



Company: O		Outer Dowsing Offshore Wind		Asset:		Whole Asset		
Project:		Whole Wind Farm		Sub Project/Package:		Whole Asset		
Documen or Descrip		Bio	odiversity Net Gain Ass	Net Gain Assessment Report				
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# **Acronyms & Terminology**

# **Abbreviations / Acronyms**

Abbreviation / Acronym	Description
ВАР	Biodiversity Action Plan
BNG	Biodiversity Net Gain
BU	Biodiversity Unit
CIC	Cable Installation Compound
CIEEM	Chartered Institute of Ecology and Environmental Management
CIRIA	Construction Industry Research and Information Association
CSS	Countryside Stewardship Scheme
DCO	Development Consent Order
Defra	Department for Environment Food and Rural Affairs
ECC	Export Cable Corridor
EIA	Environmental Impact Assessment
EMP	Ecology Management Plan
ES	Environmental Statement
GIS	Geographic Information System
IDB	Internal Drainage Board
IEMA	Institute of Environmental Management and Assessment
kV	Kilovolt
LBAP	Local Biodiversity Action Plan
LMP	Landscape Management Plan
LNR	Local Nature Reserve
LNRS	Local Nature Recovery Strategies
LPA	Local Planning Authority
LWS	Local Wildlife Site
LWT	Lincolnshire Wildlife Trust
MCIEEM	Member of the Chartered Institue of Ecology and Environmental Management
MDS	Maximum Design Scenario
MNG	Marine Net Gain
NCA	National Character Areas
NGSS	National Grid Substation
NGSSICR	National Grid Substation Indicative Connection Route
NIA	Nature Improvement Area
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NSIP	Nationally Significant Infrastructure Project
ODOW	Outer Dowsing Offshore Wind
OEP	Office for Environmental Protection
OLEMS	Outline Landscape and Ecology Management Strategy
OnSS	Onshore Substation
RSPB	The Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SPA	Special Protected Area
SMP	Shoreline Management Plans
SSSI	Site of Special Scientific Interest



Abbreviation / Acronym	Description
TJB	Transition Joint Bay
UKHab	UK Habitat Classification
VHDH	Very High Distinctiveness Habitats

# **Terminology**

Term	Description
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 onshore substation to the National Grid Substation will be
	situated.
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,
	Tota Energies and Gulf Energy Development (GULF)), trading as Outer
	Dowsing Offshore Wind. The Project is being developed by Corio Generation
	(a wholly owned Green Investment Group portfolio company), Total Energies
	and GULF.
Baseline	The status of the environment at the time of assessment without the
	development in place.
Biodiversity Net Gain	An approach to development that leaves biodiversity in a measurably
	improved state than it was previously. Where a development has an impact
	on biodiversity, developers are encouraged to provide an increase in
	appropriate natural habitat and ecological features over and above that
	being affected, to ensure that the current loss of biodiversity through development will be halted and ecological networks can be restored.
BNG Assessment Boundary	Area of land included within the BNG Assessment (defined in Figure 1).
Development Consent	An order made under the Planning Act 2008 granting development consent
Order (DCO)	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 an impact with the
	sensitivity of a receptor, in accordance with defined significance criteria.
Environmental Impact	A statutory process by which certain planned projects must be assessed
Assessment (EIA)	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 Environmental Impact Assessment (EIA) Regulations,
	including the publication of an Environmental Statement (ES).
<b>Environmental Statement</b>	The suite of documents that detail the processes and results of the EIA.
(ES)	
Export cables	High voltage cables which transmit power from the Offshore Substations
	(OSS) to the Onshore Substation (OnSS) via an Offshore Reactive
	Compensation Platform (ORCP) if required, which may include one or more
H. Ib. d	auxiliary cables (normally fibre optic cables).
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.



Term	Description
Intertidal	The area between Mean High-Water Springs (MHWS) and Mean Low Water
intertidar	Springs (MLWS).
Landfall	The location at the land-sea interface where the offshore export cables and
Lanuran	·
III Day	fibre optic cables will come ashore.
Link Boxes	Underground chambers or above ground cabinets next to the cable trench
	housing electrical earthing links.
Maximum Design Scenario	The project design parameters, or a combination of project design
	parameters that are likely to result in the greatest potential for change in
	relation to each impact assessed.
The Metric	Statutory Biodiversity Net Gain Metric (Defra, 2024).
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	The National Grid substation to be developed by the National Grid Electricity
Substation (NGSS)	Transmission (NGET) into which the Project's 400kV Cables would connect.
National Policy Statement	A document setting out national policy against which proposals for Nationally
(NPS)	Significant Infrastructure Projects (NSIPs) will be assessed and decided upon.
	A structure attached to the seabed by means of a foundation, with one or
Offshore Substation (OSS)	
	more decks and a helicopter platform (including bird deterrents),
	containing— (a) electrical equipment required to switch, transform, convert
	electricity generated at the wind turbine generators to a higher voltage and
	provide reactive power compensation; and (b) housing accommodation,
	storage, workshop auxiliary equipment, radar and facilities for operating,
	maintaining and controlling the substation or wind turbine generators.
Onshore Export Cable	The Onshore Export Cable Corridor (Onshore ECC) is the area within which
Corridor (ECC)	the export cables running from the landfall to the onshore substation will be
	situated.
Outer Dowsing Offshore	The Project.
Wind (ODOW)	
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.
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 Project	Outer Dowsing Offshore Wind, an offshore wind generating station together
The Froject	with associated onshore and offshore infrastructure.
Project Design Envelope	A description of the range of possible elements that make up the Project's
Project Design Envelope	
	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



Term	Description
	'residential' or those using areas for amenity or recreation), watercourses
	etc.
Transition Joint Bay (TJB)	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.
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 open the ground and digging a trench.



# **Reference Documentation**

<b>Document Number</b>	Title
APP-058	6.1.3 Environmental Statement Chapter 3 Project Description
APP-076	6.1.21 Environmental Statement Chapter 21 Onshore Ecology
APP-189	6.3.21.1 Chapter 21 Appendix 1 Onshore Ecology Desk Study
APP-190	6.3.21.2 Chapter 21 Appendix 2 UK Habitat Classification Survey
APP-191	6.3.21.3 Chapter 21 Appendix 3 Important Hedgerows Survey
APP-192	6.3.21.4 Chapter 21 Appendix 4 Preliminary Roost Survey for Bats
APP-194	6.3.21.5 Chapter 21 Appendix 5 Confidential Badger Desk Study and Field Survey
APP-195	6.3.21.6 Chapter 21 Appendix 6 Riparian Mammals Surveys
APP-196	6.3.21.7 Chapter 21 Appendix 7 Newt Surveys
APP-197	6.3.21.8 Chapter 21 Appendix 8 Reptile Habitat Suitability Study
APP-198	6.3.21.9 Chapter 21 Appendix 9 Invertebrate Study
APP-199	6.3.21.10 Chapter 21 Appendix 10 Fish Habitat Study
APP-200	6.3.22.1 Chapter 22 Appendix 1 Ornithology Desk Study
APP-201	6.3.22.2 Chapter 22 Appendix 2 Confidential Ornithology Desk Study
APP-202	6.3.22.3 Chapter 22 Appendix 3 Winter Bird Survey 2022/2023
APP-205	6.3.22.4 Chapter 22 Appendix 4 Breeding Bird Survey
APP 284	8.10 Outline Landscape and Ecological Management Strategy (OLEMS)
APP-302	9.5 Biodiversity Net Gain Principles and Approach
APP-303	3.1 Draft Development Consent Order



# 1 Introduction

# 1.1 Background and Project Site Description

- 1. This Biodiversity Net Gain Assessment Report has been prepared and submitted to support the recent Development Consent Order (DCO) application for Outer Dowsing Offshore Wind (ODOW) (the Project). The Project is a Nationally Significant Infrastructure Project (NSIP) proposed by GT R4 Limited (trading as Outer Dowsing Offshore Wind) hereafter referred to as the Applicant. An Environmental Impact Assessment (EIA) has been undertaken, the findings of which are presented within the Environmental Statement (ES), which accompanied the DCO application.
- 2. The Project will include both offshore and onshore infrastructure including an offshore generating station (windfarm) located approximately 54 km from the Lincolnshire coastline, export cables to landfall, onshore cables, an onshore substation, connection to the electricity transmission network, and ancillary and associated development (see Volume 1, Chapter 3: Project Description APP-058 of the DCO application for full details).
- 3. The onshore elements of the Project include the Order Limits landward of mean low water springs (MLWS) and consist of the Landfall, the Onshore Export Cable Corridor (ECC) (a typically 80m wide corridor around a centre line totalling approximately 70km in length), the Onshore substation (OnSS), a 400kV cable corridor connecting the OnSS to the Connection Area (an indicative search zone for the National Grid substation (NGSS) into which the Project will ultimately connect (hereafter collectively referred to as the onshore infrastructure).
  At the Connection Area (the indicative search area for the NGSS), a realistic worst-case scenario for continuation of the 400kV cable corridor and connection with the NGSS, has been prescribed for the purpose of carrying out this assessment. The indicative, realistic worst-case scenario runs the full length of the Connection Area from north to south and is referred to as the National Grid Substation Indicative Connection Route (NGSSICR) within this document. The boundary used for the BNG assessment is the Order Limits save for the land within the Connection Area which does not form part of the NGSSICR.
- 4. The total area of land included in the assessment is 709.21 ha; this area is illustrated in Figure 1. Collectively, this boundary described above is referred to the BNG Assessment Boundary within this report.
- 5. It is the intention of the Project that the Biodiversity Net Gain (BNG) assessment will be updated to reflect any new opportunities pursued as they become material and measurable and/ or following consent award using a detailed design, with the results represented in a final BNG Design Stage Assessment Report.



#### 1.1.1 Construction Footprint

- 6. The construction footprint is deemed to comprise:
  - All Project infrastructure within the BNG Assessment Boundary<sup>1</sup> (Figure 1) Areas not directly impacted (e.g. where trenchless techniques are being used) have been omitted (see Figure 3.4 Indicative Onshore Infrastructure Basis of Assessment [APP-089];
  - The proposed landscaping mitigation at the OnSS which is set out in the Outline Landscape and Ecology Management Strategy (OLEMS) (Document Reference APP-284); and,
  - Proposed biodiversity enhancements being considered in land adjacent to the OnSS (as described in Section 4.3.2 and shown on Figure 5).

#### 1.1.2 Operational Footprint

- 7. The operational footprint (i.e., where permanent habitat loss will occur) currently comprises:
  - Operational access (bellmouth) at landfall;
  - OnSS and permanent access track;
  - Link box manhole covers; and,
  - Transition Joint Bay (TJB) manhole covers .
- 8. The precise locations of the link box manhole covers are not yet confirmed and their final locations will be subject to detailed design. To include these within this assessment, the total number of link boxes across the entire route was divided up into each segment of the route and was based on the amount of link boxes per kilometre. Within each segment, the total area of link boxes present was apportioned according to the percentage of each habitat type. This meant that each habitat within a segment lost the same percentage area to link boxes. Coastal habitats (including coastal sand dunes, littoral mud, littoral sand, other sea buckthorn scrub, reedbeds, saltmarsh and saline reedbeds) and ponds across the Order Limits were not included in the assignment, as link boxes will not be required in these locations. A precautionary methodology was employed to assess the condition of each habitat type, with the highest value observed during field surveys attributed to each habitat.
- 9. As the locations of the link boxes are unknown, these are not included within the figures which accompany this report. The exact locations of the link boxes will however, be included in the final BNG assessment.
- 10. Due to the linear footprint of the Project, the Survey Area for some receptors is relatively large-scale, therefore, to assist with interpretation and explanation of associated data, the Order Limits has been split into segments. The extent of these segments has been aligned with key geographical features such as roads or rivers which cross the Order Limits.

<sup>&</sup>lt;sup>1</sup> This is follows the Order Limits save for the land within the Connection Area which does not form part of the National Grid Substation Indicative Connection Route (NGSSICR) (See Para 5).



11. The segments for the onshore Order Limits are shown in Table 1.1. For the purposes of this assessment, the indicative and worst case scenario of the 400 kV cable inside the Connection Area is detailed in the Metric separately. See Figure 1 for the location of the Connection Area 400kV cable and Appendix A for the Metric summary).

Table 1.1: Segments of the Onshore Project Order Limits

Segment Name
ECC 1: Landfall to A52 – Hogsthorpe
ECC 2: A52 – Hogsthorpe to Marsh Lane
ECC 3: Marsh Lane to A158 - Skegness Road
ECC 4: A158 – Skegness Road to Low Road
ECC 5: Low Road to Steeping River
ECC 6: Steeping River to Fodder Dike Bank/Fen Bank
ECC 7: Fodder Dike Bank/Fen Bank to Broadgate
ECC 8: Broadgate to Ings Drove
ECC 9: Ings Drove to Church End Lane
ECC 10: Church End Lane to The Haven
ECC 11: The Haven to Marsh Road
ECC 12: Marsh Road to Fosdyke Bridge
ECC 13: Fosdyke to Surfleet Marsh OnSS/Marsh Drove
ECC 14: Surfleet Marsh OnSS/Marsh Drove to Connection Area

# 1.2 Purpose of this Report

- 12. The purpose of this report is to present the findings of the BNG assessment for the Project which include a biodiversity metric calculation using the Statutory Metric, hereafter referred to as the Metric (Natural England, 2024). It is intended to provide sufficient information as to the biodiversity performance of the proposed development.
- 13. This document has adapted the framework provided in the Chartered Institute of Ecology and Environmental Management (CIEEM) (CIEEM, 2021) to suit the current stage of the Project (i.e. post DCO submission but pre-detailed design).
- 14. The aim for this document to provide an indication of the Net Gain to be expected for the project based upon the design and parameters as set out in the ES. The report includes the:
  - approach, methods and assumptions for the BNG assessment (Section 2);
  - pre-development (baseline) habitats of the Project (Section 3);
  - BNG good practice, rules and principles that have been applied (Section 4);
  - a summary of the proposed project design (Section 5);
  - an overview of the BNG calculations (Section 6);
  - justification of any deviations from existing good practice BNG guidance, or BNG rules and principles; and,
  - next steps to applied at the detailed design stage (Section 7).



15. It is proposed that the BNG assessment will be updated post-DCO decision, based on the detailed scheme design stage. By updating the assessment post-DCO decision, we can ensure that any changes to the project design are accurately reflected in the assessment.

## 1.3 Other Supporting Documents

- 16. The BNG assessment builds on the Biodiversity Net Gain Project Principles and Approach (Document Reference APP-302) submitted as a supporting document with the DCO application.
- 17. It has been prepared using the information detailed in the ES, namely
  - Volume 1, Chapter 3: Project Description (Document Reference APP-058),
  - baseline ecology data gathered as part of the EIA, which is reported in full in Volume 1, Chapter 21: Onshore Ecology (Document Reference APP-076) of the ES with associated appendices (listed in Section 2.1) and
  - Figure 2 'OnSS Indicative Layout and Mitigation Planting' of the Outline Landscape and Ecological Management Strategy (OLEMS) ([APP-284].
- 18. With the furtherment of the Project design following submission of the DCO application, the design of post-development habitats has also been progressed and the BNG values updated to reflect this. The current indicative layout and mitigation plan is provided in Figure 5 of this document.

# 1.4 Outer Dowsing Offshore Wind Biodiversity Net Gain Approach

- 19. The approach taken for the ES was to consider a "maximum design scenario" (MDS), so that the assessment of impacts and proposed mitigation measures are precautionary but proportionate to the proposed activities. The Project's MDS relative to Ecology is presented in Chapter 21 of the ES (Document Reference: APP-076) using the information presented in Table 21.15 of Chapter 21 (Document Reference APP-076). The Project's MDS relative to ornithology is presented in Chapter 22 of the ES (Document Reference: APP-077) using the additional mitigation measures set out in Table 1.21 of Chapter 22 (Document Reference: APP-078).
- 20. Commitment to the delivery of a Biodiversity Gain using a government-specified metric is not currently a legal requirement for NSIPs. However, the BNG assessment is being provided on a voluntary basis in line with consultation feedback and National Policy Statement (NPS) EN-1.
- 21. The Project is an NSIP, seeking approval for development consent. Implementation of BNG as a legal requirement for NSIPs is currently planned for November 2025 and is subject to the issuance of additional secondary legislation and guidance. During this interim stage, whilst the Project has no legal obligation to provide BNG, the Project is exploring additional opportunities to deliver BNG and is actively engaging with organisations and environmental bodies local to the Project's footprint, such as with the Royal Society for the Protection of Birds (RSPB) and the Greater Frampton Vison Project, to identify collaboration opportunities.



- 22. The Project is providing this BNG assessment to measure and monitor the performance of the Project on biodiversity using widely accepted metric measurement tools. The approach and methods used are tailored to suit the nature of the Project by making a series of assumptions, which are clearly set out in this report (Section 5.7 below).
- 23. The approach and assumptions set out in this report outlines those to be carried forward and supersedes those outlined in the earlier Biodiversity Net Gain Project Principles and Approach (Document Reference APP-302).
- 24. To establish whether the Project will contribute to biodiversity, the Statutory Metric (Department for Environment Food and Rural Affairs (Defra), 2024) has been applied, using condition assessments undertaken in 2023.

# 1.5 Relevant Policy and Legislation

#### 1.5.1 Environment Act 2021

- 25. The Environment Act 2021 (the Act) gained Royal Assent on 9 November 2021. The Act provides a mechanism for implementing Government's ambitions for improving the natural environment, which were previously set out in publications, including the 25 Year Environment Plan (Defra, 2018).
- 26. The Act implements the ambitions for an improved natural environment, by setting out statutory requirements which mandate action, under the oversight of the newly formed Office for Environmental Protection (OEP). The focus of the Act is "... to make provision about targets, plans and policies for improving the natural environment..." and its requirements are structured around a number of broad themes (preamble to the Environment Act 2021 available at legislation.gov.uk).
- 27. Section 98 and Schedule 14 of the Act makes amendments to the Town and Country Planning Act 1990 to set out provisions for *'Biodiversity gain as condition of planning permission'*. These provisions came into force on 12<sup>th</sup> February 2024. The Town and Country Planning Act 1990 (as amended by the Act ) requires planning applications to be supported with additional information on the change in the biodiversity value attributed to a project, with biodiversity metric calculations, and with biodiversity gain plans using metrics, guidance and templates provided by government. Planning authorities will be required to consider these submissions in the exercise of their planning functions, to ensure that they are secured, approved and, where relevant, registered.
- 28. Section 99 and Schedule 15 of the Act set out provisions for 'Biodiversity gain in nationally significant infrastructure projects' which, subject to enactment through subsequent regulations, makes provision for amendment to Sections 37, 103, 104, 105, 106, 120 and 232 of the Planning Act 2008. NSIPs are not subject to the February 2024 implementation of the Act. It is anticipated that implementation of BNG for NSIPs is planned for November 2025 delivery and is subject to the issuance of additional secondary legislation and guidance.



29. A Defra Policy Paper (Defra, 2023) titled "Nationally Significant Infrastructure: action plan for reforms to the planning process", states in Section 4.7 that: "We will incorporate biodiversity net gain (BNG) requirements for all (terrestrial) NSIP projects from November 2025 and develop an approach for marine net gain (MNG). The biodiversity net gain requirement for NSIPs is to achieve at least 10% measurable net gain on all terrestrial and intertidal development, which is to be secured for at least 30 years. Defra is developing a draft biodiversity gain statement, which will set out the detail of the biodiversity net gain requirement for NSIPs. Defra plans to consult on this draft statement in early 2023".

#### 1.5.2 National Planning Policy Framework (NPPF), 2023

- 30. The National Planning Policy Framework (NPPF) sets out guidance for Local Planning Authorities (LPAs) and decision makers on how to apply planning policies when drawing up plans and making decisions about planning applications. Along with Government Circular 06/05:

  Biodiversity and Geological Conservation Statutory Obligations and Their Impact Within The Planning System (Office of the Deputy Prime Minister, 2005) the broad policy objectives in relation to the protection of biodiversity and geological conservation in England through the planning system are set out. NPPF policies relating to habitats and biodiversity are set out in Section 15 Conserving and enhancing the natural environment, from paragraph 180. Those sections of particular relevance to this report are extracted below:
- 31. Paragraph 180 states that: "Planning policies and decisions should contribute to and enhance the natural and local environment by:
  - a. Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); ...
  - d. Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures; ..."
- 32. Paragraph 186 states that: "When determining planning applications, local planning authorities should apply the following principles:
  - a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused; ...
  - c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons, and a suitable compensation strategy exists; and
  - d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate."



#### 1.5.3 National Policy Statements for Energy Infrastructure

- 33. National Policy Statements (NPS) for Energy Infrastructure are relevant to the Project. NPS EN-1 (the Overarching National Policy Statement for Energy, November 2023) includes several references to the provision of net gains for biodiversity in Section 4.6.6 4.6.12. Section 4.6.6. states that energy NSIP proposals "should seek opportunities to contribute to and enhance the natural environment by providing net gains for biodiversity, and the wider environment where possible."
- 34. Section 4.6.7 states "In England applicants for onshore elements of any development are encouraged to use the latest version of the biodiversity metric to calculate their biodiversity baseline and present planned biodiversity net gain outcomes. This calculation data should be presented in full as part of their application".
- 35. Section 4.6.10 states "Biodiversity net gain should be applied after compliance with the mitigation hierarchy and does not change or replace existing environmental obligations..."
- 36. Section 4.6.11 considers the location of biodiversity gain, stating that "Biodiversity net gain can be delivered onsite or wholly or partially off-site." Section 4.6.12 goes on to state: "When delivering biodiversity net gain off-site, developments should do this in a manner that best contributes to the achievement of relevant wider strategic outcomes..."
- 37. Irreplaceable habitats (which are specifically referenced in Biodiversity Net Gain principles and guidance) are referred to in NPS-EN1. Section 5.4.14 and 5.4.15 define irreplaceable habitats and identify examples of these habitats, to include: "...ancient woodland...ancient and veteran trees... blanket bog, limestone pavement, coastal sand dunes, spartina salt marsh swards, mediterranean saltmarsh scrub, and lowland fen." Section 5.4.17 states that "the applicant should ensure that the ES clearly sets out any effects on....irreplaceable habitats."

#### 1.5.4 Local Plans

- 38. Local Plans, Supplementary Planning Documents and other relevant documents have been reviewed to assess if any considered BNG in a particular manner that should be accounted for in this report. The following documents were reviewed in this regard:
  - South East Lincolnshire Local Plan 2011 2036;
  - South East Lincolnshire Councils Partnership Climate Change Strategy 2022;
  - East Lindsey Local Plan Core Strategy 2018; and
  - Lincolnshire Biodiversity Action Plan (2011-2020) 3<sup>rd</sup> Edition.
- 39. The South East Lincolnshire Local Plan 2011 2036 contains Policy 28: The Natural Environment, which contains the following relevant text:
  - "A high quality, comprehensive ecological network of interconnected designated sites, sites of nature conservation importance and wildlife-friendly greenspace will be achieved by protecting, enhancing and managing natural assets: ...
  - ...3. Addressing gaps in the ecological network: a. by ensuring that all development proposals shall provide an overall net gain in biodiversity, by:



- 40. i. protecting the biodiversity value of land, buildings and trees (including veteran trees) minimising the fragmentation of habitats;
- 41. ii. maximising the opportunities for restoration, enhancement and connection of natural habitats and species of principal importance;
- 42. iii. incorporating beneficial biodiversity conservation features on buildings, where appropriate; and maximising opportunities to enhance green infrastructure and ecological corridors, including water space; and
- 43. iv. conserving or enhancing biodiversity or geodiversity conservation features that will provide new habitat and help wildlife to adapt to climate change, and if the development is within a Nature Improvement Area (NIA), contributing to the aims and objectives of the NIA..."
- 44. The Lincolnshire Biodiversity Action Plan (BAP): 2011 2020 <sup>3rd</sup> Edition (Lincolnshire Biodiversity Partnership, 2011) sets out definitions of Priority Habitats and Species present within the county, refining, where appropriate, descriptions provided in the UK BAP.
- 45. Lincolnshire Local Nature Recovery Strategy is in preparation by a partnership, led by Lincolnshire County Council (Lincolnshire County Council Website). The plan is currently in the data-gathering and consultation phase and no documents are publicly available. No other policies relevant to BNG were found.



## 2 Method

#### 2.1 Data Sources

46. The following data sources have been used to define the limits for the BNG calculation and determine the relevant attributes for BNG (e.g., size habitat type and condition) for the pre- and post-development habitats.

### 2.1.1 Pre-development (Baseline) Habitats

- 47. In order to generate the site baseline habitat data (e.g., habitat type, condition) the following survey data were used:
  - Onshore desk-based assessment completed in 2023 and covering the Order Limits and protected and notable habitats and designations up to 15 km away from the Order Limits (as outlined in Onshore Ecology Desk Study (APP-189);
  - UK Habitat Classification surveys (using UKHab v1.1) completed in 2022 and 2023 covering the Order Limits (as outlined in UK Habitat Classification Survey Report (APP-190);
  - Important hedgerow surveys completed in 2023 within the Order Limits (as outlined in the Important Hedgerows Survey Report (APP-191); and,
  - Habitat condition assessments, undertaken in accordance with the Metric 4.0 and converted to the Statutory Metric at each polygon or line of mapped habitat. The Metric requires values for a specific set of criteria to be recorded (this varies depending on habitat type) in order to determine the habitat condition score for each polygon/line.
- 48. Full details of the baseline ecology surveys undertaken are provided in the following baseline reports, which are technical appendices and addendums to ES Chapter 21: Onshore Ecology (Document Reference APP-076) and ES Chapter 22: Onshore Ornithology (Document Reference APP-077):
  - Appendix 21.1: Onshore Ecology Desk Based Assessment (APP-189);
  - Appendix 21.2: UK Habitat Classification Survey (APP-190);
  - Appendix 21.3: Important Hedgerows Survey (APP-191);
  - Appendix 21.4: Bat Surveys (APP-192);
  - Appendix 21.5: Confidential Badger Desk Study and Field Survey (APP-194);
  - Appendix 21.6: Riparian Mammals Surveys (APP-195);
  - Appendix 21.7: Great Crested Newt Surveys (APP-196);
  - Appendix 21.8: Reptile Habitat Suitability Study (APP-197);
  - Appendix 21.9: Invertebrate Study (APP-198);
  - Appendix 21.10: Fish Habitat Study (APP-199);
  - Appendix 22.1: Ornithology Desk Study (APP-200);



- Appendix 22.2: Confidential Ornithology Desk Study (APP-201);
- Appendix 22.3: Winter Bird Survey 2022/23 (APP-202);
- Appendix 22.4: Breeding Bird Survey 2023 (APP-205);
- Appendix 22.5: Confidential Breeding Bird Survey 2023 (APP-206);
- Appendix 22.7: Winter Bird Survey 2023-2024 Summary (APP-208); and,
- Chapter 22 Wintering Bird Survey 2023/2024 Addendum (Document reference 13.2)

#### 2.1.1.1 Field Survey

- 49. The Metric uses a modified version of a unified habitat classification system known as the UK Habitat Classification system (UKHab). This system provides a number of benefits over existing systems such as Phase 1 and NVC, and allows Natural England, Scottish Natural Heritage, Natural Resources Wales, Department of the Environment Northern Ireland and JNCC to report consistently on habitats of European and national significance. Data was collected using Version 1.1 of the UKHab methodology (UKHab Ltd (2018) www.ukhab.org).
- 50. In addition, the approach requires the condition of habitats to be assessed using standardised Statutory Metric Habitat Condition Assessment sheets for each habitat, published by Natural England in February 2024.
- 51. UKHab and condition assessment data were collected during field surveys in 2023. Full description of the baseline habitats within the Order Limits (which accounts for the majority of the BNG Assessment Boundary as described in Section 1.2.) are provided within Appendix 21.1 (APP-189). This report, alongside Chapter 21 Onshore Ecology (APP-076), details the locations of any habitats that are important ecological features, such as designated sites, priority habitats or habitats that are of value to protected and notable species.
- 52. The BNG Assessment Boundary is provided in Figure 1.

## 2.1.1.2 Geographic Information System (GIS)

- 53. The following baseline data is held within a Geographic Information System (GIS) database for each mapped line or polygon of habitat within the red line boundary:
  - UKHab type;
  - Condition Assessment details including score per criterion, and overall;
  - BNG Broad Habitat Type and Habitat Type;
  - Distinctiveness; and,
  - Strategic Significance.



- 54. ArcGIS Pro 3.1.3 was used to prepare the baseline data set for entry into the Statutory Metric Calculation Tool (Defra, 2024a). For each individual habitat parcel identified within the Project, the attributes identified included; the specific habitat type and its area (ha), or length (km) for linear habitats; the outcome of the habitat condition assessments; and, the habitat distinctiveness and strategic significance. For the BNG assessment, the baseline habitats were split into the infrastructure types that they intersect with, and this was used to inform their status of retained/ lost/ enhanced along with the post development habitat type and condition. Together these two layers are combined and then the data is inputted into the Metric.
- 55. A map of baseline habitat unit types is provided in Figure 2.

### 2.1.2 Post-development Habitats

- 56. Post -development habitat types, distinctiveness scores and condition scores have been based on the Outline Landscape and Ecological Management Strategy (OLEMS) (APP-284) and the Onshore Substation (OnSS) Indicative Layout and Mitigation Planting (Figure 2) therein. The extents of new hedgerow, tree and scrub planting required for landscape screening are illustrated in Figure 5 as well as the additional biodiversity enhancements being considered by the Applicant in the land adjacent to the OnSS (as discussed in Section 4.3.2.
- 57. Temporary habitat loss will occur during construction (for example because of land temporarily required for haul routes, temporary construction compounds, spoil heaps and open cut trenches for cable installation. Further details are provided in the Project Description (APP-058) and Figure 3.4 Indicative Onshore Infrastructure Basis of Assessment (APP-089). Indicative timeframes for construction activities are provided in Section 5.7.4 of this document.
- 58. Those habitats temporarily lost will be reinstated post-works, with the target habitat type, distinctiveness and condition scores of the recreated habitats matching those of habitats currently present. The condition of post-development reinstated habitats has been assigned as 'moderate' which is considered likeliest given the proposed management. It is possible that these could achieve a 'good' condition but as this is highly uncertain, a precautionary approach has been taken.
- 59. Supporting evidence for the post project evaluation is held in a GIS database, and includes for each mapped line or polygon of proposed habitat within the BNG Assessment Boundary:
  - UKHab type;
  - Condition Assessment overall score;
  - Broad Habitat Type and Habitat Type;
  - Distinctiveness;
  - Strategic Significance and,
  - Whether it is being Retained, Lost, Enhanced or Lost and Reinstated.



#### 2.1.3 Calculation of Pre-development (Baseline) Values

- 60. The Metric requires that hedgerows are mapped as linear features and that adjacent habitats are mapped to the centre line of the hedgerow<sup>2</sup>. This is at odds with the method of mapping used to record habitats in the first instance (e.g., where hedges are mapped as polygons if over 1m wide, in accordance with UKHab v.1.1 and a 5m x 5m Minimum Mapping Unit). In such cases, these hedgerows were converted to lines. This follows the approach set out in the Metric which recommends such areas be converted to the next adjacent habitat.
- 61. A similar approach was taken for watercourse polygons that were less than 5m wide, these were converted into the adjacent habitat of the highest distinctiveness value, any watercourses wider than 5m were inputted as Watercourse Footprints, as all watercourses have a linear feature to feed into the Watercourse section of the Metric.
- 62. The baseline score of the site as submitted at ES will be updated once a final design is known (i.e., there will be a pre-construction update, refer to Section 2.4.3)

## 2.2 Approach to BNG

#### 2.2.1 Guidance References

- 63. The assessment and report have been produced using the following guiding publications and resources:
  - The Statutory Metric User Guide (Defra, 2024);
  - Statutory Biodiversity Metric Calculation Tool (available at Defra, 2024a);
  - Statutory Biodiversity Metric Condition Assessments spreadsheet (available at Defra, 2024b);
  - BS 8683 Process for designing and implementing Biodiversity Net Gain Specification.
     The British Standards Institution 2021;
  - CIEEM, CIRIA and IEMA Biodiversity Net Gain: Good practice principles for development. (CIEEM, CIRIA and IEMA, 2016);
  - CIEEM Biodiversity Net Gain Report & Audit Templates document (CIEEM, 2021)
  - Baker, J., Hoskin, R., Butterworth, T. Biodiversity Net Gain: Good Practice Principles for Development, A Practical Guide (2019) CIRIA C776a.

#### 2.2.2 Assessment using the Metric

- 64. To establish whether the Project will contribute to biodiversity, the Defra Statutory Metric was applied. The Metric uses a comparison of habitats as a proxy for biodiversity and describes these habitats using standard units referred to as biodiversity units (BUs). BUs are calculated using the size of a parcel of habitat and its quality.
- 65. Under the Metric there are 3 distinct types of BU and these are not of equivalence or interchangeable. They are:

2

<sup>&</sup>lt;sup>2</sup> Section 3.12 Step 2e.



- Habitat BUs which describe areas of habitat based on measurement in hectares;
- Linear BUs which describe hedgerows and lines of trees measured in kilometres; and
- Riparian BUs which describe rivers and streams measured again in kilometres.
- 66. The overall calculation of the change in biodiversity resulting from the Project is made by subtracting the value of pre-project or 'baseline' BUs of an area of land from the number of post-project units. Post-project units incorporate temporary and permanent losses resulting from the Project, along with the value of any mitigation, compensation and enhancement proposals included as part of the Project.
- 67. The results are influenced by:
  - Habitat area/length;
  - Condition an indication of quality;
  - Distinctiveness an indication of value; and,
  - Strategic significance how a habitat is regarded within local planning policy.
- 68. The condition, distinctiveness and strategic significance are known as 'multipliers' or risk factors that take account of the contribution to local priorities, the difficulty of habitat creation/management, the time it takes to deliver and variation in the location of habitat.

## 2.2.3 Defining "On-Site" and "Off-Site"

- 69. Defra provide definitions for 'on-site' and 'off-site' in the Statutory Metric User Guide (2024) as follows:
  - On-site 'refers to all land within a red line boundary of a development', which in this
    instance is the Order Limits save for land outside the NGSSICR in the Connection Area
    (Figure 1); and,
  - Off-site 'refers to land outside of the on-site boundary, which is dedicated to habitat interventions (habitat enhancement or creation), regardless of proximity or ownership'.
- 70. These definitions bring with them specific challenges when, for example, consideration is given to approaches such as the 'Rochdale Envelope' as described within Advice Note 9 (Planning Inspectorate, 2018). This approach is to incorporate flexibility within applications for development consent in order to address uncertainty. Where this becomes particularly relevant to the evaluation of a project's biodiversity performance is when the Rochdale Envelope is relied upon to present options that relate to location and therefore baseline habitat.
- 71. As the Metric evaluates biodiversity performance against an understanding of the baseline habitat value, changes in the project boundary in either extent or location influence:
  - the 'On-site baseline' including the number and potentially type of BUs;
  - what is achievable or appropriate to deliver in the 'On-site post-intervention';
  - the 'Total net unit change' required;



- the reported 'Total on-site net % change plus off-site surplus'; and,
- whether Trading Rules (Section 2.4) can be satisfied.
- 72. Therefore, as the project progresses and the red line boundary is refined (for example, to include a final 400 kV cable corridor location within the Connection Area), further Metric calculations will be required.
- 73. The boundary (i.e., "on-site") for the purpose of applying the Metric in this assessment is defined in Section 1.2.
- 74. "Off-site" relates to all other areas.

#### 2.2.4 Offsite Requirements and Results

- 75. In accordance with the Biodiversity Gain Hierarchy, BNG should first be delivered on-site, near to where negative impacts occur, wherever possible. Every effort will be made to maximise the delivery of onsite BNG within each onshore segment (Table 1.1).
- 76. In order to facilitate the Project's ambition of delivering BNG opportunities for onsite and offsite habitat enhancement to deliver an overall net gain for the Project are being explored, as also discussed in Section 1.

### 2.2.4.1 Assessing Habitat Quality

- 77. Three habitat quality components were used in the Metric:
  - Condition;
  - Distinctiveness; and,
  - Strategic significance.

#### 2.2.4.2 Condition Assessments

78. The habitat condition assessment applies to variation in quality within each habitat type, rather than between habitat types. The condition assessment data were gathered through field survey in 2023, following the methodology provided in the Statutory Biodiversity Metric User Guide (Defra, 2024). Each habitat area was assigned a condition score based on the number of assessment criteria (including essential criteria) that are passed/ failed within the Statutory Metric Condition Assessment Sheets (current at the time of survey in 2023). These provide a structured condition assessment process for each broad habitat type within the Metric.

#### 2.2.4.3 Determining Distinctiveness

79. Each habitat type is preassigned a distinctiveness band which is a measure of habitat quality, relating to the distinguishing features of a habitat type such as rarity, conservation status and species assemblage. Habitat distinctiveness was preassigned in the Metric based on habitat type as either very high, high, medium, low or very low.



#### 2.2.4.4 Strategic Significance

- 80. The definition of "Strategic Significance" represents an area open to interpretation as local nature recovery strategies (LNRS) are yet to be published. In the absence of published LNRS other documents may be suitable, including: (for example), Local Biodiversity Plans, National Character Area (Natural England ArcGIS website) objectives, Local Planning Authority Local Ecological Networks, Shoreline Management Plans (SMP), estuary strategies and green infrastructure strategies. The following documents have been referenced in this regard:
  - South East Lincolnshire Local Plan 2011-2036;
  - East Lindsey Local Plan Core Strategy 2018;
  - Lincolnshire Nature Strategy 2011;
  - Lincolnshire Biodiversity Action Plan (BAP) (2011-2020);
  - Black Sluice Drainage Board BAP May 2014;
  - Lindsey Marsh Drainage Board BAP March 2010;
  - Welland and Deepings IDB BAP 2020;
  - Witham Fourth IDB BAP 2022;
  - National Character Area (Natural England ArcGIS Website) 42: Lincolnshire Coast and Marshes;
  - National Character Area 46: The Fens;
  - Humber Estuary to Gibraltar Point Shore Management Plan;
  - The Wash Shoreline Management Plan 2: Gibraltar to Old Hunstanton (East Anglia Coastal Group, 2010); and
  - Natural England's habitat network mapping data (Natural England, 2024a).
- 81. At the time of writing, we are not aware of any Local Ecological Network for the area. The Greater Lincolnshire Nature Partnership has confirmed that a Local Nature Recovery Strategy for Greater Lincolnshire has received seed funding, although at the time of publishing of this report, the Strategy remains in its infancy (Greater Lincolnshire Nature Partnership, 2020).
- 82. Following review of the above documents, Table 2.1 below sets out the areas identified and how their strategic significance is proposed to be assessed.



Table 2.1: Assessment of Strategic Significance

	Habitats Identified							
High	Specific areas of habitats identified in the above bullet points, namely:							
	<ul> <li>The Local Plans identify Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs) and Special Protectio Areas (SPAs), Local Nature Reserves (LNR) and Local Wildlife Sites (LWS) as being important for nature conservation and are strategically significant elements of the green infrastructure.</li> </ul>							
	<ul> <li>The East Lindsey Core Strategy (SP23) also includes Ramsar sites and lists ancient woodland and veteran trees as 'irreplaceable habitats'.</li> </ul>							
	<ul> <li>The South East Lincolnshire Local Plan includes the two RSPB reserves – Freiston Shore and Frampton Marshes.</li> </ul>							
Medium	Areas immediately adjacent to the above sites for nature conservation, with potential to support the features of interest of the site or buffer impacts (unrelated to (the Project) to it/ them.							
	Areas which meet local LWS selection criteria but are not designated as such.							
	Green Infrastructure which, within the East Lindsey Core Strategy (SP24 and SP25) is taken to include (but by no means exclusively) 'woodland, parks, green lanes, public rights of way, churchyards, sports facilities, water courses, beaches and dunes.'							
	Green Infrastructure is also identified in the South East Lincolnshire Local Plan – Policy 28. Within Policy 28, it is stated that Nature Improvements Areas will create 'joined up and resilient ecological networks at the landscape scale' in the future.							
	Areas of land identified in Natural England's habitat network mapping data including information on habitat restoration-creation, restorable habitat, plus fragmentation action, and network enhancement and expansion zones.							
Low	All remaining habitats not included in the above.							

### 2.3 BNG Calculation

- 83. This section outlines the process followed in calculating BNG performance of the Project.
- 84. The UK Habitat Survey Data and condition assessment data was downloaded from ArcGIS Fieldmaps, and then inputted into ArcGIS Pro. The data was clipped to the Project's BNG Assessment Boundary, and a check completed so that all required attributes were populated; this includes, UK Habitat types, condition assessments and strategic significance. The UK Habitat types were converted to the BNG Metric Habitat types, via the conversions included in the Metric, with guidance from suitably experienced SLR Ecologists, or the relevant field surveyors, for any habitats that were not included within the Metric conversions. This converted data forms the basis of the "pre-development" or baseline habitats.
- 85. The "post-development" layer was created by splitting the baseline habitat data into the proposed infrastructure and development types. This provides detail on the type of impact that each habitat area would be subject to, such as:
  - habitat creation enhancement and planting areas;



- areas of retained habitat;
- areas for permanent habitat loss; and,
- areas for temporary habitat loss and re-instatement.
- 86. The mitigation package is set out in the OLEMS (Document Reference: APP-284). The mitigation is secured by the draft DCO (APP-303) which requires the submission for approval by the relevant planning authority of a Landscape Management Plan (LMP) and Ecological Management Plan (EMP), both of which must accord with the OLEMS. Mitigation/compensation for permanent impacts includes the provision of hedgerow and woodland planting around the OnSS. Additional biodiversity enhancements that are being pursued by the Applicant are set out in Section 4.3.2. Further details are available in Section 5 of this document.
- 87. Mitigation/ compensation for temporarily lost habitats will include:
  - All hedges returned to species rich hedgerows.
  - All ditches to be reinstated, wherever originally present).
  - All other habitats (primarily c1 cropland and g grassland) to be returned to current condition.
  - Exceptions to the above may apply where additional mitigation/ compensation is implemented along the route (for example for protected species).
- 88. The final step is to combine the baseline and post-development layers into a layer that details what the baseline habitat is, the impact it is subject to, and then its post development habitat type and condition. All relevant data, for each habitat stand, are then inputted into the Statutory Metric tool, with a row allocated for each habitat stand, subdivided where appropriate to account for post-development changes. The Project has been split into individual segments of the route (see Table 1.1), so that each segment generates its own BNG assessment.

#### 2.3.1 Habitat Trading and Additionality

89. The concepts of habitat trading and additionality have been applied within the BNG Assessment. As they relate the rules and principles used for the Metric, the approach to this assessment is set out in Sections 4.2 and 4.3.

#### 2.3.2 Competency Statement

- 90. This report has been authored by Victoria Smith, a Principal Ecologist at SLR Consulting with over 22 years' experience as a professional ecologist. She is a full member of CIEEM (MCIEEM) and has led the onshore ecological work necessary to inform the ES for the Project.
- 91. Additional technical support and Quality Assurance review has been provided by Bob Edmonds, a Technical Directors at SLR Consulting, who is a Chartered Environmentalist (CEnv) and full members of CIEEM (MCIEEM) with over 25 years' professional ecological experience.
- 92. Jacob Scoble, Charlie Noble and Jon Salter from the SLR GIS team completed the BNG Calculators.



- 93. Charlie is an Associate GIS Analyst with 8 years' experience in the civil engineering, infrastructure and environment industry. She has been the GIS Lead on several biodiversity net gain and environmental net gain-based projects and has been involved in creating, developing, and delivering initiatives and solutions to enhance spatial analysis and mapping in this sector.
- 94. Jacob is a Senior GIS Analyst with 6 years of experience working within Environmental Consultancy. Jacob has work with a variety of GIS programmes across a broad range of multi-disciplinary projects for multiple client types including LPAs, Private Firms and Government Organisations. He has strong experience in delivering complex mapping outputs and analysis such as Biodiversity Net Gain assessments for a range of residential projects including multiphase developments and smaller scale bespoke housing developments.
- 95. Completion of the Metric calculations was overseen by Jon Salter. Jonathan is a Technical Director and GIS Lead for the European Region at SLR. He has over 10 years' experience of using GIS within the environmental planning sector having worked at multi-disciplinary environmental companies prior to SLR. Jonathan is responsible for the coordination, development and management of the European GIS Team.
- 96. Jonathan has wide-ranging knowledge in using commercial GIS software packages across a wide variety of multidisciplinary projects throughout their lifecycles. He has extensive experience in leading GIS teams in the delivery of technical drawings and complex spatial analysis outputs for reports, environmental impact assessments, and development consent orders.

#### 2.4 Limitations

The BNG assessment has not identified any material limitations. The survey area coverage is sufficient to establish a comprehensive baseline data set, allowing for a thorough evaluation of BNG using the Metric. Detailed explanations of any limitations to the assessment are provided below for additional clarity.

### 2.4.1 Pre-development (Baseline) Habitats

#### 2.4.1.1 Field Survey

- 97. Limitations specifically relating to the collection of field data for UKHab and condition assessment are stated in Appendix 21.2 of the ES (Document Reference APP-190).
- 98. The survey data collection process commenced in 2022 using UKHab v1.1. A new version, UKHab v2.0, was released in Spring 2023. Despite the update, it was determined to maintain data consistency by continuing to collect data using UKHab v1.1. A thorough review of the modifications in UKHab v2.0 indicated that transitioning to this version would not materially impact the projected Project outcomes. It is noted that, due to the progression of the design scheme whilst field surveys were undertaken, that the UKHab and condition assessment data surveyed area differs to the boundary used for the BNG assessment. Only field survey data that fell within the BNG Assessment Boundary was brought forward and used in the BNG assessment.



99. A precautionary approach, as outlined in Condition Assessment Instructions Step 3(h) (The Statutory Biodiversity Metric – Technical Annex 1, February 2024), has been taken to assigning condition for baseline habitats where habitat condition was not assessed in the field as part of the UK Habitat Classification field survey. In these cases, the baseline condition for each parcel was considered by a competent ecological surveyor, with reference to the relevant Condition Assessment Sheet, any available evidence (e.g. photographs and field notes) and the condition for like habitat types in neighbouring land parcels. Where the surveyor could not be definitive about a pass or fail, each criterion was deemed to be passed.

#### 2.4.1.2 GIS

100. Prior to input into the Metric, GIS data is taken through a quality assurance process of cleaning to identify any errors both spatially and any errors in the content. Checks are made to identify any potential gaps and overlaps on the raw data from the field. Spatial data was cleaned and refined by an experienced GIS analyst, e.g. clipping polygons to intersections and removing duplications, with any larger erroneous data reviewed by an ecologist. Once the checked and refined data is loaded into the data schema, a standardised database structure for BNG assessments, it was then run through a validation check to ensure data is correct as governed by the data rules set by the Metric. For example, check that certain habitat types have the correct condition assessment.

#### 2.4.2 Post-development Habitats

101. The precise Project design will change as the detailed project design is developed further post-consent, and therefore the values may be subject to change between iterations.

#### 2.4.3 BNG Assessment

- 102. The Metric acknowledges the inherent challenges and risks associated with managing postdevelopment habitats, as well as the time required for these habitats to establish and attain a desired condition.
- 103. Statutory Metric MS Excel spreadsheet calculators allow a maximum of 250 habitat parcels to be entered into a single metric and are therefore not designed for projects of this scale, with over 2000 parcels to be accounted for. To overcome this problem, a total of 17 spreadsheets have been produced (Appendix A), with the Project split by both segment and local authority. Data contained within the 17 spreadsheets has then been combined into a single summary table. Working within the constraints of the Metric, this additional step is unavoidable.

# 2.5 Important Ecological Features

- 104. This section provides an overview of the baseline of the area of land required for the Project.
- 105. Habitats within the BNG Assessment Boundary are, for the most part, unexceptional and reflect the lowland, intensively agricultural nature of the landscape, with approximately 88% of land within the BNG Assessment Boundary identified as cropland and 10% identified as low conservation value grassland.



- 106. There is one statutory designation and six non-statutory designations for nature conservation within the BNG Assessment Boundary. These are:
  - Sea Bank Clay Pits Site of Special Scientific Interest (SSSI);
  - Anderby Creek Sand Dunes Local Wildlife Site (LWS);
  - Hobhole Bank LWS;
  - Havenside LWS;
  - Risegate Eau LWS;
  - Surfleet Bank LWS; and,
  - Anderby Marsh Lincolnshire Wildlife Trust (LWT) Reserve.
- 107. Other important habitats within the BNG Assessment Boundary include:
  - arable field margins;
  - coastal floodplain grazing marsh;
  - hedgerows and trees;
  - sea buckthorn scrub;
  - ponds;
  - rivers;
  - reedbeds;
  - coastal saltmarsh;
  - intertidal mudflats; and,
  - coastal sand dunes.
- 108. These important habitats largely concentrated within designated sites at the coast, with smaller areas scattered along the onshore ECC.
- 109. In line with the mitigation hierarchy, the Project Design Envelope (outlined in Chapter 3 of the ES (Document Reference APP-058) takes into account the avoidance of the important ecological features listed above. The purpose of this has been to prevent both the direct impacts on habitats of importance and also to avoid impacts on protected species such as birds, bats, badgers, amphibians and reptiles. As a consequence, the Project has committed to the avoidance of direct impacts on all designated sites, Internal Drainage Board (IDB) maintained drains, Environment Agency Main Rivers and areas of Priority Habitat within the Order Limits.
- 110. Areas of habitat retention and habitat loss are provided in Figure 3.

## 2.6 Value of Pre-development (Baseline) Habitats

- 111. The baseline habitat values for the BNG Assessment Boundary have been calculated using the Metric as having baseline habitat value of:
  - 1,838.29 habitat BUs;



- 48.06 linear BUs; and,
- 190.40 riparian BUs.
- 112. The pre-development habitat units map is provided in Figure 6.
- 113. Summaries of the pre-development habitats including their area, distinctiveness, condition and their BU value are provided in Table 2.2 for habitat BUs, Table 2.3 for linear BUs and Table 2.4 for riparian BUs.

Table 2.2: Summary of Pre-Development (Baseline) Habitat BUs

Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	BU
Arable field margins	21.11	Medium	N/A	Not in local strategy/ no local strategy	84.44
tussocky	1.37	Medium	N/A	Location ecologically desirable but not in local strategy	6.03
Artificial unvegetated, unsealed surface	0.14	Very low	N/A	Not in local strategy/ no local strategy	0
Blackthorn scrub	0.0004	Medium	Moderate	Location ecologically desirable but not in local strategy	0.004
Cereal crops	516.80	Low	N/A	Not in local strategy/ no local strategy	1033.60
cerear crops	1.31	Low	N/A	Location ecologically desirable but not in local strategy	2.87
Coastal sand dunes	1.55	High	Good	Location ecologically desirable but not in local strategy	30.60
	0.001	High	Moderate	Location ecologically desirable but not in local strategy	0.007
Developed land;	9.85	Very low	N/A	Not in local strategy/ no local strategy	0
sealed surface	0.97	Very low	N/A	Location ecologically desirable but not in local strategy	0



Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	BU
				Not in local	
	0.008	Medium	Good	strategy/ no	0.10
				local strategy	
	0.20	NA o divino	Madagata	Not in local	2 27
	0.28	Medium	Moderate	strategy/ no local strategy	2.27
				Not in local	
	0.18	Medium	Poor	strategy/ no	0.72
	0.18	Wicalam	1 001	local strategy	0.72
				Location	
Hawthorn scrub	0.004			ecologically	0.04
	0.001	Medium	Good	desirable but not	0.01
				in local strategy	
				Location	
	0.04	Medium	Moderate	ecologically	0.37
	0.04	Medium	Moderate	desirable but not	0.37
				in local strategy	
				Location	
	0.16	Medium	Poor	ecologically	0.68
	0.10			desirable but not	0.08
				in local strategy	
	1.37	High	Good	Location	27.16
Littoral mud				ecologically	
				desirable but not	
				in local strategy	
				Location	
	16.23	Medium	Good	ecologically desirable but not	0.26
Litteral cond					
Littoral sand				in local strategy Location	
				ecologically	
	0.03	Medium	Moderate	desirable but not	
				in local strategy	
				Not in local	
	0.01	Medium	Good	strategy/ no	0.11
				local strategy	3.11
				Not in local	
	0.01	Medium	Moderate	strategy/ no	0.06
NAissad aggreb				local strategy	
Mixed scrub	0.30	Medium	Poor	Not in local	
				strategy/ no	1.21
				local strategy	
				Location	
	0.12	Medium	Good	ecologically	1.63
	0.12	iviculuili	3000	desirable but not	1.03
				in local strategy	



Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	ви
	0.05	Medium	Moderate	Location ecologically desirable but not in local strategy	0.44
	0.03	Medium	Poor	Location ecologically desirable but not in local strategy	0.14
	5.25	Low	Good	Not in local strategy/ no local strategy	31.50
	0.96	Low	Moderate	Not in local strategy/ no local strategy	3.85
	19.11	Low	Poor	Not in local strategy/ no local strategy	38.22
Modified grassland	3.71	Low	Good	Location ecologically desirable but not in local strategy	24.48
	0.06	Low	Moderate	Location ecologically desirable but not in local strategy	0.29
	8.14	Low	Poor	Location ecologically desirable but not in local strategy	17.90
Non-cereal crops	56.86	Low	N/A	Not in local strategy/ no local strategy	113.73
	4.81	Medium	Good	Not in local strategy/ no local strategy	57.75
	0.69	Medium	Moderate	Not in local strategy/ no local strategy	5.50
Other neutral grassland	6.40	Medium	Poor	Not in local strategy/ no local strategy	25.59
	2.83	Medium	Good	Location ecologically desirable but not in local strategy	37.31
	1.53	Medium	Moderate	Location ecologically	13.47



Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	BU
				desirable but not	
				in local strategy	
	4.01	Medium	Poor	Location ecologically desirable but not in local strategy	17.63
Other sea buckthorn scrub	1.92	Low	N/A	Location ecologically desirable but not in local strategy	4.23
	0.11	Medium	Moderate	Not in local strategy/ no local strategy	0.89
Other woodland; broad-leaved	0.54	Medium	Moderate	Location ecologically desirable but not in local strategy	4.75
	0.04	Medium	Poor	Not in local strategy/ no local strategy	0.16
Ponds (non-priority habitat)	0.08	Medium	Good	Not in local strategy/ no local strategy	0.93
Habitatj	0.13	Medium	Moderate	Not in local strategy/ no local strategy	1.07
Ponds (priority habitat)	0.003	High	Good	Location ecologically desirable but not in local strategy	0.05
Habitaty	0.19	High	Moderate	Location ecologically desirable but not in local strategy	2.55
	0.17	High	Moderate	Not in local strategy/ no local strategy	2.03
Reedbeds	0.87	High	Moderate	Location ecologically desirable but not in local strategy	11.51
	0.07	High	Poor	Not in local strategy/ no local strategy	0.45
	0.27	High	Poor	Location ecologically	1.77



Habitat Type	Area (ha)	Distinctiveness	Condition	Strategic Significance	BU
				desirable but not in local strategy	
Saltmarshes and	0.001	High	Good	Not in local strategy/ no local strategy	0.02
saline reedbeds	0.48	High	Good	Location ecologically desirable but not in local strategy	9.45
Watersource	0.61	Very low	N/A	Not in local strategy/ no local strategy	0
Watercourse	3.23	Very low	N/A	Location ecologically desirable but not in local strategy	0
Winter stubble	14.26	Low	N/A	Not in local strategy/ no local strategy	28.52
Total:	709.25			Total:	1862.60

Table 2.3: Summary of Pre-Development (Baseline) Linear BUs

Habitat Type	Length (km)	Distinctiveness	Condition	Strategic Significance	BU
Line of trees	1.34	Low	Moderate	Not in local strategy/ no local strategy	5.35
	0.41	Low	Poor	Not in local strategy/ no local strategy	0.82
	2.48	Low	Good	Location ecologically desirable but not in local strategy	16.34
Native hedgerow	0.77	Low	Moderate	Location ecologically desirable but not in local strategy	3.41
	0.46	Low	Poor	Location ecologically desirable but	1.02



Habitat Type	Length (km)	Distinctiveness	Condition	Strategic Significance	BU
				not in local strategy	
	0.63	Medium	Good	Location ecologically desirable but	8.31
	0.03	Wediam		not in local strategy	0.51
Native hedgerow – associated with bank or ditch	1.10	Medium	Moderate	Location ecologically desirable but not in local strategy	9.72
	0.36	Medium	Poor	Location ecologically desirable but not in local strategy	1.58
Non-native and ornamental hedgerow	0.03	Very low	Good	Location ecologically desirable but not in local strategy	0
Total:	7.58			Total:	46.55

Table 2.4: Summary of Pre-Development (Baseline) Riparian BUs

Habitat Type	Length (km)	Distinctiveness	Condition	Strategic Significance	BU
Ditches	1.94	Medium	Good	Not in local strategy/ no local strategy	23.22
	4.64	Medium	Moderate	Not in local strategy/ no local strategy	37.08
	28.10	Medium	Poor	Not in local strategy/ no local strategy	112.39
	0.03	Medium	Good	Location ecologically desirable but not in local strategy	0.33
	0.72	Medium	Moderate	Location ecologically	6.33



Habitat Type	Length (km)	Distinctiveness	Condition	Strategic Significance	BU
				desirable but not in local strategy	
	0.35	Medium	Poor	Location ecologically desirable but not in local strategy	1.47
Other rivers and	0.14	High	Good	Location ecologically desirable but not in local strategy	2.85
streams	0.37	High	Moderate	Location ecologically desirable but not in local strategy	4.82
Total:	36.29			Total:	188.49



# 3 BNG Rules, Principles, and Good Practice

# 3.1 Good Practice Principles

- 114. 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 Applicant is cognisant of the good practice in respect of BNG (outlined in Section 2.2.1) and has aligned with the ten principles developed by CIEEM, IEMA and CIRIA summarised below.
  - Principle 1. Apply the Mitigation Hierarchy: Avoid and then minimise impacts on biodiversity. As a last resort, and in agreement with stakeholders and decision-makers, compensate for losses that cannot be avoided.
  - Principle 2. Avoid losing biodiversity that cannot be offset by gains elsewhere: Avoid impacts on irreplaceable biodiversity these impacts cannot be offset.
  - Principle 3. Be inclusive and equitable: Engage stakeholders in designing, implementing, monitoring and evaluating the approach to Net Gain. Share the benefits fairly among stakeholders.
  - Principle 4. Address risks: Mitigate difficulty and/ or uncertainty using well-accepted ways to add contingency when calculating biodiversity losses and gains.
  - Principle 5. Make a measurable Net Gain contribution: Achieve a measurable, overall gain for biodiversity and the services ecosystems provide while directly contributing towards nature conservation priorities.
  - Principle 6. Achieve the best outcomes for biodiversity: Achieve the best outcomes for biodiversity by using robust, credible evidence and local knowledge.
  - Principle 7. Be additional: Achieve nature conservation outcomes that demonstrably exceed existing obligations (i.e., do not deliver something that would occur anyway).
  - Principle 8. Create a Net Gain legacy: Ensure Net Gain generates long-term benefits.
  - Principle 9. Optimise sustainability: Prioritise Biodiversity Net Gain and, where possible, optimise the wider environmental benefits for a sustainable society and economy.
  - **Principle 10. Be transparent:** Communicate all Net Gain activities in a transparent and timely manner, sharing the learning with all stakeholders.
- 115. In respect of Principle 5, this assessment uses the Metric to demonstrate measurable Net Gain contribution. Application of the Metric is described in Sections 2 and 4 of this report. It is however worth highlighting here that since the Metric is a proxy, it does not account for species-specific mitigation, compensation or enhancement. Loss/ gains in this respect have been measured against monitoring targets set out within the OLEMS (APP-284). The requirement for species specific licensing, including those for birds, water vole, otter and bats, will be reviewed following release of the detailed design.



- 116. The Metric User Guide (Defra, 2024) states in Section 1.5.3 that:
- 117. "The Metric can be used throughout all stages of a project, from site selection and detailed design to delivery. The earlier it is applied, the greater the opportunity to design for biodiversity and wider ecological benefits."

#### 3.1.1 Rules used for the Metric

- 118. Natural England advise that the Metric is a tool that helps inform plans and decisions, by using habitats as a proxy for measuring biodiversity value, but that any assessment must be undertaken with awareness of its limitations. The Metric specifically requires interpretation and ecological expertise to provide evidence of the appropriateness of proposed approaches to BNG and sets out a series of key principles and rules that help to support an understanding of whether proposals support wider considerations than a calculation output.
- 119. The process of achieving and assessing BNG through the use of the Metric must adhere to the five rules, otherwise a net gain cannot be claimed. The Biodiversity Metric Rules are set out in Table 3.1.
- 120. These rules have also been applied to the assessment for the Project.

Table 3.1: Statutory Biodiversity Metric Rules (Defra, 2024)

Rule Number	Rule Detail
Rule 1	The trading rules of this biodiversity metric must be followed (Table 3.2).
Rule 2	Biodiversity unit outputs, for each type of unit, must not be summed, traded, or converted between types. The requirement to deliver at least a 10% net gain applies to each type of unit.
Rule 3	To accurately apple the biodiversity metric formula, you must use the statutory biodiversity metric calculation tool or small sites biodiversity metric tool for small sites.  The tools remove the need for a user to manually calculate the change in biodiversity value.  The tool will summarise the results of the calculation and inform a user whether the biodiversity net gai objective has been met.
Rule 4	In exceptional ecological circumstances, deviation from this metric methodology may be permitted by the relevant consenting body or planning authority.

#### 3.1.2 Trading Rules (Rule 1)

121. The trading rules (Rule 1) set minimum habitat creation and enhancement requirements to compensate for specific habitat losses. These are provided in Table 3.2.



Table 3.2: Trading Rules (Rule 1) to Compensate for Losses (Defra, 2024)

Baseline Habitat Distinctiveness	Area Module (area units)	Hedgerow Module	Watercourse Module (Watercourse Units)
Very High	Priority should be given to replacing losses with area habitat units of the same habitat type (see below notes on trading).	Losses must be replaced with hedgerow units of the same habitat type.	Priority should be given to replacing losses with watercourse units of the same habitat type (see below notes on trading).
High	Losses must be replaced with area habitat units of the same habitat type.	Losses must be replaced with hedgerow units of the same habitat type or of a higher band.	Losses must be replaced with watercourse units of the same habitat type.
Medium	Losses must be replaced by area habitat units of either medium band habitat within the same broad habitat type or, any habitat from a higher band from any broad habitat type.	Losses must be replaced with hedgerow units of the same or of a higher band.	Losses must be replaced with watercourse units of a higher band.
Low	Losses must be replaced with area habitat units of the same or higher band.	Losses must be replaced with hedgerow units of the same or of a higher band.	Losses must be replaced with watercourse units of a higher band.
Very Low	Not applicable.	Losses must be replaced with hedgerow units of the same or of a higher band.	Not applicable.



## 3.2 Principles used for the Metric

122. In addition to the good practice principles CIEEM, IEMA and CIRIA and summarised above, The Metric User Guide sets out a further eight principles. These are provided in Table 3.3 below and have been adhered to for this assessment.

Table 3.3: Biodiversity Metric Principles (Defra, 2024)

Principle	
Principle 1	The metric assessment should be completed by a competent person.
Principle 2	The use of this biodiversity metric does not override existing biodiversity protections,
	statutory obligations, policy requirements, ecological mitigation hierarchy or any other
	requirements. This includes consenting or licensing processes, for example woodlands.
Principle 3	This biodiversity metric should be used in accordance with established good practice guidance and professional codes.
Principle 4	This biodiversity metric is not a complex or comprehensive ecological model and is not a substitute for expert ecological advice.
Principle 5	Biodiversity units are a proxy for biodiversity and should be treated as relative values.
Principle 6	This biodiversity metric is designed to inform decisions in conjunction with locally
	relevant evidence, expert input, or guidance.
Principle 7	Habitat interventions need to be realistic and deliverable within a relevant project timeframe.
Principle 8	<ul> <li>Created and enhanced habitats should be, where practical and reasonable, local to any impact and deliver strategically important outcomes for nature conservation.</li> </ul>
Principle 9	This biodiversity metric does not enforce a minimum habitat size ratio for compensation of losses. Proposals should aim to:
	<ul> <li>maintain habitat extent - supporting more, bigger, better and more joined up ecological networks;</li> </ul>
	<ul> <li>ensure that proposed or retained habitat parcels are of sufficient size for ecological function.</li> </ul>

### 3.2.1 Additionality (BNG Good Practice Principle 7)

- 123. It is noted that much of the Order Limits falls within agricultural land. There is the opportunity to align BNG habitat delivery with other schemes, e.g. agri-environment schemes, that promote protection and enhancement of the natural environment.
- 124. Defra and Natural England have prepared guidance (Defra and Natural England, 2023) surrounding the concept of "additionality" and "stacking", which are of relevance to considering payment options for the management of parcels of land, and therefore which locations are subject to certain habitat management for the purposes of this BNG assessment.
- 125. The concept of "stacking" is when multiple credits or units from different nature markets can be sold separately from the same activity undertaken on a piece of land. For example, one habitat enhancement action can be eligible for both BNG credits and Nutrient credits (part of the Nutrient Neutrality process which is in operation in some catchments in England).



- 126. The concept of "additionality" is where a new credit scheme must demonstrate that an additional action has occurred on the land, compared to the ongoing actions already in place for other nature market schemes. For example, enhancement activities funded under agrienvironment schemes cannot then be sold as a biodiversity unit.
- 127. The BNG approach set out in this document has been reviewed against existing agrienvironment schemes and other nature-based funding that may or is occurring within the Project Order Limits so that any measures proposed for BNG purposes are additional to existing commitments for the same land.
- 128. Natural England provides an online database of Countryside Stewardship Scheme (CSS) agreements in England (Natural England Open Data Geoportal website). By overlaying this database onto the Project, existing CSSs within the BNG Assessment Boundary were identified.

### 3.2.2 Irreplaceable Habitats

- 129. Irreplaceable Habitats are deemed to have a very high biodiversity value and are deemed so difficult to create that it would be impossible to achieve a biodiversity gain if these habitats were lost.
- 130. Irreplaceable habitats have significant protection in the NPPF (See paragraph 186 (c) in Section 12 above) and NPS-EN-1 (sections 5.4.14 5.4.17). For BNG purposes, the 10% net gain requirement is not applied to irreplaceable habitats. If there are impacts to irreplaceable habitats as a result of a development, under Rules 3 and 4 and Principle 2 of the Best Practice Principles for Net Gain (CIEEM, CIRIA and IEMA), this means a net gain for the project cannot be secured and will require bespoke compensation to be agreed with the planning authority. If there are no impacts, enhancement of irreplaceable habitats can contribute to towards a developments BNG requirement.
- 131. The initial list of irreplaceable habitats for BNG purposes, broadly mirrors the list of examples already within the National Planning Policy Framework.
- 132. Irreplaceable habitats include:
  - Ancient woodland;
  - Ancient and veteran trees:
  - Blanket bog;
  - Limestone pavements;
  - Coastal sand dunes;
  - Spartina saltmarsh swards;
  - Mediterranean saltmarsh scrub; and,
  - Lowland fens.



133. Irreplaceable habitats do exist within the Order Limits and are considered within Chapter 21: Onshore Ecology of the Environmental Statement (Document Reference APP-076). These are limited to coastal sand dunes, present at the landfall and the potential for veteran trees in those areas where land access was restricted. Impacts on all irreplaceable habitats will be avoided as a result of the embedded and non-embedded mitigation put in place (Section 21.7 and 21.9, Document Reference APP-076). Avoidance measures are primarily focussed on the adopted of trenchless techniques and siting of the onshore infrastructure to avoid field margins.

#### 3.2.3 Ancient Woodland

- 134. Ancient woodland is a finite and irreplaceable resource and is protected by existing policy and legislation. However, ancient woodland is not a discrete habitat type and, as such, is not listed in the Metric.
- 135. Ancient semi-natural woodlands, plantations on ancient woodland sites and ancient woodpasture and parkland may fit a range of metric woodland habitat types and should be checked against the Ancient Woodland Inventory Database (Natural England ArcGIS Database website). For habitats less than 2 ha in area, criteria within the Ancient Woodland Inventory Handbook (Sansum, P. and Bannister, N.R., 2018) must be referenced. Referencing the Ancient Woodland Inventory Database (Appendix 21.1: Desk Based Assessment (Document Reference APP-189)) and following completion of UK Habitat Classification Surveys (Appendix 21.2: UK Habitat Classification Survey (Document Reference APP-190)), no ancient woodland, ancient seminatural woodland plantations on ancient woodland sites or ancient wood-pasture and parkland have been recorded. Consideration of ancient woodland is therefore absent from this assessment.

### 3.2.4 Very-high Distinctiveness Habitats (VHDH)

136. VHDH are a 'metric-specific classification of highly threatened, internationally scarce habitats which require conservation action' which require bespoke compensation to be agreed on a case-by-case basis with the determining body or planning authority. No VHDH have been recorded within the BNG Assessment Boundary and therefore not included within this assessment.

#### 3.2.5 Ancient and Veteran Trees

137. The Metric User Guide states that 'wherever ancient and veteran trees occur they should be considered and recorded as irreplaceable habitat.' No ancient or veteran trees have been recorded to date. If any trees are identified during the pre-commencement surveys, the design stage BNG Assessment will be updated to include them.



# 4 Proposed Design – Post Development Baseline Habitats

- The mitigation package is currently set out in the OLEMS (Document Reference: APP-284). The mitigation is secured by the draft DCO (Document Reference APP-303) which requires the submission for approval by the relevant planning authority of a Landscape Management Plan (LMP) and Ecological Management Plan (EMP), both of which must accord with the OLEMS. It includes for mitigation/ compensation of permanent impacts at the OnSS with the provision of hedgerow, lowland, mixed-deciduous woodland and neutral grassland planting.
- 139. Mitigation/ compensation at all other locations within the corridor will include:
  - All hedges returned to species rich hedgerows (and with ditches, where originally present);
  - All ditches to be reinstated, wherever originally present; and,
  - All other habitats (primarily cropland and grassland) to be returned to current condition.
- 140. Exceptions to the above may apply where additional mitigation/ compensation is implemented along the route (for example for protected species).
- 141. Additional biodiversity enhancements being pursued by the Project are outlined in Section 4.3.2 below and are presented on Figure 5.

### 4.1 Retention of Existing Important Habitats

- 142. Through considered design, the following Section 41 Priority Habitats and Local Biodiversity Action Plan habitats will be retained during the construction and operational phases of the Project:
  - coastal floodplain grazing marsh (S41 habitat complex/ Local Biodiversity Action Plan (LBAP) habitat);
  - (planted) sea buckthorn scrub (possible Annex 1 habitat);
  - all ponds (including S41 Priority ponds and LBAP);
  - rivers (Annex 1 where tidal and associated with The Wash, LBAP);
  - reedbeds (S41 habitat and LBAP);
  - coastal saltmarsh/ saltmarsh (S41 habitat, subset of Annex 1 habitat, LBAP);
  - intertidal mudflats (S41 habitat, subset of Annex 1 habitat); and,
  - embyronic shifting dunes/ coastal sand dunes (Annex 1, S41 and LBAP habitat).
- 143. Impacts on the following important habitats will be minimised at every opportunity through use of avoidance methods, including micro-siting of the construction footprint and use of trenchless techniques:
  - arable field margins (S41 habitat and LBAP); and,
  - hedgerows and trees (S41 habitats and LBAP).



- 144. Impacts on ditches will also be minimised at every opportunity. Where impacts on arable field margins, hedgerow and trees and ditches cannot be avoided, appropriate mitigation will be provided and is summarised below.
- 145. Figure 4 provides the proposed post development habitat types.

### 4.2 Landfall, Onshore ECC and 400kV Cable Corridor & Connection Area

- 146. Following construction of the landfall, onshore ECC and 400kV cable corridor, disturbed landcover and habitats will be reinstated, with the only exception being the permanent link box manhole covers, permanent access (bellmouth) at the landfall and TJB manhole covers. The overall aim of the reinstatement will be the re-establishment of existing ground cover or returning the disturbed ground to its original agricultural use. Where possible, excavated soils will be carefully stored and reinstated as soon as possible. Hedgerow replacement will comprise species-rich and locally representative species, and where trees are removed, they will be replaced with heavy standards at a ratio of 3:1. However, no tree planting will occur over the newly laid cable.
- 147. Arable field margins will be re-established with a locally appropriate seed mix.
- 148. Exceptions to the above may apply where additional mitigation/ compensation is implemented along the route (for example for protected species).
- 149. A standard 5-year maintenance period will be applied to all land parcels to be returned to landowners following construction. The maintenance programme will include measures to ensure the successful establishment of the mitigation planting including watering, weeding, removing tree guards and replacing failed planting. The details of the maintenance operations will be presented in the final LMP/ EMP.

### 4.3 Onss Landscape Mitigation and Proposed Enhancements

### 4.3.1 OnSS Landscape Mitigation

150. The OnSS will be located at Surfleet Marsh, an area which comprises predominately arable farmland in a flat, reclaimed landscape. Construction of the OnSS and access track will result in the permanent loss of arable habitats, being predominantly cropland, with smaller areas of arable field margin and grassland. The location of the OnSS benefits from existing hedgerow field boundaries which surround the site. Landscape mitigation planting to further screen the substation has been included in the Project design for landscape mitigation (see Document Reference APP-284). The proposed landscape mitigation planting for the OnSS comprises the creation of lowland, mixed-deciduous woodland, and species-rich hedgerow.



- 151. The mitigation woodland planting will comprise a mix of faster growing 'nurse' species and slower growing 'core' species. Nurse species, such as field maple, aspen, hazel and black poplar, will grow quicker so that after 15-years they would be approximately 6.8m to 8.3m in height. They will provide shelter to bring on core species, such as oak, elder, lime and willow. Whilst the nurse species will be sufficiently fast growing to provide substantial screening of the OnSS after 15-years, the core species will outlive the nurse species and provide a preferred native woodland with a more robust structure closer in character to other woodland copses in this area.
- 152. Hedgerow planting will comprise species rich hedgerows using locally representative species such as hawthorn, dogwood and holly. The proposed hedgerows and woodland planting could restore historic field boundaries and strengthen lines of existing field boundaries, connecting new planting to established hedgerows and tree cover in the area, thereby complimenting the existing landscape structure. Hedgerow planting would typically involve six hedging plants set out in a staggered row over each linear metre. It is assumed that hedgerows will be managed to maintain a height of approximately 1.5m but could be grown taller to 2.5m or more.

### **Advanced Planting**

153. In situations where it would be practical to undertake advanced planting and in locations where there would not be any interference with access or construction works, mitigation planting (e.g. the planting around Big Tree Farm to the south of the OnSS) would be implemented during or even prior to the early phases of the construction of the OnSS. Where implemented, advanced planting could potentially give the woodland in these areas an additional 1 to 4 years of growth prior to completion of construction and commencement of operation. This will contribute to the height of the planting and reduce the period which it will take the planting to create an effective screen, especially where planted adjacent to roadsides and settlement.

#### 4.3.2 OnSS Biodiversity Net Gain Enhancements

- 154. The Applicant has also considered in the assessment the inclusion of neutral grassland and a ditch for the purposes of biodiversity enhancement as shown in Figure 5. The Applicant is seeking a voluntary agreement with this landowner.
- 155. It is intended that a species rich, neutral grassland seed mix would be sown in to the north east of the OnSS where the Project is considering biodiversity enhancements to establish a 2.10 ha area of neutral grassland. A species-rich, neutral grassland seed mix will also be sown along drainage ditches and field margins surrounding the substation.
- 156. It is also intended that a new drainage ditch will be excavated along the northeastern edge of the proposed new tree belt bordering the northeastern OnSS boundary. The drainage ditch would be approximately 340m in length with a 1.5m wide grassland bank.



## 4.4 Value of Post-Development Habitats

- 157. The post-development habitat values for the BNG Assessment Boundary have been calculated using the Metric as having habitat value of:
  - 1,825.75 habitat BUs;
  - 49.32 linear BUs; and,
  - 183.35 riparian BUs.
- 158. The post development habitat units map is provided in Figure 7.
- 159. Summaries of the post-development habitats including their area, distinctiveness, condition and their BU value are provided in Table 4.1 for habitat BUs, Table 4.2 for linear BUs and Table 4.3 for riparian BUs.
- 160. Habitats of high distinctiveness are all associated with coastal and estuarine habitats, priority ponds and species-rich hedgerows. All habitats of high distinctiveness will be avoided through thoughtful placement of construction infrastructure and the use of trenchless techniques.
- 161. The loss of Medium distinctiveness habitats which include arable field margins, scrub, hedgerow and ditches will be mitigated for by creation of like-for-like habitats worth at least the same number of BUs.
- 162. Direct impacts on non-priority ponds and littoral sand of Medium distinctiveness will be avoided by the Project.

Table 4.1: Summary of Post-Development Habitat BUs

Habitat Type	Area (ha)	Distinctiven ess	Conditi on	Strategic Significance	BU
Arable field margins tussocky	20.18	Medium	N/A	Not in local strategy/ no local strategy	80.66
	1.37	Medium	N/A	Location ecologically desirable but not in local strategy	5.93
Artificial unvegetated, unsealed surface	11.61	Very low	N/A	Not in local strategy/ no local strategy	0
Blackthorn scrub	0.0004	Medium	Modera te	Location ecologically desirable but not in local strategy	0.004
Caraal arang	509.24	Low	N/A	Not in local strategy/ no local strategy	1016. 62
Cereal crops	1.31	Low	N/A	Location ecologically desirable but not in local strategy	2.83
Coastal sand dunes	1.55	High	Good	Location ecologically desirable but not in local strategy	30.59



Habitat Type	Area (ha)	Distinctiven ess	Conditi on	Strategic Significance	BU
	0.001	High	Modera te	Location ecologically desirable but not in local strategy	0.007
Developed land; sealed surface	14.00	Very low	N/A	Not in local strategy/ no local strategy	0
	0.97	Very low	N/A	Location ecologically desirable but not in local strategy	0
	0.008	Medium	Good	Not in local strategy/ no local strategy	0.06
Hawthorn scrub	0.28	Medium	Modera te	Not in local strategy/ no local strategy	2.27
	0.18	Medium	Poor	Not in local strategy/ no local strategy	0.72
	0.001	Medium	Good	Location ecologically desirable but not in local strategy	0.01
	0.04	Medium	Modera te	Location ecologically desirable but not in local strategy	0.37
	0.16	Medium	Poor	Location ecologically desirable but not in local strategy	0.68
Littoral mud	1.37	High	Good	Location ecologically desirable but not in local strategy	27.16
Littoral sand	16.23	Medium	Good	Location ecologically desirable but not in local strategy	214.2 9
	0.03	Medium	Modera te	Location ecologically desirable but not in local strategy	0.26
Lowland meadows	2.10	Very high	Modera te	Location ecologically desirable but not in local strategy	8.54
	0.009	Medium	Good	Not in local strategy/ no local strategy	0.10
	0.007	Medium	Modera te	Not in local strategy/ no local strategy	0.06
Mixed scrub	0.30	Medium	Poor	Not in local strategy/ no local strategy	1.21
	0.12	Medium	Good	Location ecologically desirable but not in local strategy	1.63



Habitat Type	Area (ha)	Distinctiven ess	Conditi on	Strategic Significance	BU
	0.05	Medium	Modera te	Location ecologically desirable but not in local strategy	0.44
	0.03	Medium	Poor	Location ecologically desirable but not in local strategy	0.14
	5.24	Low	Good	Not in local strategy/ no local strategy	27.98
	0.96	Low	Modera te	Not in local strategy/ no local strategy	3.61
	17.83	Low	Poor	Not in local strategy/ no local strategy	35.65
Modified grassland	3.71	Low	Good	Location ecologically desirable but not in local strategy	24.45
	0.06	Low	Modera te	Location ecologically desirable but not in local strategy	0.28
	8.14	Low	Poor	Location ecologically desirable but not in local strategy	17.90
Non-cereal crops	28.60	Low	N/A	Not in local strategy/ no local strategy	56.69
	4.69	Medium	Good	Not in local strategy/ no local strategy	45.36
	1.60	Medium	Modera te	Not in local strategy/ no local strategy	11.55
	6.62	Medium	Poor	Not in local strategy/ no local strategy	26.40
Other neutral grassland	2.83	Medium	Good	Location ecologically desirable but not in local strategy	33.46
	4.67	Medium	Modera te	Location ecologically desirable but not in local strategy	36.42
	4.01	Medium	Poor	Location ecologically desirable but not in local strategy	17.63
Other sea buckthorn scrub	1.92	Low	N/A	Location ecologically desirable but not in local strategy	4.23
Other woodlands broad lagged	0.09	Medium	Modera te	Not in local strategy/ no local strategy	0.71
Other woodland; broad-leaved	0.54	Medium	Modera te	Location ecologically desirable but not in local strategy	4.75



Habitat Type	Area (ha)	Distinctiven ess	Conditi on	Strategic Significance	BU
	0.04	Medium	Poor	Not in local strategy/ no local strategy	0.15
Other woodland; mixed	15.64	Medium	Modera te	Location ecologically desirable but not in local strategy	47.25
Ponds (non-priority habitat)	0.08	Medium	Good	Not in local strategy/ no local strategy	0.93
	0.13	Medium	Modera te	Not in local strategy/ no local strategy	1.07
Ponds (priority habitat)	0.003	High	Good	Location ecologically desirable but not in local strategy	0.05
, ,	0.19	High	Modera te	Location ecologically desirable but not in local strategy	2.55
	0.169	High	Modera te	Not in local strategy/ no local strategy	1.94
Reedbeds	0.87	High	Modera te	Location ecologically desirable but not in local strategy	11.51
	0.07	High	Poor	Not in local strategy/ no local strategy	0.44
	0.27	High	Poor	Location ecologically desirable but not in local strategy	1.77
Saltmarshes and saline	0.001	High	Good	Not in local strategy/ no local strategy	0.004
reedbeds	0.48	High	Good	Location ecologically desirable but not in local strategy	9.45
Sustainable drainage system	0.57	Low	Good	Not in local strategy/ no local strategy	1.91
Watercourse	0.61	Very low	N/A	Not in local strategy/ no local strategy	0
Watercourse	3.23	Very low	N/A	Location ecologically desirable but not in local strategy	0
Winter stubble	14.26	Low	N/A	Not in local strategy/ no local strategy	28.52
winter stubble	0.001	Low	N/A	Location ecologically desirable but not in local strategy	0.001
Total:	709.27			Total:	1849. 19



Table 4.2: Summary of Post-Development Linear BUs

Habitat Type	Length (km)	Distinctive ness	Conditi on	Strategic Significance	BU
Line of trees	1.34	Low	Moder ate	Not in local strategy/ no local strategy	5.32
	0.41	Low	Poor	Not in local strategy/ no local strategy	0.82
	2.48	Low	Good	Location ecologically desirable but not in local strategy	16.25
Native hedgerow	0.77	Low	Moder ate	Location ecologically desirable but not in local strategy	3.35
	0.46	Low	Poor	Location ecologically desirable but not in local strategy	1.02
	0.63	Medium	Good	Location ecologically desirable but not in local strategy	8.31
Native hedgerow – associated with bank or ditch	1.10	Medium	Moder ate	Location ecologically desirable but not in local strategy	9.67
	0.36	Medium	Poor	Location ecologically desirable but not in local strategy	1.57
Non-native and ornamental hedgerow	0.03	Very low	Poor	Location ecologically desirable but not in local strategy	0
Species-rich native hedgerow with trees	0.75	High	Moder ate	Location ecologically desirable but not in local strategy	6.94
Total:	8.33			Total:	53.25



Table 4.3: Summary of Post-Development Riparian BUs

Habitat Type	Length (km)	Distinctivenes s	Conditio n	Strategic Significance	BU
Culvert	0.06	Low	Poor	Not in local strategy/ no local strategy	0.12
	1.94	Medium	Good	Not in local strategy/ no local strategy	23.22
	5.02	Medium	Moderat e	Not in local strategy/ no local strategy	39.06
Ditches	28.08	Medium	Poor	Not in local strategy/ no local strategy	112.30
	0.03	Medium	Good	Location ecologically desirable but not in local strategy	0.33
	0.72	Medium	Moderat e	Location ecologically desirable but not in local strategy	6.33
	0.35	Medium	Poor	Location ecologically desirable but not in local strategy	1.47
Other rivers and	0.14	High	Good	Location ecologically desirable but not in local strategy	2.85
streams	0.37	High	Moderat e	Location ecologically desirable but not in local strategy	4.82
Total:	36.71			Total:	190.50



# **5** BNG Metric Results

### 5.1 Permanent Habitat Loss

- 163. Permanent habitat loss across the entire BNG Assessment Boundary totals 39.00 ha (5.50%), with the vast majority of habitats being permanently lost within the OnSS footprint (ECC 13). Table 5.1provides a summary of permanent habitat loss by habitat type and by segment.
- 164. A total of 96.58% of the habitats permanently lost are agricultural habitats, modified grassland and developed land which are of low, or no significant biodiversity value. The remaining 3.42%, totalling 1.33 ha accounts for arable field margins, mixed and hawthorn scrub, other neutral grassland and broad-leaved woodland. Section 5.7 provides assumptions relating to the definition of permanent habitat loss.

Table 5.1: Summary of Permanent Habitat Loss

Segment/ Habitat	Area (ha)Area (ha)
ECC 1	0.104
Arable field margins tussocky	0.027
Cereal crops	0.040
Developed land; sealed surface	0.004
Mixed scrub	0.004
Modified grassland	0.021
Other neutral grassland	0.004
Winter stubble	0.004
ECC 2	0.022
Arable field margins tussocky	0.004
Cereal crops	0.004
Developed land; sealed surface	0.004
Mixed scrub	0.004
Modified grassland	0.004
Other neutral grassland	0.004
ECC 3	0.016
Arable field margins tussocky	0.002
Artificial unvegetated, unsealed surface	0.002
Cereal crops	0.002
Developed land; sealed surface	0.002
Hawthorn scrub	0.002
Modified grassland	0.002
Other neutral grassland	0.002
ECC 4	0.010
Arable field margins tussocky	0.002
Cereal crops	0.002
Developed land; sealed surface	0.002
Modified grassland	0.002



	OFFSHORE WIND
Segment/ Habitat	Area (ha)Area (ha)
Other neutral grassland	0.002
Winter stubble	0.002
ECC 5	0.024
Arable field margins tussocky	0.003
Artificial unvegetated, unsealed surface	0.003
Cereal crops	0.003
Developed land; sealed surface	0.003
Hawthorn scrub	0.003
Modified grassland	0.003
Non-cereal crops	0.003
Other neutral grassland	0.003
ECC 6	0.015
Arable field margins tussocky	0.002
Cereal crops	0.002
Developed land; sealed surface	0.002
Hawthorn scrub	0.002
Modified grassland	0.002
Non-cereal crops	0.002
Other neutral grassland	0.002
Other woodland; broadleaved	0.002
ECC 7	0.025
Arable field margins tussocky	0.004
Cereal crops	0.004
Developed land; sealed surface	0.004
Modified grassland	0.004
Other neutral grassland	0.004
Mixed scrub	0.004
Winter stubble	0.004
ECC 8	0.026
Arable field margins tussocky	0.004
Cereal crops	0.004
Developed land; sealed surface	0.004
Modified grassland	0.004
Non-cereal crops	0.004
Other neutral grassland	0.004
Other woodland; broadleaved	0.004
ECC 9	0.032
Arable field margins tussocky	0.005
Cereal crops	0.005
Developed land; sealed surface	0.005
Modified grassland	0.005
Non-cereal crops	0.005
Other neutral grassland	0.005
ECC 10	0.017



	• • OFFSHORE WIND
Segment/ Habitat	Area (ha)Area (ha)
Arable field margins tussocky	0.002
Blackthorn scrub	0.002
Cereal crops	0.002
Developed land; sealed surface	0.002
Mixed scrub	0.002
Modified grassland	0.002
Other neutral grassland	0.002
Other woodland; broadleaved	0.002
ECC 11	0.022
Arable field margins tussocky	0.003
Cereal crops	0.003
Developed land; sealed surface	0.003
Hawthorn scrub	0.003
Modified grassland	0.003
Other neutral grassland	0.003
Other woodland; broadleaved	0.003
ECC 12	0.020
Arable field margins tussocky	0.002
Artificial unvegetated, unsealed surface	0.002
Cereal crops	0.002
Developed land; sealed surface	0.002
Hawthorn scrub	0.002
Mixed scrub	0.002
Modified grassland	0.002
Non-cereal crops	0.002
Other neutral grassland	0.002
Other woodland; broadleaved	0.002
ECC 13	38.652
Arable field margins tussocky	0.937
Cereal crops	7.625
Developed land; sealed surface	0.472
Modified grassland	1.230
Non-cereal crops	28.214
Other neutral grassland	0.182
Other woodland; broadleaved	0.027
ECC 14	0.005
Arable field margins tussocky	0.001
Artificial unvegetated, unsealed surface	0.001
Cereal crops	0.001
Developed land; sealed surface	0.001
Mixed scrub	0.001
Modified grassland	0.001
Other neutral grassland	0.001
Other woodland; broadleaved	0.001



Segment/ Habitat	Area (ha)Area (ha)
NGSSICA	0.008
Arable field margins tussocky	0.004
Cereal crops	0.004
Grand Total	38.998

# 5.2 Temporary Habitat Loss

- 165. Temporary habitat loss totals 6.14% (43.57 ha) of the BNG Assessment Boundary, with the majority of temporary losses associated with construction of the OnSS and 400kV cable in ECC 13 and ECC 14. Table 5.2 summarises areas of temporary habitat loss by habitat type and segment.
- 166. A total of 87.18% of the habitats temporarily lost are agricultural habitats, modified grassland and developed land which which are of low, or no significant biodiversity value. The remaining 12.82%, totalling 5.59 ha accounts for arable field margins, other neutral grassland, hawthorn scrub, broadleaved woodland, saltmarshes and saline reedbeds, watercourse (ditch) and reedbeds. Section 6.7 provides assumptions relating to the definition of temporary habitat loss.

Table 5.2: Summary of Temporary Habitat Loss

Segment/ Habitat	Area (ha)				
ECC 1	0.963				
Cereal crops	0.747				
Modified grassland	0.217				
ECC 2	1.491				
Modified grassland	1.481				
Other neutral grassland	0.010				
ECC 3	0.494				
Cereal crops	0.000				
Modified grassland	0.047				
Other neutral grassland	0.439				
Other woodland; broadleaved	0.007				
Reedbeds	0.001				
ECC 4	0.028				
Cereal crops	0.000				
Modified grassland	0.013				
Reedbeds	0.014				
ECC 5	2.257				
Modified grassland	0.028				
Other neutral grassland	2.229				
ECC 6	0.008				
Modified grassland	0.008				
ECC 7	0.043				



Segment/ Habitat Arable field margins tussocky Modified grassland Other neutral grassland Other woodland; broadleaved  ECC 8  Modified grassland Other neutral grassland ECC 9  Modified grassland Reedbeds	Area (ha)  0.000  0.014  0.028  0.001  0.021  0.020  0.001  0.067  0.065  0.002
Modified grassland Other neutral grassland Other woodland; broadleaved  ECC 8  Modified grassland Other neutral grassland ECC 9  Modified grassland	0.014 0.028 0.001 0.021 0.020 0.001 0.067 0.065 0.002
Other neutral grassland Other woodland; broadleaved  ECC 8  Modified grassland Other neutral grassland  ECC 9  Modified grassland	0.028 0.001 0.021 0.020 0.001 0.067 0.065 0.002
Other woodland; broadleaved  ECC 8  Modified grassland Other neutral grassland  ECC 9  Modified grassland	0.001 0.021 0.020 0.001 0.067 0.065 0.002
ECC 8  Modified grassland Other neutral grassland  ECC 9  Modified grassland	0.021 0.020 0.001 0.067 0.065 0.002
Modified grassland Other neutral grassland  ECC 9  Modified grassland	0.020 0.001 <b>0.067</b> 0.065 0.002
Other neutral grassland  ECC 9  Modified grassland	0.001 0.067 0.065 0.002
ECC 9 Modified grassland	0.067 0.065 0.002
Modified grassland	0.065 0.002
	0.002
Reedbeds	
	0.455
ECC 10	0.155
Modified grassland	0.035
Other neutral grassland	0.120
Other woodland; broadleaved	0.001
ECC 11	0.018
Hawthorn scrub	0.008
Modified grassland	0.006
Other neutral grassland	0.004
ECC 12	0.250
Hawthorn scrub	0.004
Modified grassland	0.245
Other neutral grassland	0.002
ECC 13	16.943
Arable field margins tussocky	1.129
Cereal crops	9.143
Developed land; sealed surface	0.408
Hawthorn scrub	0.001
Modified grassland	0.2559
Non-cereal crops	4.433
Other neutral grassland	1.235
Saltmarshes and saline reedbeds	0.001
Watercourse footprint	0.337
ECC 14	9.614
Arable field margins tussocky	0.0002
Cereal crops	5.739
Developed land; sealed surface	0.019
Modified grassland	0.831
Non-cereal crops	3.011
Other neutral grassland	0.003
Other woodland; broadleaved	0.011
NGSSICR	11.217
Cereal crops	11.217
Grand Total	43.57



# 5.3 Summary of Biodiversity Units by Segment

- 167. The completed Statutory Metric MS Excel spreadsheet calculators for each ECC Segment are provided alongside this BNG report. The MS Excel calculators contain all numerical figures used in the calculations and where necessary contains "assessor comments" for specific comments made on land parcels within the calculation.
- 168. The MS Excel calculators are provided in Appendix A. A single excel calculator has been prepared for each segment. Segments ECC 7 and ECC 13 each have two calculators provided as these are each split over two districts (being either East Lindsey District Council, Boston District Council or South Holland District Council). ECC14 has a calculator for the South Holland District, Boston District Council and a third for the NGSSICR.
- 169. A summary of the headline BNG results for each ECC Segment are provided in Table 5.3 below.

Table 5.3: Headline BNG results for each Segment

Section ID	Baseline BNG Area Units	Baseline BNG Hedgerow Units	Baseline BNG Watercourse Units	PM BNG Area Units	PM BNG Hedgerow Units	PM BNG Watercourse	Area Units Variation	Hedgerow Units Variation	Watercourse Units Variation
ECC 1	381.04	5.38	23.30	380.48	5.34	23.25	-0.56	-0.04	-0.06
ECC 2	105.60	9.11	13.83	103.54	9.04	13.83	-2.06	-0.07	0
ECC 3	100.64	1.64	10.51	98.78	1.63	10.51	-1.86	-0.01	0
ECC 4	51.54	0.04	6.95	51.43	0.04	6.95	-0.11	0	0
ECC 5	142.43	2.24	18.07	134.27	2.20	18.07	-8.16	-0.04	0
ECC 6	64.34	1.23	12.45	64.27	1.22	12.45	-0.08	0	0
ECC 7	113.49	2.62	10.46	113.31	2.60	10.46	-0.18	-0.02	0
ECC 8	107.21	0.42	15.05	107.08	0.42	15.05	-0.13	0	0
ECC 9	139.91	2.37	9.36	139.77	2.35	9.36	-0.14	-0.02	0
ECC 10	111.37	1.95	8.75	110.82	1.95	8.39	-0.54	0	-0.36
ECC 11	130.05	2.69	10.10	129.90	2.68	10.10	-0.15	0	0
ECC 12	90.84	2.18	11.60	90.50	2.18	11.60	-0.34	0	0
ECC 13	223.93	6.20	36.79	226.12	13.11	37.35	-2.21	6.91	0.57
ECC 14	45.31	8.45	0.73	43.56	8.45	0.73	-1.75	0	0
NGSSICR	24.24	0	0.48	23.43	0	0.48	-0.81	0	0

# 5.4 Habitat Trading Results

170. There is a minor trading down in habitat and linear BUs of less than one unit across all segments and the NGSSICR. This trading down can be attributed to the permanent loss of habitats through the installation of link box manhole covers.



171. A slight reduction of less than one unit in the trading down of linear habitats has been observed in ECC 1, ECC 10, and ECC 13, specifically concerning medium distinctiveness ditches. The restoration of these medium distinctiveness ditches is planned; however, the decrease in units can be attributed to the duration required to achieve the target condition.

# 5.5 Additionality

- 172. There are two Countryside Stewardship Scheme agreements in place inside the BNG Assessment Boundary:
  - In ECC 5, off Church Lane, near Croft where trenchless techniques are proposed to be employed along with the construction of a temporary haul road; and,
  - In ECC 8, off Patman's Lane, near Friskney where either trenchless techniques or open cut techniques will be employed, along with two Cable Installation Compounds.
- 173. The Natural England database confirms that in both cases the agreements expired in 2014.
- 174. The status of these CSS agreements will be reviewed again at the detailed design stage.

# 5.6 Summary Results of Biodiversity Net Gain/Loss

- 175. The BNG values for the BNG Assessment Boundary have been calculated using the Metric as having a net gain/ loss of:
  - -0.80% for habitat BUs;
  - +14.40% for linear BUs; and,
  - +0.08% for riparian BUs.
- 176. Table 5.4 provides a summary of the Metric results for each segment as well as the total BNG Assessment Boundary.
- 177. The Project will result in minimal habitat losses associated with the installation of link box manhole covers. More significant impacts are observed in ECC 5, where three construction compounds result in a net loss of 5.73% in habitat units and a 1.92% reduction in hedgerow units. Additionally, in ECC 14, along the route of the 400 kV cable, there is a loss of 11.02% of habitat units. Conversely, net gains of 7.23% in habitat units and 102.88% in linear units are anticipated at the OnSS in ECC 13, where a comprehensive planting plan for hedgerows, woodlands, and grasslands has been proposed to enhance biodiversity.



Table 5.4: Summary of Metric Results by Segment

Segment	Pre-development Area BUs	Pre-development Hedgerow BUs	Pre-development Watercourse BUs	Post development Area BUs	Post development Hedgerow BUs	Post development Watercourse BUs	Area BU Variation	Hedgerow BU Variation	Watercourse BU Variation	Area % Gain/ Loss	Hedgerow % Gain/ Loss	Watercourse % Gain/ Loss
ECC 1	381.04	5.38	23.30	380.48	5.34	23.25	-0.56	-0.04	-0.06	-0.15	-0.71	-0.25
ECC 2	105.60	9.11	13.83	103.54	9.04	13.83	-2.06	-0.07	0.00	-1.95	-0.76	0.00
ECC 3	100.64	1.64	10.51	98.78	1.63	10.51	-1.86	-0.01	0.00	-1.85	-0.88	0.00
ECC 4	51.54	0.04	6.95	51.43	0.04	6.95	-0.11	0.00	0.00	-0.22	0.00	0.00
ECC 5	142.43	2.24	18.07	134.27	2.20	18.07	-8.16	-0.04	0.00	-5.73	-1.92	0.00
ECC 6	64.34	1.23	12.45	64.27	1.22	12.45	-0.08	0.00	0.00	-0.12	-0.27	0.00
ECC 7	113.49	2.62	10.46	113.31	2.60	10.46	-0.18	-0.02	0.00	-0.27	-1.66	0.00
ECC 8	107.21	0.42	15.05	107.08	0.42	15.05	-0.13	0.00	0.00	-0.12	0.00	0.00
ECC 9	139.91	2.37	9.36	139.77	2.35	9.36	-0.14	-0.02	0.00	-0.10	-0.97	0.00
ECC 10	111.37	1.95	8.75	110.82	1.95	8.39	-0.54	0.00	-0.36	-0.49	-0.08	-4.10
ECC 11	130.05	2.69	10.10	129.90	2.68	10.10	-0.15	0.00	0.00	-0.12	-0.12	0.00
ECC 12	90.84	2.18	11.60	90.50	2.18	11.60	-0.34	0.00	0.00	-0.38	0.00	0.00
ECC 13	223.92	6.20	36.79	226.13	13.11	37.35	2.20	6.91	0.56	7.23	102.88	9.70
ECC 14	45.31	8.45	0.73	43.56	8.45	0.73	-1.75	0.00	0.00	-14.17	0.00	0.00
NGSSA	24.24	0.00	0.48	23.43	0.00	0.48	-0.81	0.00	0.00	-3.34	0.00	0.00
TOTAL	1831.95	46.51	188.44	1817.27	53.20	188.59	-14.67	6.70	0.14	-0.80	14.40	0.08



### 5.7 Assumptions

178. In the process outlined in Section 2, a number of assumptions have been implemented. These are described in the following sections.

#### 5.7.1 Classification of Permanent Loss

- 179. Permanent loss of habitat is associated with construction of the OnSS, the OnSS permanent access track, the bellmouth permanent access at the landfall, link box manhole access covers and TJB manhole access covers.
- 180. Habitats created will differ from the baseline type and/ or condition, particularly at the OnSS which is cropland. Areas identified as "current permanent loss" in the design have been entered into the Metric as habitats scoring zero value.
- 181. The area of permanent loss for the substation has been split into 80% unsealed surface, and 20% sealed surface. As no specific detailed design exists at this stage, the area was split into 2 polygons of the relevant proportions, however as the underlying habitats are the same for the whole area this will not impact the outcome of the metrics.

### 5.7.2 Classification of Temporary Loss - Retained

- 182. For the Project, many of the activities associated with habitat disturbance are anticipated to take place over a short duration. Specifically, this is taken to cover activities of fencing off land, digging trenches, laying the cables, and then reinstating earth in the trench, restoring the land to its previous use, and removing fencing. These activities would occur over a short space of time and in short geographic lengths, with the land being subject to cable laying sequentially over the project duration.
- 183. Other activities associated with the Project are also likely to be temporary in nature, but their timing within the Project duration is not yet finalised at this stage. This includes cable feeding processes at joint bays and link boxes: trenches again are only expected to remain open for a matter of weeks whilst this work takes place before soils being reinstated.
- 184. It is assumed that for the purposes of calculating the time of a temporary impact or habitat loss for a particular habitat parcel or feature, this impact is deemed to occur upon commencement of pre-construction works. Refer to Section 5.7.4 which provides indicative timeframes for key construction activities. It is assumed that post-development, habitats classified as "temporary loss" would be cleared, but then will be reinstated to their former habitat type and condition within an acceptable timeframe.
- 185. It is assumed that any watercourses intersecting with areas of highway improvements/ alterations would be left in place, these were therefore marked as retained.
- 186. Habitats anticipated to be subject to trenchless techniques, i.e. those habitats above the drill zones, are all processed in the Metric as "retained", as impacts are deemed to be temporary and not affect habitat type or condition.



187. Any hedges/ watercourses that intersected with areas of Open Cut Infrastructure, are split into areas of Retained and Temporary Loss based on the assumption that a maximum of 60m will be affected.

### 5.7.3 Classification of Temporary Loss – Lost and Reinstated

- 188. Parcels of land that do not meet the criteria for temporary loss-reinstated, outlined in Section 5.7.2 above, and also are not related to permanent loss of habitats, have been processed in the Metric as lost and then reinstated to their original habitat type and condition.
- 189. For example, habitat loss associated with the haul road, that will remain operational for the duration of construction (up to 51 months) but will then be dismantled and land reinstated back to its original habitat type and condition.

#### 5.7.4 Retained Habitats

190. All enabling access tracks are included in the BNG assessment boundary, but are recorded as retained habitats. The Project's enabling access tracks will utilise existing farm access tracks, where no significant ecological impact is anticipated. as they will utilise existing access tracks, already in use by farm machinery.

#### 5.7.5 Timescales

191. It is assumed, unless otherwise stated, that land temporarily required for the construction of the Project will be reinstated once construction is complete. Using the Maximum Design Scenario for the project (outlined in ES Volume1: Chapter 3 Project Description (Document Reference APP-058), Indicative Construction Timescales are provided in Table 5.5. It is assumed that the haul road will be in place for a maximum of 24 months at any given location across the route.

Table 5.5: Maximum Design Scenario - Indicative Construction Timeframe

Construction Infrastructure	Maximum duration
Cable Installation Compound	6 months
Temporary construction accesses (onshore ECC and 400 kV	36 months
cable corridor)	
Temporary construction accesses between A52 and the	51 months
landfall compound	
Highway Alterations	36 months
Onshore cable duct, export cable and 400 kV installation	42 months
Onshore Drainage	Permanent
Onshore Substation Temporary Construction Compound	36 months
A52 Hogsthorpe primary construction compound	51 months
Primary Construction Compound	36 months
Secondary Construction Compound	24 months
Temporary Access Track	2 months
Temporary Laydown Area	18 months



#### 5.7.6 Metrics and Local Authority Boundaries

- 192. BNG is considered at a Project-scale rather than Local Authority scale. BNG Metrics has been run for each segment as outlined in Section . It is deemed appropriate in this instance to not run BNG Metrics for each LPA as the impacts from the Project will be dealt with on a Project-wide basis, rather than Local Authority basis, and this extends to consideration of BNG.
- 193. The Project spans two National Character Areas (NCA): Lincolnshire Coast and Marshes (42), and The Fens (46). The Metric applies a spatial risk multiplier, i.e. discounting the value of BUs, where habitat creation or enhancement is provided outside either the LPA boundary and/ or an NCA. Due to the linear nature of the project, the Project has determined that NCA are the appropriate boundaries for targeting habitat creation and enhancement delivery. As the two NCAs where habitat creation or enhancement will be delivered are adjacent, and Project covers both these NCAs, it is proposed that the spatial risk multipliers relating to habitat compensation are not applied to this Project.

### 5.7.7 UKHab to Biodiversity Metric Habitat Conversion

194. Habitat types have been assigned a Metric habitat classification based on their UK Habitat Classification Primary Code (and Secondary code, where relevant). In some instances, a direct conversion between the two habitat systems was not possible<sup>3</sup>. In this case, habitats have been assigned to the nearest matching the Metric classification based on professional judgement. To ensure transparency, where a conversion occurs, data changes will be logged in the User Comments of the completed baseline tabs (A1, B1 and C1) in the Metric calculator tool for the Project. A full list of these instances is provided in Table 5.6 below.

Table 5.6: UK Habitat to BNG Metric Habitat Conversion

Primary Code (recorded in UKHab baseline survey)	Broad BNG Habitat	BNG Habitat
c1	Cropland	Cereal crops
c1a	Cropland	Arable field margins tussocky
c1c	Cropland	Cereal crops
c1c5	Cropland	Winter stubble
c1c7	Cropland	Cereal crops
c1d	Cropland	Non-cereal crops
c1d8	Cropland	Non-cereal crops
f2e	Wetland	Reedbeds
g3	Grassland	Other neutral grassland
g3c (and all sub-types)	Grassland	Other neutral grassland
g4	Grassland	Modified grassland
h3	Heathland and shrub	Mixed scrub

<sup>&</sup>lt;sup>3</sup> The metric is based upon UKHab Primary Hierarchy Level 4 for the majority of terrestrial habitats but deviates from this habitat scheme in freshwater and inter-tidal habitats.



Primary Code (recorded in UKHab baseline survey)	Broad BNG Habitat	BNG Habitat
h3a	Heathland and shrub	Blackthorn scrub
h3c	Heathland and shrub	Other sea buckthorn scrub
h3f	Heathland and shrub	Hawthorn scrub
h3h	Heathland and shrub	Mixed scrub
r1a	Lakes	Ponds (priority habitat)
r1 19	Lakes	Ponds (priority habitat)
r2b	Watercourse footprint	Watercourse footprint
s3a5	Sparsely vegetated land	Coastal sand dunes
t2a	Intertidal sediment	Saltmarshes and saline reedbeds
t2d	Intertidal sediment	Littoral mud
t2h	Intertidal sediment	Littoral sand
u1	Urban	Developed land; sealed surface
u1b (u1b5 and u1b6)	Urban	Developed land; sealed surface
u1c	Urban	Artificial unvegetated, unsealed surface
w1	Woodland and forest	Other woodland; broadleaved
w1g7	Woodland and forest	Other woodland; broadleaved

#### 5.7.8 Distinctiveness

195. As outlined in the methodology, watercourse polygons less than 5m in width are reassigned to the adjacent habitat type of the highest distinctiveness.

### 5.7.9 Strategic Significance

196. The definition of "Strategic Significance" has been refined in the Metric and represents a multiplier for habitats based on its location and habitat type. As no Local Nature Recovery Strategy has been published and no documents have yet been identified by the local authorities as being relevant for assigning strategic significance, only medium and low strategic significance will be applied (following the guidance set out in Table 8 of the Metric User Guide (Defra, 2024)). In the event that an LNRS or other relevant documents are published in time for the post-DCO design stage BNG report, this approach will be reviewed.

#### 5.7.10 National Grid Substation Indicative Connection Route

197. The National Grid Substation Indicative Connection Route (NGSSICR) is situated within Segment ECC14. For the purposes of this assessment, Biodiversity Net Gain (BNG) calculations for this indicative, realistic worst-case scenario regarding the 400 kV cable corridor are presented separately. Once National Grid finalises the substation location, the positioning of the 400 kV connecting cable can be determined and subsequently integrated into the final BNG assessment at the detailed design stage. Given that the NGSSICR represents a realistic worst-case scenario, it is anticipated that the BNG calculations will demonstrate improvement in the final assessment.



#### 5.7.11 Onsite/Offsite Classification

- 198. The BNG Assessment Boundary is classed as "onsite" and are inputted into the relevant onsite metric tabs.
- 199. At present, no offsite mitigation is proposed. Opportunities for further biodiversity net gain will continue to be explored and will be included in the detailed design stage assessment, post-DCO consent.

### 5.8 Deviations from BNG Rules and Principles

- 200. For the Project, parcels of land have been deemed to be "retained" in Metric terms where they meet two criteria:
- 201. The habitats being impacted can be restored to their original type and condition within a three-year timeframe, according to Metric Temporal Multipliers; and,
- 202. The activity impacting the habitat is temporary in nature, i.e. physical works are completed within a three-year timeframe, according to Project implementation plans.
- 203. The Metric User Guide states that temporary losses of habitat that can be reinstated within 2 years of the impact occurring to the same habitat type and condition as the baseline situation can be omitted from the Metric calculations. Due to the nature of the project and the habitats present within the Project, it is considered appropriate to extend the period of temporary loss excluded from the metric to three years (36 months). This adaptation of published guidance has been made specifically in relation to cropland (as defined by UKHab, i.e. regularly or recently cultivated agricultural, horticultural and domestic habitats) which will be reinstated within a three-year period.
- 204. Cropland habitats are characterised by rotational disturbance on a seasonal basis, with land use changing from cereal, non-cereal or temporary grassland ley (fallow), typically on a 3-5 year rotation. It is therefore typical within an arable cropping regime for land to be fallow or unproductive for short periods and Defra guidance indicates this fallow period can be up to 5 years within designated croplands (Defra Basic Payment Scheme guidance, January 2023) Therefore, the temporary removal of arable land from food production, but maintaining its use as temporary grass and clover ley, is considered to be a cropland's "habitat restoration to baseline" for the purposes of BNG.
- 205. Whilst the vast majority (including areas for temporary construction compounds, open cut trenches, temporary access tracks and laydown areas) will be reinstated within two years or less, the Project requires the operational flexibility to retain sections of the route as accessible to construction work for longer periods. It also recognises that, with the exception of cropland, all other habitats affected by the Project would take longer than three years to return to their baseline habitat type and condition and are therefore considered in the Metric to be a loss.



206. Rule 3 cannot be adhered at the landfall (ECC 1), as a medium distinctiveness ditch is to be reinstated with a ditch of low distinctiveness, accounting for a very small loss of 0.04 BU. The trading rules outlined in Table 3.2 can therefore not be met. Section 6.1 provides the next steps proposed to overcome this.



# 6 Next Steps

207. It is the intention of the Project that the BNG assessment will be updated to reflect any new opportunities pursued as they become material and measurable and/or following consent award using a detailed design, with the results represented in a final BNG Design Stage Assessment Report. At that time, potential enhancements for the Project's latest BNG values will be investigated. Opportunities will be sought in improving existing habitat types within the Order Limits, as well as considering the addition of new parcels of land to create new habitats within the BNG Assessment Boundary. The detailed design will also look to provide a greater diversification in the habitats within the ca. 2 ha area of lowland meadow to be created to the east of the OnSS on the basis that this land parcel is secured. For example, the inclusion of a complex of ponds and scrapes would enhance habitats for birds, mammals, reptiles, amphibians and invertebrates in the local area.

## 6.1 Rule 1: Trading Up

208. There is a trading down in habitats, linear and watercourse BUs across the Project. However, the trading down is very slight and will be overcome at the detailed design stage by further improving and/ or extending the habitats to ensure that Rule 1 is adhered to.

### 6.2 Off-site Enhancement

209. Opportunities for offsite habitat enhancement are being pursued. The Project will continue to work with key stakeholders, including RSPB and the Lincolnshire Wildlife Trust to explore opportunities for enhancement, for example in support of the Greater Frampton Vision Project.

### 6.3 Greater Frampton Vision – RSPB

- 210. The Project is seeking ways to support the RSPB deliver their Greater Frampton Vision.
- 211. In some instances, the reinstatement of habitats post-Project within the RSPB's Greater Frampton Vision area may be contrary to their conservation strategy for the wider landscape.
- 212. An example of this is the reinstatement of hedgerow habitats in this area, where RSPB's conservation strategy is to remove hedgerows in their vision area. For these cases, the Project will liaise directly with RPSB to seek alignment of approaches. The Project remains committed to reinstating all habitats temporarily lost during-construction, but the location of some of these may be altered based on continued stakeholder engagement in relation to the Greater Frampton Vision.



## 6.4 Ecological Management Plan

- 213. The proposals for mitigation, monitoring and review set out in the OLEMS (Document Reference APP-284) will be updated post consent to account for the Project's detailed design, updated ecology survey results and any requirements for BNG following completion of the final BNG assessment. The mitigation and management for the Project will be provided in a detailed Ecological Management Plan (EMP) and will be developed in consultation with the relevant statutory nature conservation body.
- 214. The EMP will be submitted to the relevant Local Planning Authorities (LPAs) in consultation with the relevant statutory nature conservation body for approval prior to construction.
- 215. As required by the DCO, the EMP will include the following specific plans:
  - A protected species mitigation management plan;
  - A nesting birds management plan; and,
  - A non-native invasive species management plan.
- 216. The EMP will also secure biodiversity enhancements through provision, for example of bird and bat boxes at the OnSS.

### 6.4.1 Habitat Monitoring and Management

- 217. Habitats within the Applicant's landownership (primarily focused around the OnSS) will be subject to a 30-year monitoring and management plan..
- 218. After reinstatement, cropland and agricultural grassland will be subject to no monitoring or management. This is consistent with current BNG practice, which has not included cropland in the Habitat Management and Monitoring Plan template (Natural England, 2023).
- 219. Hedgerows and watercourses along the ECC and 400 kV cable corridor will be subject to post re-instatement visits to ensure successful establishment of habitat up to 5 years after scheme completion. Thereafter, management will be transferred back to the landowner, who shall continue to maintain them in accordance with their individual management practices.



### 7 Conclusion

- 220. This BNG assessment represents the BNG performance for the onshore section of the Outer Dowsing Offshore Wind Project (i.e. landward of MLWS) based on the Project's current design envelope using the Statutory Metric calculator. The method and limitations are presented within this report. This assessment is intended to inform the local planning authority, stakeholders and other relevant parties as to the Project's performance with regards to Biodiversity Net Gain.
- 221. The BNG values for the BNG Assessment Boundary have been calculated for each habitat type using the Metric as having a net gain/ loss of:
  - -0.80% for habitat Biodiversity Units (these are areas of habitat types measured in m2;
  - +14.40% for linear Biodiversity Units (which include hedgerow and lines of trees measured in km); and,
  - +0.08% for riparian Biodiversity Units (which include ditches and rivers measured in km).
- 222. The Project will result in minimal habitat losses associated with the installation of link box manhole covers. More significant impacts are observed in ECC 5, where three construction compounds result in a net loss of 5.73% in habitat units and a 1.92% reduction in hedgerow units. Additionally, in ECC 14, along the route of the 400 kV cable, there is a loss of 11.02% of habitat units. Conversely, net gains of 7.23% in habitat units and 102.88% in linear units are anticipated at the OnSS in ECC 13, where a comprehensive planting plan for hedgerows, woodlands, and grasslands has been proposed to enhance biodiversity.
- 223. In line with Good Practice Guidance and the Applicant's Approach to BNG, it is recommended that an updated assessment is undertaken at the post-DCO consent stage and incorporated into a final BNG Design Stage Assessment Report. In addition, a detailed LMP and EMP would be produced post-consent that will include the final requirements for auditing on-site areas against the BNG objectives set out in the Metric assessment, and any associated management actions.



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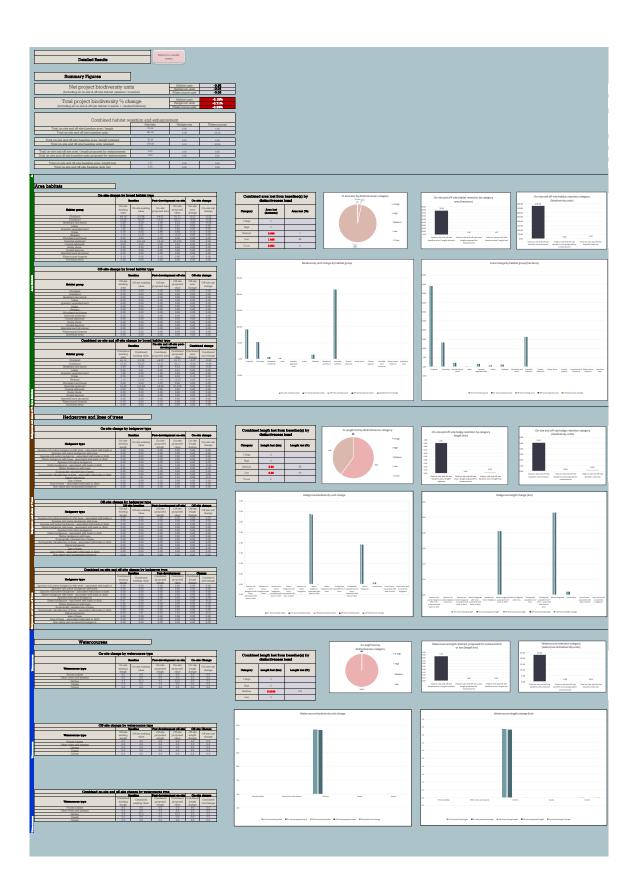
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# **Appendix A: Metric Detailed Summary**

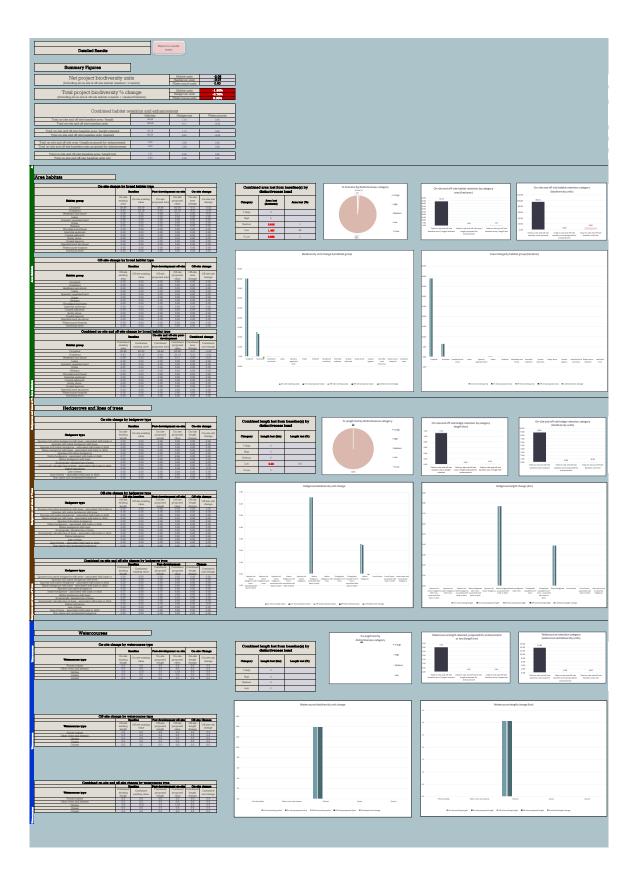


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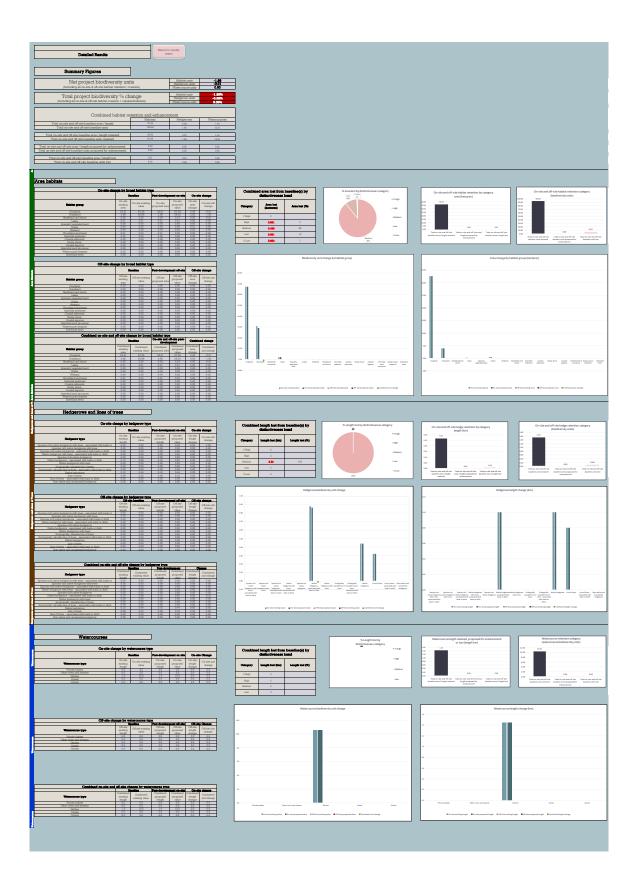


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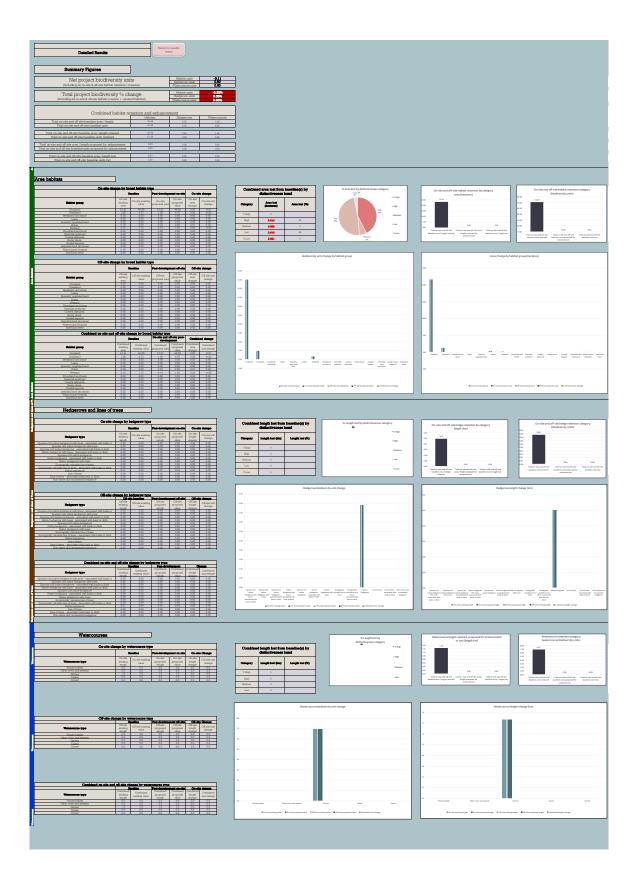


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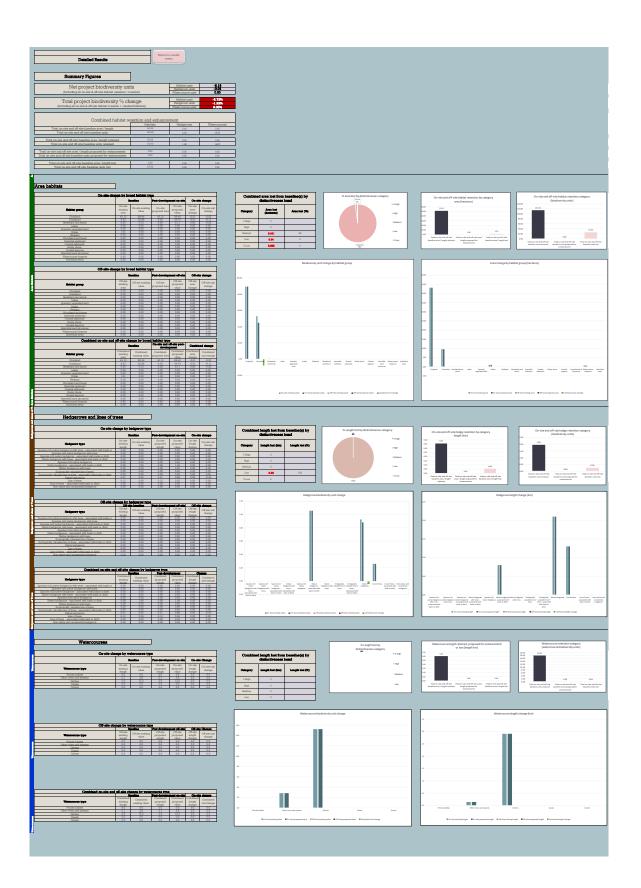


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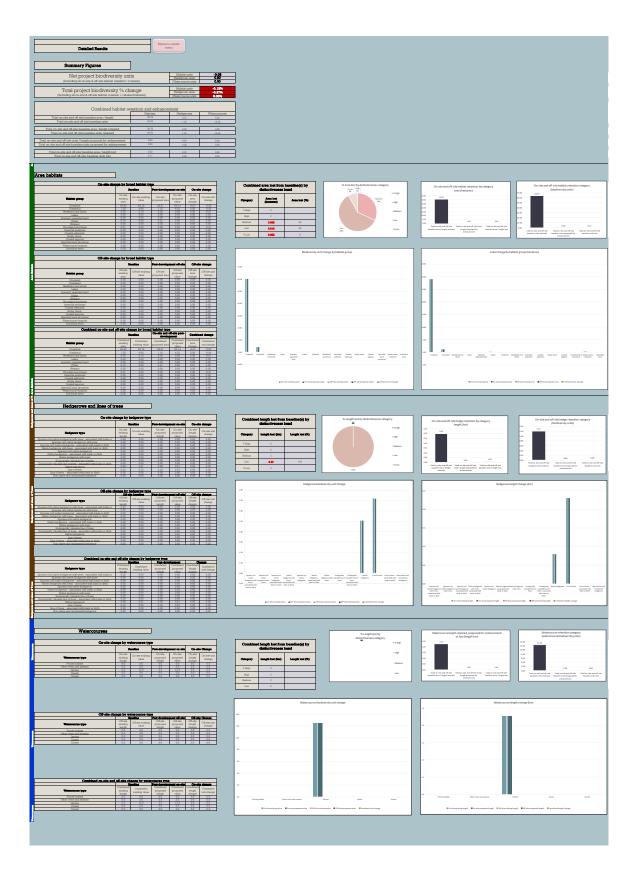


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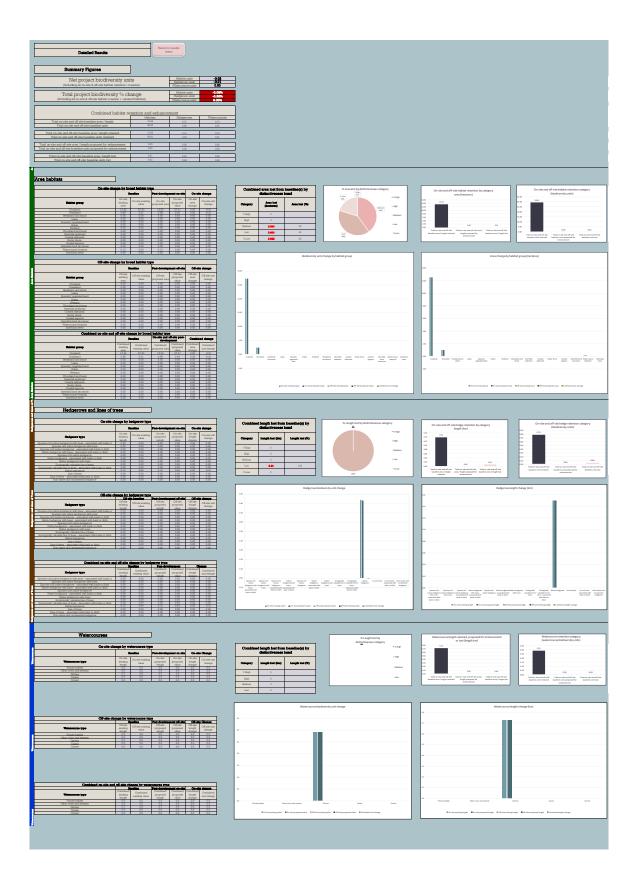


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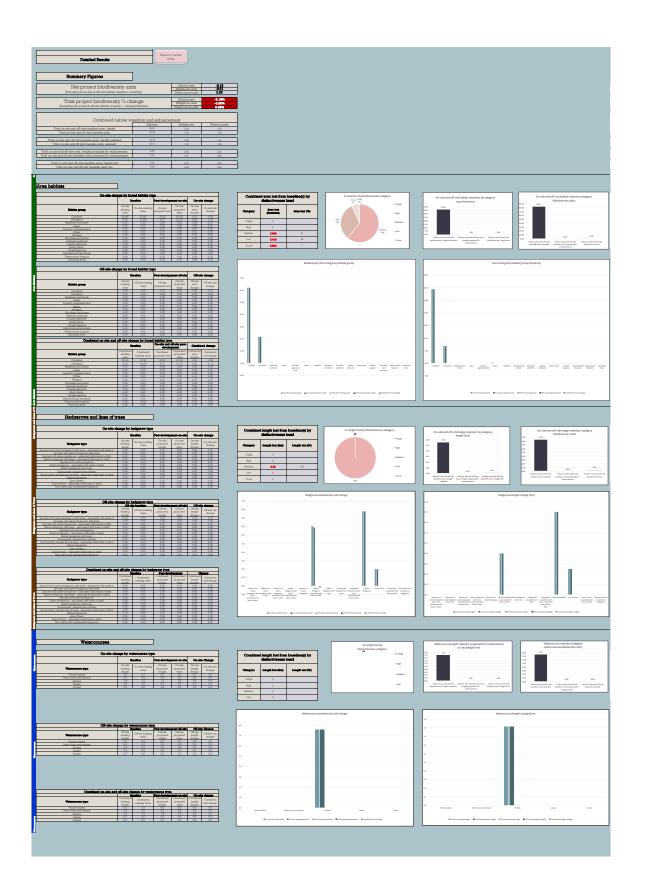


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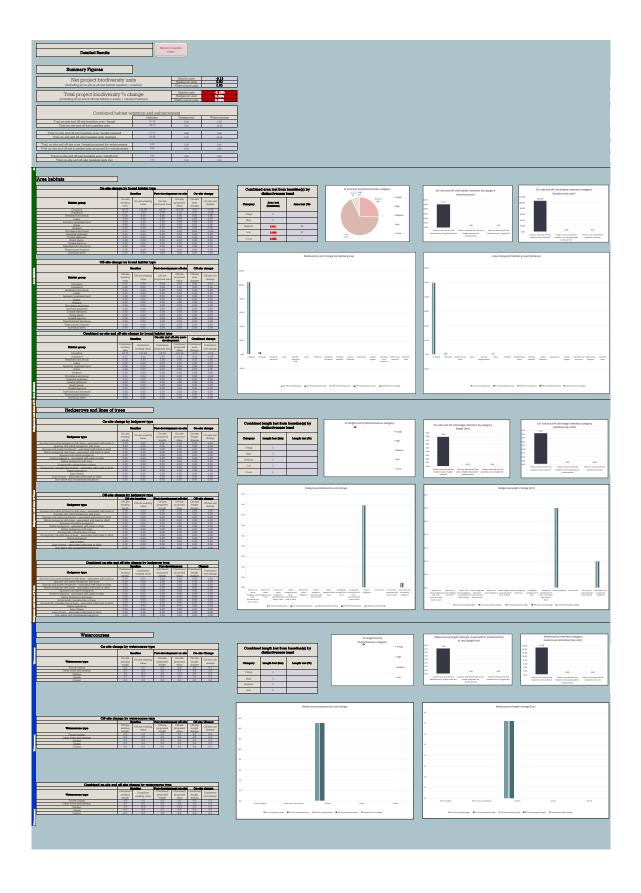


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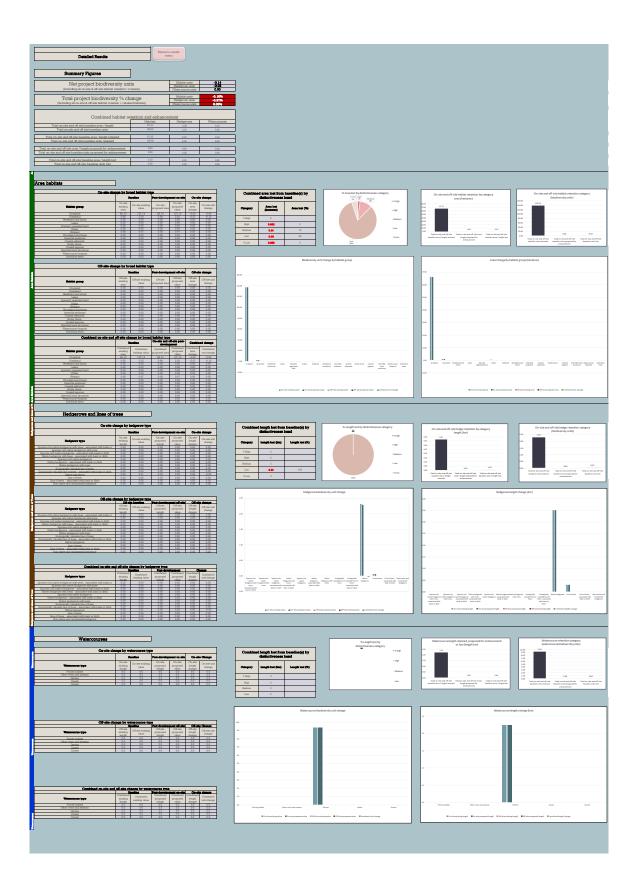


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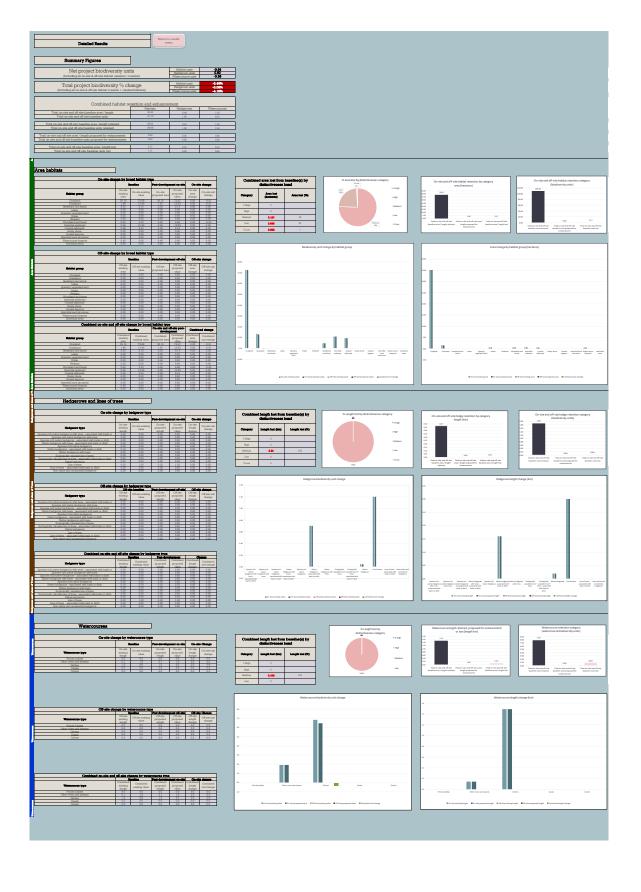


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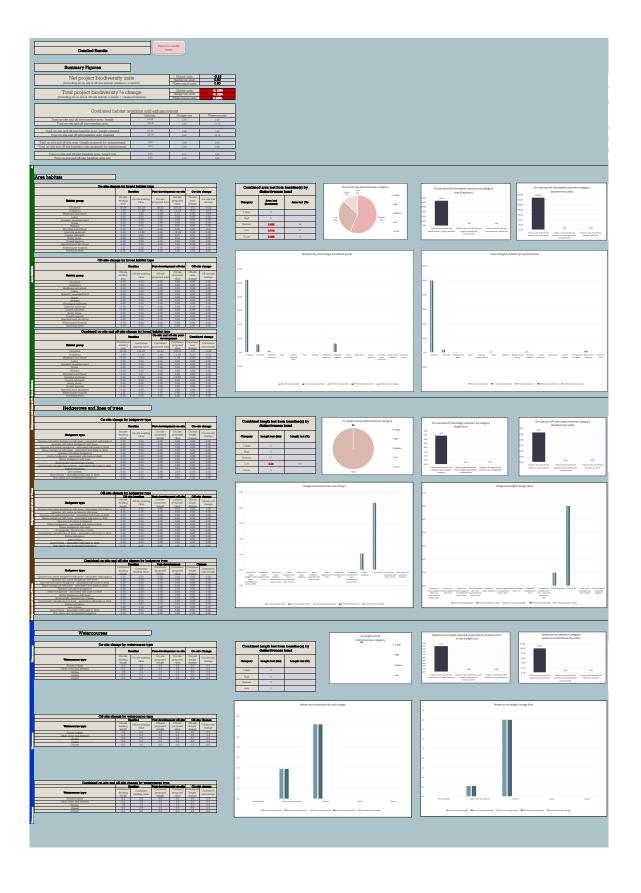


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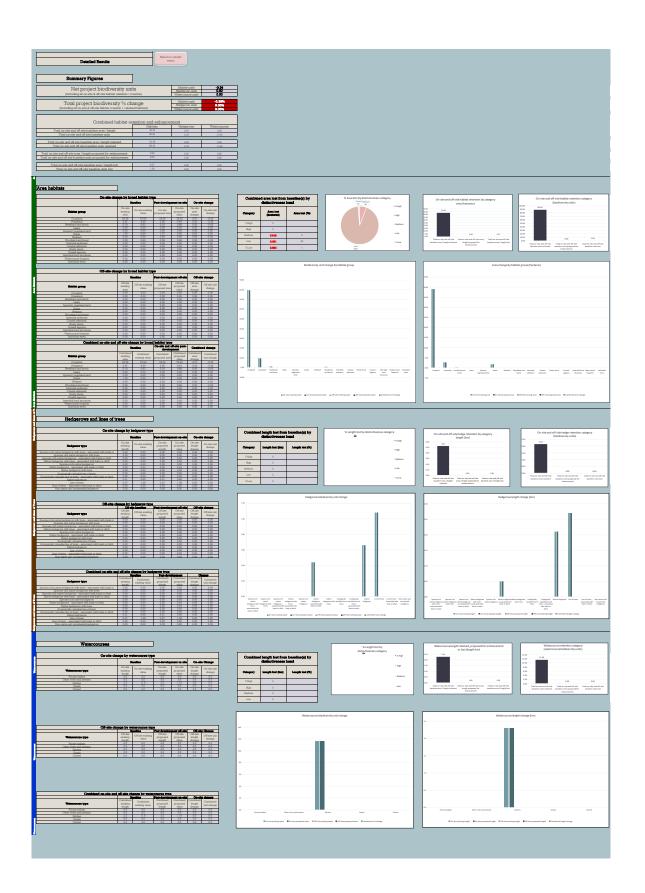


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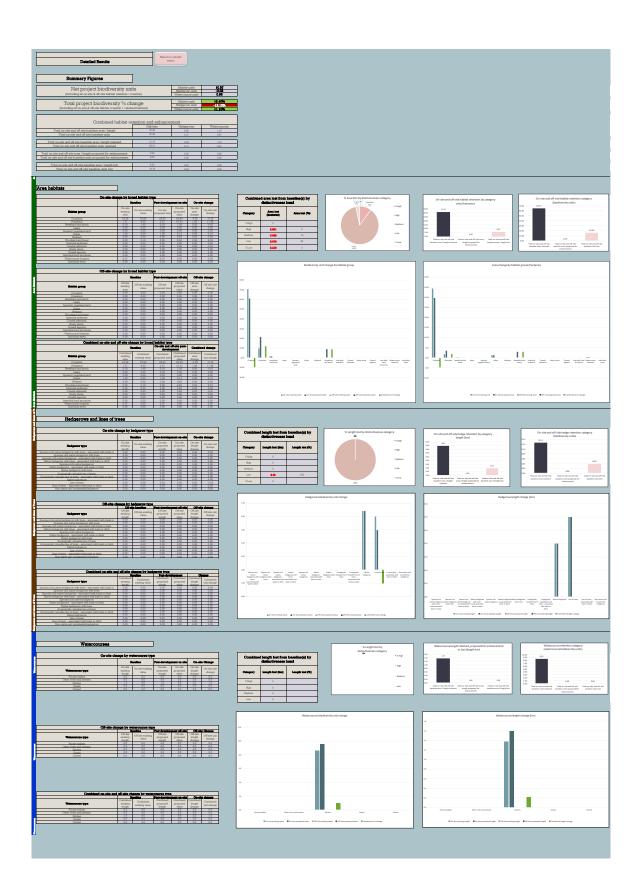


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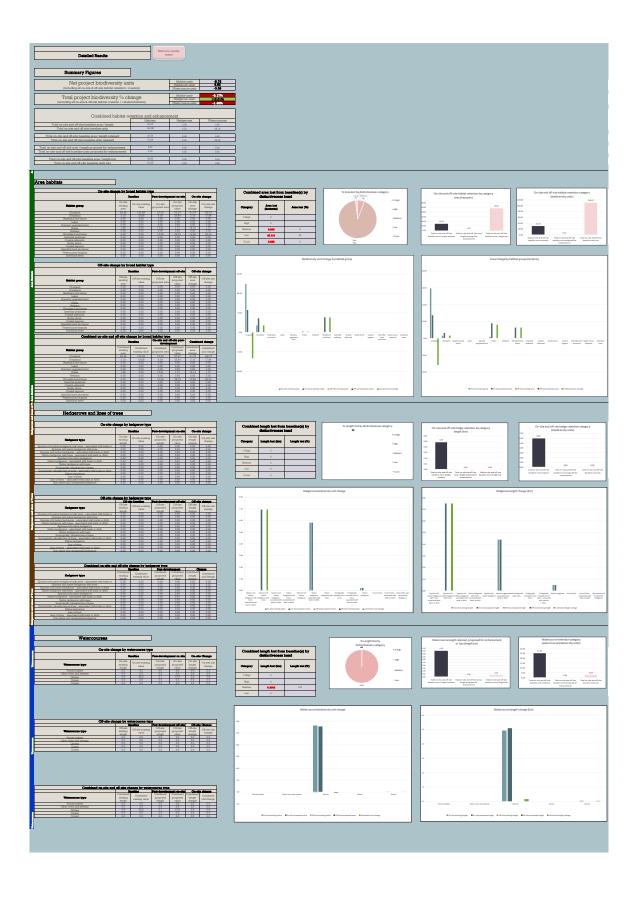


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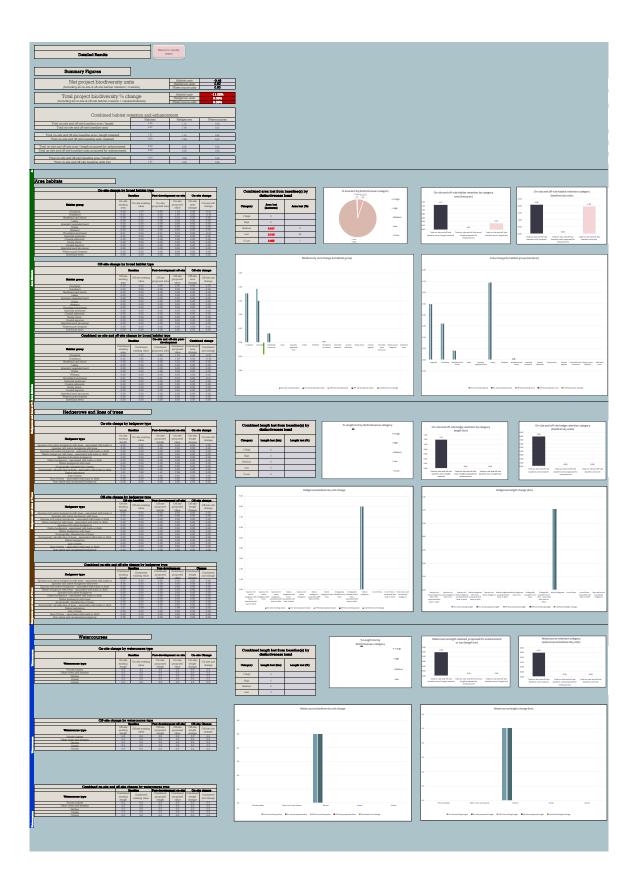


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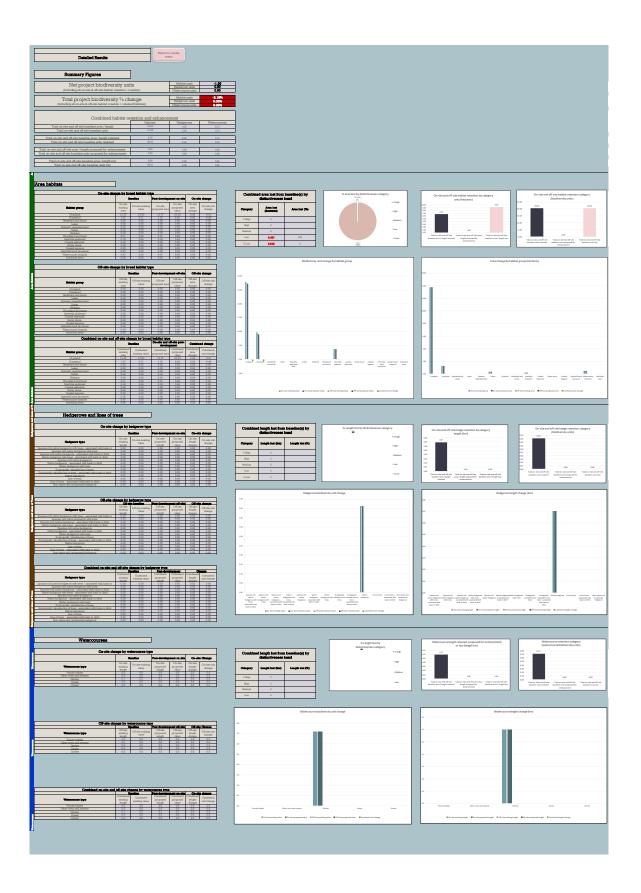


## **Segment ECC 14 (Boston District Council)**





## **Segment ECC 14 (South Holland District Council)**





### **National Grid Sub-Station Indicative Cable Route**

