



# **Cambois Connection Onshore Scheme Design And Access Statement**



# Cambois Connection: Onshore Scheme

## Design and Access Statement

On behalf of **SSE Renewables**



Project Ref: 33313305702 | Rev: D | Date: October 2023

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## Acronyms / Abbreviations

BBWF	Berwick Bank Wind Farm
DAS	Design and Access Statement
ES	Environmental Statement
HDD	Horizontal Directional Drilling
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
LPA	Local Planning Authority
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
NCC	Northumberland County Council
NGESO	National Grid Electricity System Operator
SSER	SSE Renewables

## Units

GW	Giga watt (power)
Km	Kilometre (distance)

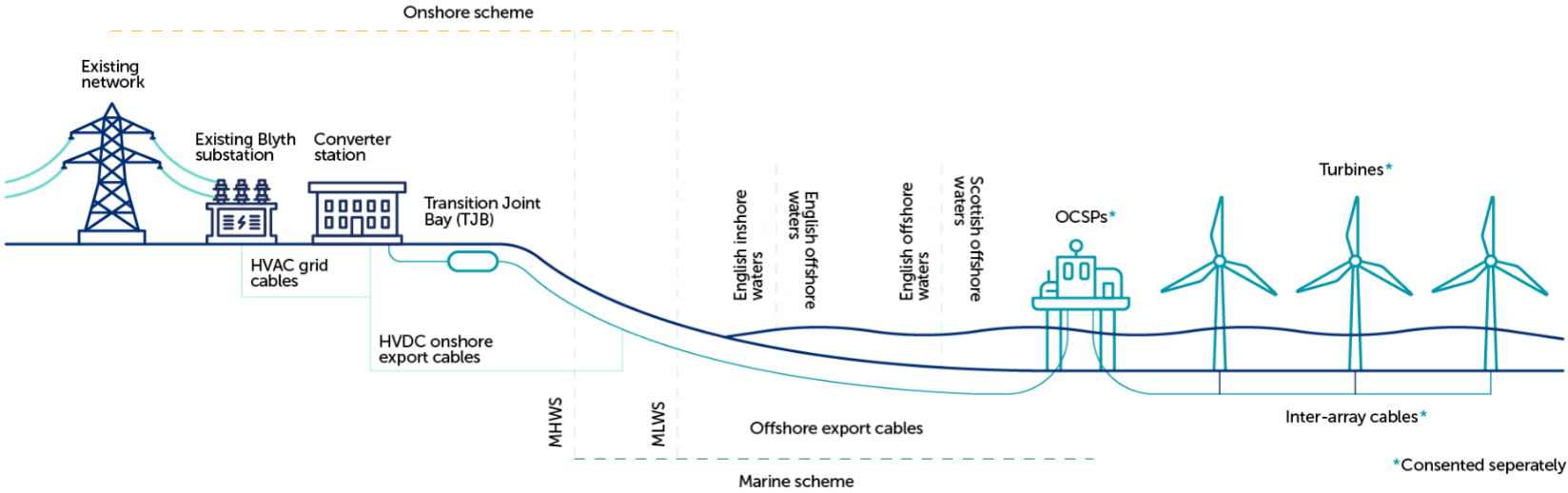
## 1.0 INTRODUCTION

### Project Overview

- 1.1 Berwick Bank Wind Farm Limited ('BBWFL') is a wholly owned subsidiary of SSE Renewables ('SSER') (hereafter referred to as 'the Applicant'). The Applicant is pursuing the development of Offshore Export Cables, Onshore Export Cables, an Onshore Converter Station and associated grid connection at Blyth in Northumberland, known as the 'Cambois Connection' ('the 'Project'). The onshore components of the Project, landward of Mean Low Water Springs (MLWS) comprise the 'Onshore Scheme', which is the subject of this Design and Access Statement ('DAS').
- 1.2 The Applicant is seeking Outline Planning Permission for the Onshore Scheme from Northumberland County Council, the Local Planning Authority ('LPA') with all matters reserved for approval. The Applicant has received written confirmation from the LPA that an Outline Planning Application is the appropriate approach for the Onshore Scheme. The final design of the Onshore Scheme will be subject to future application(s) for the approval of reserved matters and the information in this DAS is proportionate to the level of information known at this time.
- 1.3 The Onshore Scheme comprises of the following elements which are visually represented at **Figure 1.1** overleaf:
- Landfall works;
  - Onshore export cables within a cable corridor between the Landfall and the new Onshore Converter Station for a cable corridor length of up to 2.1 km;
  - A new Onshore Converter Station;
  - Onshore grid cables from the converter station to the National Grid Blyth substation for a cable corridor length of up to 1.5 km; and
  - Associated ancillary infrastructure.



Figure 1.1: Overview of key Project components



Please note that the Outline Planning Application which this DAS supports only relates to the Onshore Scheme highlighted by the orange dashed box.





### **The Applicant**

- 1.4 BBWFL is a wholly owned subsidiary of SSER. SSER is a leading developer and operator of renewable energy, headquartered in the UK and Ireland, with a growing presence internationally. Its strategy is to lead the transition to a net zero future through the world-class development, construction and operation of renewable power assets and it is building more offshore wind energy than any other company in the world. SSE Renewables is part of SSE plc, the UK-listed integrated energy group which is investing £18bn to 2027, or £10m a day, to deliver a Net Zero Acceleration Programme Plus to address climate change head on. This includes plans by SSE Renewables to increase its installed renewable energy capacity to 9GW by 2027. The company also plans to almost quadruple capacity to over 15GW by 2031, increasing output fivefold to over 50TWh annually – enough to be able to power around 20 million homes each year. SSE Renewables has a team of around 1,500 renewable energy professionals based across the UK, Ireland, Spain, France, Italy, Greece, the Netherlands, Japan and the USA, all committed to delivering the green energy the world needs now and in the future.
- 1.5 SSER is currently constructing one of the world's largest offshore wind energy projects, the 3.6 GW Dogger Bank Windfarms in the North Sea, which is a joint venture with Equinor and Eni, as well as Scotland's largest and the world's deepest fixed bottom offshore site, the 1.1 GW Seagreen Offshore Windfarm in the Firth of Forth, a joint venture with TotalEnergies. When complete, Dogger Bank and Seagreen Offshore Wind Farm will help power millions of UK homes and businesses and drive the transition to net zero carbon emissions. These assets will join the Applicant's existing operational offshore wind portfolio across two offshore joint venture sites, Beatrice and Greater Gabbard, both of which are operated on behalf of asset partners.
- 1.6 The Applicant is highly experienced and trusted delivery partner in terms of renewable energy particularly offshore wind and the associated onshore infrastructure required.

### **Purpose**

- 1.7 The purpose of this DAS is to support the Outline Planning Application by explaining how the Onshore Scheme responds to the Site and its setting and enable the Local Planning Authority to better understand the analysis that has underpinned the design of the Onshore Scheme.



- 1.8 This DAS seeks to explain the design principles and concepts that have been applied to the Onshore Scheme, the steps taken to appraise the design of the development and explain the approach taken to addressing the relevant local and national policies.
- 1.9 In short, this DAS meets the national legislation and guidance on what should be included in a Design and Access Statement and provides the LPA, Northumberland County Council, with the necessary information to determine the Outline Planning Application this DAS supports.
- 1.10 For the avoidance of any doubt, this DAS should be read alongside the extensive suite of supporting information submitted to support the Outline Planning Application. Key planning and design matters such as the national need for the development and site selection are covered in greater detail in other documents.

#### **Document Structure**

- 1.11 This DAS is structured as follows:
- Section 2.0 summarises the site context and site appraisal;
  - Section 3.0 summarises the policy context;
  - Section 4.0 outlines the design and access considerations of the Onshore Scheme;
  - Section 5.0 details the design evolution of the Onshore Scheme
  - Section 6.0 outlines the design objectives of the future detailed proposals for the Onshore Scheme;
  - Section 7.0 concludes.



## 2.0 The Site Context

### Introduction

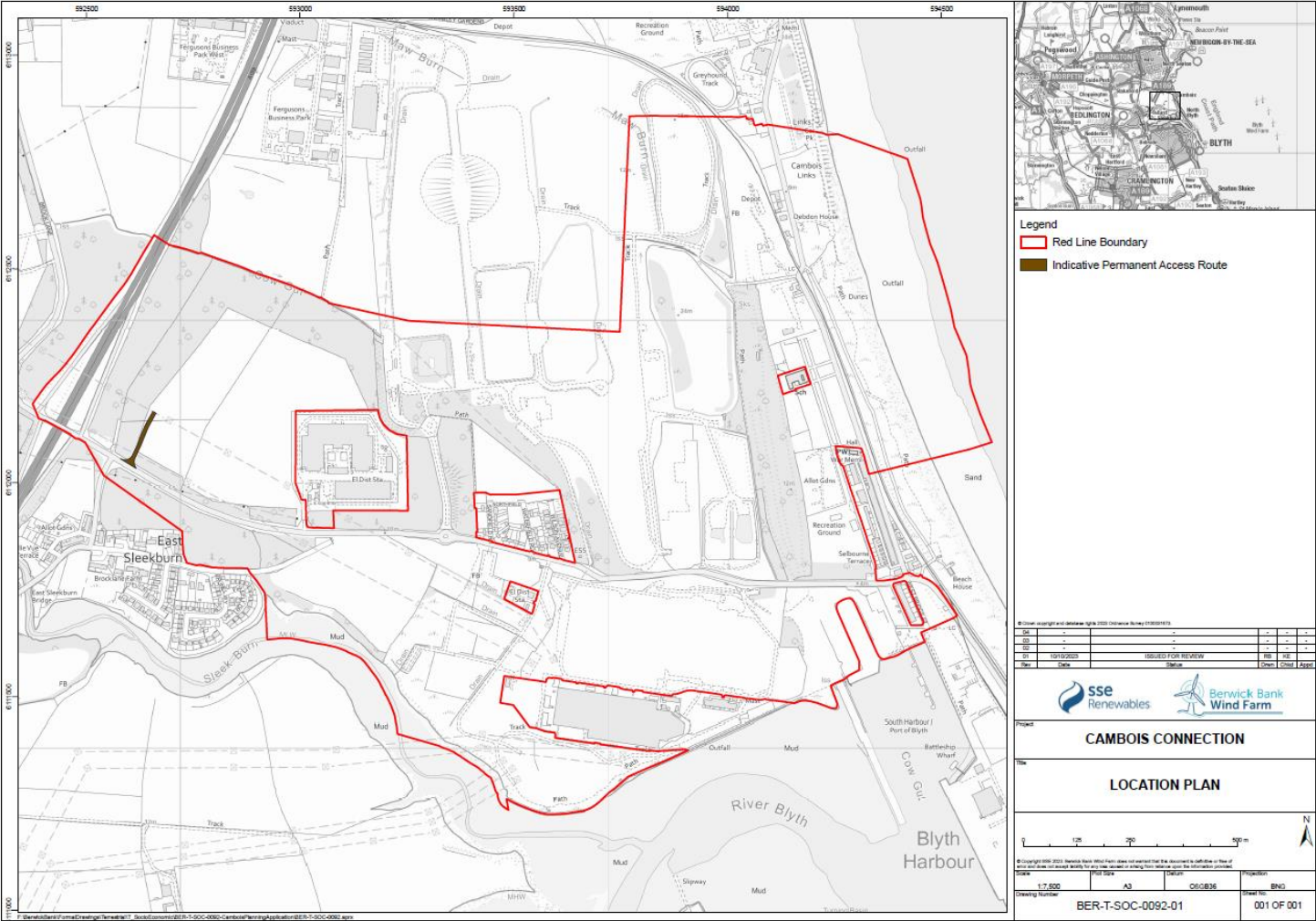
- 2.1 The following Section summarises the site context and site appraisal exercise undertaken to inform the design of the Onshore Scheme. For further details on the site selection process please refer to Chapter 4 of the supporting Environmental Statement.

### Site Location & Boundary

- 2.2 The Site is situated near Blyth and the villages of Cambois and East Sleekburn in Northumberland. The Site covers approximately 188ha and the Site boundary is shown in **Figure 2.1** overleaf.
- 2.3 The boundary and extent of the Site have been the subject of discussions with the LPA. There are some design details related to the Onshore Scheme that are still to be finalised due to further ground investigations required, ongoing engineering design work and the procurement of cable and converter station suppliers which will define the final specification. The Site boundary has been chosen to allow flexibility to accommodate these design details which will be subject to future Reserved Matters application(s) to the LPA.



**Figure 2.1: Site Boundary**



- 2.4 The Site comprises land to the north of Blyth and to the East of East Sleekburn and includes a mix of coastal amenity, new and legacy industrial uses, a school and residential areas. The Site includes three key areas (See Figures 2.2 – 2.4 overleaf):
1. The Landfall/HVDC Zone where the offshore export cables reach land;
  2. The Converter Station Zone; and
  3. The HVAC Zone where the grid cables from the Onshore Converter Station connect to the existing Blyth substation.
- 2.5 These Zones of Infrastructure are presented in ES Volume 4, Figure 5.1.
- 2.6 The proposed Landfall is located at Cambois North Beach. The landfall location at Cambois forms the interface between the Marine Scheme and Onshore Scheme where the Offshore Export Cables will be brought ashore. The Landfall corridor is approximately 0.7 km wide at Cambois beach, at the widest point between the River Wansbeck and the Port of Blyth. The final location of the Landfall at Cambois is still to be determined.
- 2.7 Moving westwards (landward) from the beach, Cambois Links are found at the back of the sand dunes, followed by railway tracks and a road. The road forms part of a small residential area, flanked by the Cambois Coastline to the east, and a larger brownfield construction area to the west. This area is the Site of the former Blyth Power Station (closed in 2001), situated on the Northern bank of the river Blyth, between the tidal estuary and the North Sea. Planning permission was granted to BritishVolt in 2021 for the construction of a 'GigaFactory' electric vehicle battery factory upon the grounds of the former power station. Subsequently, BritishVolt went into administration and the company, along with land upon which the factory would be built, was sold to Recharge Industries. It has been stated by Recharge Industries that they intend to proceed with the plans for the new factory, although it is currently unknown whether an amended or reduced scheme will be proposed. From Cambois North Beach to the west side of the BritishVolt site describes the Landfall/HVDC Zone.
- 2.8 The Onshore Converter Station Zone is situated immediately to the west of the North Sea Link (NSL) converter station, with Brock Lane running east west along the southern boundary, the A189 forms the western boundary, and the Sleekburn Business Centre lies to the north. The Onshore Converter Station Zone comprises of predominantly greenfields and existing hedgerows.



2.9 The HVAC Zone extends from the south of the A189 to the River Blyth running east to west from the converter station zone to the National Grid Blyth Substation. The HVAC Zone comprises of predominantly greenfields, existing hedgerows and a residential access road.

### **Site Features**

2.10 The Site boundary is broad at this stage to accommodate design flexibility and as such contains several features including:

- Significant areas of hardstanding associated with previous built development.
- Main watercourses including the River Wansbeck, the River Blyth and the Sleek Burn.
- Existing trees.
- Existing hedgerows and habitats.
- Existing Public Rights of Way.
- Overhead pylons.
- Ground levels that vary across the Site due to the sloping topography (west to east) and due to deeply incised glacial outwash valleys.

### **Site Appraisal**

2.11 The site appraisal exercise was comprehensive and complex due to the nature of the Onshore Scheme and individual elements (see Chapter 4 of the supporting Environmental Statement). The opportunities and constraints of the Site identified (the entire redline boundary, see Figure 2.1), which has informed the site appraisal and design process to date, can be summarised as follows:

#### *Opportunities*

- Availability of land at a scale to meet the operational requirements;
- Proximity to allocated grid connection;



- Cable route distance to allocated grid connection;
- Lack of any landscape designations;
- Not located within the designated Green Belt;
- No ancient woodland present;
- Not located within a conservation area;
- Not located within the Northumberland Coast Ramsar;
- Local of any designated heritage assets;
- The Site is considered at low risk (Flood Zone 1) of flooding in operation; and
- Favourable land ownership and use.

*Constraints*

- Presence of underground utilities infrastructure;
- Part of the Site is considered as the Sand Dune Priority Habitat;
- Part of the Site falls within the Northumberland Shore SSSI;
- Part of the Site falls within the Northumberland Marine SPA;
- Two existing Public Rights of Way cross the Site, north to south (Reference: 600 059 and 600 054).
- Proximity to sensitive uses (such as community and education facilities); and
- Possible cumulative effects with other planned developments.



Figure 2.2: Former Britishvolt site, near HVDC route (Landfall/HVDC Zone)





Figure 2.3: Proposed Converter Station Location (Onshore Converter Station Zone)



Figure 2.4: NSL Substation, near HVAC route (HVAC Zone)



## 3.0 Planning Policy Context

3.1 The following section summarises the most pertinent design related planning policies applicable to the design evolution of the Onshore Scheme. For further details on the legislation and policies relevant to the Onshore Scheme as a whole, please refer to Chapter 2 of the supporting Environmental Statement.

### National Context

#### *National Planning Policy Framework*

3.2 The National Planning Policy Framework (“NPPF”) sets out the Government’s planning policies for England and how these should be applied. The NPPF was published in 2012 and has been amended several times, most recently in September 2023.

3.3 The NPPF is clear that the purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs.

3.4 The NPPF stipulates that achieving sustainable development means that the planning system has three overarching objectives.

- An economic objective- To help build a strong, responsive, and competitive economy by ensure that sufficient land of the right types is available in the right places and at the right time to support growth, innovation, and improved productivity, and by identifying and coordinating the provision of infrastructure.



- A social objective- To support strong, vibrant, and healthy communities by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations and by fostering well designed beautiful and safe places with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and
- An environmental objective- to protect and enhance our natural, built and historic environment, including making effective use of land, improving biodiversity using natural resources prudently, minimising waste and pollution and mitigating and adapting to climate change, including moving to a low carbon economy.

3.5 The NPPF is also clear that the creation of high quality, beautiful and sustainable places is fundamental to what the planning and development process should achieve. Good design is a key aspect of sustainable development, creates better places in which to live and work and helps make development acceptable to communities.

3.6 Paragraph 132 of the NPPF stipulates that design quality should be considered throughout the evolution and assessment of individual proposals. Early discussion between applicants, the local planning authority and local community about the design and style of emerging schemes is important for clarifying expectations and reconciling local and commercial interests. Applicants should work closely with those affected by their proposals to evolve designs that take account of the views of the community. Applications that can demonstrate early, proactive and effective engagement with the community should be looked on more favourably than those that cannot.

3.7 In summary, the key design-related NPPF paragraphs for the Onshore Scheme are:

- Paragraph 119 – planning decisions should promote effective use of land;
- Paragraph 120 – planning decisions should encourage multiple benefits from land and give substantial weight to the value of using suitable brownfield land;



- Paragraph 121 - Local planning authorities should take a proactive role in identifying and helping to bring forward land that may be suitable for meeting development needs;
- Paragraph 126 – the creation of high-quality places is fundamental to what the planning and development process should achieve;
- Paragraph 129 – the National Design Guide should be used to guide decisions on applications in the absence of locally produced design guides;
- Paragraph 130 – planning decisions should ensure that developments will function well, are visually attractive, sympathetic to the local character and optimise the potential of the site;
- Paragraph 132 – design quality should be considered throughout the evolution and assessment of individual proposals;
- Paragraph 135 – Local planning authorities should seek to ensure the quality of approved development is not materially diminished between permission and completion;
- Paragraph 152 – the planning system should support the transition to a low carbon future;
- Paragraph 158 – when determining planning applications for renewable and low carbon development, local planning authorities should approve application if its impacts are (or can be made) acceptable.

#### *National Design Guide*

- 3.8 The NPPF is clear that creating high quality buildings and places is fundamental to what the planning and development process should achieve. The National Design Guide illustrates how well-designed places that are beautiful, healthy, greener, enduring and successful can be achieved in practice. It forms part of the Government's collection of planning practice guidance and should be read alongside the NPPF and other guidance. Sustainability is a key aspect of well-designed places and is woven into the National Design Guide
- 3.9 The focus of the National Design Guide is the creation of well-designed places as a whole but it can be used to provide guidance on how individual proposals can contribute to the overall objective of creating well-designed places.



3.10 The National Design Guide addresses the question of how we recognise well-designed places, by outlining and illustrating the Government's priorities for well-designed places in the form of ten characteristics (See **Figure 3.1** overleaf) which are as follows:

- Context – enhances the surroundings.
- Identity – attractive and distinctive.
- Built form – a coherent pattern of development.
- Movement – accessible and easy to move around.
- Nature – enhanced and optimised.
- Public spaces – safe, social and inclusive.
- Uses – mixed and integrated.
- Homes and buildings – functional, healthy and sustainable.
- Resources – efficient and resilient.
- Lifespan – made to last.

3.11 With regards to infrastructure specifically, paragraph 89 of the National Design Guide states:

*“Utilities services and infrastructure include water supply, sewerage, drainage, gas, electricity, full fibre broadband, digital infrastructure and telephones.*

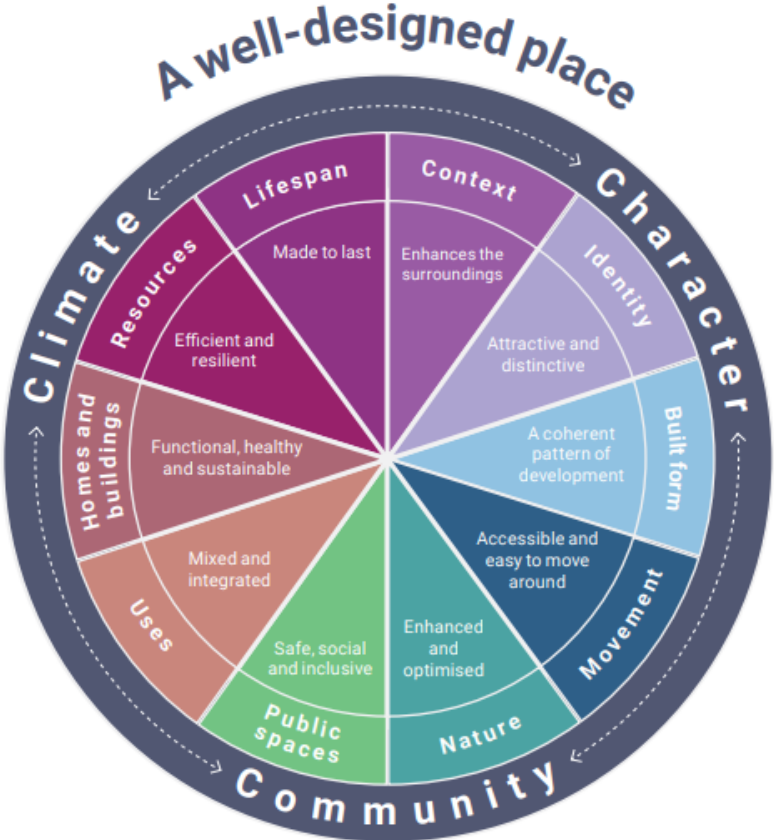
*Their siting and layout take into account:*

- *their space requirements and visual impact;*
- *convenient maintenance while not impeding the planting of street trees; and*
- *implications for foreseeable future changes in demand.”*

3.12 In short, early engagement with the relevant stakeholders, taking account of the Site and local context as well as the space requirements and visual impacts forms the principle national design-related planning guidance for infrastructure-led proposals.



Figure 3.1: The National Design Guide: 10 Characteristics of well-designed places



The ten characteristics of well-designed places

Source: The National Design Guide



## Local Planning Policy

### *The Adopted Development Plan*

- 3.13 The Development Plan comprises of the Northumberland Local Plan 2016 – 2036 (adopted 2022) along with the associated policies map and the 20 made Neighbourhood Plans. There are no made Neighbourhood Plans that cover the Site boundary.
- 3.14 The key design related policies are contained in the Northumberland Local Plan 2016 – 2036 are:
- Policy STP 3 - Principles of sustainable development;
  - Policy STP 4 - Climate change mitigation and adaptation;
  - Policy QOP 1 - Design principles;
  - Policy QOP 2 - Good design and amenity;
  - Policy QOP 4 - Landscaping and trees;
  - Policy QOP 5 - Sustainable design and construction;
  - Policy QOP 6 - Delivering well-designed places; and
  - Policy ENV 1 - Approaches to assessing the impact of development on the natural, historic and built environment.
- 3.15 Not every aspect of the key design related policies of the Northumberland Local Plan 2016 – 2036 are relevant to the Onshore Scheme. The key design related policy requirements relevant to the Onshore Scheme can be summarised as follows:
- Policy STP 3:
    - Contribute to net gains for biodiversity and establish a coherent and resilient ecological network;





- Prevent or minimise waste and make prudent and effective use of Northumberland's available finite and renewable resources;
  - Demonstrate sustainable design which is accessible to all, which respects and enhances the local distinctiveness of the natural, historic and built environment, helps promote a sense of place, reduces the need for energy, facilities flexible and adaptable buildings and environments;
  - Make best use of existing facilities and infrastructure, whilst making appropriate provision for new or additional infrastructure as required;
  - Be located in areas which are least vulnerable to climatic impacts such as risk from all sources of flooding and rising sea levels; and
  - Anticipated impacts, including those from climate change, on the historic and natural environment, including landscape, biodiversity, ecosystems and water resources should be avoided by locating development elsewhere, adequately mitigated, or as a last resort, adequately compensated for.
- Policy STP 4:
    - Designed to reduce energy consumption;
    - Incorporate decentralised, renewable and low carbon energy;
    - Protect and enhance habitats that provide important carbon sinks, including peat habitats and woodland;
    - Incorporate design features to ensure that they provide resilience to climate change;
    - Incorporate the use of sustainable drainage systems, to minimise and control surface water run-off; and
    - Incorporate, where feasible, multi-functional green infrastructure, which can help species adapt to climate change through preventing fragmentation or isolation of habitats, reduce the heating of the urban environment, and manage flooding.
  - Policy QOP1:
    - Respect and enhance the natural, developed and historic environment, including heritage, environmental and ecological assets, and any significant views or landscape setting;
    - Ensure that buildings and spaces are functional and adaptable for future uses;
    - Not cause unacceptable harm to the amenity of existing and future occupiers of the site and its surroundings;
    - Incorporate, where possible, green infrastructure and opportunities to support wildlife, while minimising impact on biodiversity and contributing to environmental net gains;



- Make provision for efficient use of resources;
  - Mitigate climate change, and be adaptable to a changing climate.
- Policy QOP 2:
  - The physical presence and design of the development preserves the character of the area and does not have a visually obtrusive or overbearing impact on neighbouring uses, while outlook from habitable areas of the development is not oppressive and the best outcomes for outlook are achieved wherever possible;
  - Trees, other green and blue infrastructure and soft landscaping of amenity value are retained where appropriate and are introduced or replaced where they would enhance amenity of the development.
- Policy QOP 4:
  - Landscaping design is of a high quality, in accordance with the principles set out in Policy QOP 1;
  - Existing features which contribute towards the character of the area, or amenity, are retained wherever possible and sympathetically incorporated into the overall design of the scheme;
  - Any hard or soft landscaping is appropriate, functional and well-integrated into the design of the development;
  - Trees, and other spaces and features that provide green and blue infrastructure, are preserved, enhanced and introduced into the landscaping scheme wherever possible;
  - There is no loss of existing trees which are valuable in terms of amenity, biodiversity or the landscape, except where this would be unavoidable.
- Policy QOP 6:
  - Early design discussions, design review and design coding will be supported, facilitated and recommended by the Council where appropriate.
- Policy ENV 1:
  - The character and/or significance of Northumberland's distinctive and valued natural, historic and built environments, will be conserved, protected and enhanced;



- An ecosystem approach will be taken that demonstrates an understanding of the significance and sensitivity of the natural resource. This should result in a neutral impact on, or net benefit for those ecosystems and the ecosystem services that they provide.

*Local Planning Guidance*

- 3.16 The Northumberland Coast Area of Outstanding Natural Management Plan 2020 – 2024 is a relevant local planning guidance document but does not contain any design related guidance or policies which are applicable to this DAS. Please refer to the supporting Planning Statement and Chapter 2 of the Environmental Statement.

*Emerging Planning Policy / Guidance*

- 3.17 The LPA consulted upon a Northumberland Design Supplementary Planning Document Scoping Document in early 2019. The purpose of the document was to inform the development of guidance on the design of future development.
- 3.18 However, there is no evidence that LPA progressed beyond the Scoping Document consulted upon in early 2019. The Scoping Document does not contain any draft guidance or policies (other than referring to those in the then draft Local Plan). As such, the Scoping Document carries very limited weight in the determination of planning applications, and nor does it provide any indication of the future direction of travel.
- 3.19 There is currently no Northumberland Design Supplementary Planning Document although the Northumberland Local Plan 2016-2036 indicates that a Design Guide will be prepared and provide guidance on the requirements of design principles and other design-related policies within the Local Plan. At present no Design Guide is available.



### **Planning Policy Context Summary**

- 3.20 National and local planning policy is clear that the fundamental purpose of the planning system is sustainable development, of which good design is a key element.
- 3.21 National planning policy dictates that where there is no local design guide then the National Design Guide should take precedence. As noted above, the LPA started the process of drafting a new Design Supplementary Planning Guide, but it did not progress to a draft and as such the National Design Guide is the key document.
- 3.22 There is limited design policy with regards to infrastructure-led proposals specifically within the National Design Guide, but the principles of good design can be applied through the lens of evaluating how individual proposals contribute to that overall objective of creating well-designed places.



## 4.0 Design and Access Considerations

4.1 The following section summarises the key design and access considerations of the Onshore Scheme which have informed the design to date and will influence the final design to be approved as part of future application(s) for approval of reserved matters.

4.2 For the avoidance of any doubt, the Onshore Scheme comprises of three main elements: Landfall and HVDC onshore underground cables; the Onshore Converter Station and the HVAC onshore grid cables. Further detail of the Onshore Scheme can be found in Chapter 5 of the supporting Environmental Statement.

### Use

4.3 An onshore connection to the National Grid network is an essential requirement of the Berwick Bank Wind Farm Project. Without the onshore connection the export of renewable power from the Marine Scheme to the network at Northumberland is not possible which is the primary purpose of the Berwick Bank Project.

### Amount, Scale and Layout

4.4 The scale of the Onshore Scheme is primarily dictated by the operational requirements. The key aspects include:

- The Landfall location - The Landfall corridor is approximately 0.7 km wide, with the final corridor to be determined as part of the final design. The maximum working corridor at the landfall (once the preferred location has been identified) will be 110 m. The corridor width has been determined to accommodate up to four HVDC Offshore Export Cables onshore.
- The Onshore HVDC Underground Cables - Up to four Onshore HVDC Underground Cables will connect the subsea cables to the Onshore Converter Station and will be installed within a duct, the widths of which have yet to be determined but are required to be up to 700 m to



accommodate the trenchless techniques. It is anticipated that the total length of the Onshore HVDC Underground Cables could extend to 2.1 km.

- The Converter Station - it is anticipated that the Converter Station will consist of one main building, which will not exceed 30 m in height (maximum roof level) and will have a maximum footprint 90,000 m<sup>2</sup>, including the platform (area of hard standing up on which the Onshore Converter Station will be positioned). The platform will also include additional areas of hardstanding for the storage of ancillary equipment such as spare transformers and cable drums. The finished platform level is anticipated have a maximum height of 15.2 m AoD, meaning that the maximum overall height will be no more than 45.2 m AOD. The scale of the Onshore Converter Station has been dictated by operational requirements.
- The Onshore HVAC Underground Cables - Up to twelve Onshore HVAC Underground Cables will connect the new Onshore Converter Station to the National Grid Blyth substation. These will be installed via a trenched or trenchless technology construction methods. It is anticipated that the total length of the Onshore HVAC Underground Cables could extend to 1.5 km.

4.5 The final layout of the Onshore Scheme, including the Landfall location, cable route and Onshore Converter Station location is yet to be determined. Notwithstanding this, the Applicant has committed to a series of 'designed in measures' (see Chapter 15 of the support ES) as part of the maximum design scenario which provide certainty on some aspects of the scale, layout and design of the Onshore Scheme. For example, one of the designed in measures is the avoidance of sensitive habitats such as intertidal habitats in the Sleekburn where lying within the Site boundary will be avoided.

### **Appearance and Landscaping**

4.6 Only manhole covers will be visually present above ground at the Landfall section and along the cable route, once the Onshore Scheme is complete thereby limiting the need for design interventions.

4.7 The Onshore Converter Station will be the most visually prominent aspect of the Onshore Scheme. The Onshore Converter Station will be contained within a permanent secure fenced compound. The final size and configuration of the Onshore Converter Station has not yet been determined.

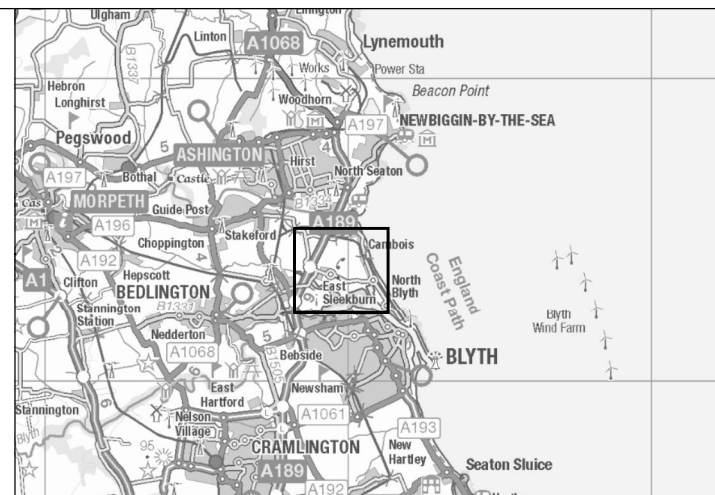
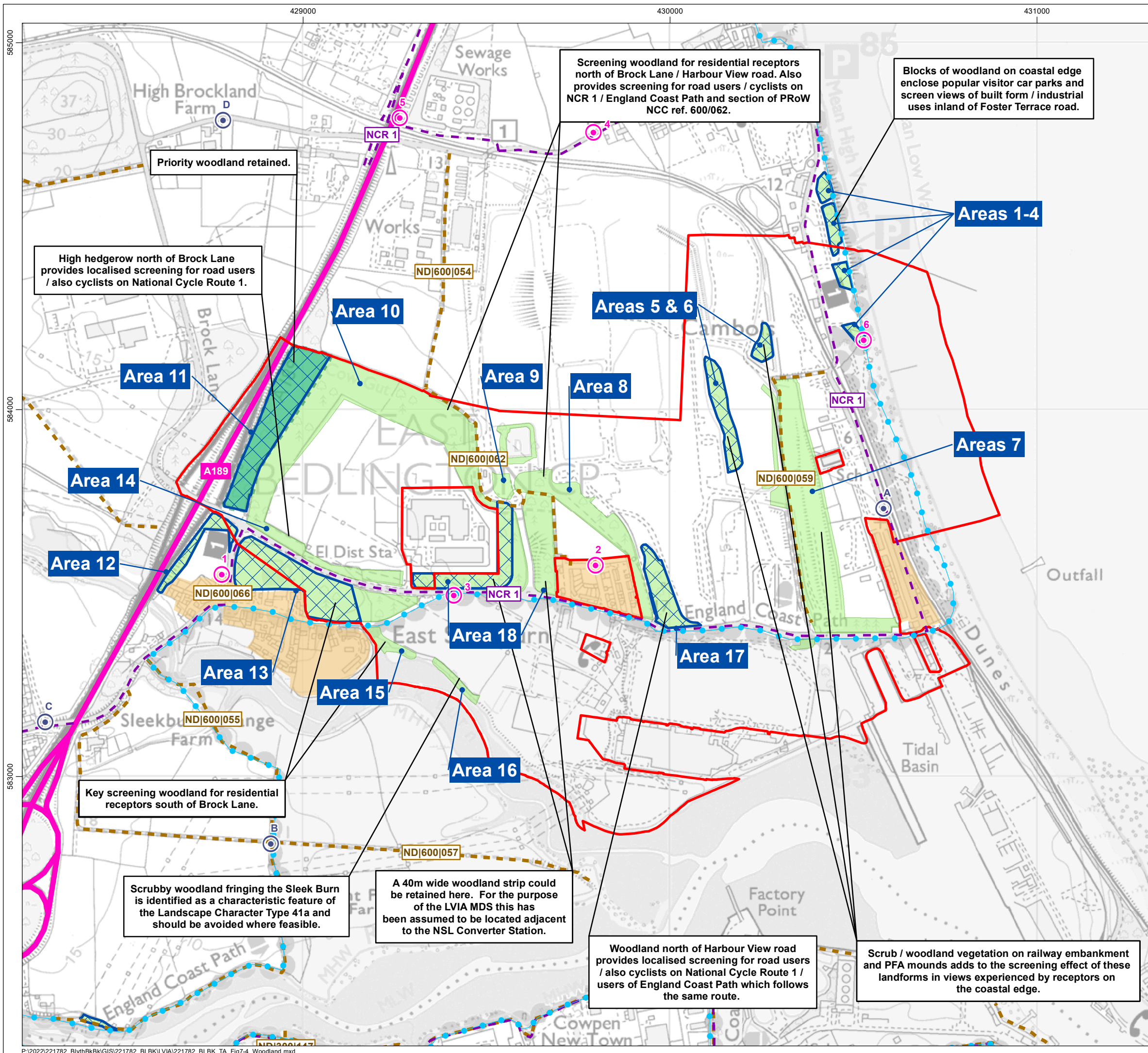


- 4.8 The visual appearance of the Onshore Converter Station will be particularly influenced by the choice of construction materials, the configuration (both internally and externally), size of the buildings and landscaping.
- 4.9 To ensure effective use of land, a requirement of national planning policy, landscaping will need to be used where appropriate such as to minimise the potential visual impacts of the new Onshore Converter Station. However, landscaping is not required for the entire Onshore Scheme due to the lack of above ground visual impact and utilisation of existing facilities (the National Grid Blyth substation).
- 4.10 The Applicant has committed to a series of ‘designed in measures’ (see Chapter 16 of the supporting ES) as part of the maximum design scenario. With regards to landscaping specifically, there are designed in measures which specify priority woodland habitat and other areas of woodland within the Site which will be avoided (see **Figure 4.1 overleaf**), commitments to the construction of a swale for drainage which will maximise the use of native plants and ecological connectivity and commitments to avoiding mixing topsoil with subsoil.

#### **Access and Parking**

- 4.11 Personnel access to the underground cable infrastructure, including the ancillary infrastructure such as communications boxes, is required for maintenance purposes. Access to the underground cable infrastructure can be achieved through strategically placed manholes which provide sufficient opportunity to undertake maintenance activities. Personnel can access the manholes with the necessary equipment on foot and as such there is no requirement for permanent parking provision along the cable route.
- 4.12 Regular vehicular access and parking is required to the new Onshore Converter Station for operations staff to monitor and maintain electrical equipment and plant. As such, a connection to the local road network and new Onshore Converter Station will be required.
- 4.13 The National Grid Blyth substation is an existing facility and as such the existing access and parking arrangements will be utilised to minimise the use of resources.





**Legend**

- Onshore Scheme
- Viewpoint
  - Spring Ville / Brock Lane, East Sleekburn
  - Northfield / Waterfield Road, near East Sleekburn
  - Brock Lane / England Coast Path / NCN 1
  - Wembley Gardens, Cambois
  - A189, southbound
  - Cambois, south of beach car park
- Illustrative Viewpoint
  - Cambois, north of Selbourne Terrace
  - England Coast Path, PRow, south of Sleek Burn
  - East of Bedlington, field gate
  - Brock Lane, near High Brockland Farm, west of A189
- Woodland at Risk of Removal (OS OpenMap Local Woodland data downloaded on 02/08/2023).
- Priority Habitat – Deciduous Woodland (Retained)
- Woodland to be Retained
- Key Sensitive Visual Receptors
  - Residential Areas
  - National Cycle Route 1
  - Public Right of Way
  - England Coastal Path
  - A Road

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National Cycle Route data supplied by Sustrans contains Ordnance Survey data (© Crown copyright and database rights (2023)).

04	-	-	-	-	-
03	-	-	-	-	-
02	-	-	-	-	-
01	17/10/2023	Draft		SH	CW
Rev	Date	Status		Drwn	Chkd
				LT	Appd

**sse Renewables** **open** optimised environments PART OF SLR

Project: **BERWICK BANK WIND FARM**

Title: **Technical Appendix 7.2 Woodland Retention Plan**

Scale: 1:10,000 Plot Size: A3 Datum: OSGB36 Projection: BNG

Drawing Number: 404.000041.00001.0609 Sheet No.: 001 OF 001

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### **Environmental Sustainability**

- 4.14 The purpose of the Onshore Scheme is to fulfil the purpose of the Project which will deliver large scale renewable energy, thereby significantly contributing to tackling climate change, an international, national and local environmental objective. As a result, it is important that the Onshore Scheme is designed to maximise construction and operational environmental sustainability to not undermine the purpose of the Project.
- 4.15 The construction methods used is just one way in which delivery of the Onshore Scheme will be carefully managed to ensure the overall environmental sustainability of the Onshore scheme is not undermined. A range of construction methods will be explored such as Horizontal Directional Drilling which avoids the need for open cut trenches thereby minimising the potential impacts of the Onshore Scheme particularly at sensitive locations such as the coastline. The construction methods chosen may influence the final design which will be approved as part of future Reserved Matters Planning Application(s).
- 4.16 The key operational aspect of the Onshore Scheme, once complete, is the new Onshore Converter Station. The most notable environmental sustainability operational requirement of the new Onshore Converter Station is drainage which will require appropriate measures to minimise the potential for any off-site impacts. Therefore, it will be necessary to maximise the site context opportunities to minimise physical interventions when the final design is identified. The final design of the new Onshore Converter Station will be approved as part of future Reserved Matters Planning Application(s).



## 5.0 Design Evolution

- 5.1 The following section describes the design evolution of the key components of the Onshore Scheme.
- 5.2 The majority of the Onshore Scheme comprises of the underground cable which once construction is complete and the cable has been laid, the surface of the land will be reinstated. Therefore, in terms of the cables, there will be no visual impact above ground following reinstatement.
- 5.3 In addition, the Onshore Scheme includes connecting to the existing National Grid Blyth substation. The connection to the existing substation is subject to a very limited design scope due to the operational restrictions and requirements imposed by National Grid.
- 5.4 As a result, this section of the DAS provides a description of the design development for the new Onshore Converter Station specifically as this is the primary built structure / infrastructure that will have a new visual presence.

### **Project Development Process**

- 5.5 The Applicant took a comprehensive approach to the project development process and engaged in pre-application and Environmental Scoping exercises which allowed the LPA and other key stakeholders to comment, amongst other things, on the future design of the Onshore Scheme.
- 5.6 The Applicant also engaged in voluntary community engagement which allowed the local community to comment, amongst other things, on the future design of the Onshore Scheme. The community engagement is briefly described below for the purposes of detailing the project development process, but further details can be found in Chapter 4 of the supporting Environmental Statement.



*Environmental Scoping*

- 5.7 The Applicant entered into a formal Environmental Scoping exercise in November 2022. The purpose of this was to allow the Applicant to be clear on what the LPA considered the significant effects of the Onshore Scheme were likely to be and therefore, the topics on which the ES should focus. The site area submitted as part of the Environmental Scoping exercise measured c.700ha.
- 5.8 The LPA adopted a Scoping Opinion on the 29<sup>th</sup> December 2022 (NCC Reference: 22/04118/SCOPE) which outlined the topics to be addressed as part of the EIA process and reported in the ES along with comments on the methodology to be used for particular topics. One of the key comments received related to the undefined project area and the need to narrow the Site boundary to better understand the future design and implications of the Onshore Scheme.
- 5.9 In addition, the response noted that to ensure high quality development that responds to and enhances local landscape character and distinctiveness, the siting and design of the proposed development should reflect local characteristics and, wherever possible, use local materials. Account should be taken of local design policies, design codes and guides as well as guidance in the National Design Guide and National Model Design Code.
- 5.10 The ES Scoping process played a key role in the evolution of the design. Following the formal Environmental Scoping exercise and further investigations the Site area was reducing substantially from c.700ha to 188ha which narrowed the possible future design options. The preparation of the planning application this DAS supports was also informed by a comprehensive review of the National Design Guide as described in Chapter 3.

*Pre-application*

- 5.11 The Applicant submitted a formal request for pre-application advice to the LPA in March 2023. The pre-application submission sought views on all aspects of the Onshore Scheme including the future design.



- 5.12 The pre-application response was received in May 2023 (NCC Reference: 23/00175/PREAPP) with no reference made to the future design or potential design impacts of the Onshore Scheme.
- 5.13 The design-related guidance received at the pre-application was limited to the potential temporary impacts on two public rights of way routes and the need to provide a mandatory 10% biodiversity net gain.
- 5.14 Following further investigations, which included a review of the design of the scheme, it was concluded that the nature of the Onshore Scheme and Site are not favourable for achieving the mandatory biodiversity net gain requirements on Site and as such an off-Site solution will be secured. The LPA have formally agreed to this biodiversity net gain approach, see **Appendix 1** of this Design and Access Statement.
- 5.15 In short, the formal pre-application process did not identify any design conflicts and as such did not result in any design changes. However, an outcome which results in no design changes should not be considered negatively but rather acknowledged as a key part in the comprehensive design evolution process.

#### *Community Engagement*

- 5.16 In addition to the formal Environmental Scoping exercise and pre-application, the Applicant undertook voluntary public engagement to seek the views of the local community on all aspects of the Onshore Scheme including the future design.
- 5.17 The voluntary community engagement included physical and online elements. The online elements comprised of a dedicated project website which includes accessible information on the project, regular news updates on the latest milestones on the project and a dedicated email address for direct queries which was regularly monitored.
- 5.18 The comments received during the community engagement are summarised in ES Chapter 4, ES Appendix 4.1 and ES Appendix 4.2.



5.19 No comments were received on the future design of the Onshore Scheme and as such did not result in any design changes.

*Summary*

5.20 The Applicant has undertaken a comprehensive project development process which included formal engagement with the LPA and key stakeholders along with lengthy community engagement. The majority of the comments received related to the delivery of the Onshore Scheme and temporary effects during construction which have limited implications on the future design. Very limited comments were received on the future design of the Onshore Scheme which has resulted in very few design changes. The pre-application design evolution of note is the substantial reduction in the Site redline boundary from c.700ha to 188ha.

5.21 In summary, the Applicant has taken a positive and proactive approach to design evolution as required by national and local planning policy.



## 6.0 Design Principles

- 6.1 The evaluation of the site (Section 2), policy considerations (Section 3) and design evolution (Section 5) has led to the development of a series of design principles which will be used to inform the detailed design of the Onshore Scheme, to be approved as part of future Reserved Matters planning application(s). Further detail of the Onshore Scheme can be found in Chapter 5 of the supporting Environmental Statement.
- 6.2 The design principles relate to the individual aspects of the Onshore Scheme: Landfall and HVDC onshore underground cables; the Onshore Converter Station and the HVAC onshore grid cables.
- 6.3 The Onshore Scheme ultimately connects to the existing National Grid Blyth substation. The design of the connection to the existing substation is also subject to a very limited scope due to the operational restrictions and requirements imposed by National Grid. Therefore, it would be inappropriate to impose design principles on this aspect of the Onshore Scheme given the lack of design flexibility.
- 6.4 The design principles have been developed against the backdrop of national and local policy objectives of delivering sustainable and beautiful development.

### Landfall

- 6.5 The only infrastructure that will be visible above ground for the landfall aspect of the Onshore Scheme once complete will be the manhole covers (up to eight in total) which are required to gain access to the link boxes associated with the Transition Joint Bay ('TJB') for maintenance purposes.



6.6 The design principles related to the landfall aspect of the Onshore Scheme have been developed accordingly and include:

1. Ensure the material chosen for the manhole covers can withstand the saline environment due to its proximity to the sea.
2. Situate the manhole covers in the least sensitive locations, where possible, in particular seek to minimise habitat loss.
3. Seek to collate infrastructure together, such as communications boxes and links, to minimise the number of manhole covers required.

#### **HVDC onshore underground cables (Landfall to Onshore Converter Station)**

6.7 Up to four HVDC onshore underground cables could be required to connect the subsea cables to the new Onshore Converter Station. The final number of cables, cable route and specification will be approved as part of future reserved matter application(s).

6.8 The only infrastructure that will be visible above ground for the HVDC onshore underground cables aspect of the Onshore Scheme once complete will be the manhole covers (8 covers assumed at this stage as part of the maximum design scenario) which are required to gain access to for maintenance purposes.



6.9 The design principles related to the HVDC onshore underground cables aspect of the Onshore Scheme have been developed accordingly and include:

1. Ensure the material chosen for the manhole covers can withstand the saline environment due to its proximity to the sea.
2. Situate the manhole covers in the least sensitive locations, where possible, in particular seek to minimise habitat loss.
3. Seek to collate infrastructure together, such as communications boxes and links, to minimise the number of manhole covers required,.

#### **Onshore Converter Station**

6.10 The Onshore Converter Station will be contained within a permanent building with an associated secure fenced compound and will comprise the electrical infrastructure required to convert HVDC electricity into HVAC electricity for connection into the national grid via the Blyth substation. The final size and configuration of the Onshore Converter Station has not yet been determined.

6.11 However, it is anticipated that the Onshore Converter Station will consist of one main building, which will not exceed 30 m in height (maximum roof level) and will have a maximum footprint 90,000 m<sup>2</sup>, including the platform (area of hard standing up on which the converter station will be positioned). The platform will also include additional areas of hardstanding for the storage of ancillary equipment such as spare transformers, cable drums and other ancillary LV and HV equipment. The finished platform level is anticipated have a maximum height of 15.2 m AoD, meaning that the maximum overall height will be no more than 45.2 m AOD.

6.12 Notwithstanding the above, it may be possible to accommodate the Onshore Converter Station within a smaller building with multiple smaller supporting buildings to host the associated equipment. The final design including the materials and configuration of the Converter Station will be confirmed as part of future Reserved Matters planning application(s).





- 6.13 A permanent vehicular access is required to the Onshore Converter Station for operations staff to monitor and maintain electrical equipment and plant. Initial investigations have identified two possible access road options which include utilising the existing access to the NSL Converter Station or a new access from Brock Lane. The permanent vehicular access will be a private, surfaced single carriageway road with the appropriate drainage.
- 6.14 The Onshore Converter Station will be the most visually prominent aspect of the Onshore Scheme. As such the design principles have been developed accordingly and include:

1. Seek to maximise perimeter landscaping as much as is practicable, including the retention of existing habitats where possible.
2. Ensure any new landscaping is in keeping with the local species.
3. Seek to reduce the glare and spread of upward light from interior and exterior light, where practicable.
4. Ensure the boundary treatments are designed and constructed using durable materials to minimise security risks.
5. Ensure vehicular parking is designed in accordance with the LPA's Car Parking Standards.
6. Liaise with the LPA Highways Team on the design of the private access road.
7. Seek to identify the most direct vehicular access route, where practicable, to minimise the amount of material required.
8. Seek to minimise the amount of exterior equipment by maximising internal space due to the saline environment, security risks and potential visual impacts.
9. Ensure the Onshore Converter Station is designed for a 35-year lifespan through the choice of materials, layout and specification.
10. Ensure the Onshore Converter Station configuration compliments the boundary treatments, landscaping and site context.



**HVAC Onshore Grid Cables (Onshore Converter Station to National Grid Blyth substation)**

- 6.15 The Onshore Converter Station will be connected to the 400kV existing National Grid Blyth substation via up to twelve HVAC cables.
- 6.16 The only infrastructure that will be visible above ground for the HVAC Onshore Grid Cables aspect of the Onshore Scheme once complete will be the manhole covers (total number unknown at this stage) which are required to gain access to for maintenance purposes.
- 6.17 The design principles related to the HVAC Onshore Grid Cables aspect of the Onshore Scheme have been developed accordingly and include:

1. Ensure the material chosen the manhole covers can withstand the saline environment due to its proximity to the sea.
2. Situate the manhole covers in the least sensitive locations, where possible, in particular seek to minimise habitat loss.
3. Seek to collate infrastructure together, such as number of trenches, communications boxes and links, to minimise the number of manhole covers required, if possible.



## 7.0 Conclusion

- 7.1 The purpose of this DAS is to support the Outline Planning Application by explaining how the proposed development – the Onshore Scheme - responds to the Site and its setting and enable the LPA to better understand the analysis that has underpinned the design of the Onshore Scheme.
- 7.2 The Onshore Scheme comprises of four main elements: landfall; HVDC onshore underground cables; the Onshore Converter Station and the HVAC onshore grid cables. Further detail of the Onshore Scheme can be found in Chapter 5 of the supporting Environmental Statement.
- 7.3 The Site is situated near Blyth and the villages of Cambois and East Sleekburn in Northumberland and extends to approximately 188ha. The Site is identified as appropriate for renewable energy infrastructure by the LPA and contains a number of features which may influence the final design of the Onshore Scheme.
- 7.4 National and local planning policy is clear that the fundamental purpose of the planning system is the achievement of sustainable development, of which good design is a key element. National planning policy dictates that where there is no local design guide then the National Design Guide should take precedence. There is limited design policy with regards to infrastructure-led proposals specifically within the National Design Guide, but the principles of good design can be applied through the lens of evaluating how individual proposals contribute to that overall objective of creating well-designed places.
- 7.5 The Applicant has undertaken a comprehensive project development process which included formal engagement with the LPA and key stakeholders along with community engagement. The majority of the comments received related to the delivery of the Onshore Scheme and temporary effects during construction which have limited implications on the future design. Very limited comments were received on the future design of the Onshore Scheme which has resulted in very few design changes. The pre-application design evolution of note is the substantial reduction in the Site redline boundary from c.700ha to 188ha.



- 7.6 The Applicant has developed a series of comprehensive design principles which will guide the final design of the four main elements of the Onshore Scheme. The design principles have been developed against the backdrop of national and local policy objectives of delivering sustainable development.
- 7.7 In short, this DAS has:
- demonstrated how the Site, policy context and stakeholder engagement has informed the design;
  - outlined how the design has evolved; and
  - highlighted how the future design of the Onshore Scheme will be developed using a series of comprehensive design principles.
- 7.8 This DAS meets the national guidance on what should be included in a Design and Access Statement and provides the Local Planning Authority, Northumberland County Council, with the necessary information to determine the Outline Planning Application this DAS supports.
- 7.9 In summary, the Applicant has taken a positive and proactive approach to design, as required by national and local planning policy. Therefore, it is kindly requested that planning consent is granted without delay as required by national planning policy.



## Appendix 1: NCC Agreement to Biodiversity Net Gain Approach



Part 1 – Summary			
TQ/RFI Number	BK-SSE-000-CON-TCN-0002	TQ/RFI Rev	
Title	Note to NCC Ecologist-Approach to Biodiversity Net Gain		
Initiating Organisation	SSER	Raised by	KE
Recipient Organisation	NCC	Recipient	CG
Date Raised	01/06/2023		

### Part 1 - Details

The aim of this document is to outline the proposed approach to Biodiversity Net Gain (BNG) for the Berwick Bank Cambois Connection Onshore Scheme (the Project). This document will be shared with Northumberland County Council for their comment and approval of approach.

It is the intention of the Project is to apply for Outline Planning Permission for the entirety of the Onshore Scheme defined by the red line boundary (RLB) (landfall, onshore cable route to new converter station and cable route to grid connection point). Further ground investigation surveys are required to enable SSER to select a final preferred onshore cable route that will not be finalised prior to the proposed submission date of October 2023.

BNG is an approach to development activities that leaves the natural environment in a measurably better state than it was before. BNG works with and does not replace the mitigation hierarchy. It does not replace existing legal requirements (e.g., in relation to protected species) and it should not be applied to compensate for impacts on irreplaceable habitats. The Project is cognisant of relevant good practice in respect of BNG and will align with the principles developed by CIEEM, IEMA and CIRIA (CIEEM, CIRIA and IEMA, 2016. *Biodiversity Net Gain: Good Practice Principles for Development.*)

Under the Environment Act 2021, all planning permissions granted in England (with a few exemptions) will have to deliver at least 10% biodiversity net gain, using a metric developed by DEFRA that generates a biodiversity value for a site before and after development to demonstrate this. This applies to major development from November 2023.

As a responsible developer, even though our proposed submission date falls before the implementation of the updated Environment Act, SSER will commit to deliver 10% biodiversity net gain.

For the purposes of BNG assessment to be submitted alongside the outline planning application we propose to assess the worst case scenario on multiple indicative options. Calculations will then be undertaken using the latest DEFRA metric (currently Biodiversity Metric 4.0) to ascertain the biodiversity of the site before and after (based on a worst case scenario) development. This approach will allow us to understand the maximum area of land we will need to undertake BNG and if we can reach this on-site. The BNG assessment would then be updated at the Detailed Planning Application stage, based on the detailed scheme design. By adopting the worst case approach outlined above it is unlikely that BNG requirements at the detailed planning stage would exceed the indicative requirements identified at the outline stage. **I can confirm that this approach is acceptable.**

It is noted that the RLB presented within the Outline Planning Application will be considerably larger than the anticipated project footprint. The RLB is therefore not considered an appropriate baseline against which to measure BNG requirements (i.e., the Project should not be expected to provide 10% BNG for areas that are not impacted by the Project or required to deliver mitigation/compensation for such areas). It is therefore proposed to apply the metric to a number of indicative project footprints, including areas needed for mitigation, compensation or enhancement). The BNG assessment would be limited to land above Mean High Water Springs and would not include intertidal or marine habitats. **If the application is submitted prior to 10% BNG becoming mandatory in November 2023 then we would be able to take a pragmatic view and the above approach would be acceptable.**

However, should there be a delay in submission of the application beyond the point where BNG is mandatory, then it is our understanding that all land within the Red Line Boundary (excluding the intertidal / marine habitats which fall within the designated site boundaries and are therefore outside the scope of BNG) would need to be included within the calculation of the on-site baseline and for the purpose of calculating 10% BNG.

Once scheme design has been finalised, it may however be possible to submit a Variation of Condition application which would allow you to amend the red-line boundary to exclude areas not required for development and / or to provide on-site habitat creation / enhancement which would reduce the on-site habitat baseline and the number of units required to deliver 10% BNG.

During a recent meeting with the Northumberland County Council (NCC) ecologist it was confirmed that NCC currently did not have initiatives that SSER could contribute to fulfil our targets if we cannot meet BNG targets within the land we will own. Discussions have since advanced, and it is likely that NCC would now be in a position to offer off-site biodiversity units in the locality of the application site which would be able meet any requirement for the development to deliver off-site units.

Our query to NCC is if the Project shows that information for BNG has been provided and we can commit to providing BNG off-site (if needed), could we defer agreeing off-site land options to the detailed planning stage?

At the outline stage, biodiversity gain information would need to be provided detailing the overall strategy for delivering BNG and the key principles to be followed. The pre-development value would need to be agreed and used for the detailed proposals through the subsequent application(s). As land will be available in the vicinity of the site to deliver any off-site units which may be required, subject to an appropriate commitment to providing this if it is deemed to be required once scheme design has been finalised, then we are satisfied that the specific detail of this provision could be left until the detailed planning stage.

**Part 2 - Response**

Please see comments above.

**Response by**

Colin Godfrey at NCC

**Date**

9<sup>th</sup> June 2023