Light Valley Solar

Environmental Statement Volume 1

Chapter 3: Alternatives and Design Iteration

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Light Valley Solar

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DCO Submission

Chapter 3: Alternatives and Design Iteration

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Contents

List of tables

List of Plates

3 Alternatives and Design Iteration

3.1 Introduction

3.1.1 This chapter sets out the alternatives that have been considered for the Proposed Development and the design evolution in relation to the project. It sets out:

1) the policy requirements for considering alternatives;
2) an overview of the approach to alternative sites and site selection;
3) design iterations for site layouts;
4) the approach to alternative cable route corridor selection;
5) the approach to alternative construction traffic routes and access points and selection of the Highway Improvement Areas;
6) the approach to selecting construction compound locations;
7) the approach to solar technologies; and
8) the approach to alternative renewable electricity infrastructure technologies.

3.1.2 The design of the Proposed Development is an iterative process following the mitigation hierarchy where potential environmental effects that may arise from the project are identified and, as far as possible, avoided or designed out. Where effects cannot be avoided, these are managed through mitigation. Further information on mitigation measures and monitoring is set out in Chapter 4: Approach to EIA (ES Volume 1) **[EN0110012/APP/LVS/06.01.04]** and the Commitments Register (ES Volume 3) **[EN0110012/APP/LVS/06.03.01.03]**.

3.2 Requirement to consider alternatives

3.2.1 The consideration of alternatives is undertaken within the context of legislative requirements and the national policy context for nationally significant energy projects.

3.2.2 Regulation 14(2)(d) of the EIA Regulations (Ref 1) states that the ES must include:

"A description of the reasonable alternatives studied by the applicant, which are relevant to the proposed development and its specific characteristics, and an indication of the main reasons for the option chosen, taking into account the effects of the development on the environment."

3.2.3 Paragraph 2 of Schedule 4 to the EIA Regulations further states that the following information must be included in the ES:

"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."

3.2.4 Further, where applicable, the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations) (Ref 2), require the consideration of alternative solutions for projects where adverse effects on integrity are identified. The Shadow Habitat Regulations Assessment **[EN0110012/APP/LVS/05.11]** confirms that the Proposed Development is not anticipated to lead to an adverse effect on the integrity of the relevant European sites. Similarly, the Water Environment (Water Framework Directive) Regulations 2017 set out that alternatives need to be considered where a deterioration in status of a Waterbody is assessed to be likely to be caused by a project. Appendix 15.2: Water Environment Regulations (Water Framework Directive) Compliance Assessment (ES Volume 3) **[EN0110012/APP/LVS/06.03.15.02]** confirms that the Proposed Development does not pose this risk. Therefore neither of these specific requirements to consider alternatives apply to the Proposed Development.

3.2.5 NPS EN-1 (Ref 3) states at paragraph 4.3.9:

"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. Although there are specific requirements in relation to compulsory acquisition and habitats sites, the NPS does not change requirements in relation to compulsory acquisition and habitats sites."

3.2.6 NPS EN-1 goes on to state at paragraphs 4.3.22:

"Given the level and urgency of need for new energy infrastructure, the Secretary of State should, subject to any relevant legal requirements (e.g. under the Habitats Regulations) which indicate otherwise, be guided by the following principles when deciding what weight should be given to alternatives:

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

3.2.7 NPS EN-1 Paragraph 4.3.27 states that:

"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."

3.2.8 As the "no development" or "do nothing" alternative would fail to provide the renewable electricity generation and storage delivered by the Proposed Development, its consideration is therefore unnecessary within this ES.

3.2.9 NPS EN-3 (Ref 4) at paragraph 2.3.2 confirms that *"the specific criteria considered by applicants and the weight they give to them will vary from project to project"*, and *"the government does not seek to direct applicants to particular sites for renewable energy infrastructure"* (paragraph 2.3.5).

3.2.10 In summary, when considering all policy and legislative tests, there is a need to consider alternatives where: compulsory acquisition is required (as required by the DCLG Planning Act 2008: Guidance related to procedures for the compulsory acquisition of land, 2013), noting that compulsory acquisition is proposed for the Proposed Development; where there are adverse effects on integrity in the context of the Conservation of Habitats and Species Regulations 2017, where a deterioration of status to a WFD waterbody is caused; and where policy tests require it (e.g. flood risk and the sequential test). With these requirements in mind, the following sections outline The Applicant's approach to alternative schemes and to site selection.

3.3 Approach to alternative sites and site selection

The project objectives

3.3.1 As noted above, NPS EN-1 paragraph 4.3.22 provides that only alternatives that can meet the objectives of the proposed development need to be considered by the Secretary of State in its decision making.

3.3.2 The Project Objectives for the Proposed Development are as follows:

1) Objective 1: A solar farm and battery scheme that will support the decarbonisation and security of the UK's energy supply by maximising its clean energy generation potential.
2) Objective 2: A solar farm and battery scheme which will be deliverable in a timely manner in line with the grid connection date and which supports the objectives of the Clean Power 2030 Action Plan
3) Objective 3: A solar farm and battery scheme which supports through flexibility future technological advancement to deliver an optimal and efficient use of grid connection capacity.
4) Objective 4: A solar farm and battery scheme which is able to deliver on its environmental mitigation requirements and deliver community benefits.
5) Objective 5: A solar farm and battery scheme which supports the on-going agricultural economy in North Yorkshire.

3.3.3 These Project Objectives have been utilised throughout the development of the project, including in the site selection process in determining the suitability of alternative sites and in design development (as noted, for example, in the Design Approach Document **[EN0110012/APP/LVS/05.05]**, where the Design Vision and Design Principles are explained to flow from these Project Objectives).

Utilising the grid connection

3.3.4 The availability of grid connections is limited and represents a significant risk to the UK's approach to achieving net zero. The utilisation of existing grid infrastructure is therefore fundamental to ensure that new renewable energy projects can be brought online quickly. This is reflected in the Project Objectives: Objective 2 is to ensure the project is deliverable in a timely manner in line with the grid connection date and Objective 3 requires optimal and efficient use of grid capacity.

3.3.5 Following discussions with National Grid, a point of connection was identified at the existing Monk Fryston 275 kV Substation which has available capacity for a utility scale energy project.

3.3.6 The Applicant has entered into a connection agreement with National Grid for the export and import of up to 500 MW of electricity and the Proposed Development aims to maximise use of the capacity allocated in the connection agreement. NPS EN-1 paragraph 4.3.27 provides that alternatives which would mean the development could not proceed "can be excluded". In accordance with this, 'smaller development' in terms of the amount of energy generating capacity does not represent a reasonable alternative and has not been considered.

Site selection methodology

3.3.7 Once a point of connection was established, The Applicant proceeded to identify potential sites within proximity of the Monk Fryston Substation that could accommodate a scheme large enough to utilise the grid connection offer.

3.3.8 The Site Selection Assessment Report (SSAR) (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01])** provides an assessment of alternative sites.

3.3.9 The first stage of assessment required the identification of an area of search, based on the available point of connection at Monk Fryston, and the general irradiance levels and topography of the area.

3.3.10 The SSAR reports how, taking account of the policy requirements of the NPS, GIS mapping was used to seek to identify land unconstrained by flood risk (zones 2 and 3); international, national, and local designations for the natural environment and cultural heritage; best and most versatile agricultural land, Green Belt and sensitive human receptors. No National Landscapes or National Parks were present in the search area.

3.3.11 The unconstrained land that was identified was then assessed against operational considerations including potential to assemble large areas of open land (minimum 40 ha), the availability of previously developed land (brownfield sites), and topography.

3.3.12 Four Potential Development Areas (PDAs) on unconstrained land were identified for further consideration of their potential suitability and availability. However, these were found to be unsuitable because of inadequate site size and existing

land uses and allocations which apply to large sections of each PDA such as the proposed Fenwick Solar Farm (PDA 1), Selby Golf Club and Gateforth Park Retirement Village (PDA 2), Aire Valley Leeds area (PDA 3) and Wetherby Racecourse (PDA 4).

3.3.13 Following the staged assessment, it was evident that there was no unconstrained suitable and available land within the search area. Therefore, the search was expanded to include Grade 2 and 3 agricultural land, Green Belt and Floods Zones 2 and 3. Taking a proportionate approach, potential sites within the widened search area were identified with the help of land agents, who took into consideration:

1) proximity and route to the Monk Fryston Substation; and
2) planning, environmental and spatial constraints.

3.3.14 At this stage, sites smaller than 40 ha were considered in specific circumstances, namely where the smaller sites were within the same ownership as larger sites, and where the smaller sites were in close proximity to other Solar Development Sites. Whilst these sites are below the 40 ha threshold considered by The Applicant to be appropriate for development, their inclusion is justified on the basis that their close proximity to other Solar Development Sites, and being within the same ownership as other land parcels, makes them economically viable for inclusion, as opposed to small isolated sites within different ownership (which would be less viable for inclusion in the Proposed Development due to the costs involved in securing and connecting them).

3.3.15 This exercise identified the site for the Proposed Development (PDA 8). Four further PDAs (PDAs 5, 6, 7 and 9) were identified for comparative assessment. PDAs 5-9 have then been assessed in the SSAR against standard assessment criteria and the Project Objectives to consider their suitability for the Proposed Development. Major constraints were identified for each of the PDAs, including PDA 8 (being the site of the Proposed Development). However, none of the alternative PDAs provided a more suitable and available alternative to PDA 8, based on the criteria identified and the Project Objectives. For instance, whilst PDAs 5, 6, 8 and 9 all contain BMV land, PDAs 5 and 6 contain a greater proportion than PDA 8.

3.3.16 The site selection assessment confirms there are no more suitable and available alternative locations to the proposed location for the Proposed Development within a search area of 25 km radius of the Monk Fryston Substation, based on the criteria identified. The Solar Development Sites are therefore considered to be suitable for the scale of development proposed and are best placed to meet the Project Objectives.

Alternative sites suggested at Phase 1 Consultation

3.3.17 At the first phase of non-statutory consultation between October and December 2024, respondents put forward a number of suggestions for alternative sites for

the Proposed Development. Table 3-1 lists the proposed sites and the reason that they be considered to be reasonable alternatives.

Table 3-1 Phase 1 Consultation: Alternative site suggestions

Phase 1 Consultation suggestion	Response
Old North Selby Mine	Outline planning permission has been granted for the former North Selby Mine site to redevelop for leisure use comprising a range of touring caravan and static caravans and associated facilities (application reference 19/00078/OUTM). A subsequent reserved matters application has been approved for the appearance, landscaping, layout and scale (23/01309/REMM). This site is therefore not available for the Proposed Development.
Brownfield land, former power stations, residential rooftops, next to motorways and other infrastructure	**Brownfield land:** The Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]** confirms that assessment of previously developed land (PDL) / brownfield land was carried out within at 25 km radius of the Monk Fryston Substation. The search did not identify any available suitable land of an adequate area to facilitate a 500 MW solar project, either individually or in combination with other sites. **Former power stations:** nearby stations have been considered but are not available, these include: Ferrybridge C – closed in 2016. This land is either already built on or is the subject of proposals for development by Mount Park (with planning permission) or is the subject of the SSE Ferrybridge Next Generation Power Station DCO proposal. Drax – still operating with biomass and with consent to add carbon capture facilities. Eggborough – closed in 2018, but development consent was granted in 2018 for a Combined Cycle Gas Turbine plant. Construction is expected to commence in 2026. (NSIP application EN010081). **Rooftops:** Commercial rooftops, including combined premises, do not deliver the scale necessary for this type of project, as discussed in the Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]**. **Next to existing linear infrastructure (e.g. roads):** proximity to roads and rail is not ruled out in the site

Phase 1 Consultation suggestion	Response
	selection process. However, the Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]** confirms that no unconstrained, suitable and available land was identified.
Parallel to A1	The Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]** confirms that no unconstrained, suitable and available land was identified within this corridor.
Roof of distribution centres including where the A162 crosses the M62	**Rooftops:** Commercial rooftops, including combined premises, do not deliver the scale necessary for this type of project, given the size requirements to meet the 500 MW grid connection.
Airfields/airports	It is noted that airports and airfields may include solar panels to support their own operational requirements. However, the requirements for the Proposed Development go well beyond this and are at a scale far larger than any solar installed at airports to date.
Battery installations at existing substations	It is considered that land at the Monk Fryston Substation is not available given that other developments are taking place around it that could otherwise have been within it if space was available.
Using poor grade agricultural land around the Yorkshire Wolds	The Yorkshire Wolds are located outside the 25 km area of search from the Monk Fryston Substation.
Buildings and land near Birkin	Birkin is within the 25 km search area applied when exploring suitable sites for the Proposed Development and therefore available land in and around Birkin was explored as part of the site selection process. With input from land agents, suitable and available land was identified and used for Solar Development Site 4, which is located to the east of Birkin.

Alternative sites suggested during Statutory Consultation

3.3.18 Further alternative sites were put forward by respondents during Statutory Consultation. Table 3-2 sets out the proposed sites and the reason that they cannot be considered to be reasonable alternatives.

Table 3-2 Statutory Consultation: Alternative site suggestions

Statutory Consultation suggestion	Response
Alternative substations to Monk Fryston, including any closer to Solar Development Site 1 and Osgodby Substation.	The location and capacity of an available point of connection was a key driver for site selection for the Proposed Development and the first stage in selecting a site. Following discussions with NGET as to possible

Statutory Consultation suggestion	Response
	points of connection, The Applicant secured a connection agreement at the Monk Fryston Substation and therefore this has informed the development of the Proposed Development. Osgodby substation is a 33kV distribution substation operated by Northern Power Grid and therefore the National Energy System Operator cannot offer a connection agreement at Osgodby and Osgodby could not cope with a size of connection required by the Proposed Development. Other similar 33kV substations in the area are similarly constrained and not large enough to accommodate the Proposed Development.
Use of commercial and brownfield sites. Specific sites mentioned (excluding ones already addressed in phase 1 consultation response table above) include Gascoigne Wood Colliery Site, Riccall Mine, Wistow Mine, Sherburn Industrial Estate, Sherburn Airfield, Rigid Paper Mill, and use of car parks at York's Park and Ride and the outlets around York	Previously developed land (including brownfield land, former power stations and rooftops) has been considered, as discussed above. With regard to the specific sites mentioned at statutory consultation: **Gascoigne Wood Mine**: Outline planning permission was granted in June 2024 (2021/1531/EIA) for an industrial and logistics hub for this former colliery pithead site and a number of subsequent discharge of conditions applications have been brought forward during 2025. Therefore, this site is not available for use by the Proposed Development. **Riccall Mine**: The Riccall Mine pithead site has already been developed into the A19 Business Park and therefore is not available for use by the Proposed Development. **Wistow Mine**: The Wistow Mine pithead site is currently used as a storage facility and therefore is not available for use for the Proposed Development. Note that this site has been considered generally in site selection as part of Potential Development Area 6. See the SSAR (ES Volume 3) [**EN0110012/APP/LVS/06.03.03.01**]) for further details on site selection. **Sherburn Industrial Estate**: The commercial rooftops at Sherburn Industrial Estate do not deliver the scale of area necessary for the Proposed Development, given the size requirements to meet the 500 MW grid connection. In any event, some of the rooftops on the estate are already in use for solar generation and therefore are not available for the Proposed Development.

Statutory Consultation suggestion	Response
	Sherburn in Elmet Airfield: Sherburn in Elmet Airfield (located next to Sherburn Industrial Estate) is an operational licenced GA aerodrome and therefore is unavailable for use for the Proposed Development. As noted above, the requirements for the Proposed Development are at a scale far larger than any solar installed at airports to date and the proposed airfield would not be able to accommodate a scheme of this size. **Rigid Paper Mill, Selby:** Outline planning permission for a mixed-use development with 300 homes was granted in 2013 (2012/0159/OUT) (now lapsed). However, the site is not considered suitable for inclusion as part of the Proposed Development because the potential generating capacity of the site is outweighed by the technical constraints that would be experienced in its inclusion in the Proposed Development. In particular: 1) it is located close to the centre of Selby and is separated from the remainder of the Proposed Development by Selby town centre (to the east, south and west) and the River Ouse (immediately to the north); and 2) it is only 8 ha in area. Whilst smaller sites have been incorporated into the Proposed Development (sites 3 and 7), these are located close to the other Solar Development Sites and are under the same land ownership as other parcels, making them more viable for inclusion within the Proposed Development (see paragraph 3.3.14 above). In contrast, this site is isolated from the remainder of the Proposed Development with no other Solar Development Sites in close proximity to Selby. **Solar at car parks such as the park and ride and outlet carparks around York:** The Askham Bar Park and Ride and York Designer Outlet Carpark are within the 25 km search area for alternative sites set out in the Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01].** However, use of these carparks for installation of the solar PV panel canopies would not deliver the scale of area necessary for this type of project, given the size requirements to meet the 500 MW grid connection. Car parks are generally smaller areas of land (below the initial 40 ha threshold that The Applicant usually applies when looking for sites to develop) and, whilst The Applicant has included some smaller sites within the Proposed

Statutory Consultation suggestion	Response
	Development because of common landownership, combining many very small sites together is not economically or technical viable for a project of a size equivalent to the Proposed Development.

3.4 Design iterations for the Solar Development Sites

3.4.1 Following initial site selection, the process of stakeholder consultation, EIA scoping, site assessments and environmentally led design commenced. The following paragraphs outline the key elements of project development and changes made from project inception to date. Further information on design evolution, and how the design evolution for the Proposed Development has been influenced by the Design Principles, is contained within the Design Approach Document **[EN0110012/APP/LVS/05.05]**.

Design iteration: Solar Development Sites from project inception to EIA Scoping

3.4.2 Environmental surveys and assessments commenced in April 2024. The aim of these surveys and assessments was to enable the project team to understand the key constraints and opportunities, and to inform the design evolution of the Proposed Development in line with The Applicant's overarching Design Principles (the Design Principles are set out in further detail in the Design Approach Document **[EN0110012/APP/LVS/05.05]**).

Design iteration: Solar Development Sites from EIA Scoping to PEIR/Statutory Consultation

3.4.3 The EIA Scoping Report (Appendix 1.1) (ES Volume 3) [**EN0110012/APP/LVS/06.03.01.01**]) was submitted on 11 November 2024. The EIA Scoping Opinion (Appendix 1.2) (ES Volume 3) [**EN0110012/APP/LVS/06.03.01.02**]) and feedback from the non-statutory consultation carried out up to June 2025 were taken into account during the design process and preparation of the PEIR.

3.4.4 Table 3-3 summarises how the design parameters influenced the draft site layouts presented at PEIR stage, including the incorporation of buffers between receptors and the built development elements of the Proposed Development to mitigate the effects of the Proposed Development on environmental receptors.

Table 3-3 Design parameters for Solar Development Sites at PEIR

Constraint	Topic	Design Parameters
Environmental constraints	Agriculture	▪ Where possible, avoid best and most versatile land (BMV).
	Landscape and visual	▪ Visual Receptors: Consider and where possible avoid private residential properties in close proximity to site boundary. ▪ 30m buffer between residential properties and built development.
	Arboriculture	▪ Apply the following buffers between the receptor and built development: ▪ Individual trees or woodland (non-veteran/non ancient) – 10 m buffer or Root Protection Area (whichever is larger). ▪ Veteran trees or ancient woodland – 15 m buffer or Root Protection Area (whichever is larger). ▪ Hedgerows – 8 m buffer.
	Cultural heritage	▪ Avoid direct impacts and minimise indirect impacts by providing appropriate buffers.
	Ecology and biodiversity	▪ Avoid Special Protection Areas. ▪ Apply the following buffers between the receptor and built development: ▪ Watercourses including ditches – 10 m buffer. ▪ Ponds – 10 m buffer. ▪ Otter couches – 30 m buffer. ▪ All Badger Setts – 30 m buffer.
	Hydrology, flood risk and drainage	▪ Sequentially locating flood sensitive critical infrastructure such as BESS outside of Flood Zones 2, 3a and 3b wherever possible. ▪ Non-flood sensitive assets including Solar PV areas to be located within areas of higher flood risk, including Flood Zones 2 and 3 where mounting structures are compatible within the floodplain. ▪ A minimum offset of 10 m from the bank top for all watercourses from all infrastructure (including fencing) and construction works, except where watercourse crossings are required (access tracks / cable routing /fencing will be located to pass across existing watercourse crossings where feasible).

Constraint	Topic	Design Parameters
		▪ Source protection zone (SPZ) 1 or SPZ2 should be avoided.
	Noise and vibration	▪ Where possible, noisy construction works will be avoided within 300m of sensitive receptors (such as residences, and schools). ▪ BESS, substations, including transformers, where possible, should be sited approximately 300m from sensitive receptors as a minimum. ▪ Supporting infrastructure with the potential to generate noise are placed at least 100m from residential properties where possible.
	Socioeconomics and population	▪ PRoW- 15 m buffer between the PRoW and built development. ▪ The BESS will be located a minimum 100 m from residential properties, nursing/care homes and places of worship for fire safety reasons and to minimise potential human health effects from fire-related toxic emissions to air.

3.4.5 Table 3-4 below outlines the changes to the Proposed Development between EIA Scoping and PEIR, reflecting application of the above design parameters, consultation feedback, ongoing environmental assessments, the Secretary of State's (SoS) EIA Scoping Opinion, and stakeholder feedback.

3.4.6 The changes in the Order Limits between EIA Scoping and PEIR stage are represented on Figure 3.1: Changes in the Order Limits between EIA Scoping and PEIR (ES Volume 2) **[EN0110012/APP/LVS/06.02.03.01]**.

3.4.7 The most substantial changes to the Proposed Development between publication of the EIA Scoping Report and publication of the PEIR were as follows:

1) Removal of Solar Development Site 5 from the Proposed Development. Flood modelling was carried out and confirmed the site was not suitable for development due to potential flood depths.
2) Addition of Solar Development Sites 6 to 8, close to Monk Fryston, brought forward by agreement with landowners.
3) Decision to locate the BESS on Solar Development Site 2 as discussed below.

Table 3-4 Design iterations for the Solar Development Sites between EIA Scoping and PEIR

Solar Development Site	Key considerations and iterations
Solar Development Site 1	Land in the northern portion of the site was removed from use for solar panels in response to landscape, agricultural land and cultural heritage considerations. Land in the south of the site was removed from use for solar panels due to flood risk. Potential locations for solar panels, site access and a 275 kV substation were identified.
Solar Development Site 2	Taking account of flood modelling work, initial understanding of potential archaeological constraints, noise sensitive receptors and ecological constraints, Solar Development Site 2 was identified as the potentially most accessible, and least environmentally constrained location for the BESS Compound. Potential locations for solar panels, site access, and a 275 kV substation were identified.
Solar Development Site 3	Potential locations for solar panels, site access, and a 33 kV substation were identified.
Solar Development Site 4	Potential locations for solar panels, site access, and a 275 kV substation were identified.
Solar Development Site 5	Removed for the Proposed Development. Solar Development Site 5 was considered to be unsuitable for solar panels due to flood risk and in particular the likely flood depths experienced on this site.
Solar Development Site 6	Solar Development Site 6 was added post EIA Scoping.
Solar Development Site 7	Solar Development Site 7 was added post EIA Scoping.
Solar Development Site 8	Solar Development Site 8 was added post EIA Scoping.

Design iteration: Solar Development Sites from PEIR/Statutory Consultation to DCO Application Submission

3.4.8 Since publication of the PEIR, the design of the Proposed Development has evolved further in line with Design Principles, reflecting statutory consultation and stakeholder feedback, and ongoing environmental and technical assessments. This includes a targeted consultation between Thursday 16 October and Thursday 20 November 2025 in relation to 40 minor changes to the Order Limits relating to minor changes to the Order Limits, in relation to access points during construction and operation; visibility splays to ensure safe sightlines for vehicles entering and exiting the Proposed Development; passing places on narrow roads; access requirements for abnormal indivisible loads (less frequent but large delivery vehicles that have wider turner circles); cable route adjustments to avoid

environmental and engineering constraints; and permissive paths to enable increased public access routes within the Solar Development Sites.

3.4.9 The design parameters have also evolved since PEIR, culminating in the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]** presented at DCO Application submission. The design parameters presented at PEIR and set out in Table 3-3 above were confirmed and, where site specific information has been gathered, were then applied more specifically to the layout or confirmed for particular constraints. The specific buffers are set out in detail in the relevant chapters of the ES **[EN0110012/APP/LVS/06.01]** and in the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]**.

3.4.10 Table 3-5 below outlines changes to the Proposed Development since publication of the PEIR. The changes in the Order Limits between PEIR and DCO Application Submission are represented on Figure 3.2: Changes in the Order Limits between PEIR and DCO Application Submission (ES Volume 2) **[EN0110012/APP/LVS/06.02.03.02]**. The key site layout changes for the Solar Development Sites between PEIR and DCO Application Submission are shown on Figure 3.3: Solar Development Site Layout Changes between PEIR and DCO Application Submission (ES Volume 2) **[EN0110012/APP/LVS/06.02.03.03]**.

3.4.11 The key design changes between publication of the PEIR and DCO Application submission are as follows:

1) Reduction of the Order Limits in some areas (i.e. fields in the north of Solar Development Site 1, fields in Solar Development Site 4 south of Haddlesey Road, and fields 6.7 and 6.10 from Solar Development Site 6) for the reasons outlined below;
2) Reduction in solar PV panel areas within the Solar Development Sites to allow appropriate ecological and mitigation buffers. This includes the reduction of land used for solar PV panels in Solar Development Site 1 and the introduction of the Bird Mitigation in its place;
3) A commitment that construction access to Solar Development Site 2 will not use Fryston Common Lane from Monk Fryston except in an emergency;
4) Increase in the Order Limits in Solar Development Site 4 to incorporate the existing access route to Maspin Moor Drain and in Solar Development Site 7 along Common Lane to incorporate access to a proposed permissive path;
5) Identification of permissive path routes;
6) Removal of the 33kV Substations from Solar Development Sites 3 and 8;
7) Removal of the 275kV Substation from Solar Development Site 6;
8) Location of the 275kV Substations on Solar Development Sites 2 and 4;
9) Concrete feet or other non-ground penetrative techniques on PV Panels were committed to in areas of archaeological potential across the Solar Development Sites;

10) Identification of opportunities for new green infrastructure, as set out in the Outline Environmental Masterplan **[EN0110012/APP/LVS/02.12]**.

11) The design of the fences within the Solar Development Sites were considered to ensure that Solar Development Sites are permeable for larger mammals such as deer and foxes.

3.4.12 Further details of the design changes between PEIR and DCO Application Submission, and how these have been influenced by the Design Principles, is contained within the Design Approach Document **[EN0110012/APP/LVS/05.05]**.

Table 3-5 Design iterations for the Solar Development Sites between PEIR and DCO Application Submission

Solar Development Site	Key considerations and iterations
Solar Development Site 1	The Order Limits were reduced in the north of Solar Development Site 1 to exclude the areas not suitable for PV panels as identified at PEIR, while still retaining areas for landscape mitigation. Solar Development Site 1 was reduced through the removal of field 1.41 from the Order Limits and field 1.42 was reduced to include only the land required for the Cable Route Corridor. Three areas of woodland were removed from Solar Development Site 1 because they are not required for the Proposed Development. Solar PV Panels were removed from the southern section of Solar Development Site 1, which is retained within the Order Limit for use as a Bird Mitigation Area. Various buffers were introduced around the Solar PV Panel areas to allow for landscape and ecological mitigation. Existing access tracks associated with current site buildings were added to the Order Limits to enable internal access throughout the site. The Order Limits were expanded in six areas in and around Solar Development Site 1 as set out in targeted consultation to ensure there is enough room for vegetation management, visibility splays, access points to Solar Development Site 1 and the Cable Route Corridor, AIL access and permissive paths. This included along Skipwith Road and Wheldrake Lane to accommodate vegetation management to provide sufficient visibility for vehicles to safely access the Solar Development Site. Proposed permissive paths were identified within Solar Development Site 1 and the Order Limits have expanded along Skipwith Road / Mill Hill to provide access to proposed permissive paths in Solar Development Site 1. A proposed PRoW diversion was identified to maximise the effectiveness of the Bird Mitigation Area in the south of Solar Development Site 1. A proposed PRoW diversion was identified to formalise the preferred routing on the ground along existing tracks within Solar Development Site 1.

Solar Development Site	Key considerations and iterations
	The 275 kV Substation was located to maximise distances to environmental receptors; particularly visual, ecological, and noise receptors; minimising associated impacts. The location of the 275kV Substation provides appropriate buffers between proposed infrastructure and sensitive habitats and features and minimise landscape and visual impact to residents. To minimises visual impacts, the 275kV Substation is located away from publicly accessible locations – Skipwith Road, PRoW and permissive paths. To minimise ecological impacts, the 275kV Substation is outside of species specific and habitat buffers. Impacts to local residences are also minimised by intervening distances, existing vegetation and proposed planting (refer to Outline Environmental Masterplan [**EN0110012/APP/LVS/02.12**]).
Solar Development Site 2	The 275 kV Substation was located to maximise distances to environmental receptors; particularly visual, ecological, and noise receptors; minimising associated impacts. The BESS layout was developed which minimises impacts to noise sensitive receptors and noise barriers were introduced within the BESS Compound (refer to Chapter 11: Noise and Vibration (ES Volume 1) [**EN0110012/APP/LVS/06.01.11**] for further details). Access points were identified to enable safe access to the BESS Compound in the event of a fire. Small areas of Solar PV Panels were removed from some Fields 2.1 to 2.3 within north of Solar Development Site 2 provide buffers from sensitive residential receptors north of the Site and minimise impact to buried archaeology.
Solar Development Site 3	The 33 kV Substation identified at PEIR was removed from Solar Development Site 3. The refined design of the Proposed Development allowed for the use of 33 kV Switch room instead of a substation. This reduced the potential for associated impacts for landscape and visual and ecology and removed those for noise receptors. The Order Limits were expanded at Hillam Common Lane access to accommodate vegetation management to provide sufficient visibility for vehicles to safely access the Site.
Solar Development Site 4	The 275 kV Substation was located to maximise distances to environmental receptors; particularly visual, ecological, and noise receptors; minimising associated impacts. A small area was removed from the Order Limits in the south east of field 4.14 in Solar Development Site 4 because it was no longer required for the Proposed Development In addition to the removal above, a section of the south east corner of Field 4.14 was removed from the PV area to avoid impacts to buried archaeology, along with Field 4.15.

Solar Development Site	Key considerations and iterations
	The 275 kV Substation on Solar Development Site 4 was located outside of area susceptible to flooding as far as practicable. Proposed permissive paths and a potential Recreational Space were identified within Solar Development Site 4. The fields south of Haddlesey Road were also removed from the Order Limits to avoid impacts of flooding. Small areas of Solar PV Panels were removed from Fields 4.4 and Field 4.5 to provide buffers from sensitive residential receptors north of the Site and Roe Lane. Solar PV Panels were removed from Fields 4.10 and native woodland planting is proposed to limit intervisibility between the Proposed Development and Birkin House (Grade II listed). Solar Development Site 4 was expanded slightly north of Maspin Moor Drain to utilise and existing access route and minimise impacts to the drain, along with an access from Roe Lane.
Solar Development Site 6	The 275 kV Substation identified at PEIR was removed from Solar Development Site 6. The refined design allowed for the use of 33 kV switch room instead of a substation. This reduced the potential for associated impacts for landscape and visual, ecology noise receptors. Field 6.7 and Field 6.9 were removed from Solar Development Site 6 and the Order Limits. Field 6.7 can continue to be used for rescued livestock by one of the local residents and Field 6.9 was confirmed as too small to contain panels without impacting surrounding hedges and trees. A small area of woodland to the east of Field 6.2 was removed from the Order Limits because it is not required for the Proposed Development Proposed permissive paths were identified within Solar Development Site 6. A section of Solar PV Panels was removed from Field 6.5 to allow for aircraft space if emergency landing is required on approach to / take off from Sherburn Aerodrome. Access to Solar Development Site 6 was expanded along Turpin Lane to utilise an existing access route to allow use of a short length of an existing track.
Solar Development Site 7	A proposed permissive path was identified within Solar Development Site 7. The Order Limits were expanded along Common Lane to provide safe access to Solar Development Site 7 and the proposed permissive paths in Solar Development Site 7.
Solar Development Site 8	The 33 kV Substation identified at PEIR was removed from Solar Development Site 8. The refined design allowed for the use of 33 kV

Solar Development Site	Key considerations and iterations
	Switch room instead of a substation. This reduced the potential for associated impacts for landscape and visual, ecology and noise receptors. Additional accesses Solar Development Site 8 were added. Solar Development Site 8 is located in a site that is bordered to the south by a railway line. Currently access to Solar Development Site 8 is located on the eastern boundary of the Solar Development Site, which is accessed via a level crossing on Phillip Lane. This access is feasible for use for the Proposed Development but requires HGVs to use the level crossings to cross the railway corridor. Whilst Network Rail has indicated that this may be acceptable, The Applicant is conscious that the railway is a live operational asset and that circumstances at the time of construction (such as railway works) may mean that access will not be able to be taken when it is needed. The Order limits therefore allow for alternative accesses into Solar Development Site 8 to ensure that access can be taken at all times, including by avoiding crossing the railway if necessary

BESS location selection

3.4.13 Solar Development Site 2 (Field 2.4) has been selected as the most appropriate site for the BESS Compound within the Order Limits.

3.4.14 Table 3-6 sets out the criteria that have informed the site selection for the BESS Compound.

Table 3-6 BESS location design parameters

Criteria	Consideration	Parameters and Design Principles
Environmental constraints	Landscape and visual	Location and orientation to be considered against key visual receptors and key views.
	Ecology and biodiversity	Avoidance of national ecological designations. Avoidance of onsite species-rich habitat.
	Water resources and flood risk	Avoidance of Flood Zone 2 or 3. Avoidance of areas of medium or higher surface water flooding risk.
	Cultural heritage	Avoidance of national cultural heritage designations. Areas of significant archaeology to be avoided. Context and setting of cultural heritage assets to be considered.

Criteria	Consideration	Parameters and Design Principles
	Agricultural land classification	Where possible avoidance of best and most versatile land.
	Noise and vibration	Avoid siting near to sensitive residential receptors. Buffer of 300m from noise sensitive receptors where possible.
	Ground conditions	Avoidance of unstable ground. Consideration of ground capacity for heavy infrastructure.
Technical and engineering requirements	Access	Accessibility to the site for maintenance and construction. Accessibility by AILs.
	Site area	Large enough size, of approximately 10.5 hectares to accommodate the BESS Compound.
	Safety	Avoidance of location within 100 m of residential properties.
	Telecommunications, and utilities	Avoidance of underground utilities and overhead powerlines – subject to easement widths.

3.4.15 Other alternatives to Solar Development Site 2 for the BESS were considered, but discounted, as set out in Table 3-7 below

Table 3-7 Alternative BESS locations within the Solar Development Sites

Solar Development Site	Reasons for Discounting
1	Solar Development Site 1 is considered too remote from Monk Fryston.
3	Solar Development Site 3 is considered too small for the BESS Compound
4	Fields 4.5, 4.4 and a combination of Fields 4.10 and 4.11 were considered. These were discounted in favour of the location on Solar Development Site 2 because of the presence of Flood Zone 2, and the public rights of way crossing them. The locations in Solar Development Site 4 also had the potential to require removal of hedgerows to accommodate the BESS (Fields 4.10 and 4.11). There

Solar Development Site	Reasons for Discounting
	is also potential for archaeological remains in Field 4.5, which made it less preferable for the BESS Compound.
6	Fields 6.3, 6.5, 6.6 and 6.7 were considered. Solar Development Site 2 was preferred due to noise constraints (Fields 6.5, 6.6 and 6.7), landscape and potential heritage impacts on a nearby residential property (Field 6.3) and areas of Flood Zone 2 (Fields 6.3 and 6.5).
7	Solar Development Site 7 is considered too small for the BESS Compound
8	Solar Development Site 8 had greater access constraints for the BESS Compound than other options and therefore wasn't considered further.

3.4.16 In selecting Solar Development Site 2 for the BESS Compound, particular weight was given to finding fields of approximately 10.5 hectares (being the size of land parcel required for the BESS) without the need to remove hedgerows (to reduce environmental impacts), more than 100 m from residential properties (safety), with good potential access, and being located in Flood Zone 1 making the site sequentially preferable for the BESS.

3.4.17 Fields 2.1, 2.2, 2.4, 2.3, 2.5 on Solar Development Site 2 were considered for the BESS Compound. Field 2.1 was considered too small. Field 2.4 was preferred over the others considered on the basis of:

1) subsequent detailed flood modelling, which showed that the east of Solar Development Site 2 is constrained by flooding, whereas the preferred area for the BESS Compound, in the west of Solar Development Site 2, is unconstrained by flooding;
2) greater potential for archaeological remains in the north-east of Solar Development Site 2, which would make is less preferable for the BESS Compound; and
3) consideration of human impacts due to noise and the location of noise sensitive receptors surrounding Solar Development Site 2.

3.4.18 The proposed site for the BESS Compound is constrained by areas of Best and Most Versatile (BMV) agricultural land, areas with potential for archaeology, and Green Belt (part). However, these constraints apply across much of the other Solar Development Sites which are further constrained by other factors. It is considered that the chosen location is the least constrained option, when factoring in the technical requirements of the BESS Compound (in terms of size and access) and the balance of effects on all environmental constraints.

3.5 Cable Route Corridor alternatives and design iteration

3.5.1 Having identified the Solar Development Sites, an important part of the development process for the Proposed Development has been to identify suitable locations for the Cable Route Corridor. The primary aim was to find the most direct alignments between the Monk Fryston Substation and the Solar Development Sites and between each of the Solar Development Sites. This would represent the most operationally efficient route and would be expected to result in fewer impacts and a shorter construction period.

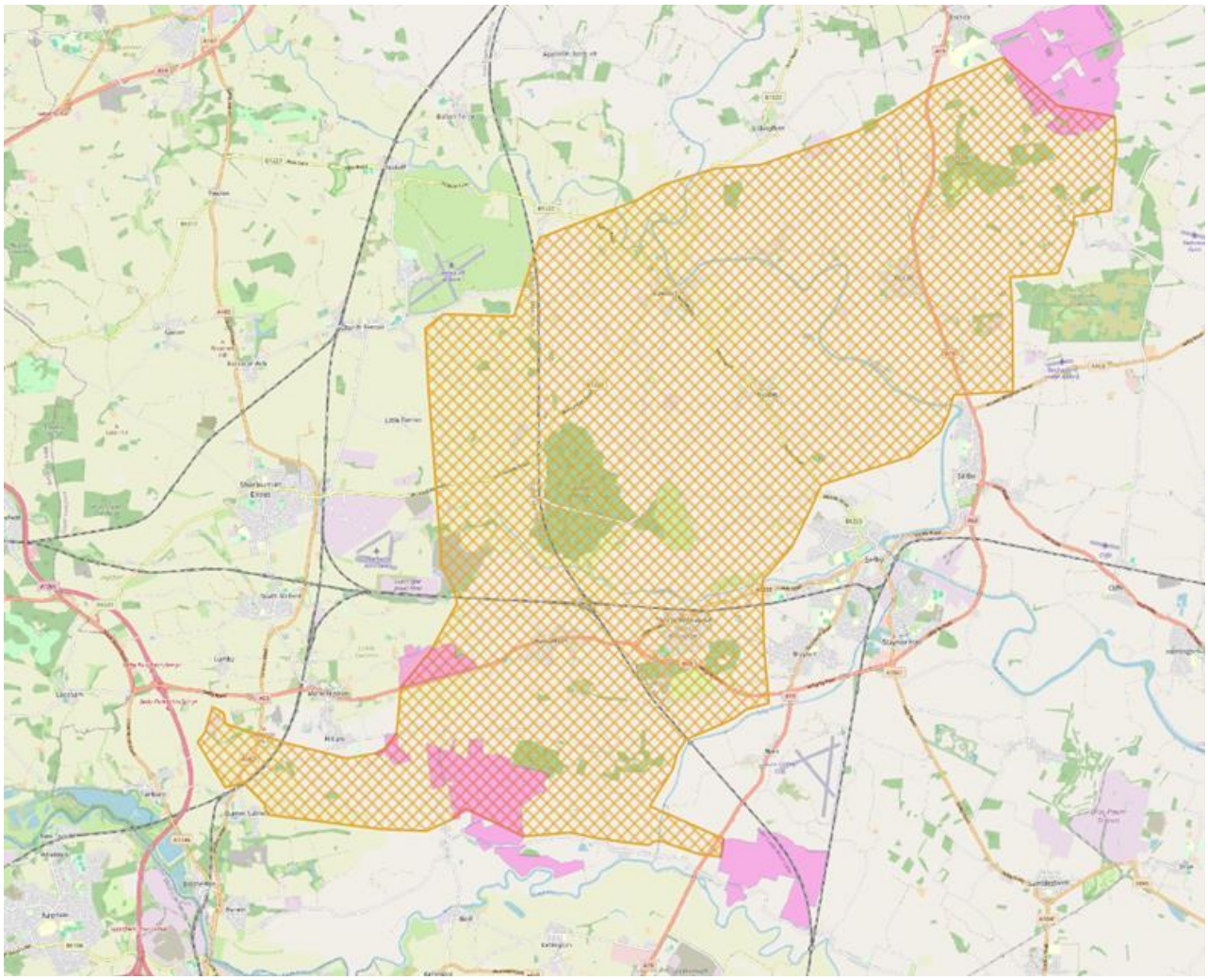
3.5.2 This section sets out how the Cable Corridor Options Area was defined for the PEIR and how this has been further refined to the Cable Route Corridor presented in the ES for DCO Application submission.

Cable Route Corridor evolution up to PEIR/Statutory Consultation: the Cable Corridor Options Area

3.5.3 The following paragraphs set out the process for selecting the Cable Route Options Area presented at PEIR.

3.5.4 Step 1 in the creation of the Cable Corridor Options Area was to define the initial search area (Plate 3-1) which extends from the south and west of Solar Development Site 1 towards the Monk Fryston Substation, picking up the other Solar Development Sites on the route.

Plate 3-1 Initial Search Area for the Cable Corridor Options Areas

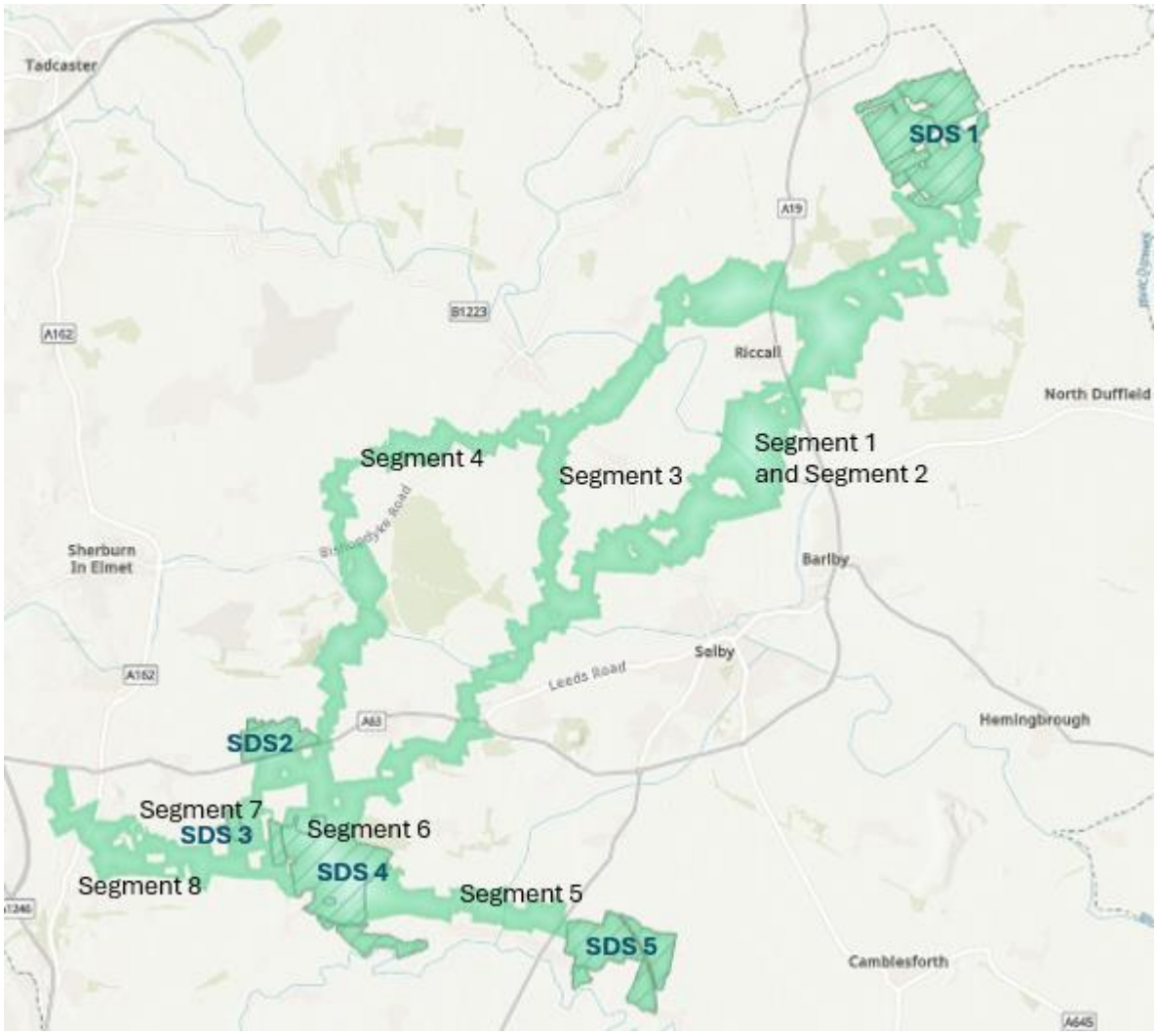


3.5.5 Step 2 involved refinement of the initial search area into a series of potential corridor routings for further consideration. Using GIS mapping, consideration was given to the following constraints and opportunities when identifying the potential corridor routings:

1) avoiding land constrained by the natural environment and cultural heritage;
2) the presence of settlements, residential receptors, businesses and utilities;
3) minimising the length of route options to maximise efficiency of transmission, and to reduce the duration and associated impacts of construction;
4) preferring more open areas of land, to minimise the need for field and hedge crossings;
5) minimising the length of route within land graded 1 and 2 by Natural England's 1970s Provisional Agricultural Land Classification; and
6) limiting the number of linear infrastructure route crossings (e.g. road, rail and utilities), and number of watercourse crossings.

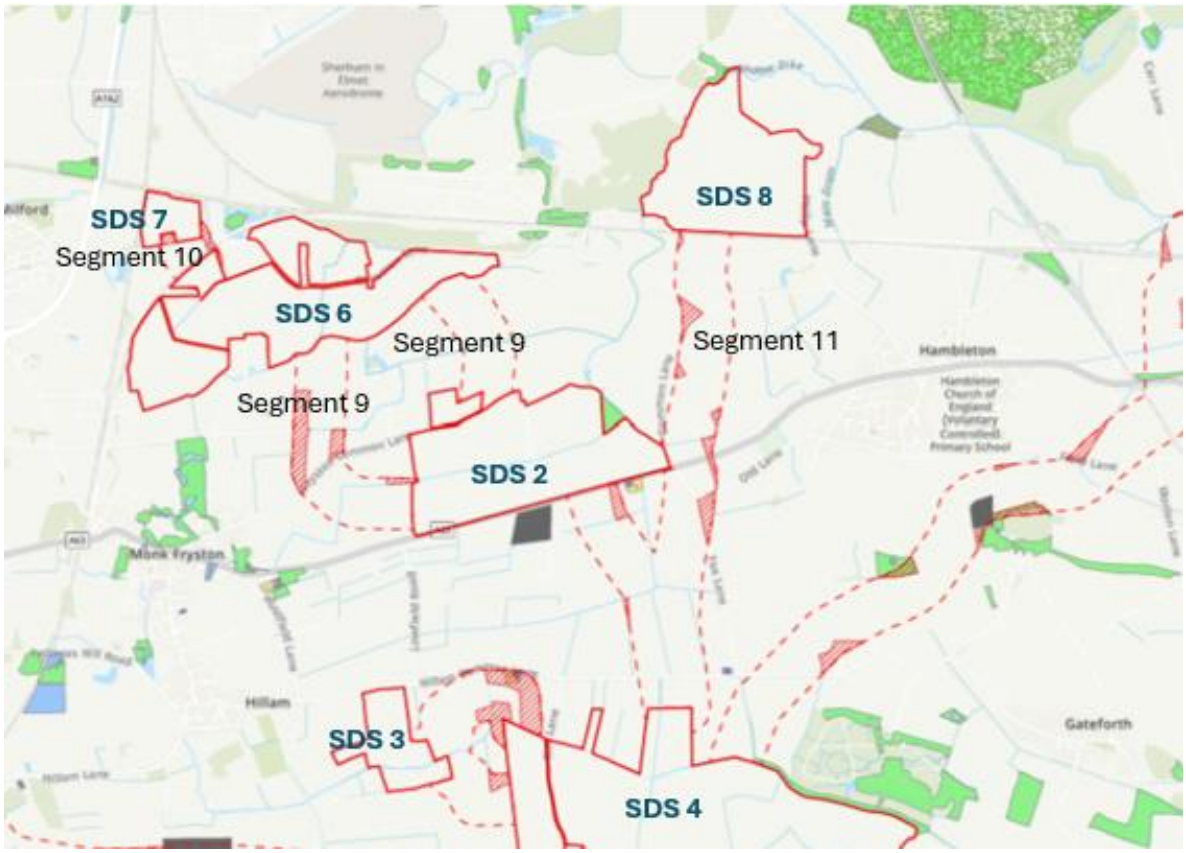
3.5.6 Following this exercise, 8 cable route segments were identified and presented at the Phase 1 non-statutory consultation in Autumn 2024 (see EIA Scoping Report Figure 1.1: Site Location and Draft Order Limits), illustrated on Plate 3-2 below.

Plate 3-2 Cable Corridor Options Area presented in EIA Scoping Report and at Phase 1 non-statutory consultation



3.5.7 Following the Phase 1 non-statutory consultation, it was decided to remove Solar Development Site 5 from the Proposed Development and to introduce Solar Development Sites 6, 7 and 8. Therefore, at Step 3 of the process, the Cable Corridor Options Areas was extended and refined to include segment options 9,10 and 11 shown on Plate 3-3 below.

Plate 3-3 Cable Corridor additional option segments



3.5.8 Through this process, 11 potential segments were identified that in combination could create multiple Cable Corridor Options Areas. Following further, more detailed assessment of constraints, one preferred Cable Corridors Options Area was then identified. The conclusion at PEIR stage was to target a Cable Corridor Options Area length between Solar Development Sites 1-4 of less than 19 km and crossing approximately 16 watercourses, avoiding priority habitat areas including a Candidate Site of Importance for Nature Conservation under the Selby District Local Plan.

3.5.9 For the routing between Solar Development Sites 2, 3, 4, 6, 7, 8 and Monk Fryston, again, shorter routes were preferred.

3.5.10 The preferred Cable Corridor Options Area presented at PEIR connecting all sites to Monk Fryston is shown on Figure 3.4: Cable Route Corridor Refinement from Scoping to DCO Application Submission (ES Volume 2) **[EN0110012/APP/LVS/06.02.03.04]** and marked as 'Proposed Development Boundary for Statutory Consultation'**.**

Cable Route Corridor evolution from PEIR/Statutory Consultation to DCO Application submission

3.5.11 Following the production of the PEIR assessments, the Cable Corridor Options Area was further refined as a result of statutory consultation feedback, focused consideration of the environmental constraints identified at stage 1, and site

survey information. The Cable Route Corridor for DCO Application Submission is shown on Figure 3.4: Cable Route Corridor Refinement from Scoping to DCO Application Submission (ES Volume 2) **[EN0110012/APP/LVS/06.02.03.04]**.

3.5.12 Minor additions to the Order Limits were made in various locations along the Cable Route Corridor as set out in targeted consultation to ensure there is enough room for vegetation management, visibility splays, passing places and AIL access. Further details of the specific changes are set out in the Design Approach Document **[EN0110012/APP/LVS/05.05]**.

3.5.13 The final alignment of the Cable Route Corridor has been chosen in order to minimise potential impacts on the following constraints:

1) Agricultural land and soils.
2) Biodiversity: ponds, watercourses, vegetation and designated sites.
3) Arboriculture: woodland, individual tress and hedgerows.
4) Cultural Heritage: conservation areas, listed buildings, scheduled monuments and records of undesignated assets.
5) Landscape and Visual: PRoW and residential receptors.
6) Noise and Vibration: residential receptors.
7) Water Resources and Flood Risk: surface and fluvial flood risk areas and rivers.
8) Traffic and Movement: potential access locations and disturbance to local roads.
9) Socioeconomics: PRoW and local business premises.

3.5.14 The Cable Route Corridor width is typically 50 m but may be up to approximately 450 m in some locations where environmental constraints, utilities or where road and rail crossings are located. The actual construction width is anticipated to be 25 m. The final cable route will be microsited with the Cable Route Corridor to best avoid impacts on important ecological features and fauna as identified during the UK Habitat surveys and species surveys, including the establishment of the buffer zones detailed above, as far as possible. The cable will also be microsited to pass through existing gaps in hedgerows/ditches wherever possible.

3.5.15 The electrical design of the Proposed Development will be finalised at the detailed design stage. Within the in ultimate electrical design, depending on the components selected for the on-site substations and the location of the components within the Orders Limits, Interconnecting Cables may be routed from Solar Development Site 1 to Solar Development Site 2 (CRC 1-4) or Solar Development Site 1 to Solar Development Site 4 (CRC 1-4a). In addition, cables may be routed from Solar Development Site 3 to Solar Development Site 4 via one of two routes (CRC 3-4 or CRC 3-4a) depending on whether fields adjacent to the Proposed Development are used by another development (see ES Chapter 17: Cumulative and In-Combination Effects (ES Volume 1) **[EN0110012/APP/LVS/06.01.17]** for more information on other relevant

developments in the area). Route CRC 3-4 will be used if the adjacent development does not receive consent. Within the ES, all options have been assessed in accordance with the principles set out in the Planning Inspectorate's Advice Note Nine: Rochdale Envelope (Ref 5).

3.5.16 A number of Avoidance Areas have been identified where non-intrusive (trenchless) installation methods will be used to avoid impact to sensitive features such as watercourses, hedgerows and mature vegetation. At each Avoidance Area the cables will be installed through HDD or other trenchless techniques. The Avoidance Areas are presented in Figure 2.5: Avoidance Areas (ES Volume 2) **[EN0110012/APP/LVS/06.02.02.05].**

3.6 Alternative construction traffic routes, access points and Highway Improvement Areas

3.6.1 The construction traffic access routes were developed taking into account feasibility, environmental and physical constraints. Through further consideration of consultation feedback, discussions with stakeholders including North Yorkshire Council (NYC) and National Highways, and ongoing consideration of environmental constraints, the construction routes have been further refined to minimise any temporary adverse impacts from construction traffic. The routes are set out in the Outline Construction Traffic Management Plan (oCTMP) [**EN0110012/APP/LVS/07.12**]. This takes into account the existing highway capacity of each route and identifies if any mitigation is required to accommodate traffic during the construction phase. Measures in the CTMP (which will be developed substantially in accordance with the oCTMP and submitted to NYC for approval) will be enforced to minimise impact on the local highway network.

3.6.2 The key design refinements to access points to the Solar Development Sites for DCO Application submission are as follows:

1) Access to Solar Development Site 2: Following consultation feedback and in discussion with NYC highways team, it was agreed that an access on the A63 would be preferable as the main access into Solar Development Site 2 to remove construction traffic from using Fryston Common Lane from Monk Fryston. For DCO Application submission, the oCTMP [**EN0110012/APP/LVS/07.12**] shows access into Solar Development Site 2 via the A63, with emergency access only on Fryston Common Lane. A further emergency access off the A63 is also proposed in order to limit the need to use Fryston Common Lane.

2) Access to Solar Development Site 8: Refinements have been made to add two alternative route options into Solar Development Site 8 (from Scalm lane and the A63) since PEIR, giving 3 potential construction access routes into Solar Development Site 8 rather than the previously proposed single access (see Table 3-5 above for further details).

3.6.3 As to Cable Corridor Access points, these were developed since PEIR taking account of design development, environmental constraints and feedback and engagement with North Yorkshire Council.

3.6.4 In addition, due to ongoing design evolution and the undertaking of an AIL study, The Applicant has identified the need for a number of Highway Improvement Areas. These were added to the Order Limits, as per the targeted consultation between Thursday 16 October and Thursday 20 November 2025. The changes in relation to these are set out further in the Design Approach Document **[EN0110012/APP/LVS/05.05].**

3.7 Construction compounds

3.7.1 As part of the Proposed Development's design development, optioneering studies have been undertaken for the siting of temporary construction compounds to be used during the construction phase of the Proposed Development.

Solar Development Site Construction Compounds

3.7.2 At PEIR stage, the compound locations had not been identified but were assumed to be located adjacent to the Solar Development Site access points. Following further development and analysis, preferred locations for Solar Development Site Construction Compounds have been identified and are presented in Chapter 2: The Proposed Development (ES Volume 1) [**EN0110012/APP/LVS/06.01.02**].

3.7.3 Suitable locations for the Solar Development Site Construction Compounds were identified taking account of the following parameters at ES Stage:

1) At least one compound will be required within each Solar Development Site (excluding Solar Development Site 3 and Solar Development Site 7).
2) The compounds should be located close to the proposed access to the Solar Development Site to limit the construction of temporary access tracks.
3) The compound areas should not be located in areas of archaeological interest identified through geophysical surveys.
4) Where practicable, the proposed compound areas should not be at risk of flooding from rivers or surface water.
5) Where practicable, the compounds should not be within 300 m of residential receptors.
6) The location of compounds should minimise movements of construction materials within the Solar PV Sites and across local roads.
7) The proposed compound areas should not be within the buffers (e.g. to mitigate effects on landscape, visual and other sensitive receptors) defined for the layout of the Proposed Development as set out within Table 3-5 above.

8) The avoidance of environmental constraints, such as badger setts, through the use of site survey information.

3.7.4 In addition to the main temporary construction compounds, temporary laydown areas may be located anywhere within the Solar Development Sites and the Cable Route Corridor, which will be progressively established across the Solar Development Sites to service local works. The temporary laydown areas will typically be set up ahead of the installation of the Solar Development Sites, electrical components and cabling and will be decommissioned as the relevant works in their locality progress and become completed.

Cable Construction Compounds

3.7.5 Potential Cable Route Corridor construction compound areas were identified by a cable construction contractor based on efficiency in construction, proximity and ease of access to the Cable Route Corridor and identified environmental constraints.

3.7.6 Potential compound areas and any alternatives identified were then evaluated to identify locations with the least environmental impacts and/or constraints. The criteria applied included:

1) landscape considerations including landscape designations and potential impacts on landscape features;
2) ecology including proximity to designated sites, as well as on-site and adjacent habitats;
3) cultural heritage, including potential archaeological or heritage assets;
4) noise and vibration, including the proximity of residential receptors;
5) water resources including SPZs, proximity to watercourses and flood zones based on publicly available data; and
6) access for construction traffic.

3.7.7 Provisional Cable Construction Compound locations were shown on PEIR Figure 1.1. Following further development, analysis and stakeholder feedback, Cable Construction Compounds have been refined and are presented in Figure 1.1: Site Location Plan and Order Limits (ES Volume 2) [**EN0110012/APP/LVS/06.02.01.01**].

3.7.8 The locations of four Cable Construction Compounds have changed since the PEIR stage as follows (the location of compounds for DCO Application submission are shown on the Works Plans **[EN0110012/APP/LVS/02.03]**):

1) Cable Construction Compound 2 has been moved to south of Wistow Road. This reduces construction vehicle access on the local road network.
2) Cable Construction Compound 3 has been moved south of King Rudding Lane. This minimises impacts to buried archaeology and locates the compound outside of areas of flood risk.

3) Cable Construction Compound 4 has been moved further west of Haugh Lane. This minimises impacts to recreational users of Hambleton Haugh and reduce construction traffic through Hambleton.

4) Cable Construction Compound 5 has been moved into Solar Development Site 2. This reduces land take by the Proposed Development.

3.8 Alternative solar technologies

3.8.1 As set out in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**, the Order Limits for the DCO Application include a degree of flexibility to allow the latest technology to be utilised at the time of construction of the Proposed Development, provided that it falls within the scope of the assessed parameters. The parameters are set out in further detail in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]** and the Design Parameters and Commitments Document **[EN0110012/APP/LVS/05.06]**.

3.8.2 Different solar technologies have been considered for the Proposed Development and a worst-case scenario has formed the basis of the assessment in this ES. Table 3-8 summarises the key parameters adopted. A full list of the design parameters can be found at Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02]**.

Table 3-8 Solar technology alternatives

Design Element	Potential alternatives
Solar PV technology	Solar PV Panels will be bifacial monocrystalline panels, comprising two layers of toughened, low reflectivity glass. Both east-west single axis tracking Solar PV Panels (Option A) and south facing fixed Solar PV Panels (Option B) are included within the parameters set out within Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02].**
Solar PV mounting structures	Each Solar PV Panel would be mounted onto a metal rack fixed to the ground. The most common fixing method is the use of driven metal posts which avoid the need for foundations and avoid disturbance to the surrounding land surface (soils). Other options include concrete footings, ground screws and ballast (either concrete or rubber). The Proposed Development will use metal posts, which will be driven to a depth of 1.5 m to 4 m (depending on ground conditions), other than in areas where archaeological protection is required, where concrete feet or other non-ground penetrative techniques will be used to secure the Solar PV mounting structures.
Transformers, Switchgear and Conversion units	The exact size and arrangement of transformers, switchgear and conversion units will be determined at a

Design Element	Potential alternatives
	detailed design stage, therefore a suitable area has been provided to allow for flexibility in the consideration of options. The maximum parameters (height, size and noise etc.) of the equipment have been used for the purposes of the assessments in this ES. The parameters are discussed in Chapter 2: The Proposed Development (ES Volume 1) **[EN0110012/APP/LVS/06.01.02].**
Solar PV Panel height	The maximum height of the Solar PV Panels is dependent on the panel type utilised. For Option A (east-west single tracking Solar PV Panels), the Solar PV Panels would have a maximum height of 4.5 m above ground level (AGL) at maximum tilt (+/- 60 degrees). The maximum height when Solar PV Panels are horizontal would be 2.5 m AGL (0 degrees). For Option B (south facing fixed Solar PV Panels), the Solar PV Panels would have a maximum height of 3.5 m AGL.
Cabling technology	Underground cables will be used for the Proposed Development. Installation of new overhead cables were discounted at an early stage to avoid likely significant landscape and visual effects associated with overhead cables.

3.9 Alternative renewable electricity infrastructure

3.9.1 Paragraph 3.3.1 of NPS EN-1 (Ref 3) confirms the need to *"ensure that there is sufficient electricity to always meet demand; with a margin to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events"*.

3.9.2 Renewable solar, wind, wave, tidal, hydro-electricity sources, alongside low carbon infrastructure, such as nuclear, hydrogen and bioenergy, combined will provide the mix needed to deliver an affordable, reliable energy system. All generating technologies mentioned in paragraph 3.3.59 of NPS EN-1 are *"urgently needed to meet the government's energy objectives"* including deployment of technologies with complementary characteristics.

3.9.3 The Solar Development Sites are considered suitable for solar energy generation due to their topography and the irradiance levels in this part of the country, proximity to a point of connection, and availability. Given this, and the fact that The Applicant is a solar and battery development company which stands ready to help deliver the Government's ambition in its Clean Power Action Plan (Ref 6) to achieve 45-47 GW of installed solar capacity by 2030, other technologies have not been considered by The Applicant in the development of the Proposed Development.

3.9.4 In any event, it is considered that the Solar Development Sites would not be suitable for other forms of renewable electricity generation at the same scale as the Proposed Development and the relevant technologies are considered in principle below:

1) Tidal power and offshore wind: these are deemed unviable due to the Proposed Development's location away from the coast. The Humber Estuary is outside of the 25 km search area for alternative sites set out in the Site Selection Assessment Report (ES Volume 3) **[EN0110012/APP/LVS/06.03.03.01]**.

2) Hydro-electric: Whilst there are examples of small-scale hydro-electric power schemes in the wider area (such as at Knottingley, Kirkthorpe and Linton Lock), these have a generating capacity of between 280kV and 500kV each and therefore are not comparable to the Proposed Development (which has secured a 500 MW connection). There are no known opportunities to source hydroelectric power from rivers at a scale that would provide a generating capacity equivalent to the electricity generated by the Proposed Development, and therefore hydroelectric power was not considered.

3) Nuclear power: it is not considered that nuclear power would be able to provide electricity output in the same timescales as proposed by the Proposed Development. As set out in the Statement of Need **[EN0110012/APP/LVS/05.03]**, nuclear power plays an important part in the UK's energy mix, but large scale nuclear is costly to build and takes significantly longer to construct. For example, development of Hinkley Point C nuclear power station started in the late 2000s, and is predicted to become operational between 2029 and 2031. The Proposed Development, in contrast, could be built and operating to export electricity to the grid by the end of 2030. Small Modular Reactor technologies are emerging, which intend to reduce the cost and time associated with building nuclear power stations by designing plant that can be pre-fabricated in factories and then installed on site. This technology, whilst likely to be quicker than large scale nuclear projects, is still in development, is currently untested in construction, commercial deployment and operation, and as such, could not be deployed within the same timescales as the Proposed Development.

4) Onshore wind: Whilst onshore wind schemes have been developed in areas close to the Proposed Development, the flat topography of the Site means that wind turbines would likely give rise to greater adverse landscape and visual effects, due to the height of the wind turbines, and the proximity to residential dwellings may give rise to adverse effects associated with shadow flicker and turbine noise. Further, as set out in the Statement of Need **[EN0110012/APP/LVS/05.03]**, by following good design principles, solar schemes can generate a similar amount of energy per hectare of land as onshore wind, due to the distance required between turbines. Therefore, the use of onshore wind over solar does not offer any particular benefit in terms of electricity generation capacity per hectare.

3.9.5 Whilst there may be opportunities to "co-locate" different renewable generation technologies (such as onshore wind-turbines), the Proposed Development instead includes the BESS, which can store electricity at times of lower demand and therefore enhances grid resilience and stability. The BESS allows for energy to be released 'on demand' at time of greater need, in a way that cannot be provided by wind turbines at this time. Therefore, it is considered that Solar PV Panels, co-located with the BESS, is the preferred energy generating solution for the Solar Development Sites.

3.10 Summary

3.10.1 In accordance with the EIA Regulations, this chapter has set out the reasonable alternatives considered by The Applicant in both the site selection undertaken at the outset of the project and through the design evolution of the Proposed Development.

3.10.2 As set out above, various alternatives have been considered as part of the design process and preferred options have been identified with consideration of the Design Principles for the Proposed Development, the Project Objectives, outcomes of environmental assessment, the functionality of the Proposed Development, and stakeholder feedback received to date.

References

Ref 1 UK Statutory Instruments (2017a) The Town and Country Planning (Environmental Impact Assessment) Regulations [Online]. Available at: https://www.legislation.gov.uk/uksi/2017/571/pdfs/uksi_20170571_en.pdf. [Accessed February 2026]

Ref 2 UK Statutory Instruments (2017b) The Conservation of Offshore Marine Habitats and Species Regulations 2017 [Online]. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [Accessed February 2026]

Ref 3 Department for Energy Security and Net Zero (2025) Overarching National Policy Statement for energy (EN-1) [Online]. Available at: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1-2025#:~:text=This%20version%20of%20the%20overarching,nationally%20significant%20infrastructure%20projects%20(%20NSIPs%20) [Accessed February 2026]

Ref 4 Department for Energy Security and Net Zero (2025) National Policy Statement for renewable energy infrastructure (EN-3) [Online]. Available at: https://www.gov.uk/government/publications/national-policy-statement-for-renewable-energy-infrastructure-en-3-2025 [Accessed February 2026]

Ref 5 Planning Inspectorate (2025) Nationally significant Infrastructure Projects – Advice Note Nine: Rochdale Envelope - last updated March 2025. Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope [Accessed February 2026]

Ref 6 Department for Energy Security and Net Zero (2024) Clean Power 2030 Action Plan [Online]. Available at: https://www.gov.uk/government/publications/clean-power-2030-action-plan [Accessed February 2026]

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