Scotland England Green Link 2 -English Onshore Scheme

Environmental Statement: Volume 2

Chapter 8: Landscape and Visual Amenity

May 2022

For: National Grid Electricity Transmission

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8. Landscape and Visual Amenity

8.1 Introduction

This chapter of the Environmental Statement (ES) presents the results of an assessment of the effects of the English Onshore Scheme on landscape character and visual amenity.

Landscape effects associated with the English Onshore Scheme relate to the changes to the fabric, character, and quality of the landscape and how it is experienced. As defined in the Guidelines for Landscape and Visual Impact Assessment (Ref 8-1) the term landscape also encompasses urban landscape, often referred to as townscape. For the purpose of this assessment the term landscape is adopted and may include areas of townscape within towns or villages.

Visual effects relate closely to changes to the landscape, but primarily concern changes in people's views and visual amenity as a result of the introduction of the English Onshore Scheme. Although effects on the landscape and visual environment are interrelated, they are assessed and reported separately in this chapter.

This chapter presents: the regulatory and policy framework relating to landscape and visual amenity; the assessment methodology applied and consultation undertaken; the existing (baseline) conditions within a defined study area; the potential impacts of the English Onshore Scheme and the mitigation measures incorporated into its design to prevent and reduce these impacts; and the likely significant effects associated with its construction and operation that are likely to remain after the establishment of mitigation measures (referred to as the 'residual effects').

The assessment of impacts and effects on landscape and visual amenity have relationships with other assessments undertaken as part of the Environmental Impact Assessment process. Accordingly, reference should be made to **Chapter 9: Archaeology and Cultural Heritage** and **Chapter 15: Socio-economics, Recreation and Tourism** of this Environmental Statement (ES).

This chapter is supported by the following figures:

- Figure 8-1: Study Area and Topography
- Figure 8-2: Landscape Character and Designations
- **Figure 8-3**: Key Visual Receptors and Representative Viewpoints
- Figure 8-4: Zone of Theoretical Visibility Converter Station (bare earth and screened)
- Figure 8-5: Outline Landscape Mitigation Plan

This chapter is also supported by Appendices, which consists of:

- Appendix 8A: Landscape and Visual Assessment
- Appendix 8B: Viewpoint Photography and Visualisations
- Appendix 8C: Arboricultural Impact Assessment Report

8.2 Planning Policy and Applicable Legislation

8.2.1 Legislation

This section sets out the legislative and policy framework relevant to the assessment of the English Onshore Scheme's impacts and effects on landscape and visual amenity.

8.2.1.1 European Landscape Convention

The European Landscape Convention (ELC) (Ref 8-1-2) was signed by the UK Government in 2006 and came into effect in March 2007. The ELC recognises landscape in law. It focuses specifically on landscape issues and highlights the importance of integration of landscape into areas of policy, to

promote protection, management and planning of all landscapes including the assessment of landscape and analysis of landscape change.

The ELC defines landscape as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and / or human factors'. The ELC considers landscape as a whole (land or marine), from urban to rural areas, and whether special or degraded.

8.2.2 National Policy

Relevant national policies to the English Onshore Scheme and the assessment of landscape and visual effects are set out in the sub-sections below. These national policies may be a material consideration in the determination of applications, but do not change the primacy of locally prepared policy for determining applications under the Town and Country Planning Act.

8.2.2.1 National Planning Policy Framework

The revised National Planning Policy Framework (NPPF) (Ref 8-3) was published in July 2021 and sets out national planning policies that reflect priorities of the Government for operation of the planning system and the economic, social, and environmental aspects of the development and use of land. The NPPF has a strong emphasis on sustainable development, with a presumption in favour of such development.

Paragraph 174 of the NPPF states:

"Planning policies and decisions should contribute to and enhance the natural and local environment by [inter alia] ... 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); ... [and] recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services; ... [and] minimising impacts on and providing net gains for biodiversity".

8.2.2.2 National Policy Statements

The National Policy Statements (NPS) set out the Government's policy for the delivery of energy infrastructure and provide the legal framework for planning decisions. The statements applicable to the English Onshore Scheme are the Overarching National Policy Statement for Energy (EN-1) (Ref 8-4) and Electricity Networks (EN-5) (Ref 8-5).

Part 5.10 of NPS EN-1 sets out the factors that should be taken into consideration when completing a landscape and visual impact assessment. The policy goes on to set out what should be considered by decision-makers, which states in paragraph 5.10.9 that:

"Projects need to be designed carefully, taking account of the potential impact on the landscape. Having regard to siting, operational and other relevant constraints the aim should be to minimise harm to the landscape, providing reasonable mitigation where possible and appropriate."

In EN-5 it is considered that the majority of text related to landscape and visual impacts is in regard to the development of new overhead lines. However other components of transmission networks such as underground cables, substations and other above ground infrastructure are referenced. Relating to the favourable design of new transmission infrastructure and their assessment, paragraph 2.8.4 states:

"While proposed underground lines do not require development consent under the Planning Act 2008, wherever the nature or proposed route of an overhead line proposal makes it likely that its visual impact will be particularly significant, the applicant should have given appropriate consideration to the potential costs and benefits of other feasible means of connection or reinforcement, including underground and sub-sea cables where appropriate. The ES should set out details of how consideration has been given to undergrounding or sub-sea cables as a way of mitigating such impacts, including, where these have not been adopted on grounds of additional cost, how the costs of mitigation have been calculated." Draft versions of NPS EN-1 and EN-5 were published for consultation by the Department for Business, Energy & Industrial Strategy in September 2021.

8.2.2.3 Planning Practice Guidance (PPG)

Planning Practice Guidance (PPG) for 'Natural Environment' (Paragraph: 036 Reference ID: 8-036-20190721) (Ref 8-6) states:

"...plans should recognise the intrinsic character and beauty of the countryside, and that strategic policies should provide for the conservation and enhancement of landscapes. This can include nationally and locally-designated landscapes but also the wider countryside."

It also notes:

"Where landscapes have a particular local value, it is important for policies to identify their special characteristics and be supported by proportionate evidence. Policies may set out criteria against which proposals for development affecting these areas will be assessed. Plans can also include policies to avoid adverse impacts on landscapes and to set out necessary mitigation measures, such as appropriate design principles and visual screening, where necessary. The cumulative impacts of development on the landscape need to be considered carefully."

8.2.3 Local Policy

8.2.3.1 East Riding of Yorkshire

The statutory development plan for East Riding of Yorkshire Council (ERYC) is the 'East Riding Local Plan 2012 – 2019' (ERLP) (Ref 8-7), adopted April 2016.

Under the ERLP objective 'A High Quality Environment', (p.32) it states:

"Recognise, protect and enhance the international, national and local importance of the East Riding's natural environment and biodiversity, including nature designations of all levels, Priority Habitats and Species, high quality landscapes, such as the Yorkshire Wolds, networks of green infrastructure and supporting opportunities for appropriate recreation."

The following policies are considered of relevance to landscape and visual considerations:

- Policy ENV1: Integrating high quality design. This policy seeks to foster good design in new development proposals, including safeguarding and respecting the diverse character and appearance of the area through their design, layout, construction, and use.
- Policy ENV2: Promoting a high-quality landscape. This broad policy sets out that development proposals should be sensitively integrated into the existing landscape, demonstrate an understanding of the intrinsic qualities of the landscape setting and, where possible, seek to make the most of the opportunities to protect and enhance landscape characteristics and features. This policy seeks to achieve this through (*inter alia*) (p.127):

"Ensure important hedgerows and trees are retained unless their removal can be justified in the wider public interest. Where important hedgerows and trees are lost replacements will usually be required.

Maintain or enhance the character and management of woodland where appropriate.

Retain, not detract from, and enhance wetland and water feature characteristics.

Protect and enhance views across valued landscape features, including flood meadows, chalk grassland, lowland heath, mudflats and salt marsh, sand dunes and chalk cliffs.

Protect and enhance the undeveloped coast.

Proposals should protect and enhance existing landscape character as described in the East Riding Landscape Character Assessment, in particular, within the following Important Landscape Areas as shown on the Policies Map [including]:

1. The Yorkshire Wolds, with special attention to ensuring developments are of an appropriately high quality and will not adversely affect the historic and special character, appearance, or natural conservation value...

3. The Lower Derwent Valley, which includes the River Derwent Corridor and Pocklington Canal."

- Policy ENV5: Strengthening green infrastructure: This policy states that development proposals should capitalise on opportunities to enhance and / or create links between green infrastructure features identified within ERYC. It notes that proposals within, or in close proximity to a green infrastructure corridor should enhance the functionality and connectivity of the corridor.
- Policies A1-6: These policies require that development proposals take into account the proximity, or views of, valued landscape features within and surrounding the East Riding, including those that have particular importance to settlements. Other features are set out in the East Riding of Yorkshire Landscape Character Assessment (Ref 8-8).

8.2.3.2 Selby District Council

The Development Plan for Selby District Council (SDC) comprises the following Local Plan documents:

- 'Saved' policies from the Selby District Local Plan, 2005 (Ref 8-9); and
- The Selby District Core Strategy Local Plan (adopted October 2013) (Ref 8-10).

Whilst an emerging new Local Plan for SDC is currently under preparation with the most recent evidence base document consultation ending in October 2021, the adopted Local Plan documents have been used to identify the following policies which are considered to be of most relevance to landscape and visual considerations:

'Saved' policies from the Selby District Local Plan, 2005

- Policy ENV1: Control of Development. The policy states that proposals for development will be
 permitted provided a good quality of development would be achieved. This includes (inter alia):
 "The effect upon the character of the area or the amenity of adjoining occupiers; The standard of
 layout, design and materials in relation to the site and its surroundings and associated
 landscaping; The potential loss, or adverse effect upon, significant buildings, related spaces,
 trees, wildlife habitats, archaeological or other features important to the character of the area."
- Policy ENV21: Landscaping Requirements: This policy states that where appropriate, high quality landscaping proposals should be incorporated as an integral part of development schemes. The policy provides guidance in order to ensure that proper consideration is given to the retention, replacement and planting of trees, hedgerows, and other landscape features.
- Policy EMP10: Additional industrial development at Drax and Eggborough Power Stations. This policy states that additional industrial / business development may be permitted at or close to Drax and Eggborough power stations provided the proposal:
- "...4) Would not have a significant adverse effect on residential amenity in nearby settlements; 5) Would be related to existing development and would be well screened, including provision for earth mounding and strategic off-site planting." (p.122)

Selby District Core Strategy Local Plan (adopted October 2013)

- Policy SP18: Protecting and Enhancing the Environment. This broad policy seeks to sustain the high quality and local distinctiveness of the natural and manmade environment.
- Policy SP19 Design Quality. This policy expects that new development proposals should achieve high quality design and have regard to the local character, identity and context of its surroundings including historic townscapes, settlement patterns and the open countryside.

8.3 Approach to Assessment

8.3.1 Introduction

This section describes the approach to the identification and assessment of impacts and effects on landscape and visual amenity resulting from the construction and operation of the English Onshore Scheme.

8.3.2 Summary of Consultation

8.3.2.1 Scoping Opinion Review

Table 8-1 summarises the issues raised in the scoping opinion in relation to landscape and visual amenity and outlines how and where these have been addressed within this assessment and other assessments reported in the ES. A copy of the scoping opinion is included in **Appendix 5B**.

Table 8-1: S	coping O	pinion ((Landscape	e and Visua	Amenity)
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Consultee	Summary of comment	How and where addressed
Natural England	Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography.	The landscape assessment has been undertaken using published local landscape character assessments. There aren't any relevant management plans or strategies relevant to the study area. Landscape character areas at the national and local level have been mapped (refer to Figure 8-2). The landscape and visual assessments are reported in Section 8.7.
	The EIA should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. The use of Landscape Character Assessment (LCA) is encouraged, based on good practice guidelines produced jointly by the Landscape Institute and Environmental Assessment in 2013. The assessment should refer to the relevant National Character Areas, as outlined on the Natural England website.	Relevant National Character Areas have been identified in Section 8.6.2.1. Impacts on local landscape character are considered in Section 8.7.4 and 8.7.5. The landscape assessment has been undertaken in accordance with relevant good practice guidelines identified in Section 8.3.3.
	Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics, to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness. The EIA process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.	The approach to design and mitigation is detailed in Section 8.7.2 and in the Design and Access Statement (DAS).
	The assessment should also include the cumulative effects of the development with other existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping Stage would be likely to be a material consideration at the time of determination of the planning application.	Cumulative landscape and visual effects are contained in Section8.10 and include projects at scoping stage.

Consultee	Summary of comment	How and where addressed
Selby District Council	SDCs Landscape Architect agrees that Landscape and Visual Amenity should be scoped in relative to the proposed converter station and that operational effects associated with the underground AC/DC cable corridors can be scoped out. EIA should consider impacts of development alone and in combination with other proposals in terms of landscape and visual amenity.	Construction effects associated with the AC/DC cable corridors is contained in Section 8.7.3. Operational effects of the underground AC / DC cable have not been assessed. The cumulative landscape and visual assessment is contained in Section 8.10.
	SDC expressed support for the proposed LVIA methodology which follows guidance as set out in GLVIA Third Edition (LI and IEMA, 2013); An approach to Landscape Character Assessment (Natural England 2014), and Landscape Institute Technical Guidance Note 06/119: Visual Representation of Development Proposals. The use of photographs and photomontages, should be in- line with Technical Guidance Note (TGN) 06/19 Visual Representation of the Development Proposals (Landscape Institute, 2019).	The LVIA has been undertaken in accordance with relevant good practice guidelines identified in 8.3.3. Visualisations have been prepared in accordance with TGN 06/19 and are contained in Appendix 8B .
	A clear design strategy should be employed and should explain how the current application achieves principles of 'good design' in context of the site as a whole, for the overall composition of site structures, massing, layout, colour and materials, aiming to reduce overall massing, visual coalescence and site clutter. Buildings and infrastructure should be sensitive to place with an appearance that demonstrates good aesthetics as far as possible to ensure that development contributes to the quality of the area. A clear landscape strategy for the proposed scheme should be provided which should consider the wider Drax Power Station site and future maintenance responsibilities. The proposed strategy should avoid removing or double- counting landscape mitigation previously committed as part of other planning approvals and NSIPs. Consideration should be given to both landscape and biodiversity objectives for the site as a clear joined-up approach. Landscape proposals and mitigation should be proportionate to the scale of the development and should have regard for/contribute to the wider landscape character and setting.	The approach to design and mitigation is detailed in Chapter 3: Description of the English Onshore Scheme , Section 8.7.2 and the Design and Access Statement (DAS). This includes the coordinated approach to the landscape and ecological mitigation for the converter station site which incorporates Biodiversity Net Gain (BNG). The outline landscape plan (Figure 8-5) does not include any committed landscape mitigation identified in other planning approvals of NSIPs.
	A detailed topographical survey should be undertaken to understand and explain all the key features and characteristics of the existing site, including levels and landform, buildings and structures, existing vegetation and screening, hard/soft structures.	A detailed topographical survey has not been undertaken as this has not been required to inform the design at this stage. There are no buildings or structures within the site, however, the arboricultural survey which is contained in Appendix 8C identifies the existing vegetation within the site.
	There should be consideration of cumulative effects with other similar schemes, including the Drax BECCS NSIP.	The cumulative landscape and visual assessment is contained in Section8.10 and identifies the schemes considered.
	Existing trees and vegetation should be reviewed, protected and retained where appropriate. Tree survey and aboricultural impact assessment should be to BS5837 (Ref	Figure 8-5 shows the vegetation that will be retained on site along with the tree

Consultee	Summary of comment	How and where addressed
	8-11). This is important if vegetation is needed for ongoing screening of the site and to protect restored areas of the site.	protection zones. The arboricultural survey of the converter station site is contained in Appendix 8C .
	For the LVIA, an initial study area of 5 km from the converter station/underground AC cable is recommended to ensure that surrounding settlements such as Hemmingbrough and Camblesforth are considered. This could be later reduced as demonstrated appropriate. It is also suggested that this should be extended to a 15 km radius for the purposes of identifying 'other development' for the assessment of cumulative effects. Agreed that 1 km for the underground DC cable is sufficient.	The Zone of Theoretical Visibility has been run to 5 km from the converter station site and is shown on Figure 8-4 .
	The principle of establishing a ZTV using a DTM is considered acceptable but this should be verified through fieldwork to establish an accurate visual envelope. The availability of LIDAR data should be checked for more accurate surface modelling.	A combination of LIDAR data and 5 m digital terrain model (DTM) has been used to produce the ZTVs. Fieldwork has been undertaken to ground truth the ZTV and inform the content of the landscape and visual assessment.
	The principle of using representative viewpoints to illustrate the experience of difference types of visual receptor is acceptable, however, the assessment should aim to describe and assess the full effects of the development (not limited to a summary of viewpoints). The assessment should provide mapping of the landscape and visual effects to help quantify and illustrate the geographical extent of all receptors and likely effects of the development.	The visual assessment is contained in Section 8.7.3 and 8.7.5 and is accompanied by Figures 8-3 and 8-4 and Appendix 8A .
	The initial proposed list of viewpoints (Tables 6-1 and 6-2) is generally acceptable, but more detailed consideration following DTM and ZTV, site survey and final proposed scheme details is desired.	Figure 8-4 illustrates the ZTV and representative viewpoints. Site work informed the selection of viewpoints and was undertaken during March 2021 and February 2022.
	Photomontages to explain how adverse effects will be mitigated over time are desired. Photographs should include winter views where possible to explain the worst- case scenario.	Baseline photography and visualisations are presented in Appendix 8B . Photography was captured in February 2022 to reflect winter views.
	Appendix 3 and 4 in TGN 06/19 should be noted, with camera/tripod height/position in the field adjusted as necessary so that views show the full extent of the site/development and show the effect it has upon the receptor location. Views of the site should not be unnecessarily obscured by buildings, roadside hedgerows or other vegetation.	Photography has been undertaken in accordance with relevant good practice guidelines identified in 8.3.3 including TGN 06/19.
	SDC welcome the opportunity to discuss viewpoints and photomontages further once a ZTV, site survey and final Proposed Scheme details have been produced.	Figure 8-4 illustrates the ZTV which has been extended to 5 km as requested by SDC. Site work informed the selection of viewpoints and was undertaken during March 2021 and February 2022. Subsequent discussions have not been held with SDC.
	SDC recommend that the applicant should consider a night-time visual assessment if external lighting is to be proposed. Future lighting on the site should be minimised to prevent incremental build-up of lighting on the wider Drax Power Station site and reduce adverse visual effects	Details about the lighting of the converter station site are subject to detailed design. A specific night-time visual assessment has not been

Consultee	Summary of comment	How and where addressed
	(including reflected light on large buildings and vertical structures).	undertaken, however, the presence of lighting has been considered in the landscape and visual assessment, and good practice principles of design set out within the mitigation section (8.7).
	SDC recommend that a landscape strategy, design and access statement (or similar) is produced to explain the approach to design and development of the site.	The DAS is submitted as part of the planning application material to SDC. The approach to landscape design and mitigation is also detailed in Section 8.7.2.
	The proposed converter station (and related infrastructure) is to be built in close association with the existing Drax Power Station and there are current proposals for other major development in proximity. Given the scale of the existing Drax Power Station site, and the significant changes that have taken place since the original power station design, SDC would like to see a clear design strategy. This strategy should explain how the current application achieves principles of 'good design' in the context of the site as a whole, for the overall composition of site structures, massing, layout, colour and materials, aiming to reduce overall massing, visual coalescence and site clutter. Buildings and infrastructure should be sensitive to place with an appearance that demonstrates good aesthetics as far as possible, to ensure that development contributes to the quality of the area. Reference should be made to previous design statements and strategies for the Drax Power Station site where they are known.	The DAS is submitted as part of the planning application material to SDC and the approach to landscape design and mitigation is detailed in Section 8.7.2.
	Landscape Proposals, Mitigation, Maintenance and Aftercare - SDC would like to see a landscape strategy for the proposed scheme which should consider the wider Drax power station site and future maintenance responsibilities. The proposed scheme should avoid removing or double-counting landscape mitigation previously committed as part of other planning approvals and NSIPs.	The approach to design and mitigation is detailed in Section 8.7.2. Landscape including the detailed proposals and associated maintenance will be a reserved matter.
	SDC would like to see consideration of both Landscape and Biodiversity objectives for the site as a clear joined-up approach.	The collaborative approach to landscape and ecological mitigation for the converter station site is contained in Section 8.7.2 and Figure 8-5 as well as in the DAS.
	Landscape proposals and mitigation should be proportionate to the scale of the development and should have regard for and contribute to the wider landscape character and setting, local amenity with clear aims and objectives.	The approach to design and mitigation is detailed in Section 8.7.2 and the DAS.
	Landscape proposals should support the Government's commitment to improving green infrastructure, health and wellbeing, as set out in the 25-year Environment Plan. The Leeds City Region Green and Blue Infrastructure Strategy, NPPF and other local policy also recognise GI.	The approach to landscape and ecological mitigation is contained in Section 8.7.2 which identifies how these plans and strategies have informed the landscape proposals.
East Riding of Yorkshire Council	ERYC welcomes the proposed methodology for the assessment noting that it will ensure that the assessment is undertaken using a consistent, standardised methodology and is in accordance with current and emerging recognised guidance.	The LVIA has been undertaken in accordance with relevant good practice guidelines identified in Section 8.3.3.

Consultee	Summary of comment	How and where addressed
	ERYC noted that the assessment will also need to consider published guidance relating to local landscape character, notably the information presented in the East Riding of Yorkshire Landscape Character Assessment. This will provide particularly useful baseline information regarding local and wider landscape character in this area and, more specifically, offer a suitable basis upon which to assess the impacts on those Landscape Character Areas that are likely to be affected by the proposed development.	Relevant local landscape character baseline data is presented in Section 8.6.2.2 and Figure 8-2 . Impacts on local landscape character are considered in Sections 8.7.4 and 8.7.5.

8.3.2.2 Additional Consultation

Table 8-2 summarises the additional consultation undertaken with consultees concerning landscape and visual amenity and outlines how and where relevant matters have been addressed within this chapter.

Consultee	Nature of additional consultation	How and where addressed
East Riding of Yorkshire Council	In light of the announcement by Natural England on 24 th June 2021 of the potential AONB designation of the Yorkshire Wolds, AECOM consulted further with ERYC (email of 6 th October 2021) to offer the opportunity to provide additional information that they might consider to be material to this application and the assessment of potential landscape effects on the Yorkshire Wolds.	ERYC responded that AECOM should keep abreast of the potential Yorkshire Wolds AONB allocation and how it would impact the English Onshore Scheme. ERYC recommended that in the absence of information including the potential extent of the designated area, that AECOM should refer to information contained in the East Riding Character Assessment, policy ENV2 of the ERLP and the additional protection afforded at a local level including the areas of highest quality within the Yorkshire Wolds ILA. Section 8.7.4.2 contains the assessment of effects on the Yorkshire Wolds ILA.

Table 8-2: Additional Consultation (Landscape and Visual Amenity)

8.3.3 Assessment Method

The assessment has been carried out in accordance with the following good practice guidance documents:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition (Ref 8-1).
- Visual Representation of Development Proposals. Technical Guidance Note 06/19 (Ref 8-12).
- An Approach to Landscape Character Assessment (Ref 8-13).
- Assessing landscape value outside national designations. Technical Guidance Note 02/21 (Ref 8-14).
- Infrastructure. Technical Guidance Note 04/2020 (Ref 8-15).

GLVIA3 places a strong emphasis on the importance of professional judgement in identifying and defining the significance of landscape and visual effects. The LVIA has been undertaken by Chartered Landscape Architects who are experienced in undertaking and reporting assessments of similar types of project. Professional judgement has been used in combination with structured methods and criteria to determine the sensitivity of landscape and visual receptors (informed by their value and susceptibility to change), the magnitude of effects on those receptors (i.e. the nature of the effect), and the significance of effects.

The following section summarises the methodology for the LVIA which builds on the general assessment methodology presented in **Chapter 5: Approach to EIA**. For clarity and in accordance with good practice, the assessment of potential effects on landscape character and visual amenity, although closely related, are undertaken separately.

The method for the production of visualisations which support the completion of the assessment is set out in **Appendix 8B: Viewpoint Photography and Visualisations**.

8.3.3.1 Sensitivity of Landscape Receptors

Landscape receptors are described as components of the landscape that are likely to be affected by the English Onshore Scheme. These can include overall character and key characteristics, individual elements or features and specific aesthetic or perceptual aspects. It is the interaction between the different components of the English Onshore Scheme and these landscape receptors which has potential to result in landscape impacts and effects (both adverse and beneficial).

The sensitivity of the landscape receptor has been derived by combining of the value of the landscape (undertaken as part of the baseline study) and the susceptibility to change of the receptor to the specific type of development being assessed.

Landscape value is frequently addressed by reference to international, national, regional, and local designations. Absence of such a designation does not necessarily imply a lack of quality or value. Factors such as accessibility and local scarcity can render areas of nationally unremarkable quality, highly valuable as a local resource. The evaluation of landscape value has been informed by Technical Guidance Note 02/21 (Ref 8-14) and undertaken considering the following factors and classified as high, medium, or low with evidence provided as to the basis of the evaluation:

- *natural heritage* landscape with clear evidence of ecological, geological, geomorphological, or physiographic interest which contribute positively to the landscape;
- *cultural heritage* landscape with clear evidence of archaeological, historical or cultural interest which contribute positively to the landscape;
- *landscape quality/condition* the measure of the physical state of the landscape including the intactness of the landscape and the condition of individual elements;
- scenic quality the level of visual and sensory appeal of the landscape;
- *perceptual aspects* the extent that the landscape receptor is recognised for its perceptual qualities (e.g. scenic, wildness or tranquillity);
- *functional* landscape which performs a clearly identifiable and valuable function, particularly in the healthy functioning of the landscape
- rarity the presence of unusual elements or features;
- representativeness/distinctiveness- the presence of particularly characteristic features;
- recreation the extent that recreational activities contribute to the landscape receptor; and
- association extent that cultural or historical associations contribute to the landscape receptor.

Landscape susceptibility relates to the ability of a particular landscape to accommodate the English Onshore Scheme. It is assessed through consideration of the baseline characteristics of the landscape, and in particular, the scale or complexity of a given landscape. The evaluation of landscape susceptibility is defined as high, medium or low and is supported by a clear explanation based upon the analysis of the landscape receptor and the extent to which it is able to accommodate the changes that would result from the English Onshore Scheme.

The overall sensitivity assessment of the landscape receptor has been made by applying professional judgement to combine and analyse the identified value and susceptibility ratings. Overall sensitivity has been rated as high, medium or low. Table 8-3 Sensitivity of Landscape Receptors below outlines indicators that inform landscape value, susceptibility and sensitivity. The basis of the assessment is made clear in the evaluation of each landscape receptor.

Table 8-3 Sensitivity of Landscape Receptors

	Higher Sensitivity	•	Lower Sensitivity
Value	A designated landscape (National Park, Area of Outstanding Natural Beauty, National Scenic		Landscapes containing few if any notable elements / features, of poor condition or containing several detracting features and

	Higher Sensitivity		Lower Sensitivity
	Area, World Heritage Site) or a landscape in very good condition, exceptional scenic quality and high recreational opportunities or a high degree of rarity.		limited aesthetic qualities. Landscapes which are not formally designated.
Susceptibility	Attributes that make up the character of the landscape which offer very limited opportunities to accommodate change of the type proposed without fundamentally altering key characteristics.	•	Attributes that make up the character of the landscape which are tolerant of a large degree of the type of change proposed without fundamentally altering the key characteristics.

8.3.3.2 Sensitivity of Visual Receptors

Sensitivity of visual receptors has been defined through an appraisal of the viewing expectation, or value placed on the view as identified in the baseline study, and its susceptibility to change.

Value of the view is an appraisal of the value attached to views and is often informed by the appearance on Ordnance Survey or tourist maps and in guidebooks, literature and art, or identified in policy. Value can also be indicated by the provision of parking or services and signage and interpretation. The nature and composition of the view and its scenic quality is also an indicator. The value of the view has been classified as high, medium, or low and is supported by evidenced, professional judgements.

The susceptibility of visual receptors to change has been established as a function of the occupation or activity of people experiencing the view, and the extent to which their attention or interest is focussed on the view and the visual amenity they experience. For example, walkers whose interest may tend to be focused on the landscape or a particular view, or visitors at an attraction where views are an important part of the experience, indicate a higher level of susceptibility. Conversely receptors engaged in outdoor sport where views are not important or receptors at their place of work are considered less susceptible to change.

Judgements about the susceptibility of visual receptors have been ascribed using high, medium or low ratings using consistent and reasoned judgements.

The overall sensitivity assessment of the visual receptor has been determined by applying professional judgement to combine and analyse the identified value and susceptibility ratings. Overall visual sensitivity has been rated as high, medium or low. **Table 8-4** Sensitivity of Visual Receptors below outlines indicators that inform value of the view, susceptibility and sensitivity of visual receptors. The basis of the assessment is made clear in the evaluation of each visual receptor.

	Higher Sensitivity	••	Lower Sensitivity
Value	Views protected by designation, or nationally recognised, or recorded on maps / guidebooks or with cultural associations. Views that have high scenic qualities relating to the content and composition of the view.		Views which are not documented or protected with minimal or no cultural associations. Views that exhibit low scenic qualities relating to the content and composition of the view.
Susceptibility	Viewers whose attention or interest is focused on their surroundings.		People whose attention or interest is not focused on their surroundings and where the view is incidental to their enjoyment.

Table 8-4 Sensitivity of Visual Receptors

8.3.3.3 Landscape Magnitude of Effect

Landscape magnitude of effect refers to the extent to which the English Onshore Scheme would alter the existing characteristics of the landscape. It is an expression of the size or scale of change to the landscape, the geographical extent of the area influenced, and its duration and reversibility. The variables involved are:

- the extent of existing landscape elements that would be lost, the proportion of the total extent that this represents and the contribution of that element to the character of the landscape;
- the extent to which aesthetic or perceptual aspects of the landscape are altered either by removal of existing components of the landscape or by the addition of new components;
- whether the change alters the key characteristics of the landscape that are integral to its distinctive character;
- the geographic area over which the change will be experienced (for example within the application boundary, the immediate setting around that boundary, at the local landscape character area scale, or on a larger scale influencing broader areas of landscape character); and
- the duration of the change (i.e. short term, medium term, or long term), as defined in Chapter 5: Approach to EIA, and its reversibility (i.e. whether it is permanent, temporary, or partially reversible).

Landscape change can be both direct, through alteration of physical components, or indirect, resulting from changes to perceptual aspects of character and how it is experienced.

An overall assessment of the magnitude of landscape change resulting from the English Onshore Scheme on landscape receptors has been made by combining the above judgements using evidence and professional judgement. The levels of landscape magnitude of change are described as being high, medium, low, very low and none as defined in **Table 8-5** below.

Magnitude	Criteria
High	Large alteration to the landscape receptor or may impact an extensive area or unique characteristics at a local level. May be longer term, permanent or reversible.
Medium	Partial alteration to the landscape receptor or may impact a wide area or characteristics at a local level. May be medium term, permanent or reversible.
Low	Slight alteration to the landscape receptor or may impact a restricted area and few key characteristics. May be short to medium term, permanent or reversible.
Very Low	Very slight alteration to the landscape receptor or may impact a limited area or no key characteristics. May be short term, permanent or reversible.
None	No change to the landscape receptor.

Table 8-5 Magnitude of Effect – Landscape Receptors

8.3.3.4 Visual Magnitude of Effect

Visual magnitude of effect relates to the extent to which the English Onshore Scheme would alter the existing view and is an expression of the size or scale of change in the view, the geographical extent of the area influenced and its duration and reversibility. The variables involved are described below:

- the scale of the change in the view with respect to the loss or addition of features in the view and changes in its composition, including the proportion of the view occupied by the English Onshore Scheme;
- the degree of contrast or integration of any new features or changes in the form, scale, composition and focal points of the view;
- the nature of the view of the English Onshore Scheme in relation to the amount of time over which it will be experienced, and whether views of this will be visible fully, partially or glimpsed;
- the angle of view in relation to the main activity of the receptor, distance of the viewpoint from the English Onshore Scheme and the extent of the area over which the changes would be visible; and

• the duration of the change (i.e. short term, medium term, or long term), as defined in Chapter 5: Approach to EIA, and its reversibility (i.e. whether it is permanent, temporary, or partially reversible).

An overall assessment of the magnitude of visual change resulting from the English Onshore Scheme on the visual receptor has been made combining the above judgements using evidence and professional judgement. The levels of visual magnitude of change are described as being high, medium, low, very low and none as defined in **Table 8-6** below.

Table 8-6 Magnitude of Effect – Visual Receptors

Magnitude	Criteria
High	A pronounced change to the composition of the view or change that may be viewed in the foreground or directly. May be longer term, permanent or reversible.
Medium	A noticeable change to the composition of the view or change that may be viewed in the middle ground or indirectly. May be medium term, permanent or reversible.
Low	An unobtrusive change in the composition of the view or change that may be viewed in the background or obliquely. May be short to medium term, permanent or reversible.
Very Low	A barely perceptible change in the composition of the view or change that may be viewed in the background and/or very obliquely. May be short term, permanent or reversible.
None	No change to the view.

8.3.3.5 Significance of Effect

Determination of the significance of landscape and visual effects has been undertaken by employing professional judgement and experience to combine and analyse the magnitude of change against the identified sensitivity of landscape and visual receptors.

The landscape assessment has taken account of direct and indirect changes to existing landscape elements, features, key characteristics and evaluates the extent to which these would be lost or modified, in the context of their importance in determining the existing baseline character.

The visual assessment has taken account of the likely changes to the visual composition, including the extent to which new features would distract or screen existing elements in the view or disrupt the scale, structure, or focus of the existing view.

The significance of landscape and visual effects are described with reference to the criteria presented in **Table 8-7** below. For the purposes of this assessment, effects rated as being of **moderate** or **major** significance are considered to be significant.

Significance of Effect	Landscape	Visual
Major Beneficial	Alterations that result in a considerable improvement of the existing landscape resource. Valued characteristic features would be restored or reintroduced.	Alterations that typically result in a pronounced improvement in the existing view.
Moderate Beneficial	Alterations that result in a partial improvement of the existing landscape resource. Valued characteristic features would be largely restored or reintroduced.	Alterations that typically result in a noticeable improvement in the existing view.
Minor Beneficial	Alterations that result in a slight improvement of the existing landscape resource. Characteristic features would be partially restored.	Alterations that typically result in a limited improvement in the existing view.
Negligible Beneficial	Alterations that result in a very slight improvement to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible improvement in the existing view.

Table 8-7 Significance of Effect

Significance of Effect	Landscape	Visual
Neutral	No alteration to any of the components that contribute to the existing landscape resource.	No change to the existing view.
Negligible Adverse	Alterations that result in a very slight deterioration to the existing landscape resource, not uncharacteristic within the receiving landscape.	Alterations that typically result in a barely perceptible deterioration in the existing view.
Minor Adverse	Alterations that result in a slight deterioration of the existing landscape resource. Characteristic features would be partially lost.	Alterations that typically result in a limited deterioration in the existing view.
Moderate Adverse	Alterations that result in a partial deterioration of the existing landscape resource. Valued characteristic features would be largely lost.	Alterations that typically result in a noticeable deterioration in the existing view.
Major Adverse	Alterations that result in a considerable deterioration of the existing landscape resource. Valued characteristic features would be wholly lost.	Alterations that typically result in a pronounced deterioration in the existing view.

8.3.3.6 Temporal Scope of Assessment

Landscape and visual effects can differ from one stage of the development to the next and change over time as mitigation planting establishes and matures. The assessment therefore considers potential effects of the English Onshore Scheme at each of the following stages:

- Construction: including consideration of all temporary structures and works areas relating to construction, such as temporary construction compounds, movement of plant and machinery etc.
- Operational Year 1: including consideration of potential medium to longer term effects associated with the converter station following completion of the construction phase and associated reinstatement. This stage is intended to represent the potential worst-case operational effects prior to establishment of mitigation planting.
- Operation Year 15: including consideration of potential longer-term effects of the English Onshore Scheme 15 years after becoming operational. This stage is intended to help demonstrate how proposed mitigation planting will influence effects once established.

Following construction of the landfall and the underground DC and AC cable routes, the working width along with construction compounds will be fully reinstated and as such long-term operational landscape and visual impacts resulting from these elements are unlikely. On this basis, and with agreement from ERYC and SDC, operational effects related to the landfall, DC cable route and AC cable route have been scoped out of the assessment. The Operation Year 1 and Operation Year 15 assessments therefore focus on potential effects associated with the converter station.

8.3.3.7 Cumulative Landscape and Visual Effects

The assessment of cumulative effects follows a similar process to that described above, first identifying and describing the cumulative baseline, followed by an assessment of the magnitude of cumulative effect and significance of cumulative effect.

The cumulative baseline involves a theoretical scenario in which scoping, consented and application stage schemes are present in addition to existing schemes. Assessment of cumulative landscape and visual effects has been undertaken based on applications for schemes of a similar type, nature and scale to the English Onshore Scheme, agreed in advance with consultees. The assessment of magnitude of cumulative effect and significance of cumulative effects involves consideration of the additional change resulting from the English Onshore Scheme to the defined cumulative baseline scenario.

It is important to note that cumulative effects may vary from the effects of the English Onshore Scheme considered in isolation. For example, it is possible for a scheme to have effects that are judged of

relatively high significance on a particular receptor when taken on its own, but when considered together with the effects of other developments the additional *cumulative* effect of the scheme may be lower.

8.4 Study Area

A Zone of Influence (ZoI) of 3 kilometres (km) from the proposed converter station and 1 km from the proposed landfall and underground DC and AC cable corridor English Onshore Scheme planning application boundary has been identified as the study area for the landscape and visual assessments. These ZoI boundaries are shown on **Figure 8-1**.

The extent of the Zol has been informed by a review of the scheme design of the English Onshore Scheme, desk-based research, field-based appraisal, ZTV mapping and professional judgement. The Zol was agreed with statutory consultees at scoping stage to ensure a proportionate approach, focussed on likely significant effects. It is important to note the Zol defines the area within which it is judged that significant landscape and/or visual effects could occur, rather than the extent of visibility of the English Onshore Scheme.

The computer generated ZTV (**Figure 8-4**) was run for the converter station as this is the only permanent above ground infrastructure associated with the English Onshore Scheme. The ZTV is based on the maximum parameters of the converter station as described in **Chapter 3**: **Description of the English Onshore Scheme** and is based on a maximum height of 30 m from a finished platform level of 6.48 m AOD. Two ZTVs have been produced. The first has been generated using a 'bare ground' digital terrain model (DTM) generated using Environment Agency 2 m Lidar DTM, which does not take account of the screening effects of vegetation, buildings, or other structures, and therefore the true extent of visibility is likely to be less than is indicated. The second ZTV incorporates screening from vegetation and buildings (**Figure 8-4**) based on the following factors:

- Existing buildings have been incorporated into the DTM from OS MasterMap with assigned individual heights and OS Open Map Local (where OS MasterMap data was not available) with an assumed height of 7.5m.
- Woodland from the National Forest Inventory (NFI) has also been incorporated into the DTM with an assumed height of 10m.

The ZTVs indicate areas from where it may be possible to view part of or the entire converter station site. However, the use of the ZTVs need to be qualifies by the following considerations:

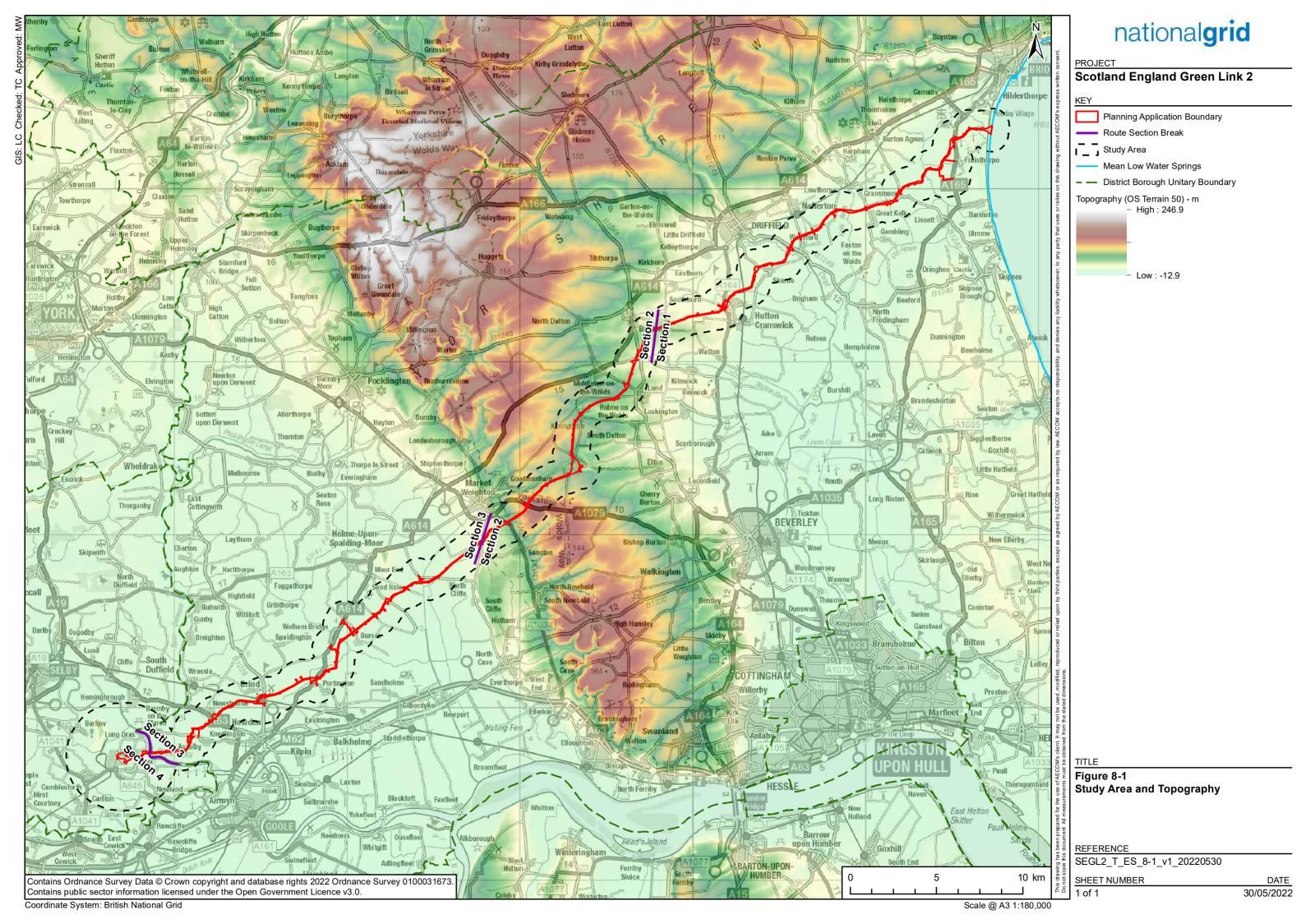
- The ZTVs are limited by the detail of the digital terrain model data used and do not take account of local topographic variations.
- Some areas of theoretical visibility may comprise woodland (not accounted for in the NFI) or agricultural land, where there is effectively no public access and the likelihood of views being experienced is consequently low.
- The ZTVs do not take account of the likely orientation of a viewer, such as the direction of travel and there is no allowance for reduction of visibility with distance, weather or light.

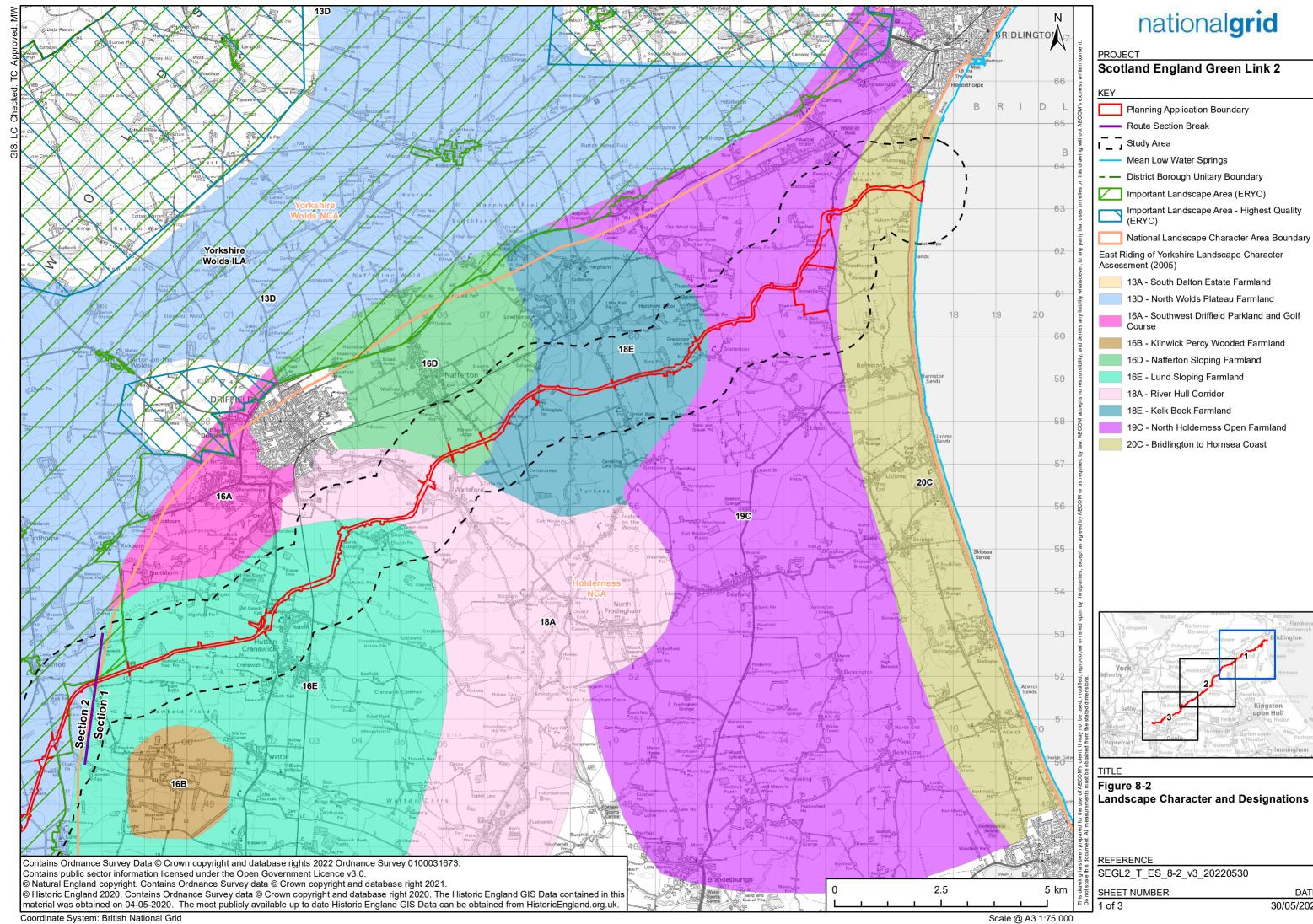
These limitations meant that the ZTVs tend to overestimate the extent of the visibility, both in terms of the area from which the English Onshore scheme is visible and the extent of the converter station site, which is visible. Consequently the ZTVs should be considered as a tool to identify areas of potential visibility for further targeted survey and assessment, and not a measure of the visual effect.

8.5 Limitations of the Assessment

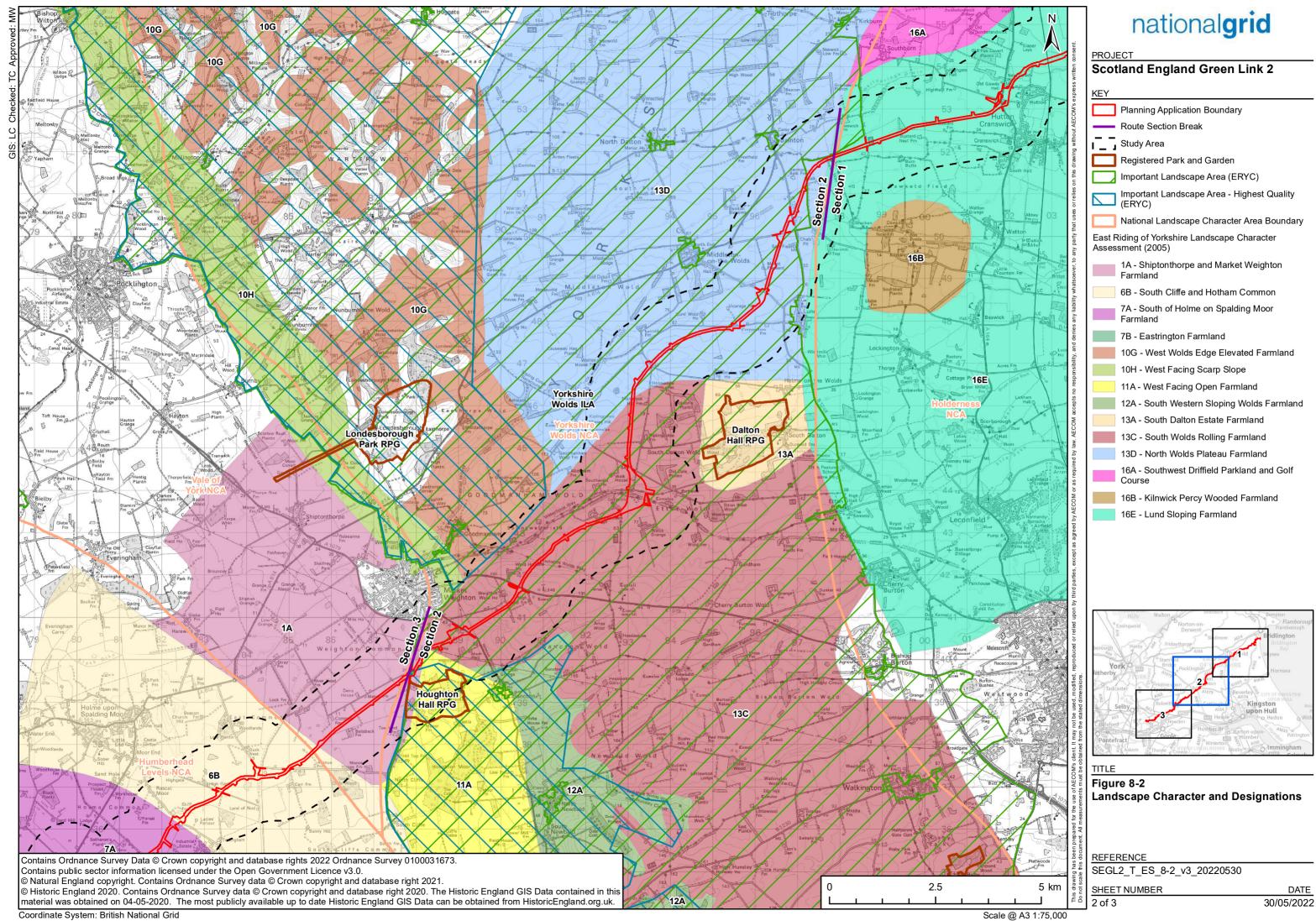
Site visits were undertaken by two Chartered Landscape Architects on the 16th-18th March 2021 and the 9th February 2022 to assess the existing character of the landscape and visit representative viewpoints. Viewpoint photography was captured on the 27th January 2022.

No technical difficulties or practical problems were encountered in carrying out the LVIA. Both site visits were conducted in the winter, therefore a comparison of visibility or visual effects over two seasons and a wide range of light and weather conditions did not occur. However, this allows assessment based on broadleaf vegetation not in leaf and represents the most open views. Potentially significant differences between seasonal views have been outlined where relevant within the assessment and taken into consideration in assessing the impacts and reaching conclusions. The site visits were undertaken in weather with good to moderate visibility of at least 3 km.





DATE 30/05/2022



Coordinate System: British National Grid



KEY
Planning Application Boundary
Route Section Break
Study Area
Registered Park and Garden
Important Landscape Area (ERYC)
Important Landscape Area - Highest Quality (ERYC)
National Landscape Character Area Boundary
East Riding of Yorkshire Landscape Character Assessment (2005)
1A - Shiptonthorpe and Market Weighton Farmland
6B - South Cliffe and Hotham Common
7A - South of Holme on Spalding Moor Farmland
7B - Eastrington Farmland
10G - West Wolds Edge Elevated Farmland
10H - West Facing Scarp Slope
11A - West Facing Open Farmland
12A - South Western Sloping Wolds Farmland
13A - South Dalton Estate Farmland
13C - South Wolds Rolling Farmland
13D - North Wolds Plateau Farmland
16A - Southwest Driffield Parkland and Golf Course
16B - Kilnwick Percy Wooded Farmland
16E - Lund Sloping Farmland
Hills Malton Norton-on- Derwent Starter Starte

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