approach is taken, the Project have committed to appointing a Project Design Champion and establishing a Local Design Panel to lead the consultation and design review process.

Plate 5-1 The representatives on the Local Design Panel

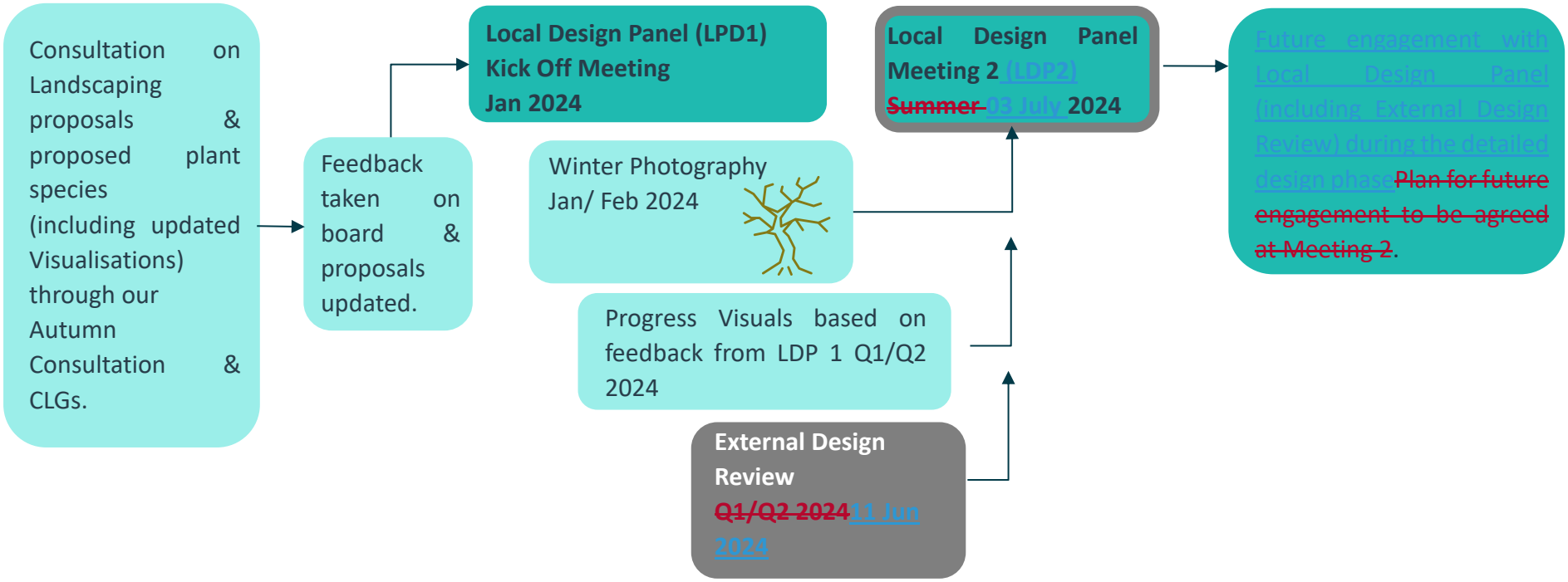


Plate 5-2 Design Process timeline to date~~agreed at LDP1 Kick off meeting (Annex A)~~

5.2.1 Design Aspects and Design Review Panel Influence

~~35.~~42. The design aspects of the substation can be divided into two main types which will determine the level of involvement by the Design Review Panel. The topics fall into two main categories -

- A) Design elements that are predominantly controlled by engineering constraints, technical standards and safety regulation. For certain design items, such as external equipment, there is likely to be little flexibility to influence the engineering design, however the Project will consult the local design panel on any decisions made to ensure these items can be considered in the context of those elements that can be influenced, such as the landscaping arrangements.
- B) Aspects of the design that are more flexible and can be significantly influenced or customised by the input of the design panel, such as the colour and external appearances of buildings, fences, entrances, landscaping layout and planting selection, earth bunds, drainage systems, public rights of way and ecological mitigation.

5.3 Project Design Champion

~~36.~~43. In line with the NIC Design Principles, the Commission identified a need for championing of good design at board level on projects. The first National Infrastructure Assessment recommended that a board level design champion be appointed for every nationally significant infrastructure project.

~~37.~~44. The Applicant has therefore appointed David Few in the role of Design Champion for the Project, the Project Director for Outer Dowsing Offshore Wind.

~~38.~~45. David is a Senior Director with significant proven experience running/growing several substantial businesses and leading major projects across different infrastructure sectors in consultant, client, contractor and manufacturing roles, his background as Chartered Civil Engineer, Fellow of Institution of Civil Engineers.

~~39.~~46. The Design Champion is accountable for delivering coherent good design and holds the project team to account in terms of a macro vision of design. The Design Champion will guide and champion an iterative design process to test the best way of achieving the design principles as set out in this document.

~~40.~~47. The Design Champion will:

- Act as a focal point for the coordination of good design for the Project's onshore substation;
- Ensure good coordination with National Grid; and
- Ensure good design continues to be prioritised and will provide a continual emphasis on the design vision throughout the process, holding the Project team accountable for delivering those design principles as set out in the DPS.

~~41.~~48. The Design Champion will be supported by the Engineering Manager to ensure that the Design Champion’s vision is embedded in the core of the project team.

5.4 External Design Review

~~42.~~49. External design review panels are independent from the project team. The ~~Project are liaising with external groups, such as~~ 'The Design Review Panel'[2] (DRP)~~who~~ operate nationally within the UK~~. Such a group would be~~ and ~~contracted to~~work with developers to provide ~~an~~ impartial, multi-disciplinary, constructive feedback on ~~the~~ design. National Planning Policy Framework (NPPF) paragraph 133, recognises the outcome of such a process can be useful to decision makers.

50. The Applicant appointed the DRP in June 2024, to undertake an external review of the OnSS design proposals. The panel was made up of a range of built environment professionals from across the country. They comprised a town planner, two architects and two landscape architects.

51. In June 2024, the Applicant held a design review session with DRP, which involved a site visit to a selection of the LVIA viewpoints around the onshore substation, followed by a workshop session to discuss issues relating to the onshore substation design more fully.

52. Feedback from that session was presented to the Substation Community Liaison Group Meeting held in July 2024. The summary of feedback given is presented in the meeting minutes and presentation (Annex B).

53. In summary this feedback was:

- Appreciation of being involved at an early stage in the design process;
- Commended the Applicant on consultation and engagement on this topic;
- Good site analysis and understanding of local landscape;
- Mitigation proposed would mitigate the visual impact;
- Encouragement to explore further landscaping options; and
- Exploring further synergies with the local landscape.

~~43.~~54. ~~The Project have committed to an External Design Review of the OnSS following the Project's application. The timeline of the external review was discussed with the LDP at the kick off meeting (LDP1) in February 2024 (~~Plate 5-2~~Plate 5.2) and the timeline was proposed such that the review would take place following the initial kick off meeting, but in advance of the next meeting and so that the External Design Panel (EDP) could be present at the LDP2 meeting to provide an opportunity for the LDP and the EDP to discuss the outcomes of the EDP in the same forum .~~

[2] http://www.designreviewpanel.co.uk/

~~44.~~55. The involvement of the DRP, as an external review mechanism, will continue post consent as the detailed design for the onshore substation is developed, which is secured through a design principle in the DPS. ~~Applicant considers this timeline appropriate given the MDS provides sufficient allowance of design considerations and amends to be undertaken (such as those considerations as outlined in the Design Principles Document (DPD) (document reference 8.19))~~.

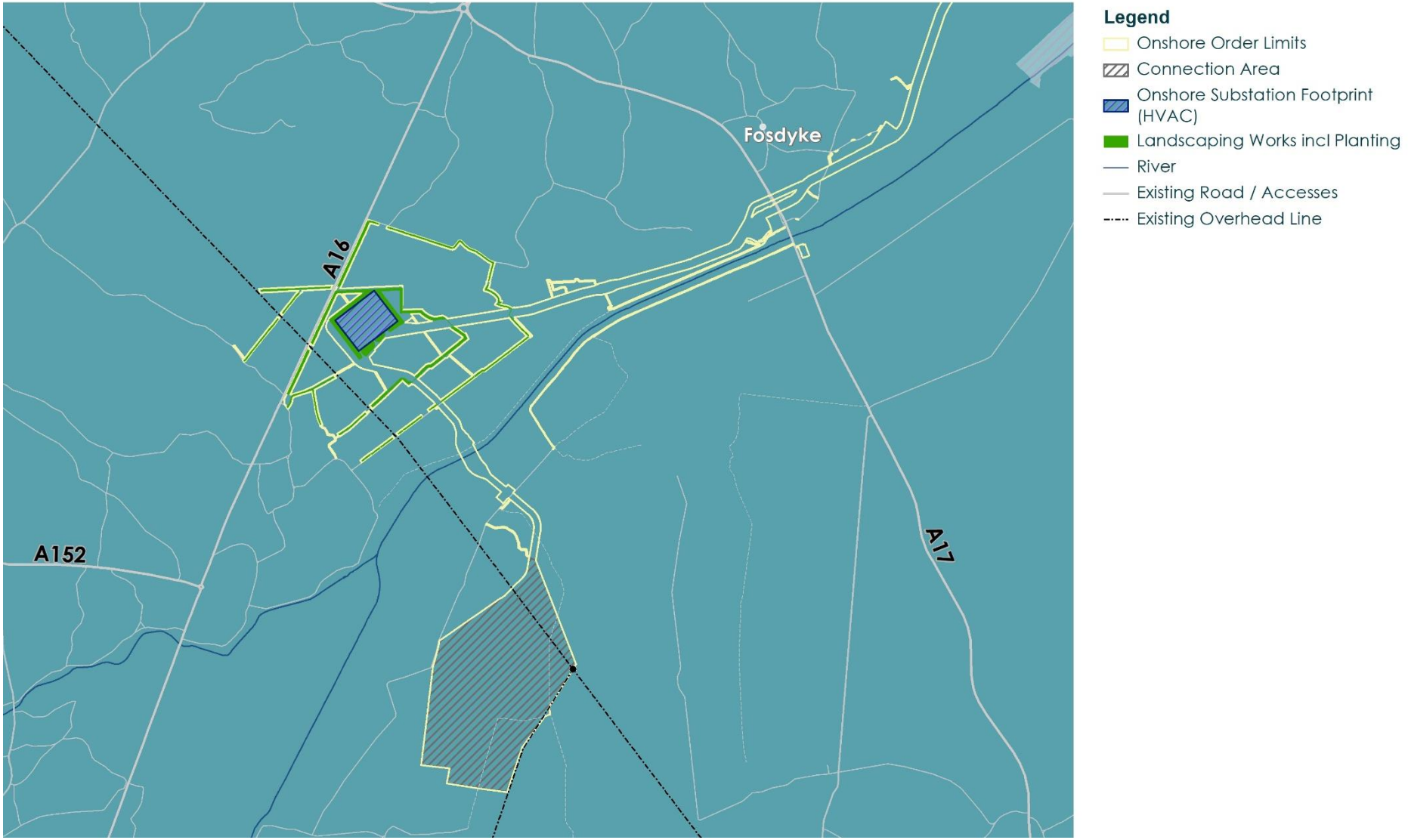


Figure 5.1: The Location of the OnSS, landscaping scheme and connection area

Woodland

01 Quercus petraea (Sessile oak)
02 Alnus glutinosa (Alder)
03 Tilia cordata (Small leaved Lime)
04 Salix alba (White Willow)
05 Betula pubescens (Downy Birch)
06 Populus nigra (Black poplar)
07 Populus tremula (Aspen)
08 Acer campestre (Field maple)
09 Prunus padus (Bird Cherry)
10 Salix caprea (Goat Willow)
11 Salix cinerea (Sallow)
12 Cornus sanguinea (Dogwood)
13 Viburnum opulus (Guelder Rose)
14 Ilex aquifolium (Holly) 1
5 Sambucus nigra (Elder)
16 Corylus avellana (Hazel)

Hedgerows

Crateagus monogyna (Hawthorn) Acer campestre (Field maple) Cornus sanguinea (Dogwood) Viburnum opulus (Guelder Rose) Ilex aquifolium (Holly) Prunus padus (Bird Cherry) Sambucus nigra (Elder) Quercus petraea (Sessile oak) Pyrus sp. (Pear) Hippophae rhamnoides (Sea Buckthorn) Corylus avellana (Hazel

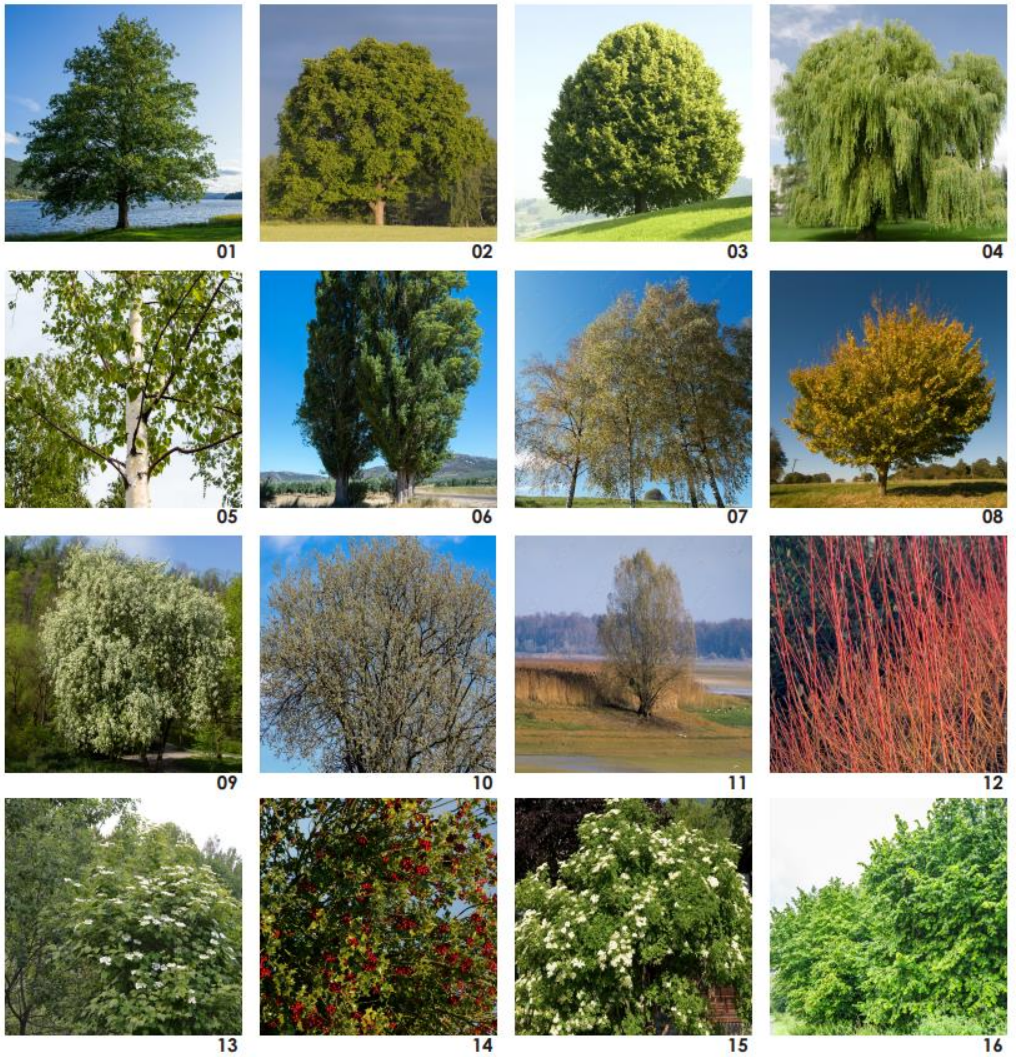


Plate 5-3 Species identified for planting scheme (as provided as part of the Autumn Consultation)

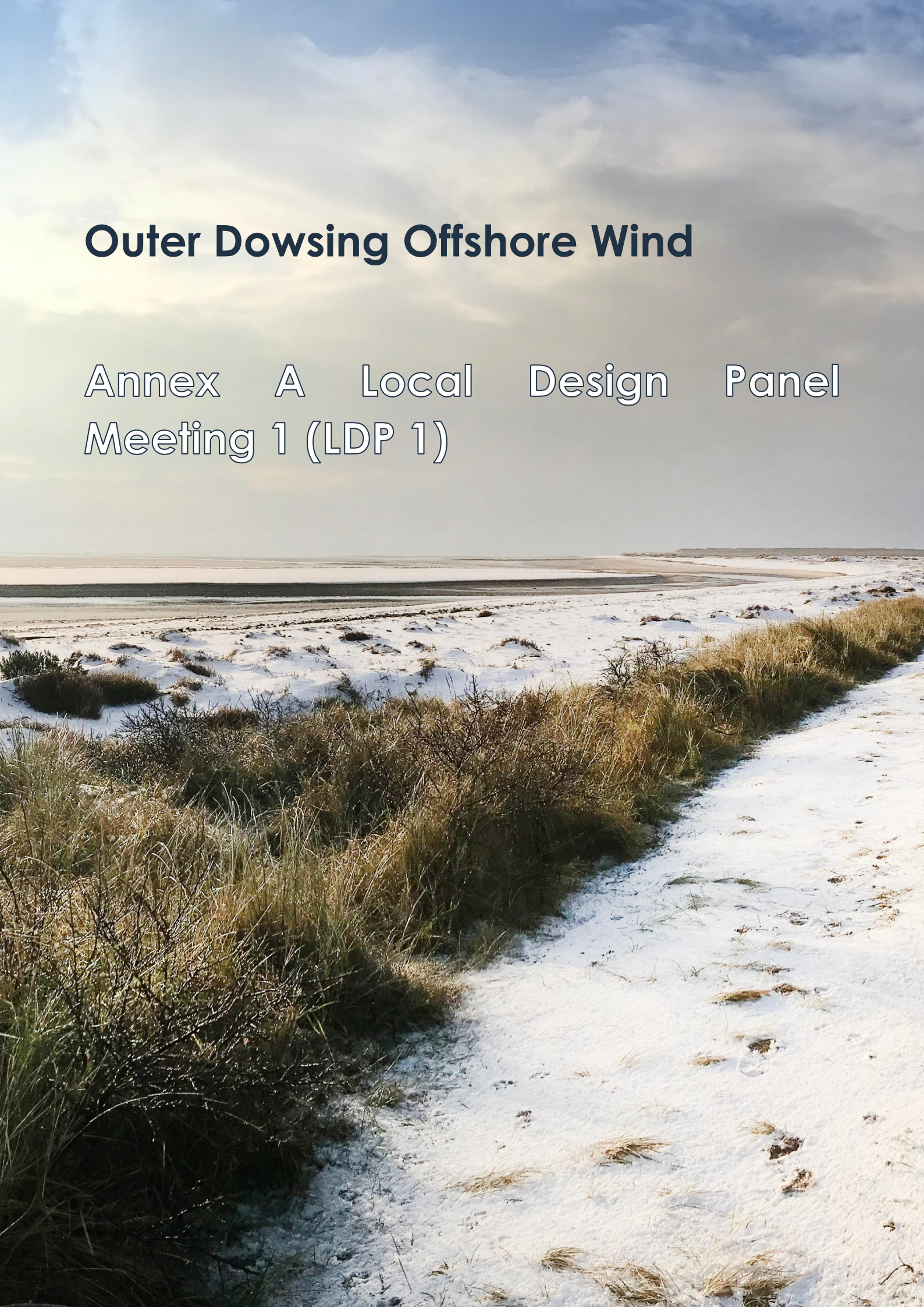
Annex A Local Design Panel Kick off meeting (LDP1)

~~45.~~56. This Annex contains the following documents:

- Local Design Panel Kick off meeting (LDP1) Presentation
- Local Design Panel Kick off meeting (LDP1) Minutes

Outer Dowsing Offshore Wind

Annex A Local Design Panel Meeting 1 (LDP 1)



This Annex includes the following documents:

- Local Design Panel Meeting 1 (LDP 1) Presentation (January 2024)
- Local Design Panel Meeting 1 (LDP 1) Minutes (January 2024)

Community Liaison Group & Local Design Panel

Chris Jenner
Garrett Roche
Roisin Alldis
Jo Phillips
Andy Acum
Jenny Marsden

Jan 2024

Agenda: Surfleet

- Terms of reference
- Introductions
- Project Update
  - Consultation overview
  - Category 3 communications
  - CBF boundary and themes review
- Timeline

Local Design Panel

- The Design Review Process
- The Onshore Substation
- Consultation & Feedback
- Design Considerations & Design Scope
- Timeline & Next Steps

AOB

Terms of Reference and Aims

Our Aims …

To involve key local stakeholders in the design and development of the Outer Dowsing Offshore Wind project (landfall, onshore cable route and substation) through presentations, discussions and planned workshop activities.

To act as a two-way communication channel between local communities and the project team.

To help foster local involvement and ownership of the project.

To facilitate focused discussions and ensure attendees can make the most out of the CLG's – it is intended for these groups to be focused on concerns/ issues / thoughts relative to their specific **local area.**

Approval of previous minutes

?

Any comments or queries prior to the meeting?

!

Declaration of Conflicts of Interests.

Introductions

Project Update

Consultation Overview

The project team have worked to engage local communities through extensive consultation

2022-2024 overview

- **16** public engagement events
- **8** webinars
- **1491** Attendees at engagement events
- **107** written responses
- **74** phone calls
- **246** Completed feedback forms

- We have received a large number of pro-actively supportive responses and positive feedback on our consultations
- Themes of interest primarily related to onshore matters such as noise, visual impacts and traffic
- Targeted consultation closed on Jan 19th
- What is the current sentiment in your community?

Community Benefit Fund

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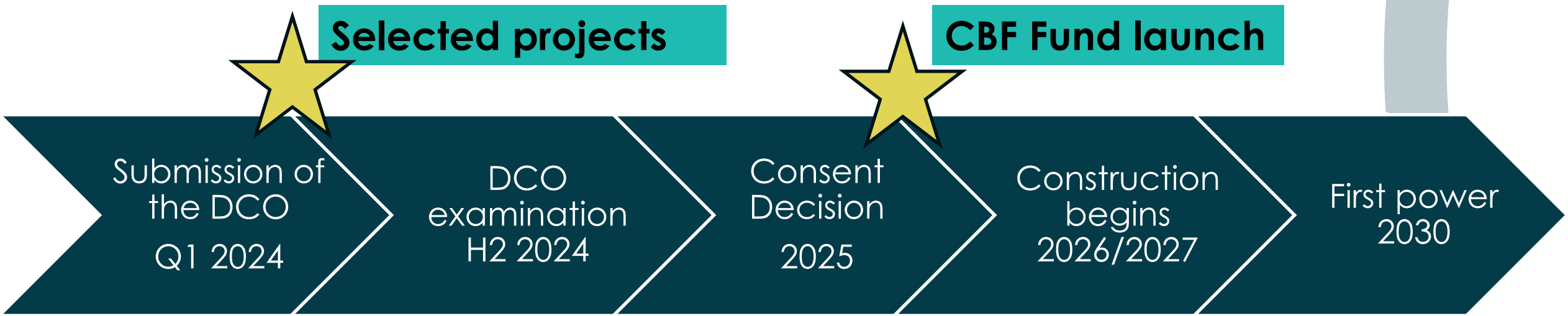
OFFSHORE WIND

Community Benefit Fund (CBF) – early proposals

1. **Aim of the fund –** to bring long-lasting value to the communities closest to our project
2. **Proposed themes of focus -** themes we hope to support in the local community.
3. **Eligibility criteria -** sets out which applications get through the first sift. Ensures the funding is in line with ODOW standards and those of our partners.
4. **Award criteria –** outlines how the applications will be scored to ensure that the projects with the highest impact and closest to the project are more likely to get funding
5. **Fund administration –** we will likely work with a third party to administer the fund
6. **Lessons learnt –** we want to incorporate learnings from other developers and feedback gained from the community consultation events.

Timeline



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Proposed themes for the CBF

Nature positive	STEM and skills	Sustainable enterprise	Community health and wellbeing

Volunteering and staff engagement

Proposed eligibility criteria and exclusions for the CBF

Eligible

- Have a constitution outlining your objectives and rules for your organisation
- Have a bank account or credit union account set up in the organization's name.

Projects must be:

- Within the eligibility zone as outlined on our map
- Aligned with our themes

Excluded

- Religious organisations, trade unions and political parties
- Promotion of any kind of discrimination (ages, sexes, ethnicities, or minority groups)
- Requests for funding that benefit a single person
- Requests for funding to pay for salaries or other ongoing running costs (e.g. rent)
- Recipients that promote illegal or unsafe activities
- Retrospective funding or existing loans or debts
- Requests for funding that relate to public infrastructure
- Members-only sports clubs or facilities unless they are open to the general public

Award evaluation criteria themes

Proposed themes that will influence which projects are selected

1. Proximity to project
2. Relevance to community
3. Level of impact
4. Ability to deliver results

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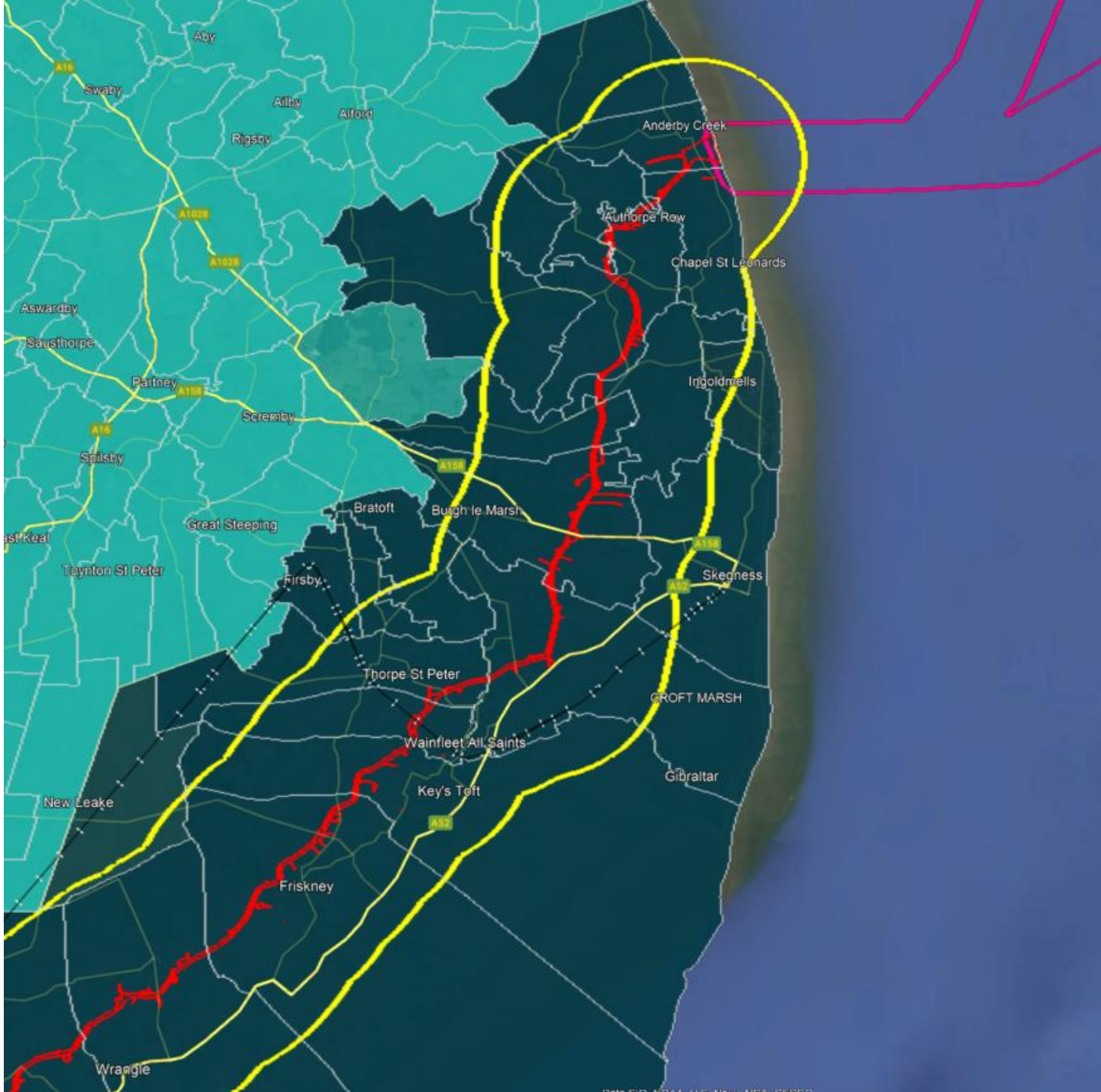
Community Benefit Fund: Proposed Boundary

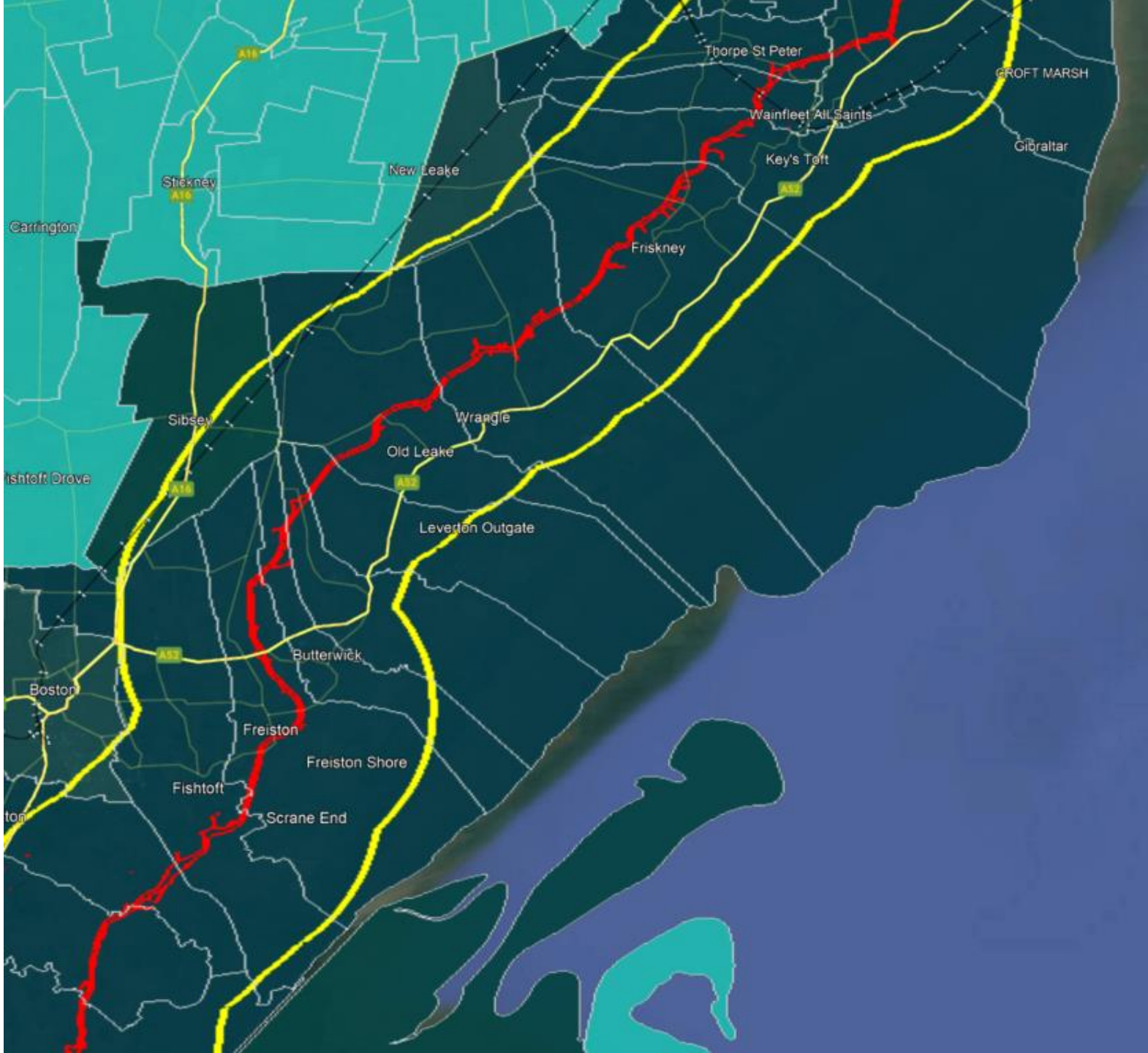
- Landfall and northern part of cable route
- Red line shows the 80m corridor
- Yellow line shows a 3km distance from the cable corridor
- If a parish council boundary comes within 3km of the cable route, projects across the whole Parish will be eligible to apply to the fund



OUTER DOWSING OFFSHORE WIND

Community Benefit Fund Proposed Boundary

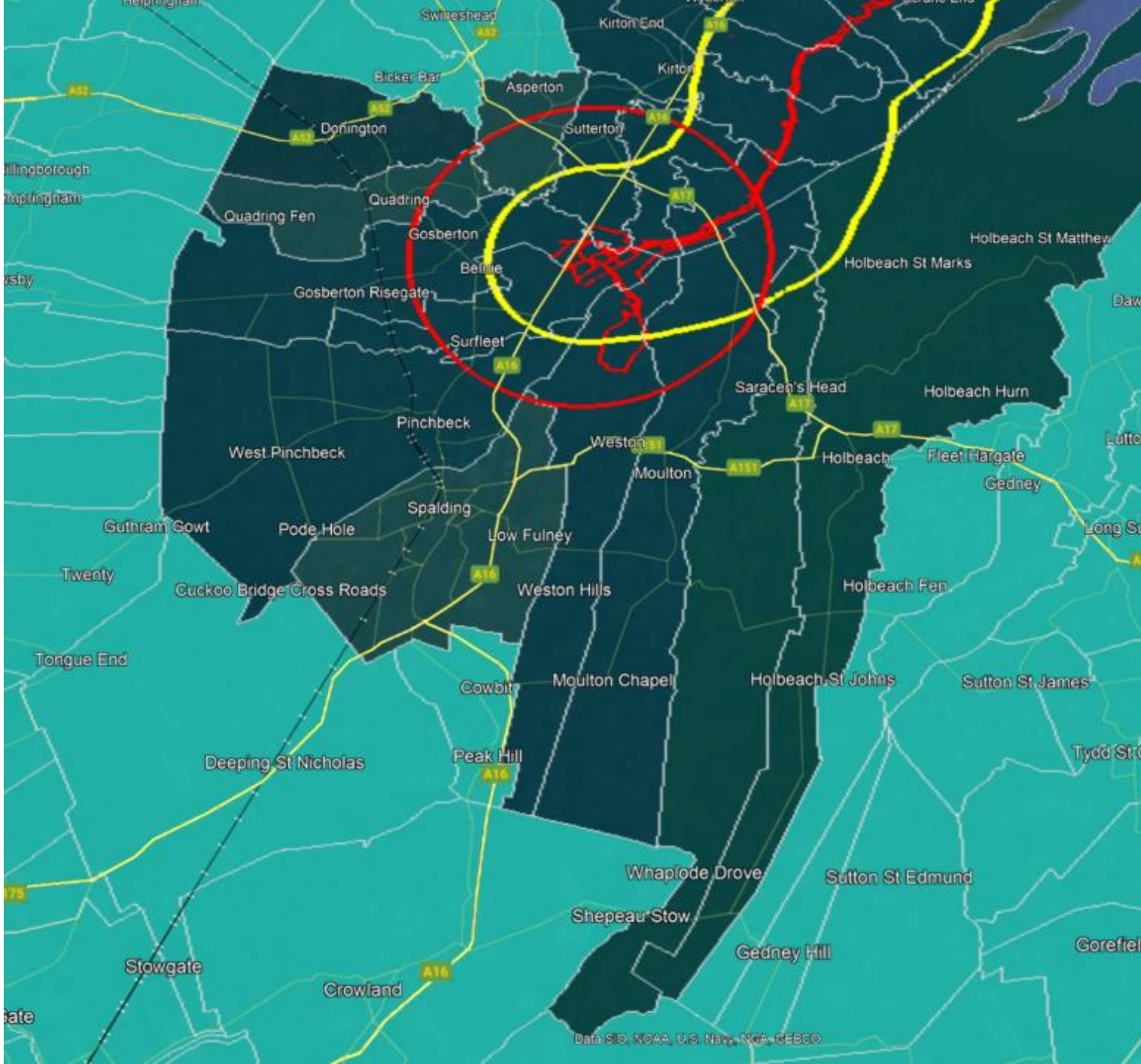
- Cable route
- Red line shows the 80m corridor
- Yellow line shows a 3km distance from the cable corridor



OUTER DOWSING OFFSHORE WIND

Community Benefit Fund Proposed Boundary

- ODOW substation site
- Red line shows 80m corridor
- Yellow line shows a 3km distance from the cable corridor
- Red line shows a 5km distance from the substation site



OUTER DOWSING OFFSHORE WIND

Community Benefit Fund Proposed Boundary

- ODOW substation site
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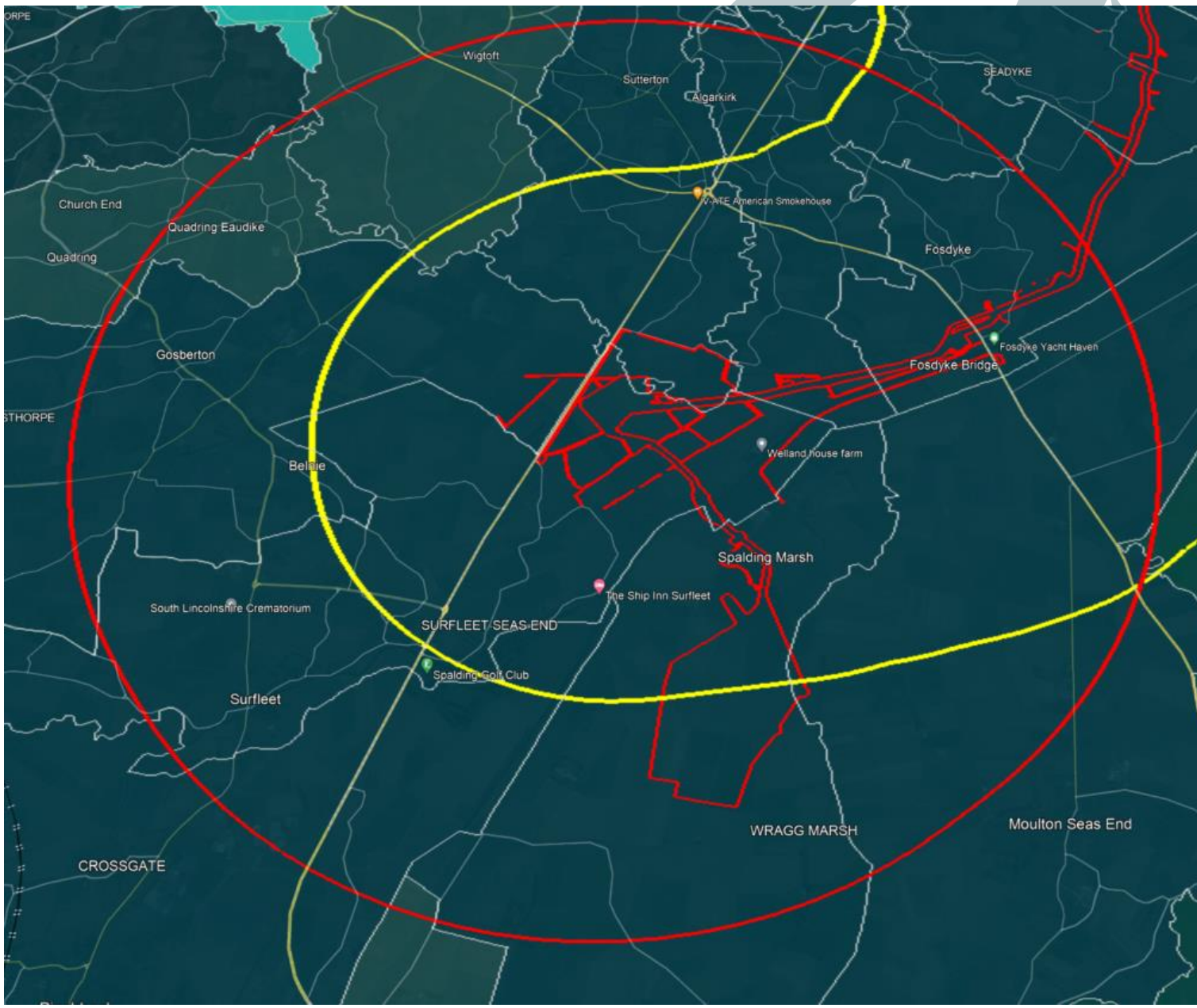

OUTER DOWSING OFFSHORE WIND

Local Design Panel

OUTER DOWSING
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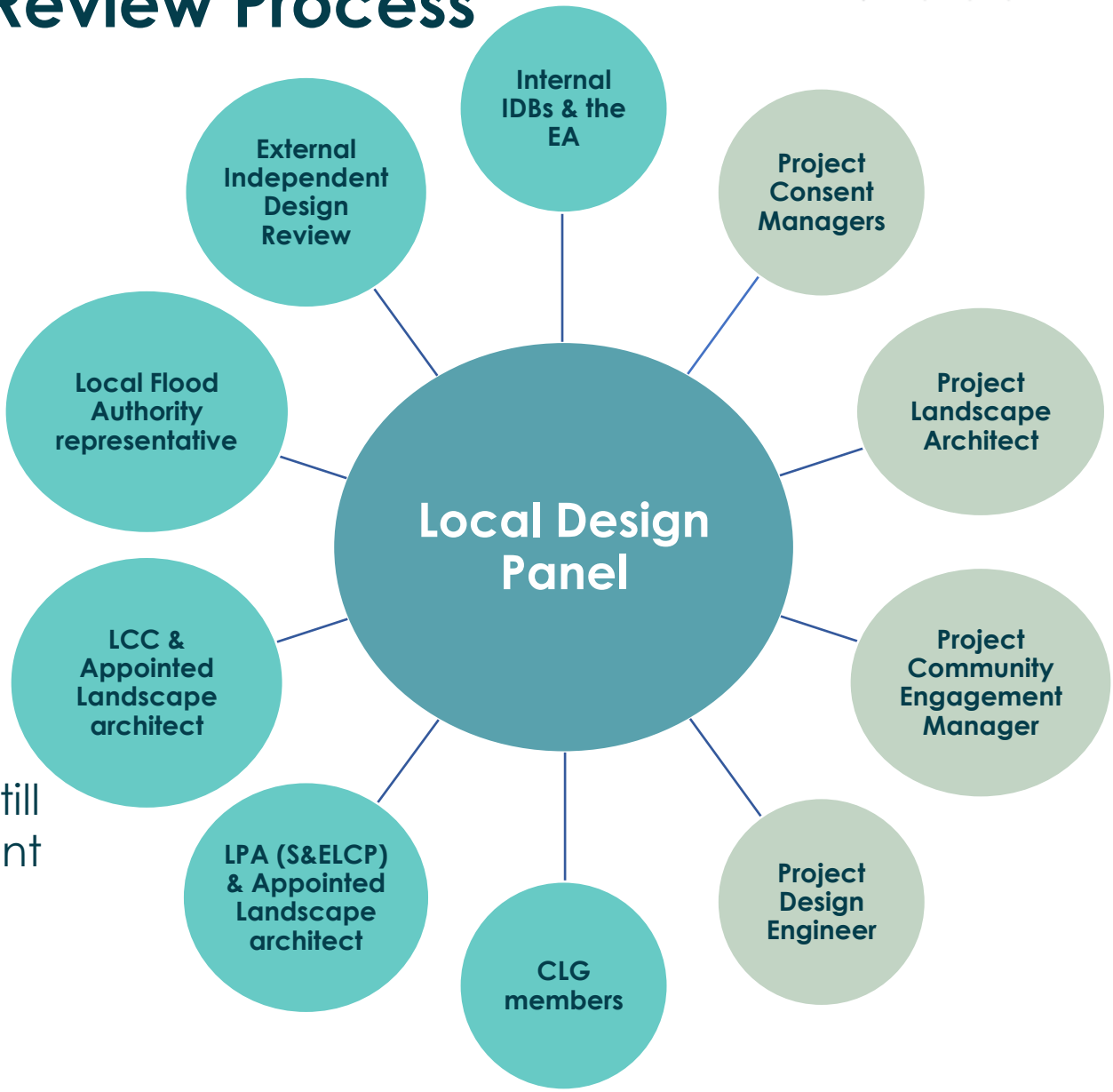
The Onshore Substation Design Review Process

- Local Design Panel first meeting in Jan, share preferences
- External Design Review – Independent Architects, will undertake a design review from Q2
- Engineers need to assess technical requirements
- Local Design panel will be consulted as the design progresses

Maximum Design Scenario

- "Worst case scenario"
- Defined based on two potential technologies still under consideration that will impact the footprint and maximum heights of buildings:
  - Air Insulated Switchgear (AIS)
  - Gas Insulated Switchgear (GIS)



Functional requirements of a substation

The project aims to generate renewable electricity and export it to the National Grid, which is process at the 400kV ODOW Substation.

The substation area indicated enables the installation and operation of either an AIS (Air Insulated Switchgear) or GIS (Gas Insulated Switchgear) type substation*. From a transmission perspective, AIS or GIS transmits the power generated offshore to meet the grid requirements. The main considerations for the substation are as follows:

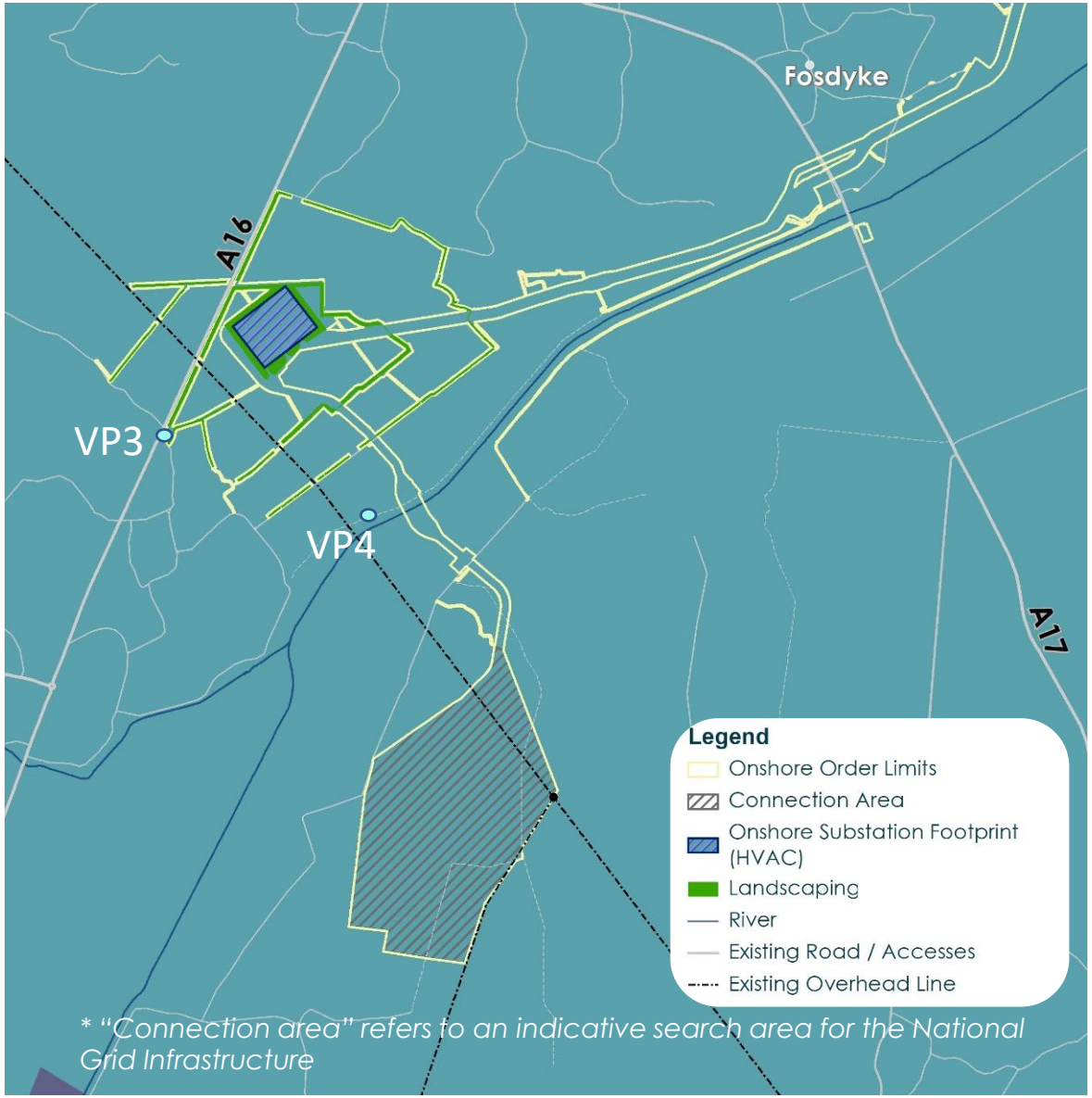
- **Insulation Medium:** The AIS uses air as the insulation medium between conductors and equipment, whereas the GIS employs a specialist gas in modular units. GIS equipment offers reduced footprint and maintenance requirements. The switchgear in AIS is outdoors, and GIS is installed indoors and requires additional building.
- **Size and Space:** The AIS substations require a larger footprint, whereas the GIS substations are compact and space-efficient. Subject to equipment and design, the GIS Convertor Hall(s) could be up to 16.5m in height. *These maximum parameters are represented on the visualisations.*

**The electrical system design and technology from the Supply chain will impact the selection of the substation.*

Onshore substation

- Following a **decision from the National Grid** that our connection point would be in the vicinity of Weston Marsh, we were able to remove Lincs Node from our Project Scope.
- We have subsequently selected **Surfleet Marsh** as the optimum site for our substation taking into account multiple factors including engineering and environmental considerations.
- There will also be a need for a National Grid substation and associated enabling works within the vicinity of the project's onshore substation which we will connect to using 400kV underground cables which will run between our project substation and that which will be developed by National Grid Electricity Transmission

1 **Confirmed** Grid Connection Location	1 **Confirmed** Substation Location	**14.5 hectares** Onshore AIS Substation Footprint	**13m** Onshore AIS Max. Equipment Height	**16.5m** Onshore GIS Substation Max. Building Height
Down from **2 options**	Down from **3 search zones**	Up from **9.5 hectares**	Up from **12m**	Down from **19m**



Onshore substation

VP4 (Views from PRoW)

Proposed **AIS** Onshore Substation (AIS OnSS) Indicative Model with Mitigation Planting (15 Years Growth) Viewpoint 4: Macmillan Way at Surfleet Bank

Proposed **GIS** Onshore Substation (AIS OnSS) Indicative Model with Mitigation Planting (15 Years Growth) Viewpoint 4: Macmillan Way at Surfleet Bank

Onshore substation • VP3 (Views from the A16)

Proposed AIS Onshore Substation (AIS OnSS) Indicative Model with Mitigation Planting (15 Years Growth) Viewpoint 4: Macmillan Way at Surfleet Bank

Feedback on Landscaping

- ***There were concerns around the use of "deciduous trees", what about views In Winter?***
  - The Project have commissioned a "Winter Photography" campaign which is being undertaken this season.
  - The woodland shelterbelts will be approximately 20m wide which will ensure that even without leaves they will provide a screen.
  - In the detailed design of the shelterbelts some evergreen trees, hedges and understorey shrubs will be included to add to the screening effect in winter.

- ***Comments on the inclusion of native species.***
  - The planting design will always prioritise native species, but also with thought and consideration given to ensuring the planting will be resilient to climate change.

- ***It was noted by landowners that the landscaping areas proposed could be adjusted to better align with the landownership boundaries***
  - As a result, the landscaping areas have been moved slightly to better align with landownership boundaries.

- ***It was highlighted that there was the possibility for potential impacts on agricultural drainage from the planting.***
  - The Project has included for drainage works within the order limits to ensure existing land drainage is not impacted.

Landscaping - What is the aim?

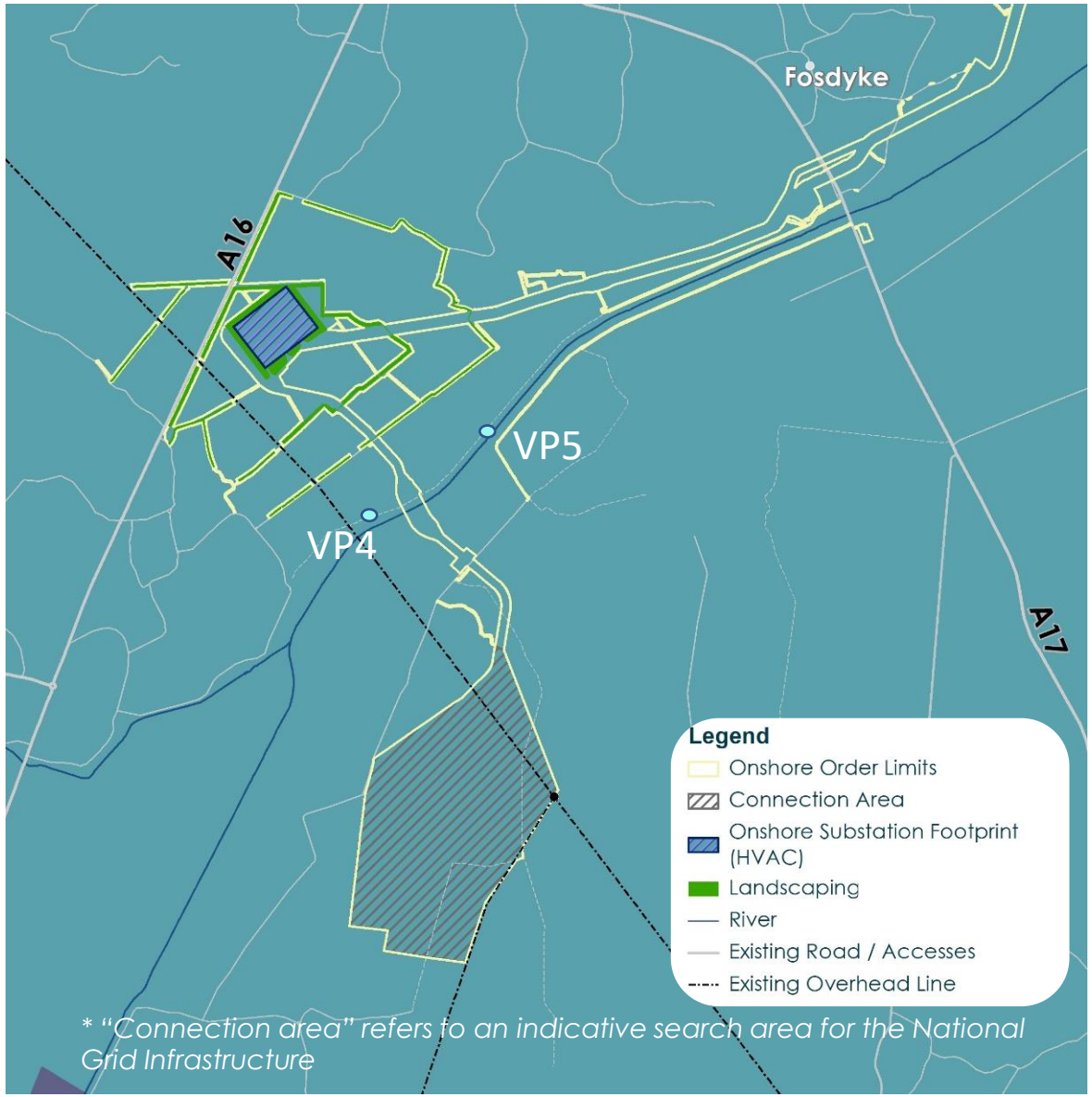
From our feedback to date it has become clear that the **screening of the substation** is the desired outcome for the local communities.

This is why the Project have developed such extensive planting proposals – not only are we able to provide an effective screen, but we are able to enhance the overall landscape and biodiversity of the Surfleet area.

- ***Do you feel this approach is line with feedback received from the local community?***

- ***Do you feel that other approaches should be considered?***

Cumulative Impacts



A cumulative assessment including Visualisations (based on an indicative location within the connection area and typical parameters) will be included in the DCO application documents.

- Noting the location of the **Connection Area** *(the indicative search area for the National Grid substation)* relative the Project substation – the planting strips will be an effective screen for those viewpoints that would be affected by both of these infrastructures.
- The cumulative Visualisations will be based on both VP4 & VP5 on Macmillan Way

Design Considerations: **LDP Scope**

Design Influence	Design Element	How is it determined?	Factors considered / to consider	Options
Consideration	Building position and orientation	Predominantly controlled by operational requirements of the site layout	Minimise land-take and landscape and visual impacts, inter relationships with the grid connection and 400kV cable corridor	Limited options, however open to feedback.
Consideration	Material	Predominantly controlled by technical and commercial feasibility	Operational, electrical safety and fire standards	
Scope (1)	**Colour**	Aesthetics and cost	Minimise visual impacts	Consultation with LDP within the range of commercially viable & available options
Scope (2)	**Cladding**	Aesthetics and cost	Minimise visual impacts	
Scope (3)	**Roof Shape**	Operational requirements, Aesthetics and cost	Minimise visual impacts	
Scope (4)	**Landscaping**	LVIA – Mitigating against visual impacts	Minimise visual impacts, enhance biodiversity,	

Design Consideration: **Material**

The key technical requirements of the materials to be used in the construction of the converter buildings are set out below;

- **Strong** enough to form robust and secure large-scale structures;
- **Fire resistant** and able to withstand high temperatures without the structural integrity of the material being compromised;
- **Resistant to severe weather conditions**, including high winds, water ingress and heat waves;
- Forming surfaces and joints that are completely **impermeable to water**;
- Suitable to form the **large spans and surfaces** required to construct large structures;
- **Sufficiently durable** to withstand the impacts of a 35 year lifecycle;
- **Modular** to reduce the time for installation, provide aesthetics and reduce the building's carbon footprint; and
- **Low maintenance.**

Material Consideration: **Steel**

Advantages

- Robust material that is fire resistant, very low maintenance and durable.
- Relatively low-cost material that is available from local manufacturers in the UK.
- Large and lightweight and can be readily and quickly assembled on-site.
- Large scale agricultural and industrial sheds made from sheet metal are a common feature in rural landscapes.
- Options for recycled steel
- Complete cladding system
- Insulated sheet metal panels last beyond the 35-year lifecycle of the converter buildings.
- The colour range available is extensive, with different types of finish available, making colour matching to local contexts possible.

Disadvantages

- Sheet metal can present a reflective surface if the **appropriate finishes and coatings** are not applied.
- The extraction of raw materials and production of sheet metal reduces the sustainability of this material, especially if also imported from overseas.
- Cladding panels could look a bit tardy toward the end of their design life. Thus, routing checks, cleaning and maintenance is required.

Design Scope: **Colour**

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Commercial colour match

		RENDER, MASONRY PAINT, WEATHER BOARDING			TIMBER, FIBRE CEMENT		STONE	BRICK, TILE		STEEL
INTEGRATION	A	0300-N	2005-Y20R	2020-Y20R	4010-G70Y	6005-Y80R	5010-Y10R	6005-R80B	5020-Y60R	7502-Y
	B	0502-Y	2502-Y	3010-G80Y	5005-Y50R	5010-G70Y	6010-Y10R	3040-Y60R	4030-Y70R	7010-G50Y
	C	0804-Y10R	3010-Y	4005-Y20R	6005-G80Y	4020-G70Y	5030-Y10R	4030-Y50R	5030-Y80R	8005-Y20R
NEUTRAL		0500-N	2500-N	3000-N	5000-N	5000-N	5500-N	4500-N	4500-N	7500-N
CONTRAST		3000-N	3500-N	4000-N	5500-N	4500-N	4000-N	3500-N	3000-N	2500-N
ACCENT	A	2500-N	2005-B20G	3005-G80Y	3020-R70B	3005-Y80R	3010-G90Y	3020-G80Y	4005-G50Y	5040-Y
	B	2502-R	3502-Y	3010-R80B	4010-G50Y	3030-R70B	4010-Y10R	3010-G50Y	4010-G30Y	5010-G50Y
	C	1505-Y10R	3020-Y	2005-Y20R	3030-G80Y	3020-G70Y	5010-Y10R	4010-B50G	4005-G20Y	5005-Y20R

Olive Green
RAL 100 30 20
BS 12B27

Merlin Grey
RAL 180 40 05
BS 18B25

Goosewing Grey
RAL 080 70 05
BS 10A05

Camouflage
RAL 110 50 10

OUTER DOWSING
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Colours in the landscape

Commercial colour match

OUTER DOWSING
OFFSHORE WIND

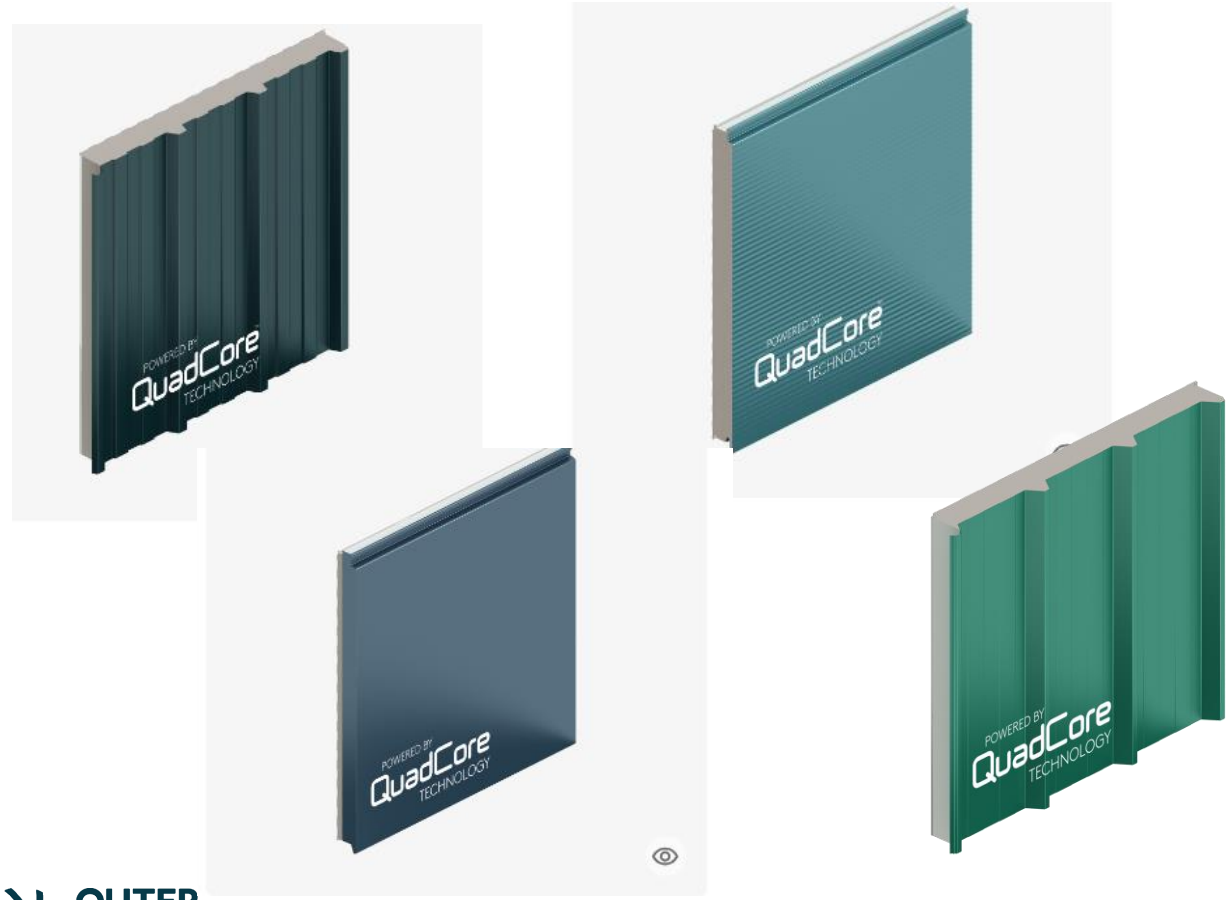
Colours in the landscape

Commercial colour match

Design Scope: **Cladding**

Appearance of materials, in terms of colour, texture and reflectiveness.

Trapezoidal Vs Smooth Architectural wall rib



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Design Scope: **Roof Shape**

Monopitch

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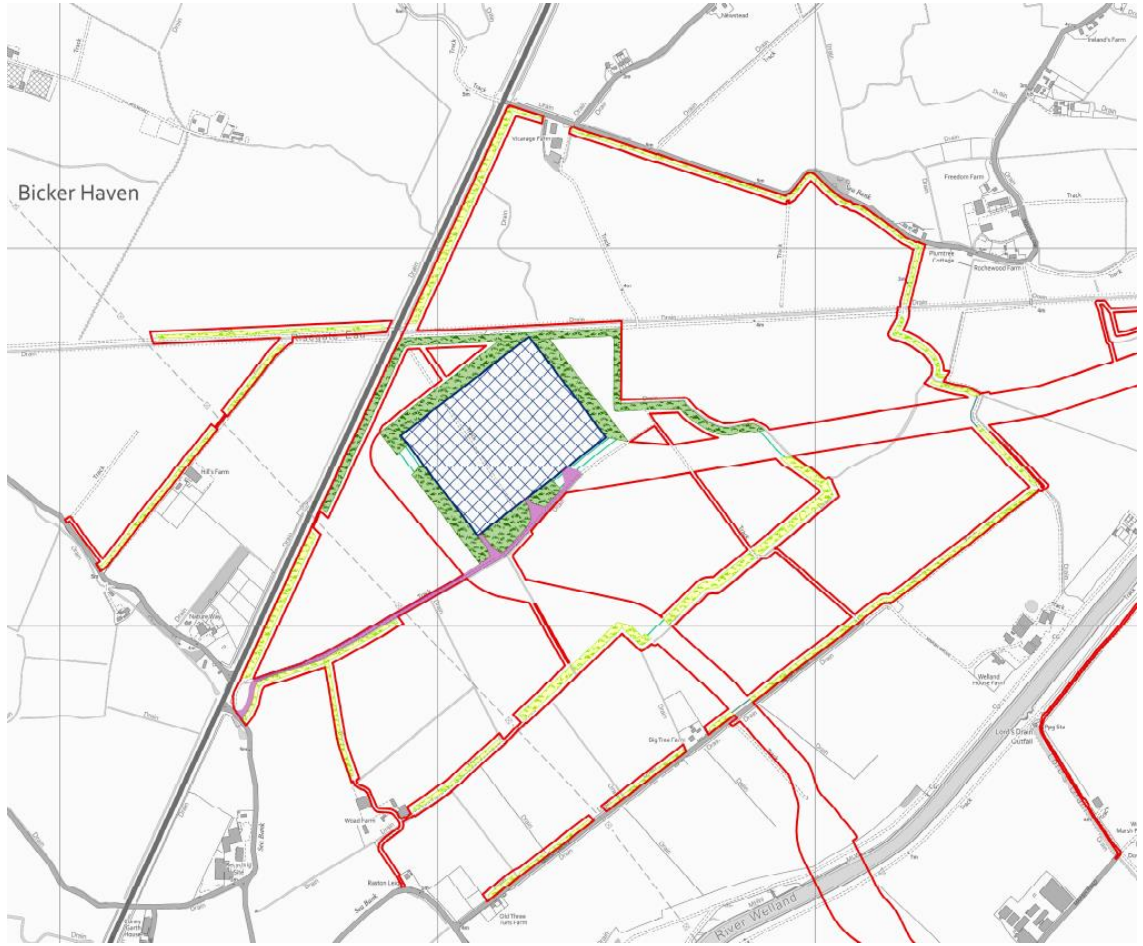
Pitched

OUTER DOWSING
OFFSHORE WIND

Flat

OUTER DOWSING
OFFSHORE WIND

Design Scope: Landscaping



- OnSS site (AIS)
- Order Limits
- On-site Mitigation Planting
- On-site Hedgerow
- Off-site Mitigation Planting
- Off-site Hedgerow
- Permanent Access Track

OUTER DOWSING
OFFSHORE WIND

Planting proposals – Increasing biodiversity, decreasing visual impacts, flood reduction and capturing carbon

Up to 130,000 trees and hedgerows would be added to the Lincolnshire landscape.

Approx 19 hectares would be planted, equivalent to 27 football fields with long term management plan.

Approx 1.6 miles of Hedgerow containing diverse species that support bats, birds and other species.





130 Biodiversity Action Plan species associated with hedges: Lichens, fungi and reptiles.

Bank vole, harvest mouse and hedgehog all nest and feed in hedgerows alongside birds including; blue tit, yellowhammer and whitethroat.

Suggested species for planting


Quercus petraea (Sessile oak)


Alnus glutinosa (Alder)


Tilia cordata (Small leaved Lime)


Salix alba (White Willow)


Betula pubescens (Downy Birch)


Populus nigra (Black poplar)


Populus tremula (Aspen)


Acer campestre (Field maple)


Prunus padus (Bird Cherry)


Salix caprea (Goat Willow)


Salix cinerea (Sallow)


Cornus sanguinea (Dogwood)


Viburnum opulus (Guelder Rose)


Ilex aquifolium (Holly)


Sambucus nigra (Elder)

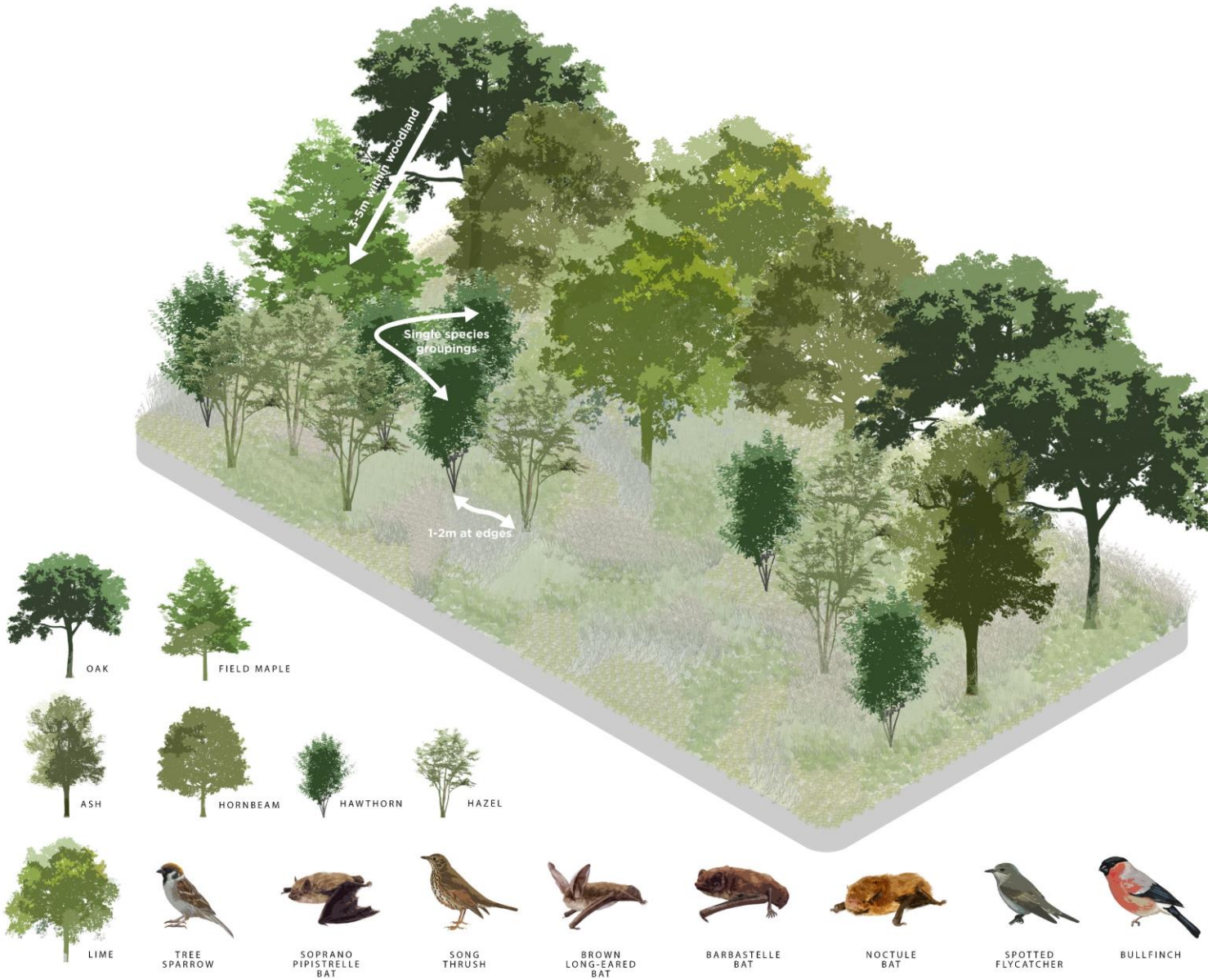

Corylus avellana (Hazel)

Hedgerows

Crateagus monogyna (Hawthorn)
Acer campestre (Field maple)
Cornus sanguinea (Dogwood)
Viburnum opulus (Guelder Rose)
Ilex aquifolium (Holly)
Prunus padus (Bird Cherry)
Sambucus nigra (Elder)
Quercus petraea (Sessile oak)
Pyrus sp. (Pear)
Hippophae rhamnoides (Sea Buckthorn)
Corylus avellana (Hazel)

"We have a mixed native hedge at the rear of our garden. 10 years since planting (next March). It is in excess of 12 feet high and is cut back by about 5 feet every winter. I would expect the planting to be an effective screen before 15 years (we have hawthorn, field maple, wild privet, wild rose, blackthorn plus several other species)" ***Autumn Consultation Feedback Form***

Example: LOWLAND DECIDUOUS MIXED WOODLAND



OUTER DOWSING
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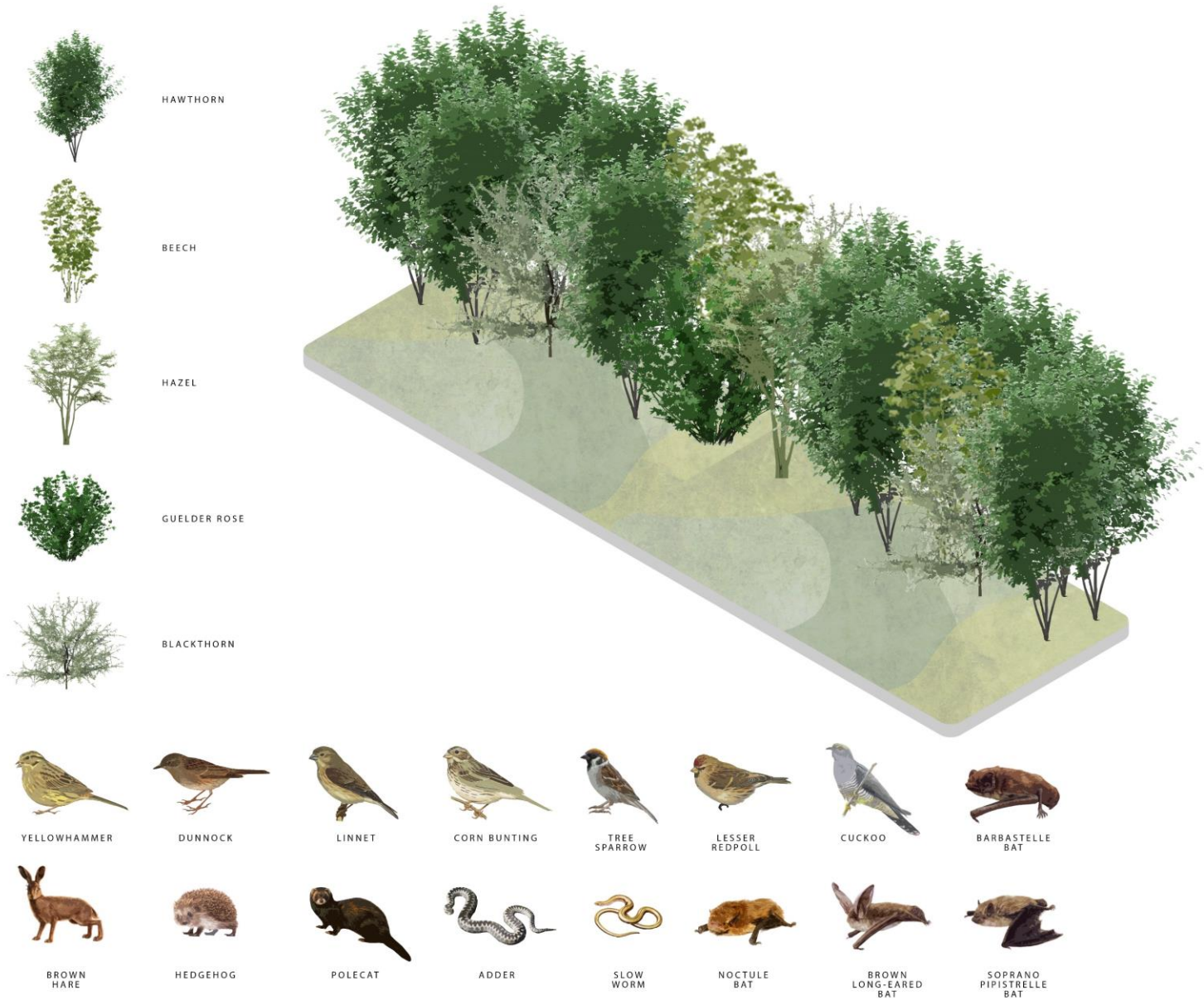
Example:



OUTER DOWSING
OFFSHORE WIND

Timeline and next steps

Consultation on Landscaping proposals & proposed plant species (including updated Visualisations) through our Autumn Consultation & CLGs.

Feedback taken on board & proposals updated.

Local Design Panel (LPD1) Kick Off Meeting Jan 2024

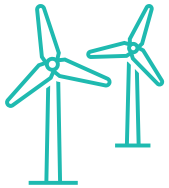
Winter Photography underway Jan/ Feb 2024

Progress Visuals based on feedback from LDP 1 Q1/Q2 2024

External Design Review Q1/Q2 2024

Local Design Panel Meeting 2 Summer 2024

Plan for future engagement to be agreed at Meeting 2.



Autumn Consultation → Targeted Consultation → Submission of the DCO (Q1) → DCO examination H2 2024 → Consent Decision 2025 → Construction begins 2026/2027 → First power 2030

AOB

Minutes of Meeting.

Meeting title	Community Liaison Group – Substation
Location	Tonic 44 Community Hub, Surfleet
Date/ time	Wednesday 31 January 2024
Originator	ODOW
Attendees	Andrew Acum – ODOW – AA Roisin Alldis – ODOW - RA Chris Jenner – ODOW – CJ Jenny Marsden – ODOW – JM Jo Phillips – ODOW – JP Garrett Roche – ODOW – GR [redacted] – Boston Borough Council – DB [redacted] - Boston Borough Council / Sutterton PC – JC [redacted] – Fosdyke PC - CC [redacted] (via Teams) - Boston Borough Council – SD [redacted] (via Teams) - Lincolnshire County Council – KGi [redacted] – Fosdyke PC - KG [redacted] (via Teams) – Lincolnshire County Council – NM [redacted] – Fosdyke PC / Landowner - AM [redacted] – Weston PC / Landowner - IP
Apologies	None
Purpose of meeting	1. To involve key local stakeholders in the design and development of the Outer Dowsing Offshore Wind project (landfall, onshore cable route and substation) through presentations, discussions and planned workshop activities. 2. To act as a two-way communication channel between local communities and the project team. 3. To help foster local involvement and ownership of the project.

	1.	**Chair's welcome, terms of reference and introductions** CJ opened the meeting and attendees introduced themselves. The group was reminded of the terms of reference. The minutes of the last meeting were already approved and available on the website.
	2.	**Consultation Overview** The project team has worked to engage local communities through extensive consultation. During the 15 months of 2023-2024, the project has delivered: • 16 public engagement events • 8 webinars • 1491 attendees at engagement events • 107 written responses • 74 phone calls • 246 Completed feedback forms The project has received a large number of supportive responses and positive feedback on the consultations. Themes of interest primarily related to onshore matters such as noise, visual impacts and traffic. Targeted consultation closed on Jan 19th.
	3.	**Category 3 Communications** Category 3 letters were sent out before Christmas. This is a statutory process and the letters were sent to people who may have an interest in land which may be indirectly affected by the project, e.g. by noise, dust, etc.

	4.	**CBF Boundary and Themes Review** The aim of the fund is to bring long-lasting value to the communities closest to the project. The team has proposed four themes of focus - themes the project hopes to support in the local community. Proposed eligibility criteria have been drafted to set out which applications get through the first sift. This ensures the funding is in line with ODOW standards and those of its partners. Draft award criteria outline how the applications will be scored to ensure that the projects with the highest impact and closest to the project are more likely to get funding. It is likely that the project will appoint a third party to administer the fund. The project wants to incorporate learnings from other developers and feedback gained from the community consultation events. The fund will be launched once consent has been granted and FID has been taken (estimated to be 2025). In the meantime, ODOW will look to fund a small number of more strategic projects, more likely with larger organisations (like the Boston Woods Trust example) as opposed to a larger number of grass-roots projects during the phase before the CBF is launched. ODOW is seeking suggestions therefore for organisations that are active within the themes presented to explore creation of projects in the run up to CBF launch. **CF Themes** The proposed themes for the CBF are: 1. Nature positive

		2. STEM and skills 3. Sustainable enterprise 4. Community health and well-being

		It is envisaged that CBF support will also include volunteering and staff engagement. IP asked if solar panels and batteries for Weston Village Hall would qualify. JM said eligibility would be covered later in the presentation. IP said that the hall is used to provide a lot of activities for the local community but heating costs have risen dramatically. **Draft Eligibility Criteria** It will be necessary for the projects to meet certain criteria. These are being explored, but early suggestions include: - Have a constitution outlining objectives and rules for the organisation. - Have a bank account or credit union account set up in the organisation's name. - Be within the eligibility zone - Be aligned with CBF themes **Exclusions** It was proposed that the following exclusions would likely apply to CBF funding: - Religious organisations, trade unions and political parties - Promotion of any kind of discrimination (ages, sexes, ethnicities, or minority groups) - Requests for funding that benefit a single person - Requests for funding to pay for salaries or other ongoing running costs (e.g. rent)

		- Recipients that promote illegal or unsafe activities - Retrospective funding or existing loans or debts - Requests for funding that relate to public infrastructure - Members-only sports clubs or facilities unless they are open to the general public CC asked if parish councils would be excluded under the "political parties" exclusion. JM said that parish councils were not political parties. JC asked if capital projects would be excluded. JM said that they may fall under the "bricks and mortar" exclusion if there was no evidence of a source of maintenance or revenue budget. JC asked if "public infrastructure" exclusion would exclude wild areas next to public footpaths maintained by local parish councils, playing field committees, etc. JM said the definition may need amending, as it is meant to apply to capital projects rather than public footpaths, cycle paths, wild meadows, etc. JC said a lot of other groups such as sports clubs, PTAs, etc. won't have constitutions and would therefore be excluded. He suggested a way around this may be to give parish councils ringfenced funds that they could distribute to worthy groups in their parishes. **Draft Award Evaluation Criteria** In order to help select the most impactful projects, criteria such as the following would most likely be applied:

		1. Proximity to project 2. Relevance to community 3. Level of impact 4. Ability to deliver results **Proposed Boundary** The initial "yellow line" boundary was drawn 3km either side of the cable route and 5 km around the substation. However, it is recognised that this is a very rural area and people living in the 3km zone may access services (such as a village hall or sports field) which are outside of the yellow line boundary. Therefore, if part of a parish lies within the boundary, then the whole parish will be eligible to apply for funding. JC said he felt the boundary was as fair as it can be. DB said the cable route appeared to follow the pylon route and asked why they couldn't share a trench. CJ said the Offshore Transmission Network Review (OTNR) determined the ODOW cable route and connection point. This was decided by National Grid. The Grimsby to Walpole pylons is a different National Grid project completely independent of ODOW with a different form and function. National Grid have some public events coming up where the public can find out more about their project. IP asked if the CBF would be a percentage of the whole project budget. JM said it wasn't known yet but would probably be benchmarked against other CBFs. JC asked whether there would be democratic oversight of grant distribution. JM said the fund would be administered by an independent third party – there are numerous foundations who do this type of

		work. They normally have a panel of local residents who are representative of the community. SD asked why the CBF was based on the cable route rather than the ZTV from the substation. JB said there is a 5km zone around the substation. JM said that a bigger portion of the pot would be allocated to the substation area. CJ said the turbines were a significant distance offshore and would not have an impact on coastal receptors.

	5.	**Onshore Substation Design Review Process** This was the first meeting of the Local Design Panel to outline the remit of the group and the elements of the substation that can be influenced by the group. There will also be an External Design Review – by independent architects from Q2 2024. Engineers need to assess technical requirements but the Local Design panel will be consulted as the design progresses. **Maximum Design Scenario** This is based on a "worst case scenario." The designs are based on two potential technologies still under consideration that will impact the footprint and maximum heights of buildings: • Air Insulated Switchgear (AIS) • Gas Insulated Switchgear (GIS) **Functional requirements of a substation** The project aims to generate renewable electricity and export it to the National Grid, via the 400kV ODOW Substation. The substation area indicated enables the installation and operation of either an AIS (Air Insulated Switchgear) or GIS (Gas Insulated Switchgear) type substation. From a transmission perspective, AIS or GIS transmits the power generated offshore to meet the grid requirements. The main considerations for the substation are as follows: **Insulation Medium:** The AIS uses air as the insulation medium between conductors and equipment, whereas the GIS employs a specialist gas in modular units. GIS equipment offers reduced footprint and maintenance requirements. The switchgear in AIS is outdoors, and GIS is installed indoors and requires additional building. **Size and Space:** The AIS substations require a larger

		footprint, whereas the GIS substations are compact and space-efficient. Subject to equipment and design, the GIS Convertor Hall(s) could be up to 16.5m in height. *These maximum parameters are represented on the visualisations.* Studies are engineering work needs to be undertaken to determine whether AIS or GIS will be used. JC asked whether there was any danger to local residents. He said this was probably the question that most residents would want reassurance on. GR said that safety was of paramount importance and was designed into the proposal through a rigorous process of safety distances, technology selection, and separation.

		It was shared by DW that onshore substations are not a new concept, it is a tried and trusted technology built to National Grid specification, the same as numerous other substations all around the country. There will also be an ongoing operations and maintenance programme for the building, equipment and grounds. IP asked if AIS had a bigger footprint. GR said that GIS has a smaller footprint, but GIS has taller buildings. CC asked that although it is not new technology, had this layout and type of cable route been done before. CJ said that there are over 2,000 offshore wind turbines around the UK, and all wind farms are fundamentally the same configuration – offshore generation, radial connection, underground cable, substation and then connection into the 400KV network. CC asked if there were any examples of feedback from other projects. CJ said that the team had learnt a lot from Triton Knoll and Viking Link . CJ said that GR had also worked on Triton Knoll. GR said that he had worked on Triton Knoll as well as power generation in general for 20 years with the last 10-15 years in offshore wind and all schemes were very similar. CC asked if this was essentially a "run of the mill" project. GR said that the main difference between projects was size and power generation, but the basic principles were the same. CC asked if any residents' lives were really affected by these schemes. GR said that from a technical point of view they weren't. CJ said that the project had received a lot of feedback from the five phases of consultation and the public events regarding Triton Knoll and Viking Link which the team has been able to learn from. One example of learning led to the ODOW definition of the CBF boundaries. Other learning points had been around traffic, access areas, speed limits, etc. He added that it was an ODOW principle to always try and do things better than before. Another good example was engagement with local farmers – they know the land and understand the soils and this knowledge guided

		the route selection. Another important aspect is soil reinstatement and a lot had been learnt from Triton Knoll, Viking Link and local farmers. GR added that the whole point of the consultation events, leaflets, CLGs and meetings was to listen and learn from local people. IP asked whether National Grid would have more capacity if they buried their cables. CJ said that would be a question for National Grid. IP asked if Triton Knoll and Viking Link were bigger projects than Outer Dowsing. CJ said that Triton Knoll was approximately half the size of Outer Dowsing, whereas Viking Link was a transmission project rather than a generation project, moving electricity between the UK and Denmark. Viking Link is an HVDC project requiring a convertor station at the end whereas ODOW is an HVAC project which wouldn't require a convertor station. DB said that he and JC were frequently receiving emails from a couple about Viking Link trucks on the main roads and they had suffered abuse and threats from lorry drivers. He wanted to know what procedures ODOW would have in place to prevent this happening on their project. CJ said he was horrified to hear this. In terms of traffic management and management of contractors, the project will be submitting a number of outline plans with its DCO application, that set out protocols, standards, working time hours and guidance. Viking Link was built under a different consenting regime; the Town and Country Planning Act rather than a Development Consent Order. In terms of the number of measures and procedures that have to be in place, the bar is much higher for a DCO and there will be a significant number of measures used to manage contractors. GR said that on Triton Knoll he would personally investigate any complaints and follow up with the contractor. JC said he would like houses along the traffic route to be mailed a leaflet explaining what was happening along with contact details in case there were any

		issues. JM said that there would be a local community liaison officer appointed prior to construction to personally deal with any issues raised by residents.
		Onshore substation Following a decision from the National Grid that the connection point would be in the vicinity of Weston Marsh, Lincs Node was removed from the Project Scope in August 2023. Surfleet Marsh was subsequently selected as the optimum site for the substation taking into account multiple factors including engineering and environmental considerations. There will also be a need for a National Grid substation and associated enabling works within the vicinity of the project's onshore substation which ODOW will connect to using 400kV underground cables running between the project substation and that which will be developed by National Grid Electricity Transmission **Feedback on Landscaping** There were previously concerns around the use of "deciduous trees" and views in winter. The Project has commissioned a "Winter Photography" campaign which is being undertaken at the moment. The woodland shelterbelts will be approximately 20m wide which will ensure that even without leaves they will provide a screen. In the detailed design of the shelterbelts some evergreen trees, hedges and understorey shrubs will be included to add to the screening effect in winter.

		Comments on the inclusion of native species. The planting design will always prioritise native species, but also with thought and consideration given to ensuring the planting will be resilient to climate change. It was noted by landowners that the landscaping areas proposed could be adjusted to better align with the landownership boundaries. As a result, the landscaping areas have been moved slightly to better align with landownership boundaries. It was previously highlighted that there was the possibility for potential impacts on agricultural drainage from the planting. The project has included for drainage works within the order limits to ensure existing land drainage is not impacted. **Landscaping - What is the aim?** From feedback to date it had become clear that the screening of the substation is the desired outcome for the local communities. This project has developed extensive planting proposals – not only are to provide an effective screen, but also to enhance the overall landscape and biodiversity of the Surfleet area. IP said he agreed with the landscaping argument but pigeons were a big problem for farmers and additional trees may exacerbate this. JP said that this had to be balanced against the visual and environmental benefits of planting. The planting would also be shelter belts, rather than dense woodland, but the project would take on board the feedback. CJ said that the process was iterative, and the final design will consider balance between agricultural and landscaping requirements.

		Post-consent, the landscaping then has to be approved by the local planning authority in consultation with the county council. The point of the local design group is to understand these concerns and suggestions and try and incorporate them into the proposals. **Cumulative Impacts** A cumulative assessment including visualisations (based on an indicative location within the connection area and typical parameters) will be included in the DCO application documents. • Noting the location of the **Connection Area** *(the indicative search area for the National Grid substation)* relative the project substation – the planting strips will be an effective screen for those viewpoints that would be affected by both of these infrastructures. • The cumulative visualisations will be based on both VP4 & VP5 on Macmillan Way JP said that there are very few points where it would be possible to see both the ODOW and National Grid substations, but they would be visible from the elevated points on the Macmillan Way, and this was the focus of the concept of the cumulative impact and this has been incorporated into the study. After 10-15 years it is possible to effectively screen the ODOW substation which means it can be removed from the cumulative impact. NM asked if the National Grid pylons would be included in the assessment. JP said that the project has to put together an assessment based on Best Available Information. As the pylon route is not yet known, this would be picked up later with an update. DB asked why the project couldn't connect at Anderby. CJ said that the connection point is decided by National Grid, not ODOW.

		DB asked whether ODOW had spoken to National Grid. CJ said that the project had been speaking to National Grid on a regular basis for the last couple of years regarding connecting to the network, but the project does not need new overhead lines to connect. DB asked how it would connect. CJ said that the project would connect into the existing overhead lines via the ODOW and National Grid substations, and ODOW will be supplying power into the Grid before the Grimsby to Walpole scheme is developed. JC said that when the ODOW project began, there was no talk of the National Grid project. He now has three national energy projects in his ward. He felt that people were getting fed up with energy projects in their area, although ODOW had handled their scheme well. **Design Consideration: Material** The key technical requirements of the materials to be used in the construction of the converter buildings are; • Strong enough to form robust and secure large-scale structures; • Fire resistant and able to withstand high temperatures without the structural integrity of the material being compromised; • Resistant to severe weather conditions, including high winds, water ingress and heat waves; • Forming surfaces and joints that are completely impermeable to water; • Suitable to form the large spans and surfaces required to construct large structures; • Sufficiently durable to withstand the impacts of a 35-year lifecycle; • Modular to reduce the time for installation, provide aesthetics and reduce the building's carbon footprint; and • Low maintenance.

		Material Consideration: Steel Steel has always come out as the most appropriate material for these types of buildings. Advantages • Robust material that is fire resistant, very low maintenance and durable. • Relatively low-cost material that is available from local manufacturers in the UK. • Large and lightweight and can be readily and quickly assembled on-site. • Large scale agricultural and industrial sheds made from sheet metal are a common feature in rural landscapes. • Options for recycled steel • Complete cladding system • Insulated sheet metal panels last beyond the 35-year lifecycle of the converter buildings. • The colour range available is extensive, with different types of finish available, making colour matching to local contexts possible. Disadvantages • Sheet metal can present a reflective surface if the appropriate finishes and coatings are not applied. • The extraction of raw materials and production of sheet metal reduces the sustainability of this material, especially if also imported from overseas. • Cladding panels could look a bit tardy toward the end of their design life. Thus, routine checks, cleaning and maintenance are required. **Colour** The aim is to minimise the visual impact and blend into the local environment and its natural colour palettes. This can be discussed in more detail at future meetings.

		JC asked if much brick would be used. JP said not on the main building. JM said that she had been looking into the possibility of using "bee bricks" where possible. **Cladding** Appearance of materials, in terms of colour, texture and reflectiveness. Trapezoidal vs smooth architectural wall rib. **Roof Shape** The options that can be influenced are: • Monopitch • Pitched – keeps the height of the eaves lower • Flat – looks more industrial **Design Scope: Landscaping & Planting Proposals** • Increasing biodiversity, decreasing visual impacts, flood reduction and capturing carbon. • Increasing biodiversity, decreasing visual impacts, flood reduction and capturing carbon. • Many thousands of trees and hedgerows would be added to the Lincolnshire landscape. • Up to 19 hectares would be planted, equivalent to 27 football fields with long term management plan. • Up to 1.6 miles of Hedgerow containing diverse species that support bats, birds and other species. • 130 Biodiversity Action Plan species associated with hedges: • Lichens, fungi and reptiles. • Bank vole, harvest mouse and hedgehog all nest and feed in hedgerows alongside birds including; blue tit, yellowhammer and whitethroat. JM said that there were up to19 hectares of planting involved in the whole project, increasing biodiversity and creating natural corridors. CJ said there were

		also added indirect benefits such as capturing carbon and flood reduction. IP asked who would maintain the hedges. CJ said that the project had an obligation to maintain the landscaping and hedges. This may be done directly, or sub-contracted to a farmer or landowner. The details are still being discussed and will be confirmed at a later date. JC asked if there were any Tree Preservation Orders. CJ said there weren't any around the substation, but there was one spot on the 60km cable route were there are a couple of trees with TPOs.
		Timeline The project is still on course to submit its Development Consent Order by the end of Q1 2024. Once submitted, the Planning Inspectorate has 28 days to validate it. Once accepted, there will then be an examination period, probably in H2 2024. This is a participatory process where all residents and stakeholders can attend and/or submit questions. The Inspectors will then cross-examine the team on the plans. If approved, a consent decision would be made in 2025, with constructions starting earliest 2026 (subject to consent) and commercial operations commencing in 2030. In terms of the Local Design Group, consultation on landscaping proposals and planting had been undertaken as part of the Autumn Consultation. Prior to the next group meeting in Summer 2024, the winter photography campaign would be completed, along with substation visuals and feedback from the External Design Review.

	6.	**AOB** NB asked if there were any plans to work with other CBFs in the substation area. JM said that she has been looking at what could be done collaboratively within the different project time frames. JP added that the work that ODOW had done on design principles had been agreed with other projects which sets out a template and some degree of co-ordination for what comes forward for mitigation planting between the different projects even though they may be at slightly different phases. CJ said he was happy to discuss this further with the LPAs. KG said that the management of the planting scheme at both establishment and long-term is important to make sure that the trees establish and grow and achieve the objectives, otherwise it's just a case of planting and replanting. He also thought the strategy of including offsite planting was good as otherwise it would be difficult to screen such a large building, however care must be taken not to change the character of the area through the overplanting of screening, particularly where there has traditionally been little tree cover. IP asked if there was any news on where the National Grid substation would go or when a decision would be made. CJ said this was a question for National Grid.
	7.	**Chair's closing remarks and next steps / next meeting** The next CLG is expected to be in the summer but Jenny Marsden will be in touch with details nearer the date. his email will come from contact@outerdowsing.com, please ensure it is added to safe mailing lists.

Meeting Protocol	
Distribute agenda before meeting	Fix responsibilities for each item
Start on time	Finish on time
Set out your ground rules	Publish minutes / actions

Stick to the agenda	Continuous improvement

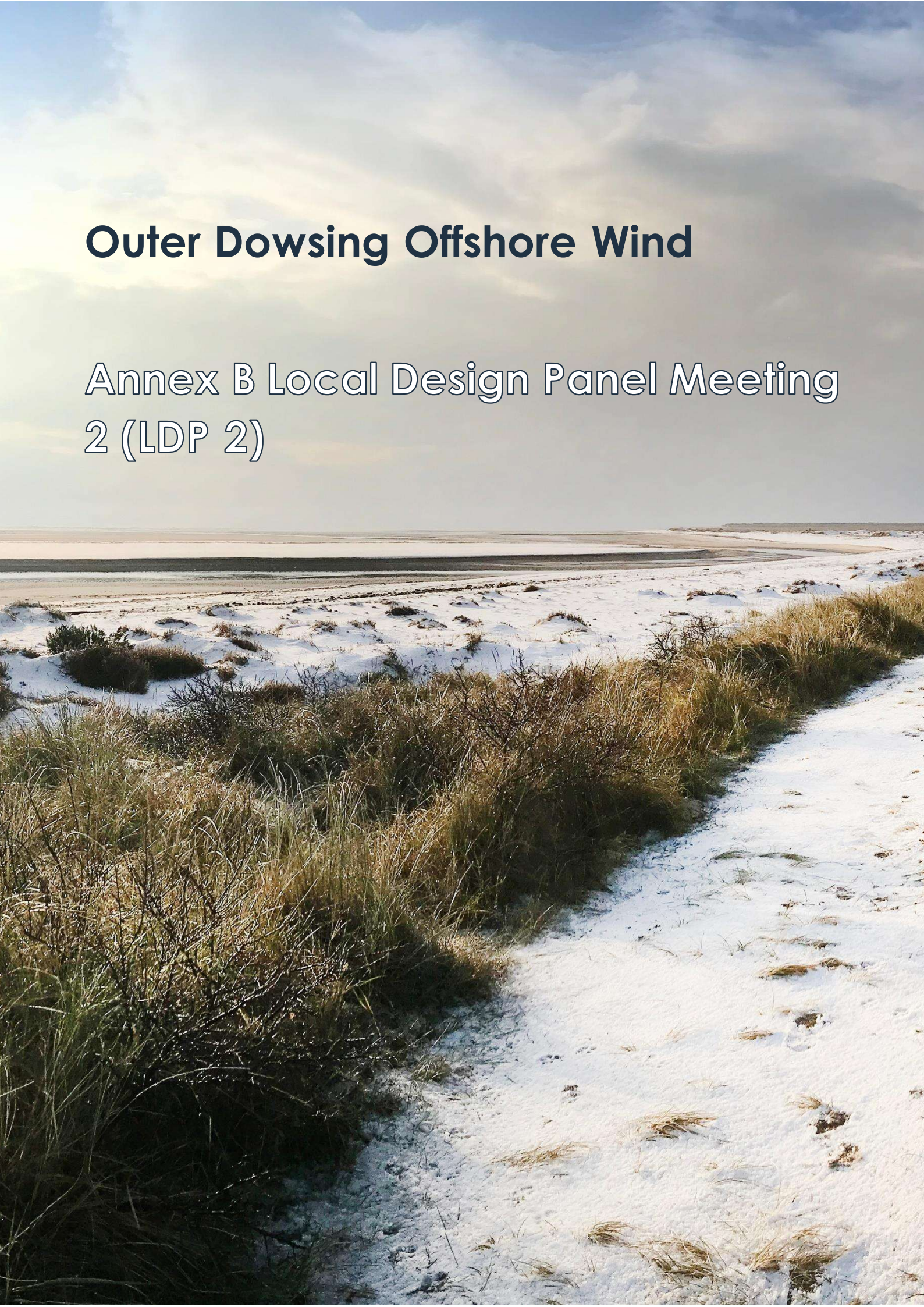
Annex B Local Design Panel meeting (LDP2)

57. This Annex contains the following documents:

- Local Design Panel meeting (LDP2) Presentation
- Local Design Panel meeting (LDP2) Minutes

Outer Dowsing Offshore Wind

Annex B Local Design Panel Meeting 2 (LDP 2)



This Annex includes the following documents:

- Local Design Panel Meeting (LDP 2) Presentation (July 2024)
- Local Design Panel Meeting (LDP 2) Minutes (July 2024)

Community Liaison Group Meeting

July 2024

Agenda

- Terms of reference
- Introductions
- Project Update
    - Survey activity
    - Examination high level update with timeline
    - Outer Dowsing in the community

Local Design Panel

- The Design Review Process
- The Onshore Substation
- Design review elements
- Feedback from DRP
- Timeline & Next Steps
- Q&A

Terms of Reference and Aims

Our Aims …

To involve key local stakeholders in the design and development of the Outer Dowsing Offshore Wind project (landfall, onshore cable route and substation) through presentations, discussions and planned workshop activities.

To act as a two-way communication channel between local communities and the project team.

To help foster local involvement and ownership of the project.

To facilitate focused discussions and ensure attendees can make the most out of the CLG's – it is intended for these groups to be focused on concerns/ issues / thoughts relative to their specific **local area.**

Approval of previous minutes

?

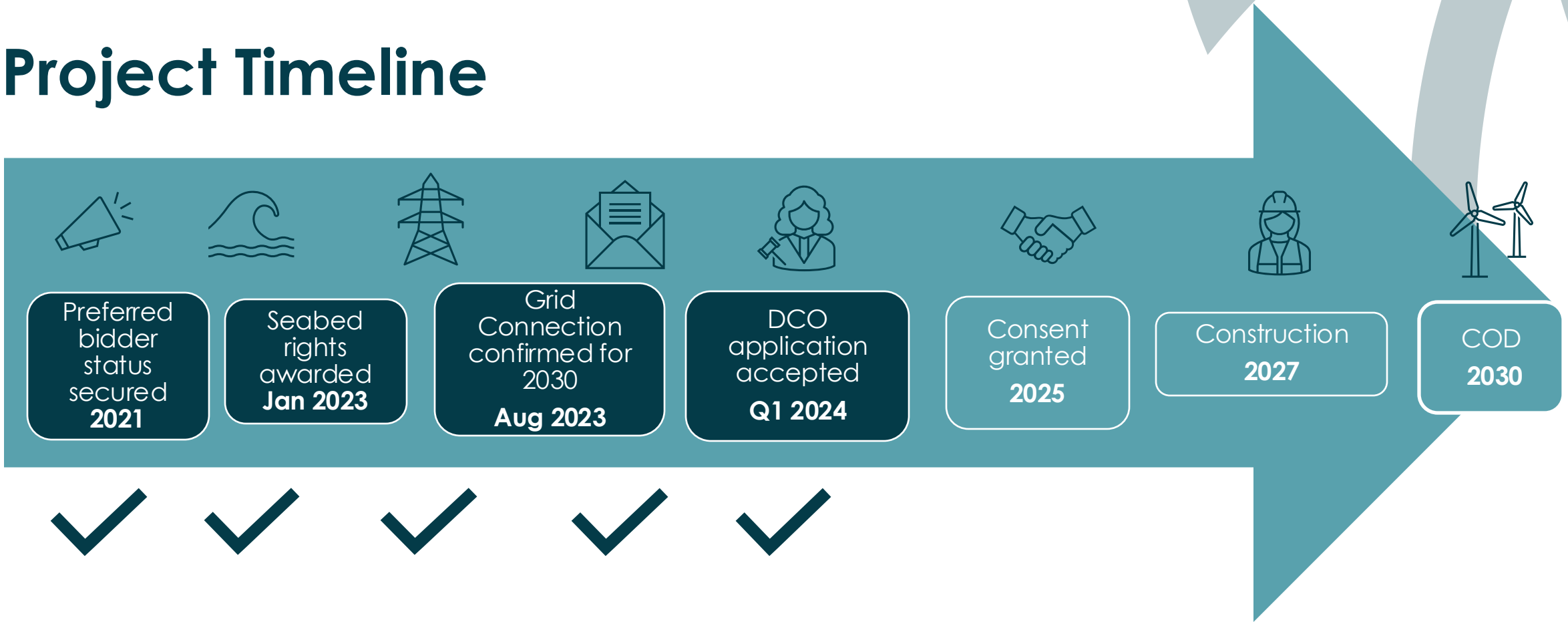
Any comments or queries prior to the meeting?

!

Declaration of Conflicts of Interests.

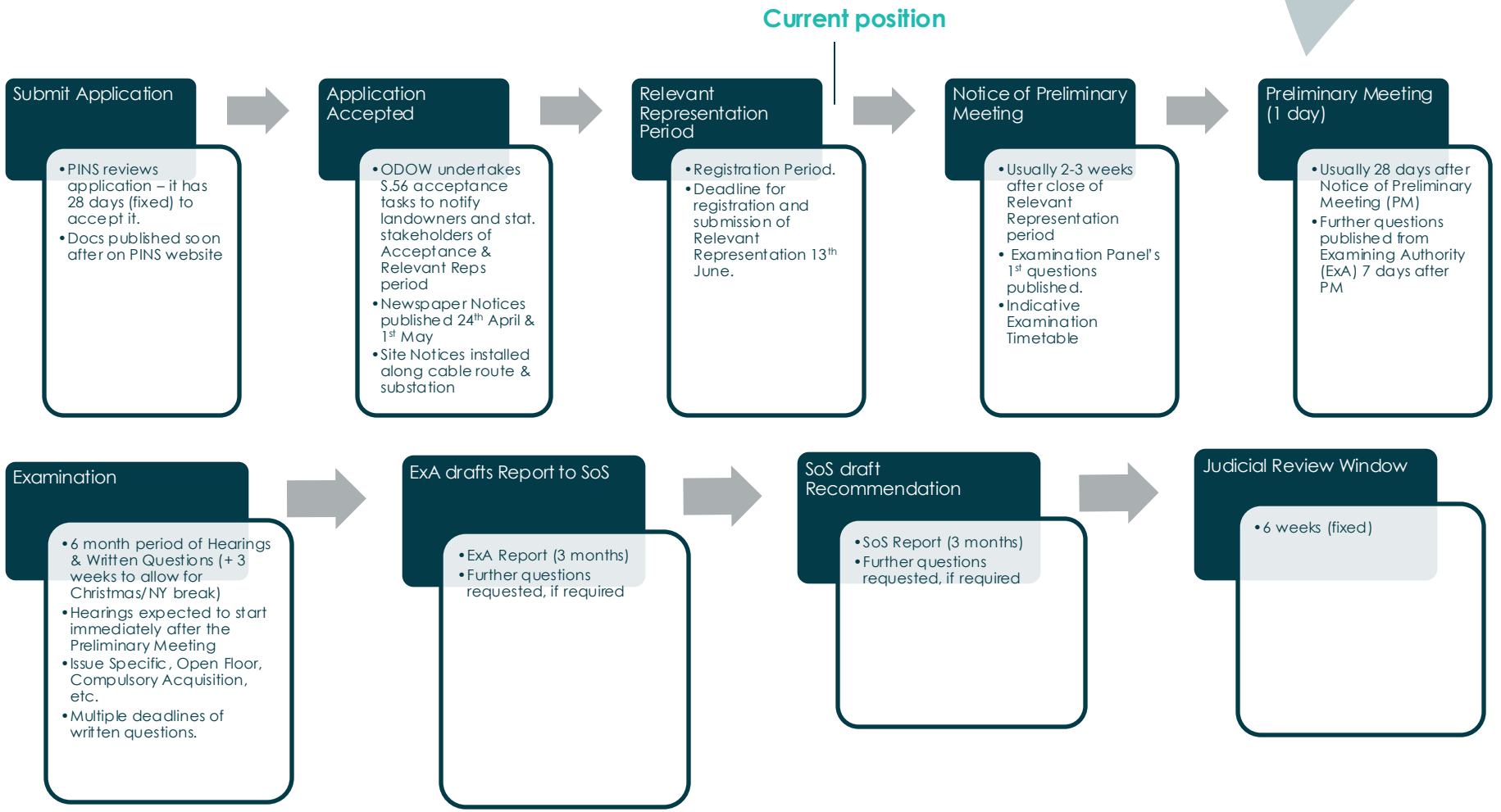
Project Update

Project Timeline



OUTER DOWSING OFFSHORE WIND

DCO Examination Process – DCO accepted on 16th April

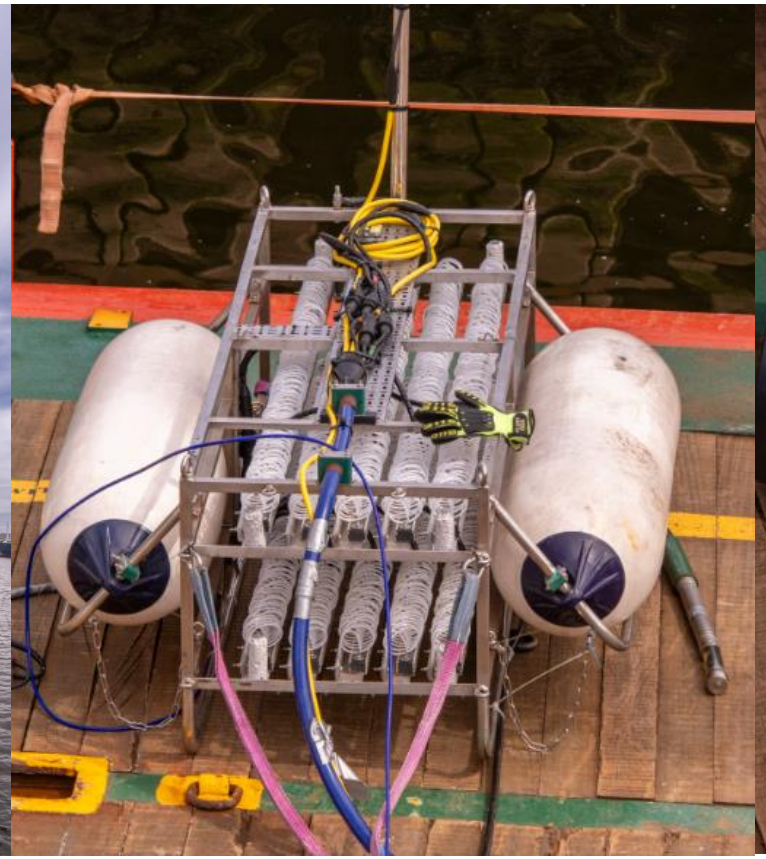


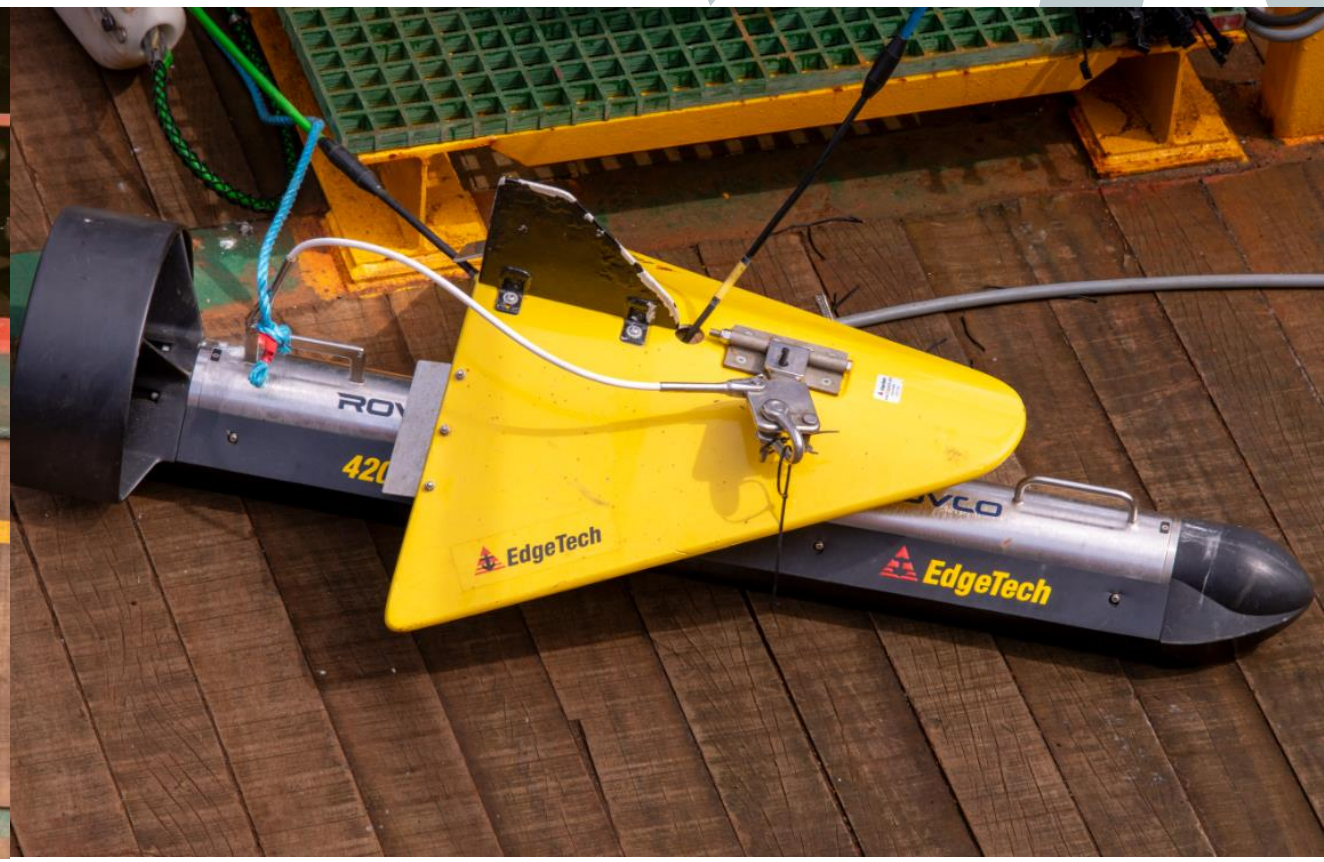
OUTER DOWSING OFFSHORE WIND

Survey update

Activity	Location	Timing and Duration
Offshore geophysical surveys	Various offshore locations	July until later in the year
Onshore geophysical site investigations	Lincolnshire fields	Completed in June
Onshore geotechnical boreholes and trial pits	Lincolnshire fields	Completed in May
Nearshore Geotechnical works (seabed survey)	Off the coast from Anderby Creek	Due for completion by end of July
Onshore Archaeology Excavation	Lincolnshire fields	July - September

Offshore Geophysical, Environmental & Geotechnical Surveys 2024





OUTER DOWSING
OFFSHORE WIND

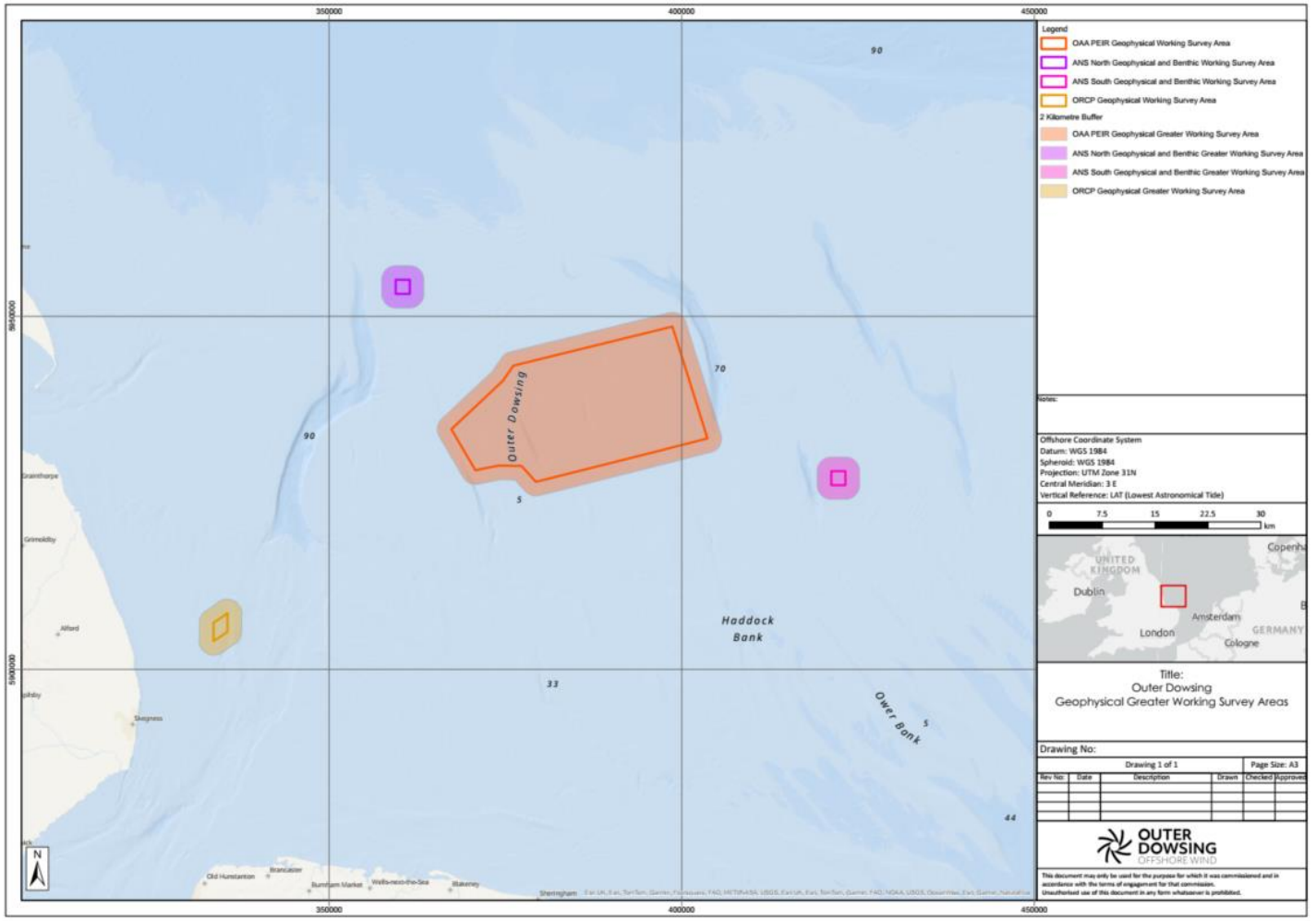
Offshore Geophysical & Environmental Surveys 2024

Offshore Geophysical Survey 2024

Outer Dowsing Offshore Wind (a joint venture between TotalEnergies, Corio Generation and Gulf Energy) are conducting a 2 month offshore geophysical survey between 27th May and 18th July 2024 using the vessel *Glomar Supporter* call sign: HOAL. The survey vessel shall at times be towing a cable up to approximately 100m behind the vessel (the end marked by a tail buoy) at depths of up to 3m below sea level. The survey vessel shall have limited maneuverability so please allow a safe distance. The survey vessel is also accompanied by a Guard / Scout vessel.

Company:	Outer Dowsing Offshore Wind
Contractor:	ROVCO Limited
Survey Vessel:	Glomar Supporter
Survey Vessel call sign:	HOAL
Earliest Start date:	27th May 2024
Latest Finish date:	18th July 2024

Company:	Outer Dowsing Offshore Wind
Contractor:	NFFO Services Limited
Guard/Scout Vessel:	Atlas WY170
Guard Scout Vessel call sign:	MPUD3



OUTER DOWSING OFFSHORE WIND

Geotechnical Seabed Survey – Visible from Anderby Creek

What is happening?

This work is related to the Outer Dowsing Offshore Wind farm. Construction of the wind farm and associated onshore infrastructure will not begin until 2027 at the earliest, but ahead of the construction it is necessary to carry out various surveys to get samples of the subsurface to plan the engineering. The geotechnical jack-up rig you can see will take a small sample of the soil and rocks below the seabed which will then be analysed by our engineers to plan the underground cable installation works.

Why are you doing this?

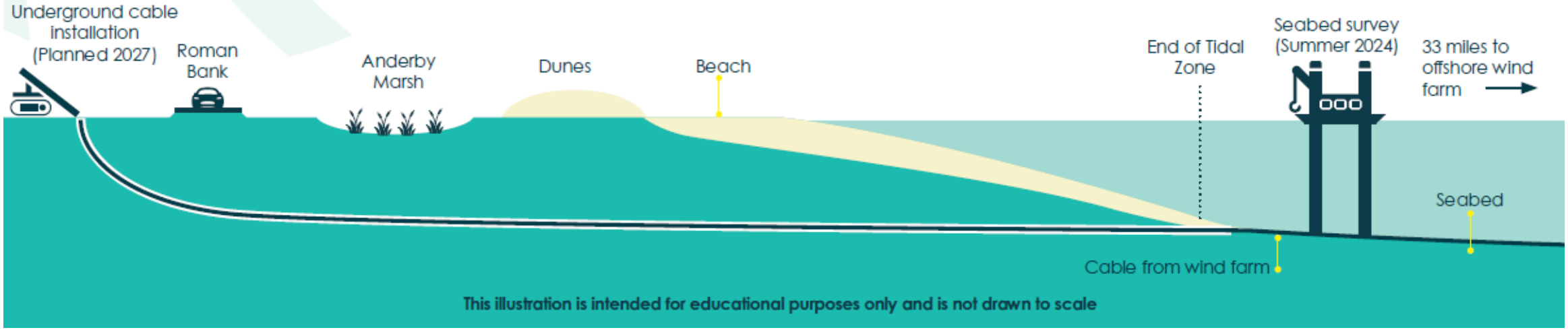
Outer Dowsing Offshore Wind is a wind farm planned to be built in the North Sea, 54km (33 miles) offshore. To avoid impacts to the beach and surrounding sensitive areas, we will bring the electrical cables ashore using horizontal directional drilling. The plan is to install the cable from a field west of the Roman Bank, under the sensitive areas until it is past the tidal zone.

How long will the survey take?

The geotechnical jack-up rig will be doing works just offshore, past the tidal zone, for a period of approximatively 3 weeks from July 1st. The beach will remain open and there will be no works on the beach.

Keeping safe

During operations it is important that we keep everyone safe. Please therefore refrain from approaching the vessel or interacting with it, or the crew, in any way so that they can complete their works safely and to schedule.



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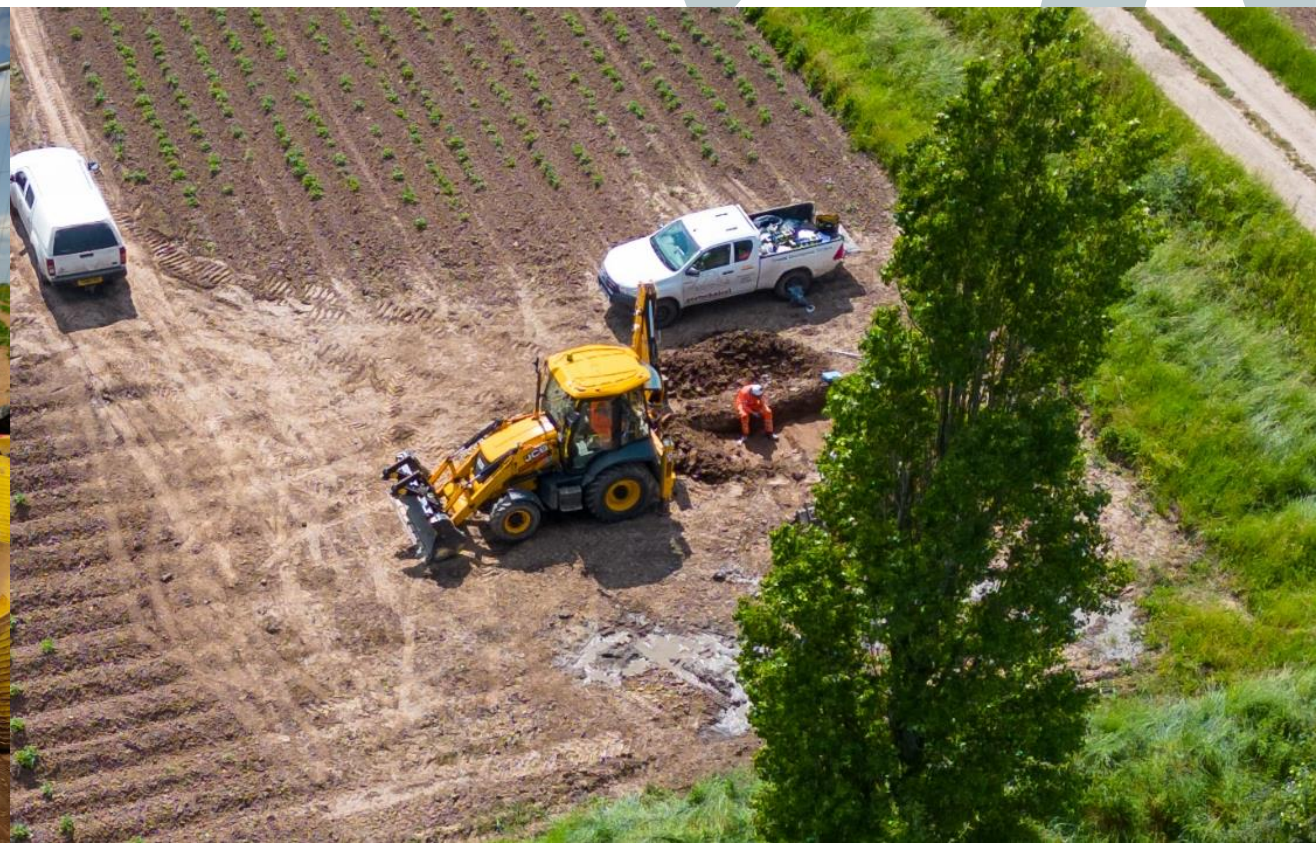
Onshore geophysical investigations – *Completed*

OUTER DOWSING OFFSHORE WIND

Onshore engineering and archaeology boreholes and trial trenches



OUTER DOWSING
OFFSHORE WIND

Outer Dowsing in the community

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OFFSHORE WIND

Inspiring the young engineers of the future

OUTER DOWSING OFFSHORE WIND

The Lincolnshire Show

OUTER DOWSING
OFFSHORE WIND

Investing in the UK

We will work to Maximize investment in the UK supply chain and create skilled jobs

- Over **£2billion** estimated investment in the UK
- Over **1000 UK-based** skilled jobs during construction
- Over **400 UK-based** skilled jobs during operations for 35 years
- **STEM program** launched to inspire next generation of engineers
- **Community Benefit Fund** to launch after FC

OUTER DOWSING OFFSHORE WIND

Design Review Process

The Onshore Substation Design Review Process

- Local Design Panel first meeting (LDP-1) in January 2024
- **External Design Review – Undertaken 11 June**
- Engineers to assess technical requirements & progress detailed design
- Local Design panel will be consulted as the design progresses

Maximum Design Scenario

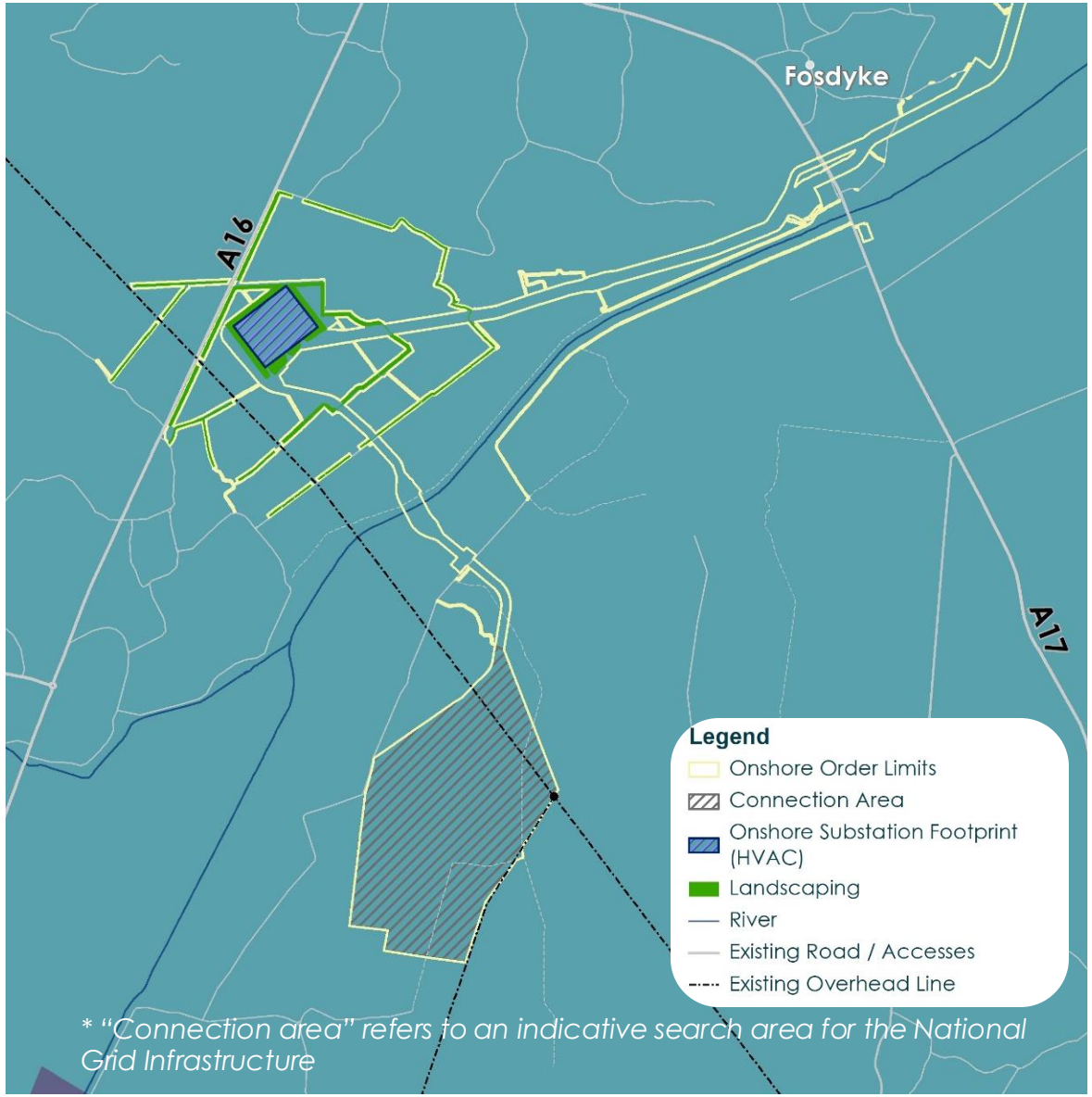
- "Worst case scenario"
- Defined based on two potential technologies still under consideration that will impact the footprint and maximum heights of buildings:
  - **Air Insulated Switchgear (AIS)**
  - **Gas Insulated Switchgear (GIS)**

The Onshore substation (OnSS)

Onshore substation

- Following a **decision from the National Grid** that our connection point would be in the vicinity of Weston Marsh, we were able to remove Lincs Node from our Project Scope.
- We subsequently selected **Surfleet Marsh** as the optimum site for our substation taking into account multiple factors including engineering and environmental considerations.
- There will also be a need for a National Grid substation and associated enabling works within the vicinity of the project's onshore substation which we will connect to using 400kV underground cables which will run between our project substation and that which will be developed by National Grid Electricity Transmission

1 **Confirmed** Grid Connection Location	1 **Confirmed** Substation Location	**14.5 hectares** Onshore AIS Substation Footprint	**13m** Onshore AIS Max. Equipment Height	**16.5m** Onshore GIS Substation Max. Building Height
Down from **2 options**	Down from **3 search zones**	Up from **9.5 hectares**	Up from **12m**	Down from **19m**



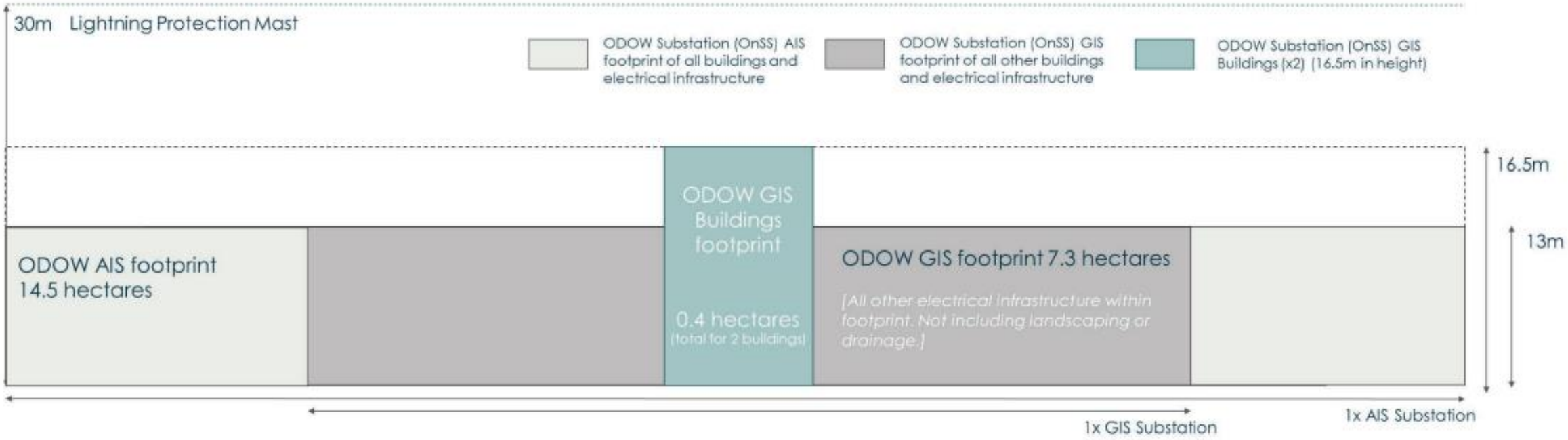
Functional requirements of a substation

The substation area indicated enables the installation and operation of either an AIS (Air Insulated Switchgear) or GIS (Gas Insulated Switchgear) type substation*. From a transmission perspective, AIS or GIS transmits the power generated offshore to meet the grid requirements. The main considerations for the substation are as follows:

- **Insulation Medium:** The AIS uses air as the insulation medium between conductors and equipment, whereas the GIS employs a specialist gas in modular units. GIS equipment offers reduced footprint and maintenance requirements. The switchgear in AIS is outdoors, and GIS is installed indoors and requires additional building.
- **Size and Space:** The AIS substations require a larger footprint, whereas the GIS substations are compact and space-efficient. The AIS maximum height is 13m, whereas the GIS Convertor Hall(s) in a GIS substation could be up to 16.5m in height. *These maximum parameters are represented by a white dashed line on the visualisations.*

**The electrical system design and technology from the Supply chain will impact the selection of the substation.*

Maximum Design Parameters



OUTER DOWSING OFFSHORE WIND

Post Application Design review elements

Cladding colour & Roof shape options explored

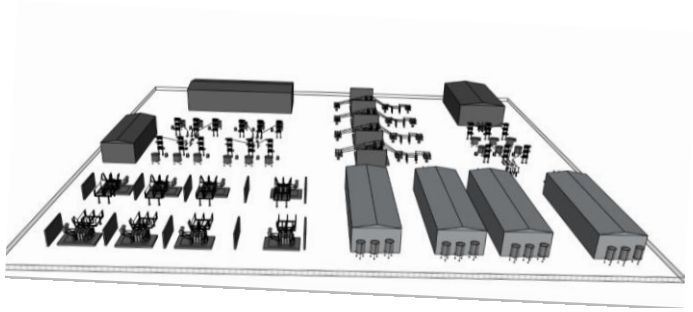
Khaki Green
RAL 100 60 20
BS 12B21

Camouflage
RAL 110 50 10

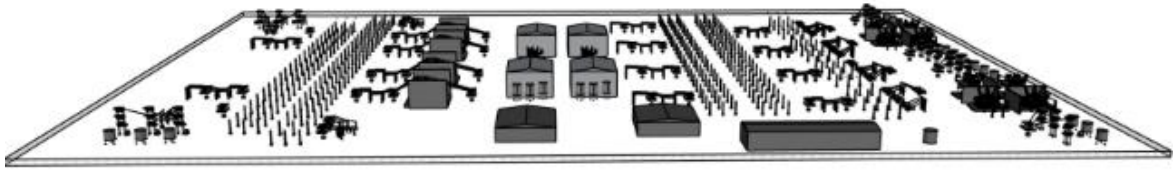
Beige Grey
RAL 7006

Olive Green
RAL 100 30 20
BS 12B27

Above colour options picked out by OPEN following review of both summer & winter photography.



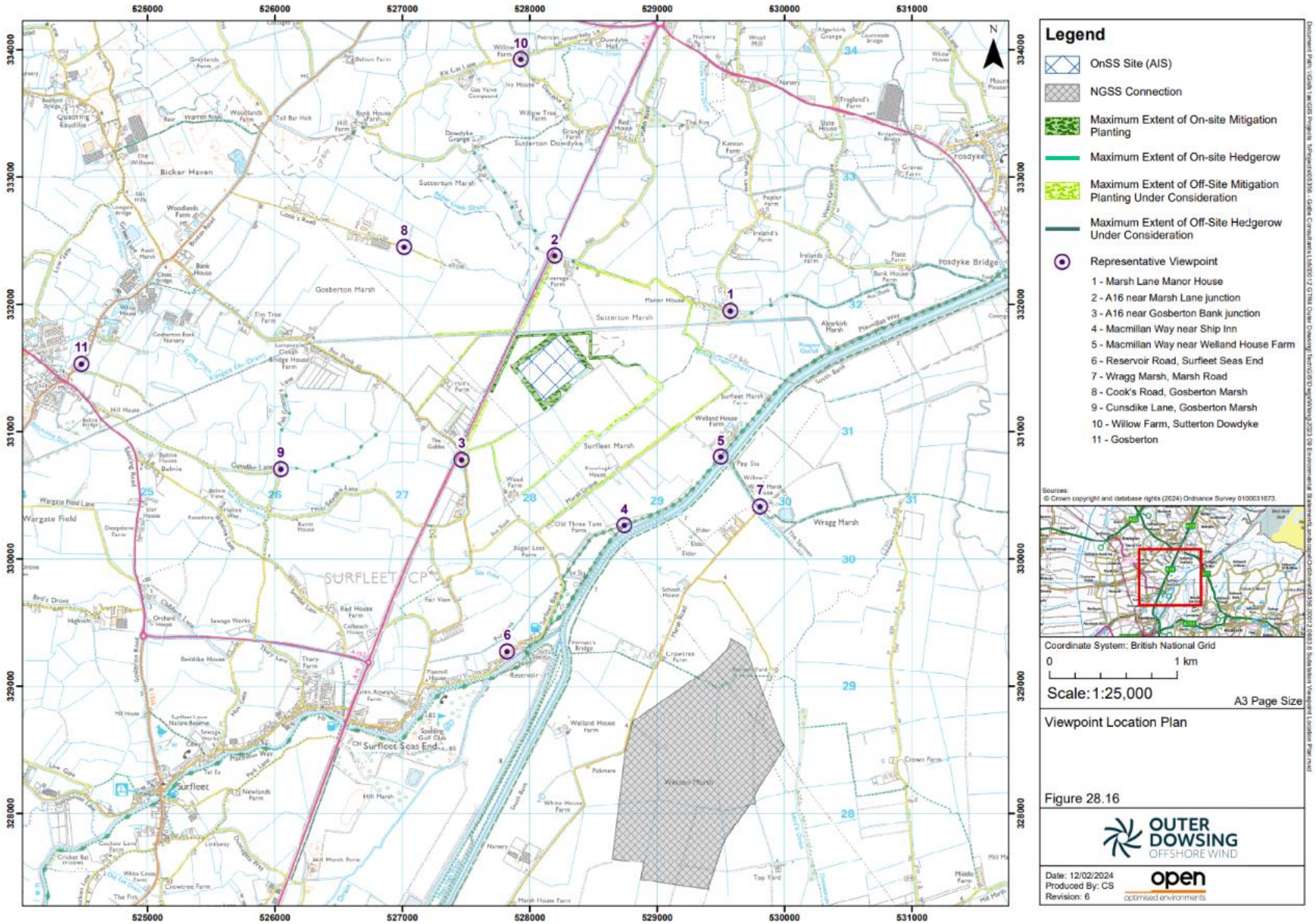
GIS



AIS

Pitched roof models generated to show the difference aesthetically opposed to the flat roof models in the ES visualisations.

Viewpoint locations



Legend

- OnSS Site (AIS)
- NGSS Connection
- Maximum Extent of On-site Mitigation Planting
- Maximum Extent of On-site Hedgerow
- Maximum Extent of Off-Site Mitigation Planting Under Consideration
- Maximum Extent of Off-Site Hedgerow Under Consideration
- Representative Viewpoint
  - 1 - Marsh Lane Manor House
  - 2 - A16 near Marsh Lane junction
  - 3 - A16 near Gosberton Bank junction
  - 4 - Macmillan Way near Ship Inn
  - 5 - Macmillan Way near Welland House Farm
  - 6 - Reservoir Road, Surfleet Seas End
  - 7 - Wragg Marsh, Marsh Road
  - 8 - Cook's Road, Gosberton Marsh
  - 9 - Cunsdike Lane, Gosberton Marsh
  - 10 - Willow Farm, Sutterton Dowdyke
  - 11 - Gosberton

Coordinate System: British National Grid

0 1 km

Scale: 1:25,000 A3 Page Size

Viewpoint Location Plan

Figure 28.16

OUTER DOWSING OFFSHORE WIND

Date: 12/02/2024
Produced By: CS
Revision: 6

open optimised environments

VP2

OUTER DOWSING OFFSHORE WIND

OS reference:	528195E 332380N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor: 150% @A1**	
Eye level:	6 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	181°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	0.7 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 13:43:09		

Figure 2b - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Khaki Green
Viewpoint 2: A16 near Marsh Lane junction
OUTER DOWSING OFFSHORE WIND

VP4

OUTER DOWSING OFFSHORE WIND

Khaki Green
RAL 100 60 20
BS 12B21

OS reference:	528743E 330263N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor: 150% @A1**	
Eye level:	9 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	335°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	1.2 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 12:42:24		

Figure 2b - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Khaki Green
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

VP2

OUTER DOWSING OFFSHORE WIND

OS reference:	528195E 332380N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor:**	150% @A1
Eye level:	6 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	181°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	0.7 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 13:43:09		

Figure 2c - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Camouflage
Viewpoint 2: A16 near Marsh Lane junction
OUTER DOWSING OFFSHORE WIND

VP4

OUTER DOWSING OFFSHORE WIND

OS reference:	528743E 330263N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor: 150% @A1**	
Eye level:	9 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	335°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	1.2 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 12:42:24		

Figure 2c - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Camouflage
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

VP2

OUTER DOWSING OFFSHORE WIND

OS reference:	528195E 332380N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor:**	150% @A1
Eye level:	6 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	181°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	0.7 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 13:43:09		

Figure 2d - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Beige Grey
Viewpoint 2: A16 near Marsh Lane junction
OUTER DOWSING OFFSHORE WIND

VP4

OUTER DOWSING OFFSHORE WIND

Beige Grey
RAL 7006

OS reference:	528743E 330263N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor:**	150% @A1
Eye level:	9 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	335°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	1.2 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 12:42:24		

Figure 2d - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Beige Grey
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

VP2

OUTER DOWSING OFFSHORE WIND

Olive Green
RAL 100 30 20
BS 12B27

OS reference:	528195E 332380N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor: 150% @A1**	
Eye level:	6 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	181°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	0.7 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 13:43:09		

Figure 2e - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Olive Green
Viewpoint 2: A16 near Marsh Lane junction
OUTER DOWSING OFFSHORE WIND

VP4

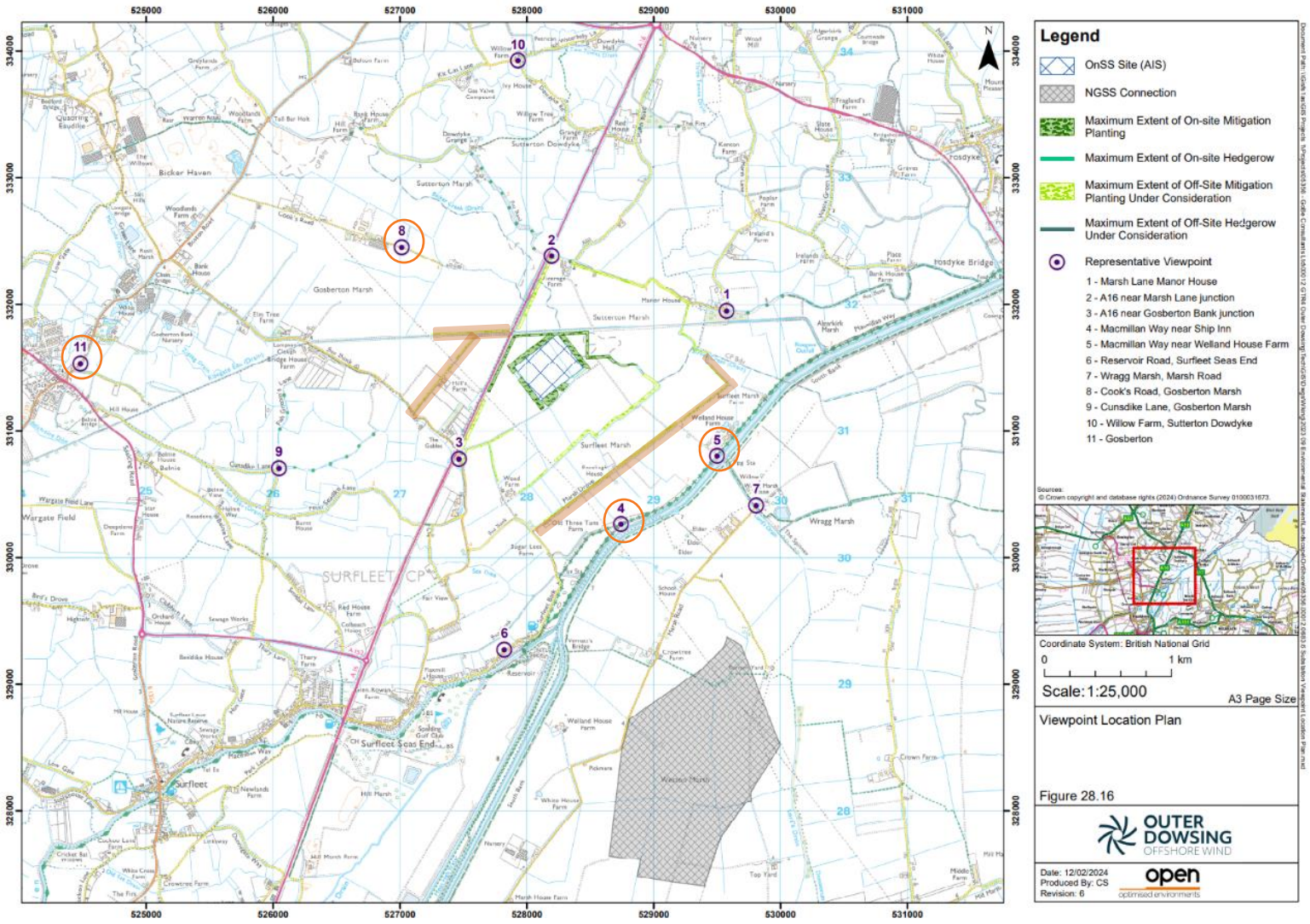
OUTER DOWSING OFFSHORE WIND

Olive Green
RAL 100 30 20
BS 12B27

OS reference:	528743E 330263N	**Horizontal field of view:**	53.5° (planar projection)	**Camera:**	Canon EOS 6D	**Enlargement Factor: 150% @A1**	
Eye level:	9 m AOD	**Principal distance:**	812.5 mm	**Lens:**	Canon EF 50mm f/1.4		
Direction of view:	335°	**Paper size:**	841 x 297 mm (half A1)	**Camera height:**	1.5 m		
Distance to site:	1.2 km	**Correct printed image size:**	820 x 260 mm	**Date and time:**	08/10/2022, 12:42:24		

Figure 2e - Proposed GIS Onshore Substation (GIS OnSS) Indicative Model - Olive Green
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

Discussion – proposal for refined planting scheme (AIS)



VP	Comment	Proposal
4	Closer range band of trees removed but no appreciable difference in screening effect form this viewpoint.	Area 2 -section south-west of cable crossing could potentially be removed
5	Closer range band of trees removed and screening effect reduced slightly.	Area 2 – section north-east of cable crossing suggested to be retained
8	Tree belt to south-east removed with no appreciable difference in screening effect from this viewpoint.	Area 1 could be removed
11	Tree belt to east removed with no appreciable difference in screening effect from this viewpoint.	Area 1 could be removed

Bands proposed that could be removed under an AIS scenario

VP4

ES
Planting

Refined
Planting

VP5

ES
Planting

Refined
Planting

VP8

ES
Planting

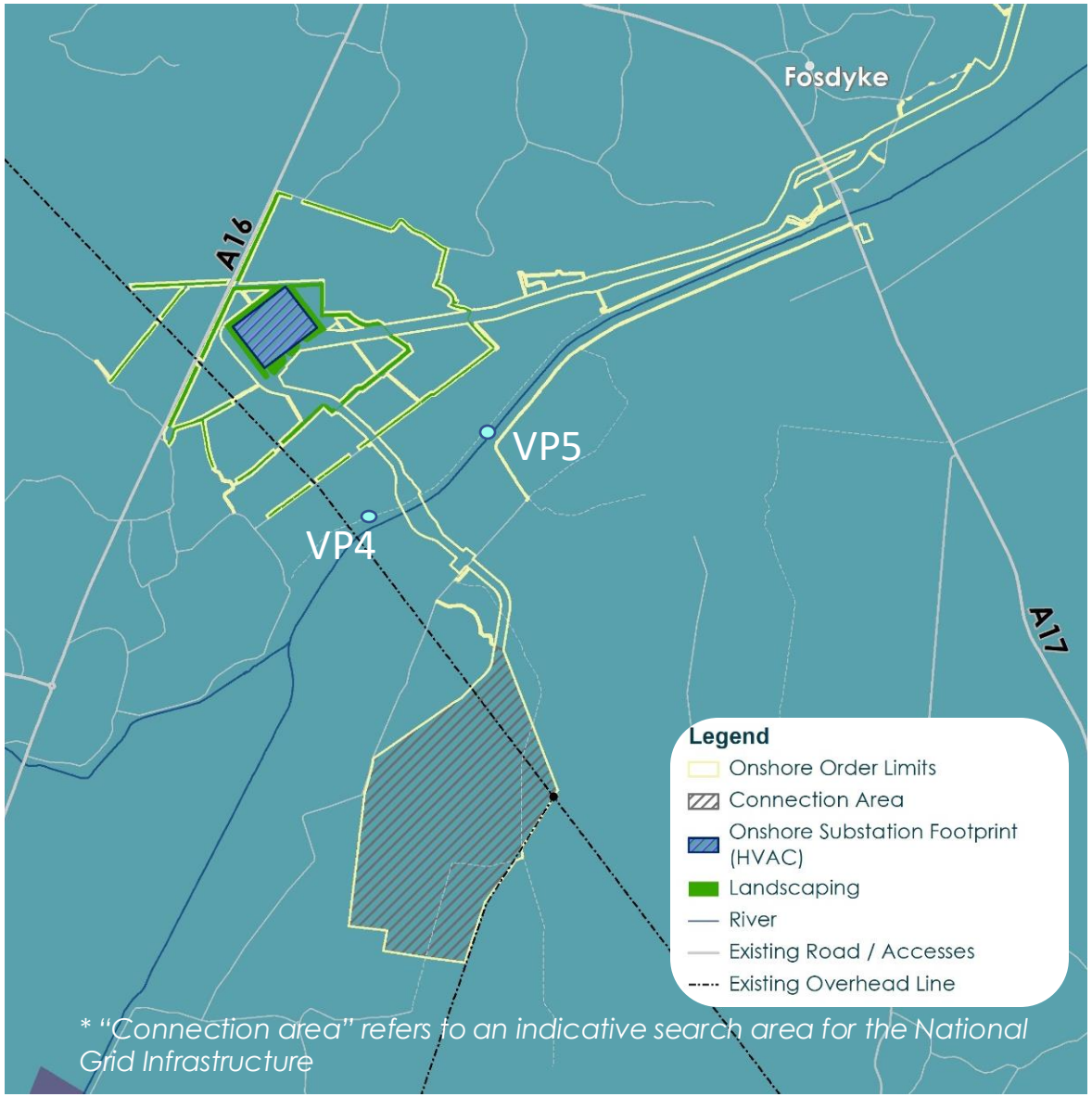
Refined
Planting

VP11

ES
Planting

Refined
Planting

Cumulative Impacts



A cumulative assessment including Visualisations (based on an indicative location within the connection area and typical parameters) has been included in the DCO application documents.

- Noting the location of the **Connection Area** *(the indicative search area for the National Grid substation)* relative to the Project substation – the planting strips will be an effective screen for those viewpoints that would be affected by both of these infrastructures.
- The cumulative Visualisations are based on both VP4 & VP5 on Macmillan Way

VP4 – Cumulative (before)

OS reference:	528743E 330263N	Horizontal field of view:	53.5° (planar projection)	Camera:	Canon EOS 6D	Enlargement Factor: 150% @A1	
Eye level:	9 m AOD	Principal distance:	812.5 mm	Lens:	Canon EF 50mm f/1.4		
Direction of view:	164°	Paper size:	841 x 297 mm (half A1)	Camera height:	1.5 m		
Distance to site:	1.7 km	Correct printed image size:	820 x 260 mm	Date and time:	08/10/2022, 12:42:24		

Figure 28-20f - Existing Baseline Photograph
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

VP4 – Cumulative (with NGSS envelope)

OS reference:	528743E 330263N	Horizontal field of view:	53.5° (planar projection)	Camera:	Canon EOS 6D	Enlargement Factor: 150% @A1	
Eye level:	9 m AOD	Principal distance:	812.5 mm	Lens:	Canon EF 50mm f/1.4		
Direction of view:	164°	Paper size:	841 x 297 mm (half A1)	Camera height:	1.5 m		
Distance to site:	1.7 km	Correct printed image size:	820 x 260 mm	Date and time:	08/10/2022, 12:42:24		

Figure 28-20g - Proposed National Grid Onshore Substation Location and Search Area
Viewpoint 4: Macmillan Way near Ship Inn
OUTER DOWSING OFFSHORE WIND

VP5 – Cumulative

OS reference:	529500E 330799N	Horizontal field of view:	53.5° (planar projection)	Camera:	Canon EOS 6D	Enlargement Factor: 150% @A1	
Eye level:	9.1 m AOD	Principal distance:	812.5 mm	Lens:	Canon EF 50mm f/1.4		
Direction of view:	184°	Paper size:	841 x 297 mm (half A1)	Camera height:	1.5 m		
Distance to site:	2.1 km	Correct printed image size:	820 x 260 mm	Date and time:	05/10/2022, 12:58:41		

Figure 28-21f - Existing Baseline Photograph
Viewpoint 5: Macmillan Way near Welland House Farm
OUTER DOWSING OFFSHORE WIND

VP5 – Cumulative

OS reference:	529500E 330799N	Horizontal field of view:	53.5° (planar projection)	Camera:	Canon EOS 6D	Enlargement Factor: 150% @A1	
Eye level:	9.1 m AOD	Principal distance:	812.5 mm	Lens:	Canon EF 50mm f/1.4		
Direction of view:	184°	Paper size:	841 x 297 mm (half A1)	Camera height:	1.5 m		
Distance to site:	2.1 km	Correct printed image size:	820 x 260 mm	Date and time:	08/10/2022, 12:58:41		

Figure 28-21g - Proposed National Grid Onshore Substation Location and Search Area
Viewpoint 5: Macmillan Way near Welland House Farm
OUTER DOWSING OFFSHORE WIND

Planting proposals – Increasing biodiversity, decreasing visual impacts, flood reduction and capturing carbon

Up to 130,000 trees and hedgerows would be added to the Lincolnshire landscape.

Up to 19 hectares would be planted, equivalent to 27 football fields with long term management plan.

Up to 1.6 miles of Hedgerow containing diverse species that support bats, birds and other species.





130 Biodiversity Action Plan species associated with hedges:
Lichens, fungi and reptiles.

Bank vole, harvest mouse and hedgehog all nest and feed in hedgerows alongside birds including; blue tit, yellowhammer and whitethroat.

Suggested species for planting


Quercus petraea (Sessile oak)


Alnus glutinosa (Alder)


Tilia cordata (Small leaved Lime)


Salix alba (White Willow)


Betula pubescens (Downy Birch)


Populus nigra (Black poplar)


Populus tremula (Aspen)


Acer campestre (Field maple)


Prunus padus (Bird Cherry)


Salix caprea (Goat Willow)


Salix cinerea (Sallow)


Cornus sanguinea (Dogwood)


Viburnum opulus (Guelder Rose)


Ilex aquifolium (Holly)


Sambucus nigra (Elder)

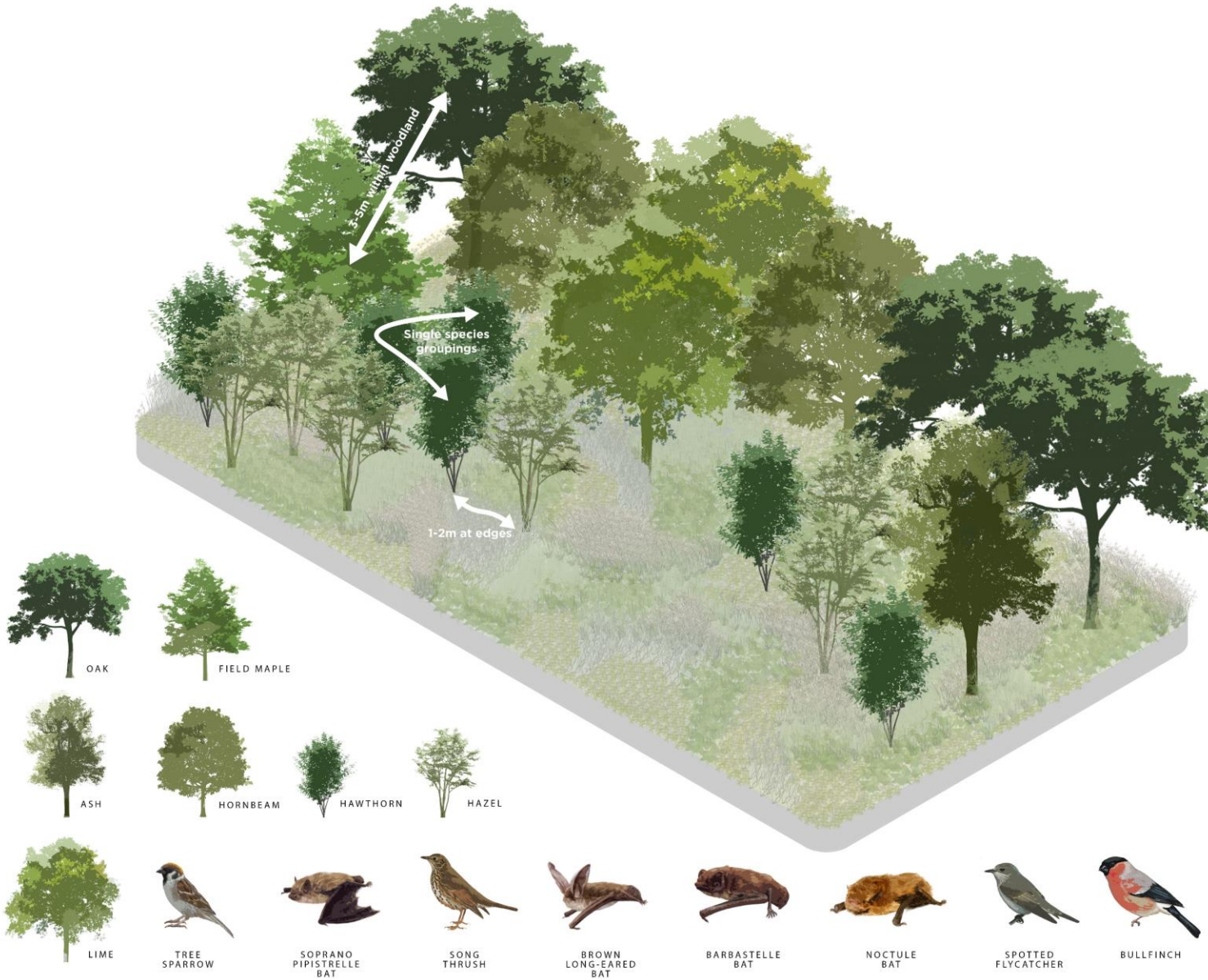

Corylus avellana (Hazel)

Hedgerows

Crateagus monogyna (Hawthorn)
Acer campestre (Field maple)
Cornus sanguinea (Dogwood)
Viburnum opulus (Guelder Rose)
Ilex aquifolium (Holly)
Prunus padus (Bird Cherry)
Sambucus nigra (Elder)
Quercus petraea (Sessile oak)
Pyrus sp. (Pear)
Hippophae rhamnoides (Sea Buckthorn)
Corylus avellana (Hazel)

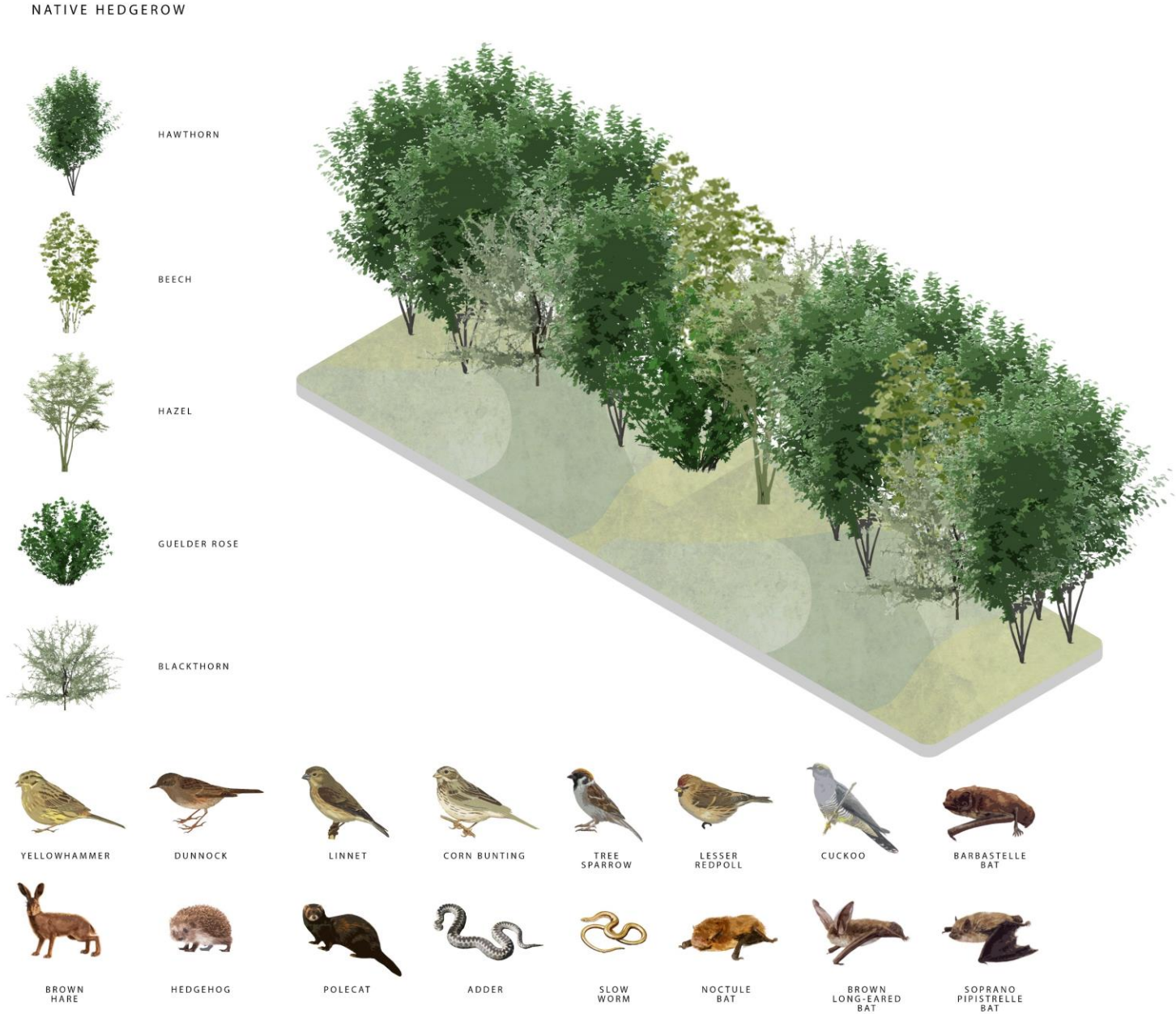
"We have a mixed native hedge at the rear of our garden. 10 years since planting (next March). It is in excess of 12 feet high and is cut back by about 5 feet every winter. I would expect the planting to be an effective screen before 15 years (we have hawthorn, field maple, wild privet, wild rose, blackthorn plus several other species)" ***Autumn Consultation Feedback Form***

Example: LOWLAND DECIDUOUS MIXED WOODLAND



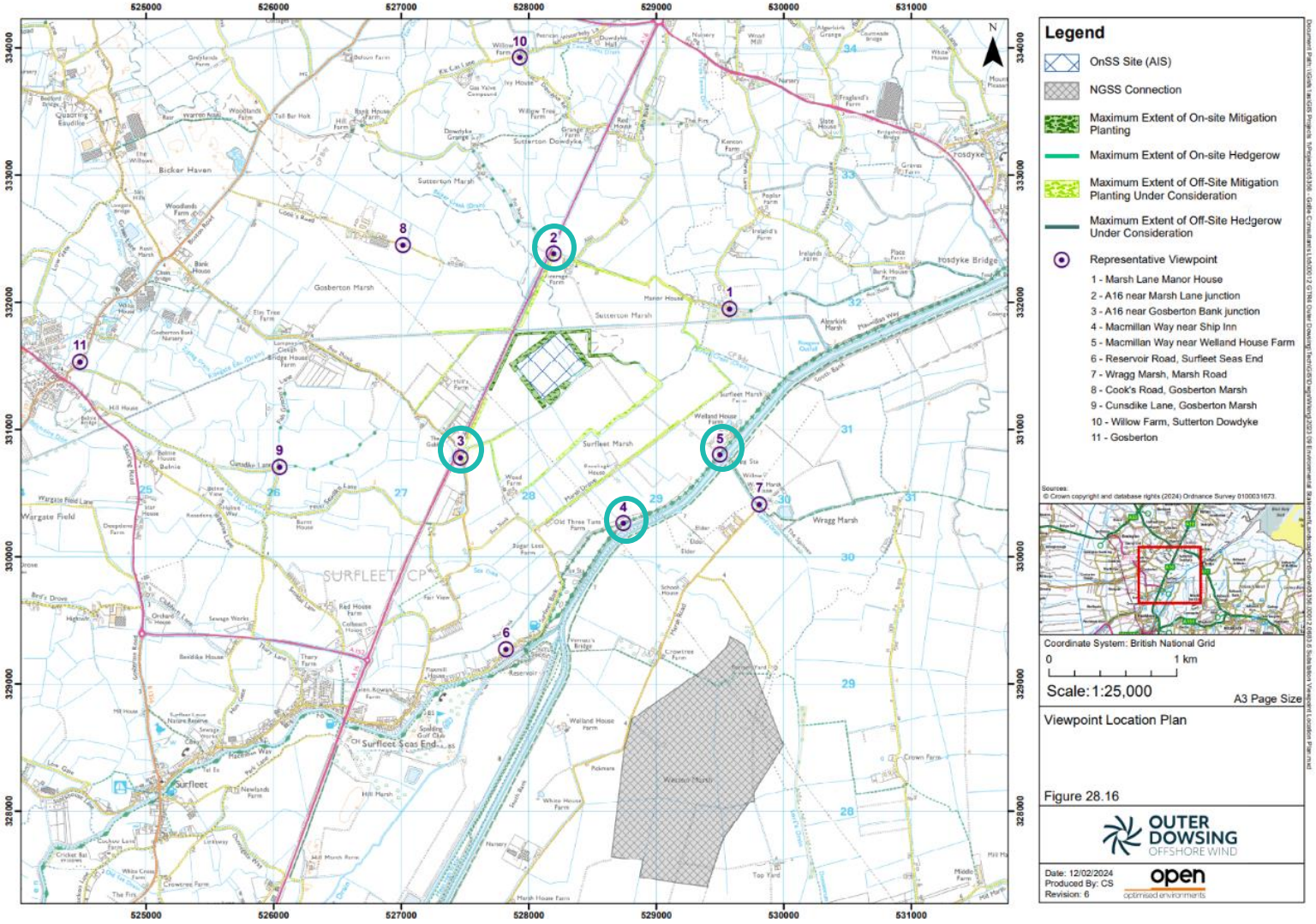
OUTER DOWSING
OFFSHORE WIND

Example:



OUTER DOWSING
OFFSHORE WIND

DRP Site tour



External ‘Design Review Panel’ Feedback & LDP discussion

Timeline and next steps

Consultation on Landscaping proposals & proposed plant species (including updated Visualisations) through our Autumn Consultation & CLGs.

Feedback taken on board & proposals updated.

Local Design Panel (LPD1) Kick Off Meeting 31 Jan 2024

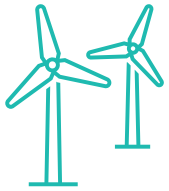
Winter Photography underway Jan/ Feb 2024

Progress Visuals based on feedback from LDP 1 Q1/Q2 2024

External Design Review 11 Jun 2024

Local Design Panel Meeting 2 (LDP2) 03 July 2024

To discuss future engagement



Autumn Consultation → Targeted Consultation → Submission of the DCO (Q1) → DCO examination H2 2024 → Consent Decision 2025 → Construction begins 2026/2027 → First power 2030

OUTER DOWSING
OFFSHORE WIND

Q&A

Minutes of Meeting.

Meeting title	Substation Community Liaison Group
Location	Tonic 44 Community Hub, Surfleet
Date/ time	Wednesday 3 July 2024 7pm – 9pm
Originator	ODOW
Attendees	Andrew Acum – ODOW – AA Roisin Alldis – ODOW – RA Sophie Brown – ODOW - SB Chris Jenner – ODOW – CJ Gemma Kitson – ODOW - GK Jon Ongley – ODOW - JO [redacted] – Kirton Parish Council – CA [redacted] – Boston Borough Council – DB [redacted] JC [redacted] (via Teams) - Boston Borough Council – SD [redacted] (via Teams) - Lincolnshire County Council – KGi [redacted] – Fosdyke Parish Council – KG [redacted] – Fosdyke PC / Landowner - AM [redacted] – Weston PC / Landowner - IP [redacted] JP [redacted] (via Teams) – DRP – AR [redacted] – Lincolnshire County Council / South Holland District Council - ES
Apologies	None
Purpose of meeting	1. To involve key local stakeholders in the design and development of the Outer Dowsing Offshore Wind project (landfall, onshore cable route and substation) through presentations, discussions and planned workshop activities. 2. To act as a two-way communication channel between local communities and the project team. 3. To help foster local involvement and ownership of the project.

	1.	**Chair's welcome, terms of reference and introductions** CJ opened the meeting and attendees introduced themselves. IP and JP identified themselves as having commercial interests as landowners. The group was reminded of the terms of reference. The minutes of the last meeting were already approved and posted on the website.

	2.	**Project Update** Project Timeline: The 25,000-page application has been accepted and the Planning Inspectorate (PINS) will pull issue a timetable for the hearings in August. The project anticipates a consent decision by summer 2025. Subject to a consent decision from the Secretary of State, there will be a period to discharge any conditions prior to construction starting from 2027. Construction will last approximately 3 years and it is anticipated that the project will start to generate power in 2030. DCO Examination Process: The Relevant Representation period has now closed and representations are available to view on the PINS website. A total of 95 representations were received including one from Fosdyke Parish council and one from Well Parish Meeting. A number of representations were submitted by landowners. The next stage will include a Preliminary Meeting where the examination panel will commence the 6-month Examination process. The hearings are expected to take place between October 2024 and March 2025. The full examination process will take around six months with issue-specific hearings taking place over this period. The five inspectors will inspect the application and focus on areas of interest and to reflect the representations that have been received. There will then be hearings on specialist subjects. The inspectors will then have three months to write a report recommending approval or refusal and this will be sent to the Secretary of State who then has three further months to make a decision. Landowners in the area will receive a 'Rule 8' letter from the Planning Inspectorate detailing the examination process and this may generate some queries to local councillors.

		Residents can sign up for project updates on the PINS website which will provide notification of key milestones such as when the Rule 8 letters are being sent out. CA asked if it was possible to visit the substation site. CJ said that during the examination there would be a site visit for the Inspectors and it may be possible to do something similar for other representatives. **Action: CJ to explore options for site visit for CLG members.**
	3.	**Survey Activity** Further survey work is being undertaken across the project area. This included: • Offshore geophysical surveys from July until later this year. • Onshore geophysical site investigations – in fields – these were completed in June.

- Onshore geotechnical boreholes and trial pits were completed in May. These will allow the engineers to have a better understanding of the subsurface geology for HDD and the substation work.

- Nearshore geotechnical seabed survey off the coast from Anderby Creek is due for completion by the end of July and a jack-up barge will be visible from the beach. At the closest point, it will be 500m from the shore. It is being undertaken during the summer for weather, speed and safety reasons. It will give the engineers and idea of what they will be drilling through and help them design an optimal route. Workers will be ferried in and out from Skegness Yacht Club.

- Onshore Archaeology trial trench excavation in fields along the route would take place between July-October (est.). This will involve trenches 30-50m in length at locations identified by the geophysical surveys.

AM asked how large the ORCP structure would be. CJ said it would be slightly smaller than the offshore substation platform on the Lincs wind farm. DB asked if it would be possible to land a helicopter on it. JO said there was no intention to put a helideck on it, but it would be big enough to accommodate one.

AM asked how deep the geophysical survey could penetrate and if it had found anything. CJ said that it generally detects anomalies (non-intrusive technique) 2-3m depending on the soil conditions, but it can pick up incredibly fine anomalies. Most surveys find something such as old field boundaries, ditches, buildings, etc, but it is up to the archaeologists to assess relevance. There will be around 200 trenches dug along the cable route starting at the end of July through to October this year. The county archaeologist is consulted to agree the location of the trenches. These are typically 30m long and the width of a JCB bucket. There will be comprehensive soil management procedures in place and the work will be monitored by the County archaeologist.

		IP asked what depth the trial trenches would be. CJ said that it would depend on the soil structure in the area, but generally around 1m. IP asked if there would be trenches on his land. CJ said that Dalcour MacLaren would be in touch with landowners there were any trenches planned on their land. RA said that affected landowners had already been contacted so if he hadn't heard anything, then they would not be digging on his land. JC asked if it would be possible to involve schools with the archaeology work. RA said that Jan Allen (County archaeologist) is keen on this and the team is currently discussing what could be facilitated.

	4.	**Outer Dowsing in the community** <u>Young Engineers</u> The ODOW team will attend the Future Fest careers event in Boston to encourage students to consider a career in offshore wind. This is in addition to a previous event at John Spendluffe College that the team attended. The team aims to continue to engage young people in the area to promote STEM skills and is exploring the possibility of purchasing learning equipment to do work with primary schools. <u>Lincolnshire Show</u> Outer Dowsing was proud to sponsor the show this year for the first time. As one of Lincolnshire's flagship events it was important that we were able to show support for the Lincolnshire Agricultural Society and all that they do to celebrate and support rural Lincolnshire. It also provided a good opportunity to answer questions about the project to interested parties such as landowners and primary schools. <u>Community benefit fund</u> The formal CBF will launch in 2027 when the project reaches financial close. Ahead of the Community Benefit Fund (CBF), the project is exploring options to support a small number of projects in line with our themes. Most projects proposed so far were more aligned with the CBF. Therefore, ahead of the CBF launch the project will likely focus on developing STEM and Nature Positive related activities such as outdoor learning with local schools, planting/bio-diversity projects and wind workshops.

	5.	**Design Review Process** Design Review Process AR said that his organisation works nationally looking at a variety of schemes. The National Planning Policy Framework encourages assessment by a Design Review Panel (DRP) which acts as a critical friend, providing advice and work alongside the development team. The panel is made up of a range of built environment professionals including architects, landscape architects, ecologists, energy professionals and town planners based all over the country. The ODOW DRP comprises AR as a town planner, plus two architects and two landscape architects. CJ said the LPAs, County Council, IDBs and the EA were also invited to take part, alongside the ODOW team. Onshore Substation IP asked if maps were available on the website. CJ said that the best place to find the maps was the PINS website and he would supply the address **Action: CJ to provide IP with PINS address - https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010130** IP asked what distance would be needed for a cable to go round a bend. JO said it would need a radius of around 60-100m to make a 90O turn. JC asked how the project could guarantee that the cable was buried deep enough. CJ said that all land agreements state the minimum buried depth subject to other constraints, but typically the target depth is 1.2m. IP asked if it was possible to have a meeting with DW to discuss concerns about cable depth. **Action: DW to contact IP** CJ said that it was in the Project's interest to protect its assets and the design would include ducts, protection tiles and sufficient depth to mitigate any risk. CA asked how the minimum depth would be affected by undulating land. CJ said that the minimum depth was 1.2m

		below surface level. JO said that they would maintain minimum depth even allowing for localised changes. IP said that he was double cropping and ploughing his land which was different to installing underneath grassland. CJ said that the standard depth was 0.9m but the project had committed to 1.2m minimum depth recognising the unique agricultural nature of the area. RA explained that a GIS substation is gas insulated and an AIS substation is air insulated. The visualisation shown previously were based on both options. CJ explained that the Project would seek consent for both types to give more options/greater flexibility for procurement. The landscaping designs should the worst-case scenario including both the GIS height with the AIS footprint. IP asked how many hectares the substation would require. RA said that it would be 14.5 ha for AIS and 7.3ha for GIS. Since the last meeting the team had looked at variations in colour and roof types, considering summer and winter colours in the area and cumulative visualisations. Pitched roofs more closely resemble farm buildings in the area. RA then ran through the visualisations showing different colour options and viewpoints. IP asked if they had looked at graduated colour. RA said that this would be looked at as a result of feedback. <u>Planting for the substation</u> RA said that the DCO application included the maximum extent of planting that may be required but as a result of the DRP and CLG feedback, they have also looked at reduced levels of planting that may be more in keeping with the nature of the area. The recommendation for the GIS was to maintain the level of planting due to the height, with some refinements in certain areas. From an AIS perspective, there was the possibility of removing some of the bands of planting. IP said he agreed with some screening but the proposal included 50 acres of screening around a 35-acre site. He said this would just encourage pigeons which would cause damage to crops.

		CA said there was a difference between being in a wheat belt and a vegetable belt. IP said that 17,000 acres would be required for all the projects proposed in Lincolnshire and there needed to be a balance. CJ said that the permanent land take of the Project footprint was limited to between 7-15 ha. AM asked how much land would be temporarily taken out of production from landfall to the substation. CJ said he didn't know the exact figure including temporary land but would get back to him. **Action: CJ to supply total land take figure.** CA said that Viking Link has done a good job of reinstatement and it was not possible to tell where they had been. IP said that visually it was not possible to tell, but if you were growing crops on it, it would take 10 years to recover, and gas pipelines were even worse. CJ said that underground utility installation has come a long way in the last 40-50 years in terms of soil management and reinstatement. The team has been looking very closely at what Viking Link and Triton Knoll had done to learn from them – both what they had done well and to see what the project could do better. AM said that the heat from the cables could change the microbiology of the soil. CJ said that this was something that the project was looking into. JC said there were seven projects coming through his ward. He felt that mitigation on seven projects would wipe out a lot of farming and the landscape planting could encourage vermin. <u>DRP Feedback</u> AR said that the debate was interesting and the panel appreciated being involved at an early stage where they could make a difference. Due to the early stage, the views of the panel were relatively high level. If the objective was to choose a site and then design mitigation that would hide the site, then the work done was very strong. There was a lot of good analysis of the site and local landscape character. From the site visit they could see that there are actually very few public viewpoints, and the mitigation proposals would mitigate the visual impact. However, whilst

		this would work, the panel questioned whether this was the correct approach. There was an assumption that the buildings and elements that make up the substation were inherently unattractive and should be hidden. The panel felt that a functional building does not need to be unattractive and therefore hidden. There was a strong history of things like water towers and power stations that had become powerful pieces of architecture in their own right. The panel's advice was to bring on board some architectural expertise to explore whether there may be a different way of doing it. The other way of doing it may be to create something which doesn't necessarily need to be hidden – it could be creating something striking architecturally but could also be striking in terms of landscape architecture. There was a concern that ideas based around tree belts quite close to visual receptors are not characteristic of the area which is typified by thin, broken up woodland. Existing large agricultural buildings are not hidden. Mitigation often draws attention to, rather than screen a development. The panel was not promoting an alternative idea, but to explore all options. The project could make use of other locally characteristic features such as berms and dykes. The green energy revolution is creating the need for a whole new set of structures and all involved should think about the impacts on valued traditional landscapes. The panel would like the team to take a step back from the approach of screening the substation and explore different ideas. IP said he felt this was a sensible approach and would like to meet AR if he was in the area. ES said she agreed. She said she was born in Lincolnshire and the fens are not traditionally a forested area. She said she now feels more comfortable if the project is looking at building something more attractive with less screening. She also said that she sits on Surfleet Parish Council and wondered why there were no other Surfleet councillors present. IP said that they have never attended. ES said she would follow this up. CJ confirmed invitations had been issued. KGi said that his company was involved in a lot of the Lincolnshire projects and you can't blanket the landscape with hedgerows and tress as this is not in keeping with the

		landscape. There is room for mitigation, but it needs to be placed well and he agreed that buildings don't need to be unsightly. Agricultural buildings that were not to everyone's taste when they were built can later become part of the landscape. SD said that they had involved a landscape consultant involved and looked at secondary planting so that the planting area doesn't have to be as big. IP said that trees are easy to plant. His parish council were given three trees to plant 20 years but now they were overhanging the church and it cost £3500 to remove them. CJ said that tree maintenance is covered as part of the Project ongoing commitment to maintenance. JC said that if there were fewer trees, then they would need to be strong trees due to the high winds. Even 30-year-old trees have come down in recent months. IP asked if the details about the substation. JO mentioned that generally components are earthed. AR commended ODOW on their consultation and engagement, and that it was clear to him that ODOW were trying to do the right thing. He said it felt almost apologetic to hide the substation when it is a scheme that is so exciting and will do fantastic things. CJ said that DRP feedback would feed into the examination process. The LPAs have identified visual impact as a key feature and the Inspectors will draw upon those comments to structure the hearings around these themes, so this conversation will be continued with the Inspectors. <u>Cumulative Impacts</u> RA ran through the cumulative impacts visualisations. CJ explained that the National Grid element is still fairly high level as the project doesn't have details of what their scheme will look like. GK said people on the footpath would see both the ODOW and NG projects and this was the rationale for some of the mitigation planting so that people would not be seeing a lot of energy infrastructure.

		IP said it didn't help people trying to make a living off the land when the planting was taking up farmland and encouraging wildlife just to benefit a few people walking their dogs on a Sunday afternoon. CJ said it was about finding a balance that replicated the existing character. CA asked how the project compared with a solar farm in terms of land requirements and power output. CJ said that ODOW was a 1.5GW (1500MW) project and he didn't know any solar farm with that capacity. The largest solar projects tended to be 200-300MW.
	6.	**AOB** None.
	7.	**Chair's closing remarks and next steps / next meeting** The next CLG is expected to be in the late Autumn but the ODOW team will be in touch with details nearer the date.

Meeting Protocol	
Distribute agenda before meeting	Fix responsibilities for each item
Start on time	Finish on time
Set out your ground rules	Publish minutes / actions
Stick to the agenda	Continuous improvement