# FENWICK SOLAR FARM

**Fenwick Solar Farm**
**EN010152**

## Environmental Statement

**Volume I Chapter 3: Alternatives and Design Evolution**

**Document Reference: EN010152/APP/6.1**

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

October 2024
Revision Number: 00

BOOM-POWER.CO.UK

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Revision History

| Revision Number | Date | Details |
|---|---|---|
| 00 | October 2024 | DCO application |
| | | |
| | | |
| | | |

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# 3. Alternatives and Design Evolution

## 3.1 Introduction

3.1.1 This chapter of the Environmental Statement (ES) describes the consideration of alternatives and design evolution in relation to Fenwick Solar Farm (hereafter referred to as 'the Scheme'). Relevant Government policy, the overarching need for the Scheme (as set out more fully in the **Statement of Need [EN010152/APP/7.3]**) and reasons for the selection of the Site are also explained.

3.1.2 A **Outline Design Parameters Statement [EN010152/APP/7.4]** and a **Design and Access Statement [EN010152/APP/7.2]** have been submitted as part of the Development Consent Order (DCO) Application.

3.1.3 The **Outline Design Parameters Statement [EN010152/APP/7.4]** provides the guiding parameters for the detailed design of the Scheme and is secured by a requirement in the **Draft Development Consent Order [EN010152/APP/3.1]**.

3.1.4 The **Design and Access Statement [EN010152/APP/7.2]** sets out the design principles that have been adopted to ensure that good design has been embedded within the Scheme from inception and to explain how the design has evolved having regard to local context, character, movement and nature.

## 3.2 Legislation and Planning Policy

3.2.1 There is a legislative requirement to present alternatives where these have been considered by the Applicant. Regulation 14(2) of the Infrastructure Planning (Environmental Impact Assessment) (EIA) Regulations 2017 (Ref. 3-1) sets out what an Environmental Statement (ES) must include and refers to Schedule 4 of the EIA Regulations (Ref. 3-1) for additional information to be provided in the ES. Paragraph 2 of Schedule 4 of the EIA Regulations (Ref. 3-1) requires the ES to present:

*"A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects".*

3.2.2 There is no general requirement in relevant national policy to consider alternatives. Paragraph 4.3.9 of National Policy Statement (NPS) EN-1: Overarching National Policy Statement for Energy (Ref. 3-2) states that:

*"As in any planning case, the relevance or otherwise to the decision making process of the existence (or alleged existence) of alternatives to the proposed development is, in the first instance, a matter of law. This NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option from a policy perspective…"*

3.2.3 Paragraph 4.3.9 of NPS EN-1 (Ref. 3-2) does, however, go on to highlight the specific requirements in respect of compulsory acquisition and habitats sites, and notes the NPS itself does not change those.

3.2.4 Despite the fact that national planning policy does not set out a general requirement to consider alternatives, there is an obligation to provide a description of alternatives considered and an indication of the main reasons for the option chosen within the ES as per Section 14 of the EIA Regulations 2017 (Ref. 3-1). Paragraph 4.3.15 of NPS EN 1 (Ref. 3-2) confirms this requirement stating that Applicants are obliged to include in their ES:

*"…an indication of the main reasons for the applicant's choice, taking into account the environmental, social and economic effects and including, where relevant, technical and commercial feasibility."*

3.2.1 In addition, paragraph 9.3 of the Planning Inspectorate's Advice Note 7: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements (Ref. 3-3) states that a good ES is one that *"explains the reasonable alternatives considered and the reasons for the chosen option taking into account the effects of the Proposed Development on the environment".*

3.2.2 Paragraph 4.3.16 of NPS EN-1 (Ref. 3-2) sets out that the NPSs may set out specific circumstances in which the consideration of alternatives is a policy requirement. These include in relation to biodiversity and geological conservation interests, flood risk and development within nationally designated landscapes which are explained in the subsections further below.

3.2.3 Paragraph 4.3.17 of NPS EN-1 (Ref. 3-2) states:

*"where there is a policy or legal requirement to consider alternatives the applicant should describe the alternatives considered in compliance with these requirements".*

3.2.4 In applying policy tests relating to biodiversity and geological conservation, flood risk and designated landscapes, paragraph 4.3.22 of NPS EN-1 (Ref. 3-2) provides direction for the Secretary of State as to the weight that should be attached to alternatives, given the critical national priority for new energy infrastructure stating that:

- *"the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner; and*
- *only alternatives that can meet the objectives of the proposed development need to be considered."*

**Biodiversity and Geological Conservation**

3.2.5 The policy tests relating to biodiversity and geological conservation include a requirement under the Habitats Directive, as transposed into UK law by the Conservation of Habitats and Species Regulations 2017 (Ref. 3-4Ref. 3-5), in relation to avoiding significant harm to biodiversity and geological conservation interests.

3.2.6 Paragraph 5.4.42 of NPS EN-1 (Ref. 3-2) states:

*"development should, in line with the mitigation hierarchy, aim to avoid significant harm to biodiversity and geological conservation interests, including through consideration of reasonable alternatives (as set out in Section 4.3 above). Where significant harm cannot be avoided, impacts should be mitigated and as a last resort, appropriate compensation measures should be sought.*

3.2.7 It is not anticipated that the Scheme, with its proposed mitigation, will cause any significant adverse effects to biodiversity and geological conservation interests once mitigation measures have been implemented. This is confirmed within **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**. The **No Significant Effects Report [EN010152/APP/7.12]** verifies that the Order limits does not include 'European sites' protected by the Habitat Regulations (Special Areas of Conservation and Special Protection Areas) and confirms that there will be no significant effects on European Sites either from the construction, operation and decommissioning of the Scheme or in combination with other plans or projects. Therefore, the consideration of alternatives in respect of biodiversity and geological conservation is not considered necessary.

**Flood Risk**

3.2.8 In respect of siting developments within areas of flood risk, paragraphs 5.8.6 to 5.8.12 of NPS EN-1 (Ref. 3-2) set out the relevant policy tests. These confirm the need to steer new development to areas at the lowest risk of flooding. Where this cannot be avoided, the Sequential Test (as outlined in Planning Practice Guidance on Flood Risk and Coastal Change Guidance (Paragraphs 023 and 024)) must be applied to site selection. This test requires a detailed process for the consideration of alternative sites that pose lower flood risk than that selected. If this cannot deliver an acceptable site the Exception Test (as outlined in Planning Practice Guidance on Flood Risk and Coastal Change Guidance (Paragraph 31) must then be applied to confirm that the development will provide wider sustainability benefits to the community that outweigh the flood risk adopted, and that the development will be safe tor its lifetime, and where practicable will reduce flood risk overall.

3.2.9 With respect to flood risk, the majority of the Solar PV Site is located within Flood Zone 1 and Flood Zones 2, with some areas of Flood Zone 3. Flood Zones 2 and 3 are predominantly located within the north and eastern areas of the Solar PV Site with west and southwestern areas falling in Flood Zone 1. **ES Volume III Appendix 9-3: Flood Risk Assessment [EN010152/APP/6.3]** sets out how the Sequential Test has been applied and flood risk effects are set out in **ES Volume I Chapter 9: Water Environment [EN010152/APP/6.1]**.

3.2.10 The Grid Connection Corridor is largely located within areas of medium risk of fluvial flooding (Flood Zone 2) and high fluvial flooding (Flood Zone 3) (see **ES Volume II Figure 9-4: Environment Agency Flood Map for Planning (Rivers and Seas) [EN010152/APP/6.2]**). As discussed in Section 3.5, the Existing National Grid Thorpe Marsh Substation has the capacity and availability to accept the electricity generated by the Scheme. The identification of the Grid Connection Corridor considered the flood risk

context and confirmed that a corridor outside Flood Zones 2 and 3 connecting the Solar PV Site to the Existing National Grid Thorpe Marsh Substation would not be possible as the Existing National Grid Thorpe Marsh Substation and surrounding land in all directions for several kilometres is located in Flood Zone 3. As noted in **ES Volume I Chapter 9 Flood Risk, Drainage and Water Environment [EN010152/APP/6.1])** once constructed cabling within the Grid Connection Corridor will not be subject to flood risk because this infrastructure will be buried. Therefore the application of the Sequential Test in relation to the Grid Connection Corridor applies only to the construction phase.

3.2.11 In addition, as described in Section 3.7, an alternative connection to the national electricity transmission system is being considered via a Grid Connection Line Drop. This would connect at the base of an existing on-site 400 kV overhead line tower within Field SE2 (see **ES Volume II Figure 2-3: Indicative Site Layout [EN010152/APP/6.2]**). The tower is located within Flood Zone 2 and Flood Zone 3 is located to the immediate south and west of the tower. Therefore, there are no reasonable alternatives for the Grid Connection Corridor or Grid Connection Line Drop within areas of Flood Zone 1 or that avoid Flood Zones 2 or 3. The location of the Grid Connection Corridor or the Grid Connection Line Drop in Flood Zones 2 and 3 will not impact on the operation of the below ground cables.

### Designated Landscapes

3.2.12 In respect of designated landscapes, paragraph 5.10.6 and 5.10.7 of NPS EN-1 (Ref. 3-2) sets out the national policy protection afforded to designated landscapes with:

*"National Parks, the Broads and AONBs have been confirmed by the government as having the highest status of protection in relation to landscape and natural beauty. Each of these designated areas has specific statutory purposes. Projects should be designed sensitively given the various siting, operational, and other relevant constraints…".*

3.2.13 **ES Volume I Chapter 12: Landscape and Visual Amenity [EN010152/APP/6.1]** sets out the environmental effects of the Scheme upon landscape. As confirmed by Chapter 12 and shown on **ES Volume II Figure 10-1: Landscape and Visual Amenity Study Area and Relevant Designations [EN010152/APP/6.2]** the Scheme is not located within or in close proximity to any designated landscape (National Park, the Broads or AONB) and as such, there is no need to consider alternatives in accordance with NPS EN-1 paragraph 5.10.7 (Ref. 3-2).

### Summary

3.2.14 Taking into consideration the policy and legal requirements, as well as the iterative approach to the Scheme design to date, the following alternatives have been considered for the Scheme and are discussed in this chapter:

a. Alternative sites to the Solar PV Site;

b. Alternative solar design technologies;

c. Alternative arrangements for the BESS Area;

d. Alternative methods for the grid connection; and

e. Alternative layouts within the Solar PV Site including access.

3.2.15 These alternatives are discussed in Section 3.5 onwards alongside a summary of the need for the Scheme and the reasons the Applicant has selected the Solar PV Site and the Grid Connection Corridor.

3.2.16 Consideration of 'no development' as an alternative to the Scheme has not been considered further. This is because 'no development' is not considered to be a reasonable alternative to the Scheme as it would not deliver the proposed additional electricity generation capacity or storage proposed. Paragraph 4.3.27 of NPS EN-1 (Ref. 3-2) states:

*"Alternative proposals which mean the necessary development could not proceed, for example because the alternative proposals are not commercially viable or alternative proposals for sites would not be physically suitable, can be excluded on the grounds that they are not important and relevant to the Secretary of State's decision."*

3.2.17 Other generation schemes, such as wind power, nuclear, coal, or gas fired power stations, have not been assessed due to a number of factors. This includes their unsuitability for the Site and, as explained in the **Statement of Need [EN010152/APP/7.3]**, the timescales within which they could contribute (or not) to the UK's urgent and critical need to decarbonise the energy sector

3.2.18 A development with a lower generation capacity as an alternative to the Scheme has also not been considered further. This is due to the urgent need to deploy large scale renewable energy projects in accordance with NPS EN-1 (Ref. 3-2) and having regard to paragraph 4.2.23 of NPS EN-1, which states that*:*

*"The Secretary of State should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security and climate change benefits) in the same timescale as the proposed development".*

3.2.19 A development with a lower generation capacity would not deliver the same level of benefits associated with the Scheme in terms of electricity generation, energy security and climate change benefits and is therefore not considered a reasonable alternative given the established need to deploy large scale renewable energy projects endorsed by NPS EN-1 (Ref. 3-2).

3.2.20 The Applicant has a grid connection offer from National Grid Electricity System Operator Limited (NGESO) to connect the Scheme to the national electricity transmission system (NETS) as set out within the **Grid Connection Statement [EN010152/APP/7.5]** submitted alongside the DCO application.

3.2.21 Paragraph 4.11.1 of NPS EN-1 (Ref. 3-2) recognises that network connection is an important site selection consideration for applicants and at paragraph 4.11.12 confirms that the Secretary of State in making a decision should be satisfied that:

*"appropriate network connection arrangements are/will be in place for a given project regardless of whether one or multiple (linked) applications are submitted."*

3.2.22 In addition, paragraph 2.10.22 of NPS EN-3 (Ref. 3-5) states that:

*"The capacity of the local grid network to accept the likely output from a proposed solar farm is critical to the technical and commercial feasibility of a development proposal".*

3.2.23 The Scheme has an agreed network connection. It has been designed to ensure that an efficient and effective use is made of the grid connection capacity. This is alongside an associated BESS system which will have the ability to store electricity generated from the Scheme and/or import energy from the national grid at times of excess electricity generation, discharging the stored energy at times of peak demand and assisting in balancing the UK's electricity supplies. In this regard, reducing the size of the Scheme would result in an inefficient use of the available and secured grid connection capacity at a time when there is a critical national priority to deploy renewable and low-carbon energy generating infrastructure as identified by NPS EN-1 (Ref. 3-2).

## 3.3 Consultation

3.3.1 This section provides a summary of the consultation undertaken to date regarding the Scheme. Further detail on the consultation can also be found in **ES Volume I Chapter 4: Consultation [EN010152/APP/6.1]**.

### Scoping Opinion

3.3.2 A scoping exercise was undertaken in Spring 2023 to establish the content of the assessment and the approach and methods to be followed. The scoping exercise outcomes were presented in the Scoping Report (**ES Volume III Appendix 1-1: EIA Scoping Report [EN010152/APP/6.3]**) which was submitted to the Planning Inspectorate on 1 June 2023. The Scoping Report records the findings of the scoping exercise and identifies that the ES will include a description of the alternatives that have been considered and an indication of the main reasons for selecting the chosen option.

3.3.3 A Scoping Opinion was received from the Planning Inspectorate on 11 July 2023 (**ES Volume III Appendix 1-2: EIA Scoping Opinion [EN010152/APP/6.3]**).

3.3.4 A full review of all comments raised in the Scoping Opinion is provided in **ES Volume III Appendix 1-3: EIA Scoping Opinion Responses [EN010152/APP/6.3]**. This outlines how and where the Scoping Opinion comments have been addressed within this ES.

### Statutory Consultation

3.3.5 Further consultation in response to formal pre-application engagement was undertaken through the Preliminary Environmental Information Report (PEIR) which was published in April 2024. Responses to statutory

consultation are presented in the **Consultation Report [EN010152/APP/5.1]**.

3.3.6 Statutory consultation responses relating to alternatives and design evolution are presented in **Appendix O1, Appendix O2, Appendix O3** and **Appendix O4** of the **Consultation Report [EN010152/APP/5.2]**. The key topics identified in these responses are summarised below.

### Alternative forms of energy production

3.3.7 Responses expressed a preference for developing alternative forms of energy production, including coal-powered plants, offshore wind and onshore wind. As is summarised under 'Need for the Scheme' below and detailed within the **Statement of Need [EN010152/APP/7.3]**, coal is not considered a viable alternative because it does not support the goal of reducing greenhouse gas emissions and is restricted by national planning policy. Also, whilst onshore wind (and to a lesser extent onshore wind) is expected to produce a proportion of the UK's future low-carbon electricity needs, it is not tasked with meeting, and cannot be expected to meet, future electricity needs on its own. Wind turbines would also require more land to generate the same amount of electricity as solar panels due to the offsets required between turbines. Therefore, as is recognised at paragraphs 2.10.9 and 2.10.10 of NPS EN-3 (Ref. 3-5) there is a pressing need to bring forward grid-scale solar and associated energy storage system developments and it is important these assets are brought forward quickly due to the urgency of the need.

### Use of brownfield land

3.3.8 Responses expressed a preference for locating the Scheme on brownfield land, including on land next to the Existing National Grid Thorpe Marsh Substation. As is explained in Section 3.5 below, brownfield land was considered following a review of City of Doncaster Council brownfield land register. The review concluded that available brownfield sites would compete or be in conflict with local planning policy seeking to deliver housing and mixed use developments. In addition, land next to the Existing National Grid Thorpe Marsh Substation is not available as it is being developed for another energy project. Therefore, it was concluded that there was no available or suitable brownfield land for the Scheme.

### Alternative design suggestions

3.3.9 Responses offered changes to the design, mainly in respect of alternative locations for highways and ecology mitigation. Highway related suggestions included the use of London Lane and the use of an unmade road that links to Fenwick Lane but were not considered feasible owing to the extensive land and works required to implement the suggestions. However, following a review of concerns expressed through statutory consultation feedback, the Applicant did alter the main access requirements for the Solar PV Site which is explained more fully in Section 3.10 below.

3.3.10 In respect of ecology mitigation, responses had recommended the use of fields SE6 and SE7 (see **ES Volume II Figure 2-3: Indicative Site Layout**)

as wetlands. However, based on field surveys undertaken by the Applicant, topography and presence of existing boundary features consisting of mature hedgerow/tree lines, it was decided that the River Went corridor was a more suitable location for wetland creation/enhancement. Responses had also recommended alternative habitat types (such as wildflower meadow). Reasoning behind the chosen habitats can be found **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**, and measures relating to the management of the habitats can be found in the **Framework Landscape and Ecological Management Plan (LEMP) [EN010152/APP/7.14]**.

## 3.4 Need for the Scheme

3.4.1 NPS EN-1 (Ref. 3-2) confirms at paragraphs 3.3.62 and 4.2.4 that *"there is a critical national priority (CNP) for the provision of nationally significant low carbon infrastructure."* This sets out a policy presumption in favour of critical national priority infrastructure, such as solar, to achieve energy objectives to decarbonise the energy sector by 2035 and to achieve net zero by 2050.

3.4.2 The DCO Application is also accompanied by a **Statement of Need [EN010152/APP/7.3].** This sets out a detailed and compelling case as to why the Scheme is urgently required at the scale and location proposed. This section provides a summary of the need for the Scheme.

3.4.3 The Scheme's principal objective is to efficiently generate a substantial capacity of renewable energy to the National Electricity Transmission System during its design life, thereby supporting the delivery of the Government's objectives and commitments for the development of a secure, affordable and low carbon energy.

3.4.4 The inclusion of electricity storage assets as 'associated infrastructure' to the principle solar development within the Scheme provides a means of further enhancing the utility of the power generated by the Scheme by providing energy balancing capability and other services to support the decarbonisation and operation of the National Electricity Transmission System including, for example, capturing and storing cheap and low-carbon energy when it is abundant and releasing it when it is needed.

### Global Commitments to Decarbonisation

3.4.5 Decarbonisation is of global significance. The compelling need for global action to decarbonise continues to be reinforced. On 20 March 2023, the United Nations (UN) Intergovernmental Panel on Climate Change published its 2023 assessment of global climate change (Ref. 3-6). The advisory report concludes that the world is likely to pass a dangerous temperature threshold within the next 10 years, pushing the planet past the point of catastrophic warming unless nations drastically transform their economies and immediately transition away from fossil fuels.

3.4.6 The most recent Conference of the Parties (COP) 28 held in Dubai between the 30 November and 12 December 2023 signalled a further increase in the urgency of global action required to fight climate change. COP28 marked the beginning of the end of fossil fuels, therefore also marking the absolute requirement to generate energy from low-carbon sources. The COP28

agreement also stated that all countries must take action now to curb emissions and not in a distant future. This is a key point, since all countries including the UK committed to update their national climate plans for COP29 and therefore must now increase their carbon reduction ambitions (Ref. 3-7).

## UK Commitments to Decarbonisation

3.4.7 There is a growing body of UK energy and climate change international commitments, law, policy and guidance which highlights an urgent need for new low carbon energy generation infrastructure, particularly from renewable sources such as solar.

3.4.8 Decarbonisation is a legal requirement on the UK Government. In June 2019, Government passed law to end the UK's contribution to global warming by 2050: Net Zero (Ref. 3-8). Alongside the Net Zero commitments, the UK Government has also committed to achieving decarbonisation of the energy sector by 2035 (Ref. 3-9).

3.4.9 In its election manifesto (Ref. 3-10), the Government set out its ambition to deliver 'Clean Power by 2030'. This ambition brings forward the ambitions set by the previous Government to decarbonise the nation's electricity supply and support wider decarbonisation with more secure and affordable energy supplies.

3.4.10 Wider decarbonisation requires wider transitions outside of the power sector, including decarbonising transport, industry, agriculture and homes by substituting the use of fossil fuels (including gas, petrol and diesel) for low carbon supplies. The demand for UK electricity is therefore expected to double from current levels by 2050 due to wider transitions outside of the power sector.

3.4.11 This is a critical point because it will be through the extensive electrification of energy demand, which is currently outside of the power sector, that the required emissions reductions will be achieved. Reducing emissions therefore requires the major expansion of renewable and other low-carbon power generation to ensure that the UK is capable of securely meeting future energy demand, and with a significantly lower carbon intensity. The decarbonisation of UK electricity generation is therefore vitally important to meet the UK's legal obligations on carbon emissions and ensure sustainable energy resilience as per the British Energy Security Strategy 2022 (Ref. 3-11)

## Practical Obstacles to Meeting Decarbonisation Commitments

3.4.12 While the policy outlined above sets a clear commitment to decarbonisation and net zero, the Committee on Climate Change (CCC) outlined concerns in its July 2024 Progress Report (Ref. 3-12) to the UK Government that, for the UK to meet its Nationally Determined Contribution under the Paris Agreement to reduce emissions in 2030 to 68 per cent when compared with 1990 levels (the UK's 2030 target), it states:

*"Urgent action is needed to get on track for the UK's 2030 target … only a third of the emissions reductions required to achieve the 2030 target are*

*currently covered by credible plans. Action is needed across all sectors of the economy, with low-carbon technologies becoming the norm.".*

3.4.13 The decommissioning of existing and ageing generation assets also increases the requirement to develop new low-carbon generation with urgency in order to "keep the lights on" at even existing demand levels. This decommissioning includes:

a. The UK's last coal fired power station closed in September 2024.

b. All but one of the existing UK nuclear power stations will close by 2028. It will be joined by Hinkley Point C (the UK's only funded new nuclear power plant, which is currently under construction and anticipated to operate commercially from between 2029 and 2031. No other new nuclear developments have yet secured full funding, and none have commenced nuclear construction. Therefore, beyond Hinkley Point C, no other new nuclear power stations are likely to commission before the mid-2030s at the earliest, due to the long lead times required for nuclear developments.

3.4.14 Alongside the decommissioning of existing assets, the development of Carbon Capture, Utilisation and Storage (CCUS) is currently being pursued as a key measure to help the UK move towards Net Zero. CCUS is tasked with facilitating the decarbonisation of the UK's gas-fired (carbon emitting) power stations, capture carbon emissions from industry, capture carbon which may arise from the production of 'blue' hydrogen, and deliver greenhouse gas removal technologies. Recent progress has been made towards bringing CCUS clusters forward by the end of the decade however the UK Government recognises that the technology has not been delivered at the scale necessary to curb emissions and significant risks to the delivery of the technology at the pace and scale remain.

3.4.15 Hydrogen is also being pursued as another new measure to help the UK move towards Net Zero. Blue hydrogen relies on functional CCUS operating at GW-scale; pink hydrogen on abundant electricity from new nuclear facilities; and green hydrogen on abundant low-carbon electricity. That is to say that the production of low-carbon hydrogen must be coupled with an energy generating activity. The delivery risks associated with producing 'green' hydrogen are significantly lower than the risks associated with producing either 'blue' or 'pink' hydrogen because large-scale renewable generation, including solar, is proven in delivery and in operation in the UK, while CCUS and new nuclear are not. Hydrogen has the potential to be used as a low-carbon substitute for natural gas in electricity generation, homes and industry. It also has potential to be used as a substitute transport fuel, and as a means of storing energy. The production of green hydrogen will cause an increase in the demand placed on UK electricity generation, and therefore requires an increase in low-carbon electricity supply.

## Policy Promotion of Renewable Energy

3.4.16 Alongside the above decarbonisation technologies, is the production of renewable energy. The UK has substantial renewable energy resources. The Government is targeting 50 GW of offshore wind to be operational by 2030 to harness that resource and shield consumers from volatile international

energy markets. But the UK's range of policy documents and guidance make it clear that wind on its own is not sufficient and that solar energy developments play a crucial role in the decarbonisation of the UK's electricity network. As set out in the NPS EN-1 (Ref. 3-2) at paragraph 3.3.20, *"a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar."*

3.4.17 The development of large-scale solar in the UK (National Grid estimates up to 40 GW by 2030 rising up to 108 GW by 2050 (Ref. 3-13) will provide an essential diversity to the UK's low-carbon generation portfolio, working with other technologies to deliver security of supply and value to UK consumers. The British Energy Security Strategy (April 2022) (Ref. 3-11) set an ambition of 70 GW of solar by 2035 (an increase of circa 55 GW from the current installed capacity). In its election manifesto, the Government set out its ambition to 'triple solar power by 2030 (Ref. 3-10).

3.4.18 Mission Zero (Ref. 3-14), published in January 2023 by Rt Hon Chris Skidmore MP, Chair of government's Independent Review of Net Zero, finds that *"The benefits of net zero will outweigh the costs"* and believes that *"This is too important to get wrong".*

3.4.19 Mission Zero goes on to recommend the:

*"Full-scale deployment of solar including through a 'rooftop revolution' to harness one of the cheapest forms of energy, increase our energy independence and deliver up to 70 GW of British solar generation by 2035"* (Ref. 3-14[p8]).

3.4.20 Government's Powering Up Britain strategy, published by the then Government in March 2023 (Ref. 3-15) concludes that:

*"We need investment at scale across a range of sectors to rapidly rollout existing technologies and bring through transformative new ones. Established technologies … need to be deployed at pace to meet our ambitions for decarbonising power and* [lower] *wholesale UK electricity prices"* [p9] [and] *"a significant proportion of technologies we will need for 2050 are currently at the demonstration or prototype phase".*

3.4.21 This is an important point because not all prototype projects successfully achieve deployment at scale and as such technologies which are currently in their prototype phase, cannot yet be relied upon to deliver the benefits ascribed to them. Therefore, a prudent approach is needed to meet the urgent need to reach net zero by 2050, including carbon-neutral operation of the electricity system by 2035 or earlier. The deployment of proven technologies including large-scale solar to cover the case that prototype technologies do not proceed to full-scale technical deployment is such a prudent approach.

3.4.22 Powering Up Britain also concludes that an acceleration of the deployment of renewables is critical to the delivery of Government's plans, as evidenced by the Government's commitments to deliver 'Clean Power by 2030' which represent an acceleration in the UK's deployment of new low-carbon generation capacity:

*"Our goal is to develop up to 50 GW of offshore wind by 2030 and to quintuple our solar power by 2035"* [p7].

3.4.23 Powering Up Britain's Energy Security Plan (Ref. 3-16) explicitly states that the Government is:

*"aiming for 70 gigawatts of ground and rooftop* [solar] *capacity together by 2035"* [because] *"Ground-mounted solar is one of the cheapest forms of electricity generation and is readily deployable at scale. The government seeks large scale ground-mount solar deployment across the UK, looking for development mainly on brownfield, industrial and low and medium grade agricultural land"* (pp37-38).

3.4.24 The UK Government has committed to sustained growth in solar capacity to ensure the UK is on a pathway to net zero emissions. As such, solar is a key part of the Government's strategy for low-cost decarbonisation of the energy sector and has an important role in delivering the Government's goals for greater energy independence (as recognised by paragraph 2.10.9 and 2.10.10 of NPS EN-3 (Ref. 3-5)).

3.4.25 The government's support for large-scale solar generation going forwards is highly likely to be no lower than the support set out in existing publications and strategies and, if anything, may be stronger. This is evidenced by the approval of four large-scale solar DCOs (Sunnica Energy Farm, Mallard Pass Solar Project, Gate Burton Energy Park and Cottam Solar Project) in the first months of the Government's term in office, the first three of which were overdue decisions.

3.4.26 There is a therefore a pressing need to bring forward grid-scale solar and associated energy storage systems developments and it is important these assets are brought forward quickly due to the urgency of the need.

## Summary

3.4.27 Solar generation is already a leading low-cost generation technology in the UK, as set out in the Cost of Energy Report (Ref. 3-17),and is therefore a critical element of the plan to decarbonise the UK electricity sector. The national need for solar generation is urgent and the capacity required is significantly greater than the capacity of the projects currently understood to be in development.

3.4.28 Solar addresses all important aspects of existing and emerging UK Government energy policy. It will make a critical and timely contribution to decarbonisation and the security of energy supply in the UK, will help shield consumer bills from volatile energy prices and international supply markets, and will deliver biodiversity net gains through its development.

3.4.29 A **Statement of Need [EN010152/APP/7.3]** accompanies the DCO Application and sets out a detailed and compelling case as to why the Scheme is urgently required at the scale and location proposed.

3.4.30 In summary, the Scheme has a vital role to play on the national and world stage in the urgent response to tackle climate change.

# 3.5 Selection of the Solar PV Site

3.5.1 There is no standard methodology for the site selection of energy projects. Paragraph 2.3.5 of NPS EN-3 (Ref. 3-5) states that *"the government does not seek to direct applicants to particular sites for renewable energy infrastructure."* Instead, the NPS focuses on the general presumption in favour of granting consent for applications for renewable energy where there is an urgent need for this infrastructure. National planning policy confirms that the presumption for development will in generally outweigh any other residual impacts not capable of being addressed by the application through mitigation.

3.5.2 NPS EN-3 (Ref. 3-5) does however set out general considerations relating to site selection for renewable energy projects. It refers to the need to consider national designation tests related to potential impacts upon biodiversity, landscape and visual considerations and the need to demonstrate that any significant effects on qualities for which the area has been designated are clearly outweighed by the urgent need for the Scheme. The Secretary of State should also have regard to the aims, goals and targets of the Government's Environmental Improvement Plan (Ref. 3-18) and other existing and future measures and targets in England, as well as compliance with the Environment Act 2021 (Ref. 3-19). Specific reference is also made to the historic environment given the statutory duty for the Secretary of State to give considerable importance and weight to the desirability of preserving all heritage assets.

3.5.3 Paragraph 2.3.9 of NPS EN-3 (Ref. 3-5) recognises that:

*"most renewable energy resources can only be developed where the resource exists and where economically feasible, and because there are no limits on the need established in Part 3 of EN-1, the Secretary of State should not use a consecutive approach in the consideration of renewable energy projects (for example, by giving priority to the re-use of previously developed land for renewable technology developments)."*

3.5.4 The following sections explain the main factors that have influenced how the Applicant has selected the land for the Scheme and considers the factors influencing site selection as set out in the NPS EN-3 (Ref. 3-5).

## Identifying a Point of Connection with Network Capacity

3.5.5 Proximity to an available grid connection with appropriate capacity is fundamental to the viability and deliverability of large-scale solar development. This is recognised at paragraph 2.10.24 of NPS EN-3 (Ref. 3-5) which states:

*"…the connection voltage, availability of network capacity, and the distance from the solar farm to the existing network can have a significant effect on the commercial feasibility of a development proposal."*

3.5.6 The Applicant was aware of the legacy of coal fired power stations in the Yorkshire region and undertook a search of available capacity within these areas. This was in the context that many coal fired power stations were being dismantled which would free up connection to the national electricity

transmission system (NETS). Following discussions with National Grid, the Applicant identified available capacity at the Existing National Grid Thorpe Marsh Substation and subsequently secured a Point of Connection (POC). The Point of Connection is shown on **ES Volume II Figure 3-1: Point of Connection [EN010152/APP/6.2].**

3.5.7 The Applicant considered the compatibility of the POC and surrounding land with Solar PV and BESS technology. This mainly considered land within the City of Doncaster Council's administrative area (owing to the central location of the POC in that area). Technical considerations focussed on irradiation levels from the sun and topography which are key factors in identifying suitable locations for solar development as identified in NPS EN-3, paragraph 2.10.19 (Ref. 3-5). Topography is an important consideration because large scale solar development on flat land helps to reduce visual intrusion and assists the screening of Solar PV Panels due to the land not being elevated. Flat land also limits the shading between solar PV arrays and allows for easy construction of solar developments. The Applicant found that the areas surrounding the POC had good levels of irradiation and comprised of mainly flat topography.

3.5.8 As shown in **ES Volume II Figure 10-4: Topography [EN010152/APP/6.2]**, the Solar PV Site is located within low-lying land with a relatively flat landscape thereby being suitable for large-scale solar development.

3.5.9 The availability of the POC, together with good levels of irradiation levels and surrounding flat topography, illustrates its suitability for the delivery of critical national priority infrastructure. The site selection process that followed as set out in the remaining sections of this chapter further demonstrates the suitability of the Solar PV Site for the Scheme.

## Identifying potentially suitable land for a Solar PV Site

3.5.10 This section explains the Applicant's consideration of planning and environmental opportunities and constraints to identify suitable land for a Solar PV Site.

### Agricultural Land Classification

3.5.11 NPS EN-3 (Ref. 3-5) at paragraph 2.10.29 states that:

*"Where the proposed use of any agricultural land has been shown to be necessary, poorer quality land should be preferred to higher quality land avoiding the use of "Best and Most Versatile" agricultural land where possible. Best and Most Versatile agricultural land is defined as land in grades 1, 2 and 3a of the Agricultural Land Classification".*

3.5.12 In identifying areas that could be suitable for a Solar PV Site the Applicant considered locations that would avoid best and most versatile (BMV) agricultural land. To identify these locations the Applicant used provisional Agricultural Land Classification (ALC) mapping published by Natural England (Ref. 3-20). This is identified on **ES Volume II Figure 3-2: Agricultural Land Classification [EN010152/APP/6.2]** and **ES Volume II Figure 3-3: Exclusion of Best and Most Versatile agricultural land [EN010152/APP/6.2]** and allowed the identification of areas of land that

comprised of non-BMV land (Grade 4, Grade 5 and non-agricultural land) within the City of Doncaster Council's administrative area. Grade 1, 2 and 3 BMV land and urban areas identified on **ES Volume II Figure 3-2: Agricultural Land Classification [EN010152/APP/6.2]** were avoided.

**Brownfield Land**

3.5.13 Whilst ALC mapping does contain a layer for 'non-agricultural uses', it was considered appropriate to review the availability of brownfield land using local data. This is in the context of NPS EN-3 at paragraph 3.10.14 stating that:

*'While land type should not be a predominating factor in determining the suitability of the site location applicants should, where possible, utilise previously developed land, brownfield land, contaminated land and industrial land'.*

3.5.14 The Applicant therefore considered the availability of brownfield land through reference to the brownfield land register for the administrative area of City of Doncaster. The largest sites within are listed below and, where stated, are allocated in the Doncaster Local Plan (Ref. 3-21):

a. Former Rossington Colliery, West End Lane, New Rossington (65.8ha). The site is allocated in the Local Plan (ref. ROS01 and ROS02), planning permissions are in place and the site is being developed for largely residential uses.

b. Former McCormick Tractors International, Wheatley Hall Road, Wheatley, Doncaster, DN2 4PG (41.1ha). The site is allocated in the Local Plan (ref. MIX01), planning permissions are in place and the site is being developed for largely residential uses.

c. Eden Grove, Hexthorpe, Doncaster, DN4 0DA (21.3ha). The site is allocated in the Local Plan (ref. MUA07), planning permissions are in place and the site is being developed for largely residential uses.

d. Former Yorkshire Main Colliery, Broomhouse Lane, Balby (17.6ha). The site is allocated in the Local Plan (ref. EDL03) and planning permissions are in place for largely residential uses.

e. Askern Saw Mills, High Street, Askern (15.04ha). The site is allocated in the Local Plan (ref. MIX04) and planning permissions are in place for mixed uses.

f. Former Brodsworth Colliery Site, Long Lands Lane, Adwick Le Street (13.04ha). The site is allocated in the Local Plan (ref. ADW03), planning permissions are in place and the site is being developed for largely residential uses.

g. Waterdale, Doncaster (12.20ha). The city centre site is allocated in the Local Plan (ref. MIX02), various planning permissions in place and developments underway for a variety of uses.

3.5.15 The above confirms that if the Scheme was to use the above brownfield sites this would compete or be in conflict with local planning policy seeking to deliver housing and mixed use developments. The majority of the sites also have extant planning permissions for such uses. In addition, whilst not

located on the brownfield land register, land surrounding the POC at the Existing National Grid Thorpe Marsh Substation, which was part of the former Thorpe Marsh Power Station, is being developed for another energy project and is therefore not available. It was concluded that there was no available or suitable brownfield land for the Scheme.

### Internationally and Nationally Designated Biodiversity Sites

3.5.16 These designated sites are afforded high protection in legislation and NPS EN-1 (Ref. 3-2) and NPS EN-3 (Ref. 3-5) . Therefore, Special Areas of Conservation (SAC), SPA, Ramsar Sites, Sites of Specific Scientific Importance (SSSI) and National Nature Reserves (NNR) were avoided. This included Thorne Moor SAC and Hatfield Moor SAC approximately 9km to the east and 12km to the north east of the POC.

### National Landscape Designations

3.5.17 Areas of Outstanding Natural Beauty and National Parks have the highest status of protection in relation to landscape and scenic beauty in NPS EN-1 (Ref. 3-2) and the National Planning Policy Framework (December 2023) (Ref. 3-22). These designations were considered but none were identified in the City of Doncaster administrative area.

### Flood Risk

3.5.18 Although solar farm development is considered ‘essential infrastructure’ in terms of flood risk vulnerability in Annex 3 of the National Planning Policy Framework (NPPF) (December 2023) (Ref. 3-22) and can be resilient to flooding, the policy context set out by Section 5.8 of NPS EN-1 (Ref. 3-2) requires a sequential approach (the Flood Risk Sequential Test) to be taken as part of the site selection process, preferring land in Flood Zone 1 over land in Flood Zone 2 and then Flood Zone 3.

3.5.19 In avoiding constrained areas, as shown on **ES Volume II Figure 3-4: Planning, Environmental and Land Use Constraints [EN010152/APP/6.2],** the Applicant has sought to avoid areas of land wholly within Flood Zone 2 and Flood Zone 3.

### Green Belt

3.5.20 As set out in section 5.11 of NPS EN-1 (Ref. 3-2) and section 13 of the NPPF section 13 (December 2023) (Ref. 3-22), there is a general presumption against inappropriate development that would affect the openness of the Green Belt unless very special circumstances exist. The Green Belt was therefore identified and areas of land within the Green Belt were avoided (broadly comprising the western half of the administrative area of the City of Doncaster).

### Designated Heritage Assets

3.5.21 Paragraph 5.9.27 of NPS EN-1 (Ref. 3-2) identifies the presumption in favour of the conservation of designated heritage assets with the more significant the designated heritage asset the greater presumption in favour of its conservation should be. The spatial constraints of World Heritage Sites and registered battlefields were not located within the City of Doncaster

administrative area. However, the spatial constraints of scheduled monuments, conservation areas and registered parks and gardens were identified and avoided.

### Woodland

3.5.22 Ancient woodland and veteran trees are identified as valuable biodiversity resources. Areas of woodland also provide a habitat resource for biodiversity and should therefore be retained where practicable. Paragraph 5.4.53 of EN-1 (Ref. 3-2) sets out that development consent should not be granted for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons, and a suitable compensation strategy exists. Large areas of woodland may also create shading and thus reduce irradiation levels in these areas and may require felling for solar development to be constructed. The national inventory data for woodland was used to avoid large areas of woodland including large areas of ancient woodland to identify suitable land.

### Summary

3.5.23 Planning and environmental opportunities and constraints were considered by the Applicant (as shown on **ES Volume II Figure 3-4: Planning, Environmental and Land Use Constraints [EN010152/APP/6.2].** These were considered alongside additional factors discussed in the following section that impact on the suitability and availability of the land for a Solar PV Site.

## Selecting the Solar PV Site

3.5.24 The Applicant considered the following factors to identify the Solar PV Site.

### Land Use

3.5.25 The Applicant identified a significant area of unconstrained land 5km north of the POC. This area is predominantly agricultural land with limited land use conflicts.

3.5.26 Other unconstrained areas included three large areas of non agricultural land shown on **ES Volume II Figure 3-4: Planning, Environmental and Land Use Constraints [EN010152/APP/6.2].**

3.5.27 The first area is located to the immediate south east of the City of Doncaster and has a number of land use conflicts. The southern portion of the area is occupied by the Doncaster built up urban areas. The middle portion is occupied by Doncaster racecourse (with the central part of the racecourse occupied by Town Moor golf course). The northern portion is occupied by three schools, Doncaster Knights rugby club and Wheatley golf course.

3.5.28 The second area of non agricultural land is 12km south east of the POC and occupied by Doncaster Sheffield Airport and, owing to operational airfield limitations, is therefore a conflicting land use.

3.5.29 The third area of non agricultural land is located 8km south east of the POC. The southern portion of this area is the built up area of Moorland, Lindholme

and Hatfield Lakes Prisons and is a conflicting land use. The northern portion of this area is being developed by another solar farm developer (an EIA screening decision was issued for the solar farm under City of Doncaster planning reference 21/03685/SCRE) and is not available.

3.5.30 In addition, an area of unconstrained land, which is Grade 4 agricultural land, is approximately 3km south east of the POC. This area of land is approximately 3.5ha (or approximately 2.8ha when restricted to the two main field parcels) and is considered to be of insufficient scale to accommodate the Solar PV Site.

**Land Availability**

3.5.31 The Applicant undertook a process of establishing land availability by identifying landowners willing for their land to be used for the Scheme in the area of land 5km north of the POC. This also considered whether the land had landholdings with minimal landownership to minimise the number of landowners affected by the Scheme; and the Applicant sought to avoid unregistered land due to uncertainty of ownership. This led to the identification of the boundary shown on **ES Volume II Figure 3-5: EIA Scoping and Non-Statutory Consultation Boundary [EN010152/APP/6.2]** which included land outside the unconstrained areas but adjacent in Flood Zones 2 and 3 to the north, north east, east and south east of Fenwick due to the lack of available land within the unconstrained areas of a sufficient scale to accommodate the Scheme**.**

3.5.32 Minimising the number of landowners affected by the Scheme and identifying opportunities for necessary land rights to be acquired voluntarily have been key requirements of the Applicant's approach to the selection of the Solar PV Site. Following non-statutory consultation, the land within the Solar PV Site was extended to the south (into an area of mostly unconstrained land, as shown on **ES Volume II Figure 3-6: Site Boundary for Statutory Consultation [EN010152/APP/6.2]**), in response to feedback from landowners who had not previously engaged with the Applicant. Following statutory consultation, land was removed from the wider Order Limits as a result of feedback received, as summarised in Table 3-3 and shown on **ES Volume II Figure 3-7 ES: Order limit changes following Statutory Consultation [EN010152/APP/6.2]**). The Applicant has secured 'under option' agreements for all the land required for the Solar PV Site.

**Proximity to residential dwellings**

3.5.33 Paragraph 2.10.27 of NPS EN-3 (Ref. 3-5) recognises that solar farms can have a significant zone of visual influence and, therefore, the need to minimise the potential for adverse impacts on visual amenity and from glint and glare. Therefore, the Applicant sought to reduce adverse impacts by not surrounding local villages, including the village of Fenwick which occupies a large area of unconstrained land as shown on **ES Volume II Figure 3-4: Planning, Environmental and Land Use Constraints [EN010152/APP/6.2].**

### Public Rights of Way

3.5.34 Section 2.10 of NPS EN-3 (Ref. 3-5) identifies public rights of way (PRoW) as a factor for consideration by applicants in selecting sites and designing large-scale solar farms. In selecting the Solar PV Site, the Applicant has sought to avoid land which is crossed by PRoW, where practicable. The land selected provides a Solar PV Site which largely avoids PRoW, whilst those which are located within the Solar PV Site would be retained (with some localised diversions) and available for use throughout the operation and maintenance phase of the Scheme, with increased buffers applied to preserve amenity.

### Accessibility

3.5.35 Paragraphs 2.10.35 and 2.10.36 of NPS EN-3 (Ref. 3-5) recognises that, given the location of most solar farms in rural areas, the need to accommodate construction traffic can be a significant consideration in the siting of solar farms. Large equipment and construction personnel will need to access the Solar PV Site and, therefore, the Applicant has considered the potential for Heavy Goods Vehicle (HGV) access in identifying a suitable land for the Solar PV Site. During the operation and maintenance phase, the Solar PV Site will also need to be accessed typically by light goods vehicles (LGVs) for maintenance activities. The land that has been identified for the Solar PV Site has good access to the strategic road network, with the M62 located approximately 4 km to the north, the M18 located approximately 8 km to the east and the A19 (Selby Road) located approximately 3 km to the west. This is supplemented with local roads such as Moss Road and Fenwick Common Lane.

### Summary

3.5.36 The Applicant selected the Solar PV Site taking into account existing land use, land availability, proximity of residential dwellings, the concentration of public rights of way and the accessibility of land for potential HGV use. Owing mainly to land availability of land at lowest risk of flooding, the Applicant selected land within Flood Zone 2 (and to a much lesser extent Flood Zone 3) to the north east, east and south east of Fenwick for the Solar PV Site. Further land was also included to the south (in mostly Flood Zone 1 land) following non-statutory consultation to provide flexibility for the solar PV and BESS design and for providing potential mitigation areas that may be needed but not yet known.

## 3.6 Alternative Sites to the Solar PV Site

3.6.1 The reasons that the Applicant selected the Solar PV Site are described in Section 3.5. This included consideration of brownfield sites but concluded that there were no available or suitable brownfield sites for the Scheme.

3.6.2 As detailed in Section 3.2, the Applicant is required to consider alternative sites due to the relevant flood risk policy requirements set out at 3.5.18. The Applicant has sought to identify suitable and available land for the Solar PV Site which is at low risk from all sources (fluvial, groundwater and surface water) of flooding to confirm if there are reasonably available and suitable

areas at lower risk of flooding. This is set out in the Sequential Test Report provided in **Annex C of Appendix 9-3 Flood Risk Assessment, ES Volume II [EN010152/APP/6.3]**. As discussed in Section 3.5 above not all areas at low risk of flooding considered by the Applicant were suitable and available and therefore Flood Zone 2 land and small pockets of Flood Zone 3 land were included in the Solar PV Site.

3.6.3 Compliance with these policy requirements is set out in the **Planning Statement [EN010152/APP/7.1]** and **Appendix 9-3 Flood Risk Assessment, ES Volume II [EN010152/APP/6.3]**, which includes confirmation that the Applicant has identified land for the Solar PV Site in accordance with the Sequential Test policy requirements.

## 3.7 Selecting the Grid Connection Corridor

3.7.1 The Scheme will connect to the national electricity transmission system either via cables routed within the Grid Connection Corridor, or via a Grid Connection Line Drop connecting to existing overhead lines within the Solar PV Site. The determination of the Grid Connection Line Drop's viability by National Grid will only be possible after the Application has been granted. Therefore, until future discussions with National Grid conclude and the Grid Connection Line Drop is confirmed or no longer pursued, this connection method has been incorporated into the Scheme description and the powers of the **Draft Development Consent Order [EN010152/APP/3.1]** as an alternative to the Grid Connection Corridor to ensure it is considered as part of the overall assessment. The sections below provide details regarding how the route of the Grid Connection Corridor has been selected and evolved.

3.7.2 The Grid Connection Corridor is shown in **ES Volume II Figure 1-2: Site Boundary Plan [EN010152/APP/6.2]** and **ES Volume II Figure 2-3: Indicative Site Layout Plan [EN010152/APP/6.2]**.

3.7.3 The Grid Connection Corridor is the area outside the Solar PV Site in which the 400 kilovolt (kV) and associated cables (the Grid Connection Cables) would be installed between the On-Site Substation to the Existing National Grid Thorpe Marsh Substation (approximately 6.3 km south of the Solar PV Site). The land use within the Grid Connection Corridor is predominantly agricultural. **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]** describes how the cabling is expected to be laid.

3.7.4 The Applicant initially identified a Grid Connection Corridor search area of approximately 2,010 ha and up to approximately 3 km wide, broadly between the railway line to the west and the River Don and the village of Braithwaite to the east. Table 3-1 summarises the main factors that determined the Grid Connection Corridor search area which was consulted upon at the non-statutory consultation stage. This is represented on **ES Volume II Figure 3-5: EIA Scoping and Non-Statutory Consultation Boundary [EN010152/APP/6.2]**).

**Table 3-1: Grid Connection Corridor Considerations**

| Criteria | Considerations to identify the Grid Connection Corridor Search Area | How these Considerations have Influenced the Proposed Grid Connection Corridor |
|---|---|---|
| Operational and engineering requirements | • Point of connection at the Existing National Grid Thorpe Marsh Substation.<br>• Optimising routing so the cable can be laid in a straight line or in shallow curves so that the cable can be pulled through the ducting efficiently.<br>• Requires space to undertake the works to lay the cable. | A corridor was identified which provided as direct a route as practicable to the point of connection.<br>The Grid Connection Corridor optimises routing to ensure the cable can be laid in a straight line or shallow curve so that the cable can be pulled through the ducting efficiently.<br>The route crosses agricultural land and therefore provides sufficient space for jointing bays and pits.<br>There is sufficient working area for cable trenching.<br>There is a sufficient working area for crossing obstacles. |
| Planning and environmental constraints[1] | • Proximity to residential properties in local settlements.<br>• Proximity to other land uses such as businesses and other existing and proposed infrastructure.<br>• Proximity to international and nationally designated biodiversity sites.<br>• Proximity to nationally or locally designated landscapes.<br>• Proximity to public rights of way. | The Grid Connection Corridor avoids passing through settlements including Thorpe in Balne and the hamlets of Hawkhouse Green and Trumfleet.<br><br>The corridor is not located within, or in close proximity, to nationally or locally designated landscapes or ecological designations (but does include some non-statutorily designated sites). Direct impacts on designated heritage assets are avoided with listed buildings and scheduled monuments outside the corridor. There may still be impacts on the setting of such assets but these would be temporary. |

[1] Drawn from national and local policy requirements

| Criteria | Considerations to identify the Grid Connection Corridor Search Area | How these Considerations have Influenced the Proposed Grid Connection Corridor |
|---|---|---|
| | • Proximity of designated heritage assets.<br>• Flood risk.<br>• Sensitivity of watercourse crossings and the Environment Agency and Internal Drainage Board's requirements for watercourse crossings.<br>• Avoiding where practicable best and most versatile agricultural land. | Flood risk has been identified and the Grid Connection Corridor is located largely within Flood Zone 3 with smaller areas of Flood Zone 2 along its central section and approximately 700 m within Flood Zone 1 toward its northern extent. The location of the Grid Connection Corridor in Flood Zones 2 and 3 will not impact on the operation of the below ground cables.<br>The corridor also avoids other land use conflicts and is predominantly agricultural. Natural England's provisional ALC mapping (Ref. 3-20) suggests that the Grid Connection Corridor and the Existing National Grid Thorpe Marsh Substation are located predominantly within Grade 4 land with some areas of Grade 3 land in the central section of the Grid Connection Corridor between the villages of Moss and Thorpe in Balne. Therefore, the agricultural land within the Grid Connection Corridor and the Existing National Grid Thorpe Marsh Substation is not anticipated to comprise a large amount of BMV land (and all the land within the Grid Connection Corridor is assumed to be available for farming during operation and maintenance). The routing of the cables inside this corridor will follow field edges as far as practicable to minimise disturbance to agricultural land.<br><br>The corridor is crossed by eight watercourses which, from north to south, include Ell Wood and Fenwick Grange Drain, Moss Road and London Hill |

| Criteria | Considerations to identify the Grid Connection Corridor Search Area | How these Considerations have Influenced the Proposed Grid Connection Corridor |
|---|---|---|
| | | Drain, Moss Little Common Drain, Hawkhouse Green Dike, Mill Dike, Wrancarr Drain, Engine Dike, and Thorpe Marsh Engine Drain. Horizontal Directional Drilling (HDD) is proposed to meet the requirements of the Environment Agency and Internal Drainage Board (IDB). |
| Other land use and land ownership constraints | • Minimising number of affected landowners.<br>• Following field edges in order to minimise possible disturbance for the landowner when farming or using land for other purposes.<br>• Following the road network where practicable<br>• Reducing interaction with the rail network, utilities and other infrastructure such as the existing National Grid infrastructure and its proposed infrastructure. | The routing of cables within the Grid Connection Corridor will use Horizontal Directional Drilling to reduce the interaction with existing infrastructure where appropriate and will be to the edges of fields where practicable to minimise the number of landowners affected.<br>The Grid Connection Corridor avoids affecting a large number of landowners and avoids interaction with the river flood defences at Marsh Road, to the north of the River Don. |

3.7.5 Following the EIA scoping and non-statutory consultation stages, the Grid Connection Corridor was refined to an approximately 100 m wide corridor for statutory consultation (see **ES Volume II Figure 3-6: Site Boundary for Statutory Consultation [EN010152/APP/6.2])** based on desk-based environmental information, engineering and construction requirements, and land constraints. The Grid Connection Corridor was designed to take a direct route as practicable to the point of connection whilst following existing linear features and seeking to avoid sensitive receptors, such as habitat designations, residential and commercial properties, heritage assets and a large number of land interests.

3.7.6 Following statutory consultation, and as shown on **ES Volume II Figure 3-7: Order limit changes following Statutory Consultation [EN010152/APP/6.2])**, the Grid Connection Corridor was refined further by reducing the Order limits at the northern extent of the Grid Connection Corridor (to reduce the number of landowners affected at that location) and the removal of the eastern Order limit 'leg' at Marsh Road, to the north of the River Don (to avoid interacting with the river flood defences at that location).

3.7.7 The Grid Connection Corridor is largely located within areas of medium risk of fluvial flooding (Flood Zone 2) and high fluvial flooding (Flood Zone 3) (see **ES Volume II Figure 9-4: Environment Agency Flood Map for Planning (Rivers and Seas) [EN010152/APP/6.2]**). As discussed in Section 3.5, the Existing National Grid Thorpe Marsh Substation has the capacity and availability to accept the electricity generated by the Scheme. The identification of the Grid Connection Corridor considered the flood risk context and confirmed that a corridor outside Flood Zones 2 and 3 connecting the Solar PV Site to the Existing National Grid Thorpe Marsh Substation would not be possible as the Existing National Grid Thorpe Marsh Substation and surrounding land in all directions for several km is located in Flood Zone 3. Therefore there are no reasonable alternatives within areas of Flood Zone 1 or Flood Zone 2 that avoid Flood Zone 3. The location of the Grid Connection Corridor in Flood Zones 2 and 3 will not impact on the operation of the below ground cables.

3.7.8 The factors in Table 3-1, including in particular the need for a direct route that follows existing linear features, minimises the number of land owners affected, and avoids sensitive receptors, interaction with utilities and environmental designations as far as practicable, are the reasons that the Grid Connection Corridor is routed as proposed.

## 3.8 Alternative Solar Design Technologies

3.8.1 As described in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]**, the parameters of the DCO will maintain some degree of design flexibility to allow the latest technology to be utilised at the time of Scheme construction. Notwithstanding this, several design options in relation to the solar technology and associated infrastructure have been considered and preferred options have been defined taking into account potential environmental effects, the Scheme requirements, and need for optimal functionality. Table 3-2 summarises these technological design alternatives and options taken forward.

**Table 3-2: Solar Design Technological Alternatives**

| Design Technology Element | Considerations |
|---|---|
| Solar PV technology and arrangement | Three types of solar photovoltaic panels and their electricity production were considered at the EIA scoping stage:<br>a. Option 1 (fixed south facing solar panels) – an arrangement which remains static and has been commonly used on solar PV developments in the UK to date. The panel tilt is typically between 15 to 35 degrees from horizontal with a height of up to 3.5 m above ground and spacing of 2 m to 12 m between the Solar PV Panel arrays.<br>*b.* Option 2 (fixed east-west facing solar panels) – an arrangement typically installed in a fixed triangular arrangement with one panel facing east and the other facing west which remain static. The panel tilt is typically between 15 to 35 degrees from horizontal with a height of up to 3.5 m above ground and spacing of 2 m to 4 m between the Solar PV Panel arrays. When compared with other arrangements, this would have lower biodiversity net gain (BNG) options because it removes space between the Solar PV Panel arrays which also reduces the ability to graze sheep in fields and the amount of light reaching the ground. The fixed east-west option would also generate more construction traffic due to the larger volume of panels needing to be installed.<br>c. Option 3 (single axis east-west tracker solar panels) – an arrangement which follows the position of the sun throughout the day via a horizontal north-south axis. The panel tilt ranges from +/- 60 degrees from horizontal with a height of up to 3.5 m above ground during early morning and late evening and spacing of 4 m to 8 m between the Solar PV Panel arrays. The Solar PV Panels would be horizontal at midday and are also stored in a horizontal position over night. This means they are lower in height for most of the day compared to the fixed south facing arrangement and, therefore, could reduce the level of landscape and visual impact. This option requires a larger land area for each solar PV table, compared to fixed south facing, in order to limit any inter-row shadowing and obtain the maximum possible efficiency from the panels.<br>The Applicant determined that Option 1, fixed south facing solar panels, was appropriate for the Scheme at the EIA Scoping Stage and this remains the case. This is because the fixed south facing option is more space-efficient at this Solar PV Site than Options 2 and 3, thereby |

| Design Technology Element | Considerations |
|---|---|
| | enabling the Scheme to make the best use of the grid connection given appropriate layout parameters and local constraints, including the availability of suitable land. |
| Field Stations: Arrangement of transformers, switchgear and inverters | Three options for the arrangement of the transformers, switchgear and inverters are being considered by the Applicant:<br>*a.* Option 1 (all elements housed together) – proposed to house the transformers, switchgear and central inverter together in a single container foreach Field Station. Field Stations will be distributed throughout the Solar PV Site.<br>b. Option 2 (transformers and switchgear housed together and separate inverter) – transformers and switchgear housed together in a single container with inverters provided in a separate single container or separately as string-type arrangement within the Solar PV Panel arrays (on the rear of the frame mounts behind the panels or at the end of each frame). Field Stations will be distributed throughout the Solar PV Site.<br>c. Option 3 (all elements housed separately) – transformers, switchgear and inverters will each be provided separately in containers or external for each Field Station. Field Stations will be distributed throughout the Solar PV Site. Inverters may also be provided separately as string-type arrangement within the Solar PV Panel arrays (on the rear of the frame mounts behind the panels or at the end of each frame).<br>The Applicant is retaining the flexibility of implementing any of these three options for the Field Stations and this flexibility has been assessed in the technical topic chapters reported in this ES. Therefore, the parameters of all three options have been presented in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]** and assessed to ensure the worst case is considered within this ES, as set out in **ES Volume I Chapter 5: Environmental Impact Assessment Methodology [EN010152/APP/6.1]**. |
| BESS arrangement | Two options for arranging the BESS have been considered:<br>a. Option 1 (centralised arrangement) – arrangement would keep all BESS located, in containers, in a single field. This allows it to be co-located with other larger scale infrastructure such as the On-Site Substation, and enables this infrastructure to be sited in an area at low risk of flooding. |

| Design Technology Element | Considerations |
|---|---|
| | b. Option 2 (decentralised arrangement) – arrangement with BESS located across and amongst the area of Solar PV Site. Likely require some BESS Area's to be located in Flood Zone 2 and spreads the location of larger scale infrastructure across the site.<br>Option 1 (centralised BESS) has been selected as the technically and environmentally preferred option. |
| Grid connection method | Four methods of providing the grid connection were considered at the EIA scoping stage:<br>a. Option 1 (400 kilovolt (kV) line drop to 400 kV/33 kV substation along the Grid Connection Corridor, close to the Solar PV Site);<br>b. Option 2 (400 kV line drop to 400 kV/33 kV substation within the Solar PV Site);<br>c. Option 3 (up to two underground 132 kV circuits connecting a 132 kV/33 kV substation along the Grid Connection Corridor or within the Solar PV Site to a 400 kV/132 kV substation along the Grid Connection Corridor, located close to and connecting via a 400 kV underground cable to the Existing National Grid Thorpe Marsh Substation); and<br>d. Option 4 (400 kV underground cables connecting a 400 kV/33 kV substation within the Solar PV Site to the Existing National Grid Thorpe Marsh Substation).<br>All options include the construction of above ground 132 kV/33 kV and/or 400 kV/33 kV substation(s) which involve some local ground disturbance and potential permanent adverse landscape and visual and other impacts. Option 1 and 2 involve an overhead line drop which would require an additional compound at or near the location of the line drop, however it would not require a new below ground cable between the Solar PV Site and the Existing National Grid Thorpe Marsh Substation. Options 3 and 4 would not require an additional compound, but would result in c. 6.3 km of below ground cables being laid within the Grid Connection Corridor.<br>The Scheme is continuing to retain both Options 2 and 4 (i.e. for either a line drop or a below ground connection to the Existing National Grid Thorpe Marsh Substation) pending the outcome of discussions with stakeholders.<br>However, Options 1 and 3 were ruled out by the Applicant as these would require the construction of a new substation outside and remote from the Solar PV Site, thereby |

| Design Technology Element | Considerations |
|---|---|
| | introducing the potential for environmental impacts, including landscape impacts to locations outside of the Solar PV Site.<br>. |

## 3.9 Evolution of the Order limits and Alternative Layouts within the Solar PV Site

3.9.1 The Scheme has undergone various stages of design evolution which has resulted in changes to its layout and the extent of the land required for the Scheme referred to as the Order limits.

3.9.2 This process of design evolution has been informed by ongoing environmental assessments, engineering and design considerations, as well as engagement with stakeholders.

3.9.3 The purpose of this section is to summarise the evolution of the Order limits and the alternative layouts considered for the Scheme. Table 3-3 below summarises the evolution of the Order limits and the main design layout changes for the Solar PV Site. The following Figures provided in **ES Volume II [EN010152/APP/6.2]**) illustrate the changes in terms of land area:

a. **Figure 3-5** – Site Boundary for EIA Scoping and non-statutory Consultation;

b. **Figure 3-6** – Site Boundary for Statutory Consultation; and

c. **Figure 3-7** – Order limit changes following Statutory Consultation.

**Table 3-3: Evolution of the Order limits and main design layout iterations for the Solar PV Site**

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| EIA Scoping and Non-Statutory Consultation Layout (Spring and Summer 2023) | The Solar PV Site boundary represented the anticipated maximum extent of land being considered at the EIA scoping and non-statutory consultation stages. The layout comprised an approximately 323 hectare (ha) area located off Lawn Lane to the south of the River Went in Fenwick, Doncaster.<br>No detailed layout was explored at this stage. | Discussions with landowners, and National Grid.<br>Consultation with Statutory Environmental Bodies as part of the EIA Scoping process including Natural England, Environment Agency and Historic England.<br>Consultation with other key stakeholders as part of the EIA Scoping Process including City of Doncaster Council, National Highways, Yorkshire and Humber Drainage Boards, Yorkshire Water, South Yorkshire Police and South Yorkshire Archaeology Service.<br>The land assembled was chosen prior to extensive consultation and, therefore, was not influenced by other stakeholders. | The EIA Scoping Layout was produced with limited data from desk based and preliminary environmental surveys. It was an initial boundary of land assembled by the Applicant for the Solar PV Site taking into account known planning and environmental constraints and other factors as discussed in Section 3.5. The land assembled was informed by meetings with landowners and National Grid regarding the point of connection and network capacity at the Existing National Grid Thorpe Marsh Substation. |
| PEIR Layout and Statutory Consultation Layout (Autumn | The Solar PV Site comprises an approximately 421 ha area located off | Discussions with landowners and other key stakeholders including Natural England, Environment Agency, Historic England, National Grid; Network Rail, | The layout of the Solar PV Site was developed as part of a strategic masterplanning process, influenced by the outcome of baseline ecology, landscape and visual, |

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| 2023 to Spring 2024) | Lawn Lane to the south of the River Went in Fenwick, Doncaster.<br>The Order limits at this preliminary stage is shown on **ES Volume II Figure 3-6 [EN010152/APP/6.2]**. | City of Doncaster Council, North Yorkshire Council and South Yorkshire Fire Service.<br>Non-statutory consultation feedback. | heritage, flood risk, access surveys, and consultation feedback.<br>This included the inclusion of a 20 m buffer strip free of Solar PV Panels, located to the east of the scheduled moated site of Fenwick Hall and within the Solar PV Site, that was agreed with Historic England and then further enhanced within the Scheme design by the extension of the buffer to include the entire field.<br>Also, the Applicant incorporated appropriate exclusion zones around Bunfold Shaw (an Ancient Woodland and Local Wildlife Site), which enlarged the central area that is excluded from the Order limits.<br>Additional land to the south west and south east of the EIA Scoping Layout was incorporated into the Solar PV Site after non-statutory consultation following positive discussions with landowners in the vicinity of the Solar PV Site. The feedback identified this land as available, suitable and adjacent to the Solar PV Site (with such land predominantly being located in Flood Zone 1) and, despite being identified on national inventory data for woodland, was not occupied by woodland. This additional land provided flexibility for designing the Solar PV Panel arrangement (as discussed in Table 3-3 above) and for providing potential mitigation areas that may be needed, but were not yet known due to ongoing surveys.<br>Design principles at this preliminary stage which influenced the proposed Solar PV Site layout included: |

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| | | | Climate<br>a. Efficiently generate a large amount of renewable energy for supply to the National Electricity Transmission System, maximising use of the available grid connection capacity, and contribute towards the UK meeting its net zero targets.<br>b. Minimise embodied carbon by selecting low-carbon materials where practicable, utilising efficient designs and implementing sustainable practices throughout construction, operation and maintenance and decommissioning.<br>c. Ensure the Scheme is designed to be resilient to future climate change.<br>People<br>d. Demonstrate considerate neighbourly conduct during the construction, operation and maintenance and decommissioning phases of the Scheme.<br>e. Embrace open and transparent interactions with nearby communities, stakeholders, and residents, leveraging their local insights to mitigate and enhance the Scheme.<br>f. Maintain existing levels of public right of way connectivity through and across the site and enhance routes within the Order limits, where practicable.<br>Place |

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| | | | a. Seek to establish spaces that can serve for energy generation, biodiversity improvement, water and flood control, and green infrastructure.<br>b. Seek to safeguard the water environment and be resilient from flooding both now and in the future.<br>c. Site the Scheme sensitively in the landscape, respecting the distinctive and unique character of settlements adjacent to the site and the surrounding countryside and exploring reasonable opportunities to mitigate visual impacts.<br>d. Develop the Scheme sensitively with regard to cultural heritage assets and their settings.<br><u>Value</u><br>e. Acknowledge the ever-changing and progressing state of technology and strive to use current and advanced options to optimise efficiency.<br>f. Seek opportunities for local communities and businesses to benefit economically through promoting employment opportunities locally and opportunities for local business to tender to supply services in delivery of the Scheme. |
| DCO submission layout (Spring and Summer 2024) | The Solar PV Site is approximately 421 ha and is the total area covered by the ground- | Feedback received during statutory consultation, discussion with landowners and further engagement with key stakeholders including City of Doncaster Council. | The main elements of the Solar PV Site remain unchanged. However, minor changes have been made, including moving the fence line adjacent to the River Went to the top of the bank and amending a fence line in |

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| | mounted Solar PV Panels, planting and mitigation areas, Field Stations, Battery Energy Storage System Area (BESS Area), On-Site Substation, and associated infrastructure. | | field SE3 (see **ES Volume II Figure 2-3: Indicative Site Layout**).<br>In terms of the wider Site, changes to the Order limits have been made including the removal of passing bays along Fenwick Common Lane (owing to its proposed restriction to construction workforce vehicles), reducing the boundary at the junction between Common Lane and Moss Road, slightly increasing the Order limits with the main site access off Moss Road and removal of fields to the north and south of Haggs Lane (to reduce the number of landowners affected by the Scheme).<br>The access to the west of the village of Moss was also removed and is discussed in further detail in Section 3.10 below.<br>Statutory consultation feedback had proposed the creation of wetland mitigation within Fields SE6 and SE7. However, based on field surveys undertaken by the Applicant, topography and presence of existing boundary features consisting of mature hedgerow/tree lines, it was decided that the River Went corridor was a more suitable location for wetland creation/enhancement.<br>An agricultural land quality survey was undertaken between February 2023 and May 2023 for the majority of the Solar PV Site. This was supplemented with a survey in June 2024 which focussed on the south and south western parts of the Solar PV Site. In total the two surveys provided full coverage of the Solar PV Site and confirmed that 7% of the Solar PV Site is BMV |

| Stage | Order limits configuration and proposed layout | Consultation which Influenced the Layout | Design Evolution |
|---|---|---|---|
| | | | agricultural land in areas to be occupied by Solar PV panels, Ecology Mitigation Area (including part of the Heritage Buffer Area) and the BESS Area. All such areas can be restored to agricultural use by the landowner at decommissioning, with all structures removed and stored topsoil returned. Therefore, the results of the surveys validated the approach to the layout design and no design changes were considered necessary. |

## 3.10 Design Evolution of the Main Access for the Solar PV Site

3.10.1 In developing the DCO submission layout and following a review of statutory consultation feedback, the Applicant reviewed the main access requirements for the Solar PV Site and made two main changes as described below.

**Selection of Access to the East of the Village of Moss**

3.10.2 The Applicant reviewed its proposals to access the Solar PV Site and altered the main access for the Solar PV Site to utilise an existing field access to the east of the village of Moss (as shown in Annexe A of the **Framework Construction Traffic Management Plan (CTMP) [EN010152/APP/7.17]**. In doing so, the Applicant removed the access to the west of Moss. The main reasons for this design changes are two fold.

3.10.3 Firstly, to facilitate the construction of the Grid Connection Corridor, an access was already identified by the Applicant to be utilised to the east of the village of Moss. Therefore, the utilisation of this access for both the Grid Connection Corridor and the Solar PV Site reduces the overall number of access points being required in the vicinity of the village of Moss. This strategy eliminates any hedgerow removal that would have been required to the west of the village of Moss to accommodate an access at this location.

3.10.4 Secondly, it was identified that the existing junction of Moss Road and Trumfleet Lane would have required upgrades to facilitate construction vehicle access between the Solar PV Site and the Grid Connection Corridor. Therefore, the Applicant has proposed that a haul road is constructed along the Grid Connection Corridor between Moss Road and Trumfleet Lane that effectively bypasses the village of Moss to the southeast. This proposal removes any construction works within the village of Moss, which was a concern expressed through statutory consultation feedback, and seeks to ensure all construction vehicle access between the Grid Connection Corridor and Solar PV Site is conducted wholly to the east of the village of Moss.

**Removal of the Proposed Access for Construction HGV Vehicles via Fenwick Common Lane and Haggs Lane**

3.10.5 During preliminary design development, the initial strategy was for HGVs to access the Solar PV Site via Fenwick Common Lane and Haggs Lane. However, following a review of the existing highway infrastructure and concerns expressed through statutory consultation feedback, it was determined that this route would not be appropriate due to the following reasons:

a. Vehicle swept path analysis identified a need for the junction of Moss Road and Fenwick Common Lane to be upgraded in order to cater for HGV movements. This would result in additional hedgerow loss and the requirement to extend an existing culvert underneath the carriageway of Fenwick Common Lane.

b. These junction upgrades would require traffic management, local diversions and works in the carriageway which would all be within close proximity to a Network Rail Level Crossing. Any works in this area would

introduce a risk of impacting the safe operational efficiency of this level crossing and therefore any construction works would need to be carefully controlled and agreed with Network Rail.

c. Visibility for vehicles exiting the junction is constrained to the East by an existing residential property. This would therefore require a departure from standard being submitted to City of Doncaster Council and temporary speed reductions being in place during construction.

d. A number of existing overhead statutory undertaker assets would need to be diverted or protected to facilitate the widening of the junction.

3.10.6 Because of the above (and explained further in the **Framework CTMP [EN010152/APP/7.17]**), Fenwick Common Lane and Haggs Lane are proposed to be used as an access route for construction workforce vehicles only and no HGVs will use this route. This would eliminate the need for any upgrade works and subsequent disturbance to the Local Road Network at the junction of Fenwick Common Lane and Haggs Lane.

## 3.11 References

Ref. 3-1 HMSO (2017). The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 EIA Regulations. Available at: https://www.legislation.gov.uk/uksi/2017/572/contents/made [Accessed 17 July 2024]

Ref. 3-2 Department for Energy Security and Net Zero (DESNZ) (2023). Overarching National Policy Statement for Energy (EN1). Available at: https://assets.publishing.service.gov.uk/media/65a7864e96a5ec0013731a93/overarching-nps-for-energy-en1.pdf. [Accessed 17 July 2024].

Ref. 3-3 Planning Inspectorate (2020). Advice Note 7: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements. Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/. [Accessed 17 July 2024].

Ref. 3-4 H.M. Government (2017). The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/made [Accessed 17 July 2024]

Ref. 3-5 Department for Energy Security and Net Zero (2023). National Policy Statement for Renewable Energy Infrastructure (EN 3). Available at: https://assets.publishing.service.gov.uk/media/65a7889996a5ec000d731aba/nps-renewable-energy-infrastructure-en3.pdf. [Accessed 25 January 2024].

Ref. 3-6 Intergovernmental Panel on Climate Change (IPCC) (2023). Synthesis Report of the IPCC Sixth Assessment Report. Available at: https://report.ipcc.ch/ar6syr/pdf/IPCC_AR6_SYR_SPM.pdf. [Accessed 17 July 2024].

Ref. 3-7 European Parliament (2023). COP28 climate talks agree on transitioning away from fossil fuels. Available at: https://www.europarl.europa.eu/news/en/press-room/20231205IPR15686/cop28-climate-talks-agree-on-transitioning-away-from-fossil-fuels [Accessed on 17 July 2024]

Ref. 3-8 HM Government (2019). The Climate Change Act 2008 (2050 Target Amendment) Order 2019. Available at: https://www.legislation.gov.uk/ukdsi/2019/9780111187654. [Accessed 18 July 2023].

Ref. 3-9 Department for Business, Energy & Industrial Strategy (2021). Plans unveiled to decarbonise UK power system by 2035. Available at:

https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035 [Accessed 17 July 2024]

Ref. 3-10 The Labour party, Change – Labour Party Manifesto 2024. Available at: https://labour.org.uk/wp-content/uploads/2024/06/Change-Labour-Party-Manifesto-2024-large-print.pdf [Accessed July 2024]

Ref. 3-11 Department for Energy Security and Net Zero (2022) British Energy Security Strategy. Available at: https://www.gov.uk/government/publications/british-energy-security-strategy [Accessed on 17 July 2024]

Ref. 3-12 CCC (2023). Progress in reducing UK Emissions 2024 Report to Parliament. Available at: https://www.theccc.org.uk/publication/progress-in-reducing-emissions-2024-report-to-parliament/ [Accessed 22 July 2024]

Ref. 3-13 National Grid Electricity System Operator, Future Energy Scenarios, 2023. Available at https://www.nationalgrideso.com/document/283101/download [Accessed 18 July 2023]

Ref. 3-14 Rt Hon Chris Skidmore MP (2023). Mission Zero Independent Review of Net Zero. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1128689/mission-zero-independent-review.pdf. [Accessed 18 July 2024].

Ref. 3-15 Department for Energy Security and Net Zero (2023). Powering Up Britain. Available at: https://www.gov.uk/government/publications/powering-up-britain [Accessed on 18 July 2024]

Ref. 3-16 Department for Energy Security and Net Zero (2023). Powering up Britain: Energy Security Plan. Available at: https://www.gov.uk/government/publications/powering-up-britain/powering-up-britain-energy-security-plan [Accessed on 18 July 2024]

Ref. 3-17 Department for Energy Security and Net Zero (2023). Electricity Generation Costs. Available at: https://assets.publishing.service.gov.uk/media/6556027d046ed400148b99fe/electricity-generation-costs-2023.pdf [Accessed on 18 July 2024]

Ref. 3-18 Department for Environment, Food and Rural Affairs (2023). Environmental improvement Plan 2023. Available at: https://www.gov.uk/government/publications/environmental-improvement-plan [Accessed on 18 July 2024]

Ref. 3-19 HM Government (2021) Environment Act 2021. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents [Accessed 18 July 2024]

Ref. 3-20 Natural England (2019). Provisional Agricultural Land Classification (England). Available at: https://naturalengland-defra.opendata.arcgis.com/datasets/5d2477d8d04b41d4bbc9a8742f858f4

d_0/explore?location=52.776796%2C-2.141583%2C7.13 [Accessed 26 July 2024]

Ref. 3-21 Doncaster Council (2021) Doncaster Local Plan 2015-2035. Available at: https://www.doncaster.gov.uk/services/planning/local-plan [Accessed 31 July 2024]

Ref. 3-22 Ministry of Housing, Communities and Local Government (2023). National Planning Policy Framework. Available at: https://assets.publishing.service.gov.uk/media/65a11af7e8f5ec000f1f8c46/NPPF_December_2023.pdf. [Accessed 18 July 2024].


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