



Stonestreet Green Solar

Environmental Statement Volume 2: Main Text Chapter 16: Other Topics

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Appendices

- Appendix 16.1: Soils and Agricultural Land Report;
- Appendix 16.2: Solar Photovoltaic Glint and Glare Study; and
- Appendix 16.3: Mineral Safeguarding Assessment.

16 Other Topics

16.1 Introduction

- 16.1.1 This Chapter includes the matters relevant to the other environmental topics raised by the Planning Inspectorate in **ES Volume 4, Appendix 1.2: Scoping Opinion (Doc Ref 5.4)** and how they are addressed within the ES. This Chapter aims to provide information and in some cases assessment of other environmental topics which do not warrant individual chapters, either due to their small impact or the limited nature of the assessment necessary for the Project.
- 16.1.2 The aspects considered and the relevant sections of this Chapter are as follows:
- Compliance with EIA Scoping Opinion (Section 16.2);
 - Glint and Glare (Section 16.3);
 - Minerals (Section 16.4);
 - Waste (Section 16.5);
 - Telecommunications, Television Reception and Utilities (Section 16.6); and
 - Major Accidents and/or Disasters (Section 16.7).
- 16.1.3 This Chapter is supported by the following appendices provided in **ES Volume 4 (Doc Ref 5.4)**:
- Appendix 16.1: Soils and Agricultural Land Report;
 - Appendix 16.2: Solar Photovoltaic Glint and Glare Study; and
 - Appendix 16.3: Mineral Safeguarding Assessment.
- 16.1.4 **Section 16.2** of this Chapter provides information to confirm the ‘scoping out’ of topics from full assessment within the ES, where requested by the Planning Inspectorate in **ES Volume 4, Appendix 1.2: Scoping Opinion (Doc Ref 5.4)**. Signposting to assessments in other topic chapters of the ES and evidence that relevant mitigation measures are secured in the DCO Application are also provided where relevant.
- 16.1.5 As discussed in **ES Volume 2, Chapter 6: EIA Methodology, Section 6.7 (Doc Ref 5.2)**, a Rochdale Envelope approach is being used to provide flexibility in the ES and DCO. Reasonable worst case principles are also applied to the Project, as explained in **ES Volume 2, Chapter 6: EIA Methodology, Section 6.7 (Doc Ref 5.2)**. The same principles used throughout the ES are used to inform this Chapter.

16.2 Compliance with EIA Scoping Opinion

16.2.1 **Table 16.1** below sets out how this ES has complied with the **ES Volume 4, Appendix 1.2: Scoping Opinion (Doc Ref 5.4)**, and how the Applicant has had regard to the Planning Inspectorate responses for the topics of Agricultural Land and Soils, Air Quality and Dust, Vibration, Electric, Magnetic and Electromagnetic Fields, Lighting and Daylight, Sunlight and Overshadowing.

Table 16.1: Planning Inspectorate Scoping Opinion comments and response

Planning Inspectorate Comment (30 May 2022)	Applicant Response
<i>Agricultural Land and Soils</i>	
<p>The Scoping Report includes information to quantify the loss of BMV (Best Most Versatile) land based on soil surveys and explains why significant effects on agricultural land and soils are unlikely.</p> <p>The ES should include the information used to support scoping, however, on the bases of the above information is provided, the Inspectorate is content to scope this matter out.</p> <p>Where the ES relies upon grazing as mitigation for loss of BMV land, it should be demonstrated that the land is not subject to restrictive covenants that would prevent such use and such mitigation is secured in respect of the operation of the Project.</p>	<p>ES Volume 4, Appendix 16.1: Soils and Agricultural Land Report (Doc Ref 5.4) provides the requisite information to comply with the Scoping Opinion. This includes the findings of soil surveys and Agricultural Land Classification ('ALC') grading within the Site.</p> <p>The predominant ALC grade within the Site is Subgrade 3b (143.47 ha), with the remaining agricultural land comprising Subgrade 3a land (36.69 ha) and Grade 2 land (1.95 ha). The total area of Best and Most Versatile Land ('BMV')¹ land within the Site is 38.64 ha (i.e. approximately 20% of the total Site area and 0.12% of BMV in ABC). The remaining areas within the Site boundary comprise a small area of non-agricultural land consisting of existing farm buildings and infrastructure, woodland, watercourses (including East Stour River), railway lines, urban areas, and roads (9.43 ha).</p> <p>Good practice soil management measures, including those set out in Defra's Code of Practice for the Sustainable Use of Soils on Construction Sites¹, are secured through the Outline CEMP (Doc Ref 7.8) and Outline DEMP (Doc Ref 7.12) through an Outline Soil Management Plan. Effective implementation of these measures would ensure that the levels of loss and damage to soil resources are minimised, such that significant effects on soil resources would not arise.</p>

¹ BMV is classified as Grade 1 to Grade 3a using the ALC.

Planning Inspectorate Comment (30 May 2022)

Applicant Response

The nature of the Project (a solar farm) is such that it provides potential for the land beneath and around the PV panels to continue in, albeit altered, agricultural use during the Project’s operational lifetime, with potential for agricultural grazing. The Project is not relying on grazing for mitigation due to the limited area of temporary loss of BMV land. However, there is no restrictive covenant in place that would prevent such a use (i.e., grazing).

The Project is anticipated to lead to some permanent loss of agricultural land as it is assumed that landscape and habitat mitigation would be retained post-decommissioning of the Project. Based on the **Illustrative Landscape Drawings (Doc Ref 2.7)** it is anticipated that the retained landscape and habitat mitigation would lead to a permanent loss of 11.43ha of agricultural land, of which 5.58ha is BMV. This represents a loss of 14.4% of the BMV within the Site and 0.017% of the BMV within ABC.

Air Quality and Dust

Air quality is proposed to be scoped out of the ES on the basis that the number of anticipated movements during construction (100 HGV Average Annual Daily Traffic (AADT)) and operation (2 AADT vehicle movements) are below the threshold criteria requiring an assessment of significant effects in the ‘Land Use Planning and Development Control: Planning for Air Quality’ guidance (Institute of Air Quality Management (IAQM, 2017)). A Construction Traffic Management Plan (CTMP) will be submitted with the application to ensure impacts on receptors are minimised.

Section 13.7 of ES Volume 2, Chapter 13: Traffic and Access (Doc Ref 5.2), the **Outline CTMP (Doc Ref. 7.9)** and the **Outline OMP (Doc Ref 7.11)** present details of construction and operational traffic movements. Decommissioning traffic is expected to be similar to, or lower to that of the construction phase and is presented within the **Outline DTMP (Doc Ref. 7.12)**.

As outlined within **Section 13.7 of ES Volume 2, Chapter 13: Traffic and Access (Doc Ref. 5.2)**, the indicative Heavy Good Vehicles (‘HGV’) trips have been calculated at 18.5 one way or 37 two-way movements a day over the 12-month construction period. HGV movements during construction are not expected to exceed 100 Annual Average Daily Traffic (‘AADT’) movements over the assumed 12-month construction period.

The Environment Protection UK (‘EPUK’) / Institute of Air Quality Management (‘IAQM’)² guidance sets out thresholds for traffic generation at a point a detailed

Planning Inspectorate Comment (30 May 2022)

Applicant Response

Provided that the ES description of development includes sufficient detail to demonstrate that construction and operational traffic movements will not exceed the IAQM criteria and given that the temporary nature of the movements, further consideration of vehicle emissions impacts may be scoped out.

assessment of road traffic impacts should be undertaken, including dispersion modelling if necessary. If traffic generation is within the criteria, in line with EPUK/IAQM guidance, the impact to air quality can be considered insignificant. These criteria are where the project will lead to changes in AADT flows of more than: 25 Heavy Duty Vehicles^{II} ('HDV's) or 100 Light Duty Vehicles^{III} ('LDV's) inside an AQMA; or; 100 HDVs or 500 LDVs outside an AQMA. The calculated traffic movements for the Project fall well below the screening thresholds defined by the IAQM (i.e. 100 AADT for HDV).

Once operational, the Project would have a negligible effect on air quality. No effects from vehicle emissions are anticipated due to the low number of vehicle movements. The Project would generate a maximum of 2 (two-way) AADT vehicle movements per day during the operational phase.

With reference to the IAQM guidance, dispersion modelling of vehicle emissions is not required for the Project as predicted traffic movements presented do not exceed the relevant IAQM criteria and impacts can be considered as having an insignificant effect.

An assessment was also undertaken in relation to the potential impact on designated sites in accordance with IAQM guidance 'A guide to the assessment of air quality on designated nature conservation sites'³. This is reported in **ES Volume 4, Appendix 9.6: Biodiversity Air Quality Screening Report (Doc Ref. 5.4)**.

Scoping Report paragraphs 6.3.5 to 6.3.26 provide a step-by-step screening process in line with the Institute of Air Quality Managements ('IAQM') guidance (2016) 'Guidance on the Assessment of Dust from Demolition and Construction'. A list of suggested mitigation measures are set out in Scoping Report paragraph 6.3.21 and 6.3.22 in line with IAQM

Section 5 of the Outline CEMP (Doc Ref. 7.8) and Outline DEMP (Doc Ref. 7.12) provides an Outline Air Quality and Dust Management Plan which secures appropriate measures in line with the IAQM 'Assessment of dust from demolition and construction' guidance (2024) V2.2⁴. The measures include those set out in the Scoping Report (paragraphs 6.3.21 and 6.3.22) and other best practice measures line with the IAQM 'Assessment of dust from demolition and construction' guidance.

^{II} HDV = goods vehicles + buses >3.5t gross vehicle weight. HGV figures are applied as buses are not proposed for use.

^{III} LDV = cars and small vans <3.5t gross vehicle weight.

Planning Inspectorate Comment (30 May 2022)

Applicant Response

guidance to control dust and paragraph 6.3.26 states that mitigation measures will be described and secured via the Construction Environmental Management Plan (CEMP) through a Development Consent Order (DCO) requirement.

Provided that the appropriate mitigation measures are secured through the CTMP and CEMP via a DCO Requirement, the Inspectorate is content to scope this aspect out.

The **Outline CTMP (Doc Ref. 7.9)** and **Outline DTMP (Doc Ref. 7.13)** include measures to control construction/decommissioning traffic routing, minimise construction/decommissioning traffic and disruption on public highways.

The **Outline CEMP (Doc Ref. 7.8)**, **Outline DEMP (Doc Ref. 7.12)**, **Outline CTMP (Doc Ref. 7.9)** and **Outline DTMP (Doc Ref. 7.13)** are secured by Requirement in the **Draft Development Consent Order (Doc Ref. 3.1)**.

Vibration

Vibration impacts during operation are not anticipated due to the nature of the Project. The Inspectorate is content to scope out operational vibration impacts on this basis.

Scoping Report paragraph 6.6.2 states that vibration impacts during construction and decommissioning from piling will be mitigated through use of a low vibration piling rig which has very low vibration emissions within 3 metres of the rig; this is proposed to be secured in the CEMP by DCO Requirement.

Scoping Report paragraph 6.6.3 states that during construction and decommissioning the CEMP would secure that, excavators with potential to cause vibration impacts will not be used within 50m of residential properties and

Measures to minimise and mitigate vibration effects during construction and decommissioning from all potential sources of vibration are included in the **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)**. Measures are based on Best Practicable Means ('BPM') and good practice in line with British Standard ('BS') 5228-2:2009 +A1:2014⁵ Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration.

The **Outline CEMP (Doc Ref. 7.8)** Section 4.4 includes a commitment to use low vibration piling rigs and hydraulic bursting for the removal of concrete at locations within 30m of a sensitive receptor during construction. The **Outline DEMP (Doc Ref. 7.12)** includes a commitment to use low vibration methods and hydraulic bursting for the removal of concrete structures during decommissioning at locations within 30m of a sensitive receptor. The **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)** also require appropriate monitoring and communication with affected parties to be undertaken where the use of excavators is required within 50m of affected residential properties.

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where this cannot be avoided, appropriate monitoring and communication would be undertaken.

Subject to securing the proposed mitigation measures in a CEMP secured by the DCO, the Inspectorate is content to scope out impacts from vibration on human receptors during construction and decommissioning.

The **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)** are secured by Requirements in the **Draft Development Consent Order (Doc Ref. 3.1)**.

Electric, Magnetic and Electromagnetic Fields

Electric, Magnetic and Electromagnetic fields ('EMF') are proposed to be scoped out on the basis that the Project would not require cables and infrastructure exceeding 132kV; a threshold set out by DECC Power Lines: Demonstrating compliance with EMF public exposure guidelines, A Voluntary Code of Practice 2012 guidance.

Subject to the ES demonstrating that cables are below relevant guidance thresholds for impact to receptors, the Inspectorate is content to scope out impacts from EMF.

The **Design Principles (Doc Ref. 7.5)** confirm that the maximum voltage of the Project Substation will be 132 kilovolts ('kV'). The Grid Connection Cable which connects the Project Substation to Sellindge Substation would also be a maximum of 132kV. All other infrastructure and cabling used on-Site would be below 132kV.

Page 5 of guidelines published by the International Commission on Non-Ionizing Radiation Protection ('ICNIRP')⁶ state that '*Overhead power lines at voltages up to and including 132kV, underground cables up to and including 132kV and substations at and beyond the publicly accessible perimeter*' are not capable of exceeding the ICNIRP guidelines for exposure to EMF.

All cable voltages and infrastructure for the Project are therefore below the ICNIRP reference limits for magnetic and electric fields and no significant effects are likely. As such no further assessment is required.

Lighting

A standalone Lighting Chapter is proposed to be scoped on the basis that construction and

During the construction and decommissioning phases temporary lighting would be required and provided in accordance with Regulation 35 of the Construction (Design

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decommissioning impacts on ecology will be assessed in the Biodiversity Chapter and construction and decommissioning impacts on the existing character of the night-sky will be assessed within the Landscape and Views Chapter. Operational effects are proposed to be scoped out on the basis that no permanent lighting is proposed during operation.

The Inspectorate is broadly content with this approach; however, the ES should include a detailed description of the lighting design and the measures taken to avoid or minimise lighting impacts on human and ecological receptors, including consideration of effects relating to intermittent lighting sources such as motion activated security lighting.

and Management) Regulations 2015⁷ ('CDM Regulations'). Measures to avoid or minimise lighting impacts during construction and decommissioning phases are secured through the **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)**.

During the operational phase, no part of the Project will be continuously lit (with the exception of the Sellindge Substation Extension), with lighting limited to emergency and overnight maintenance lighting only at Inverter Stations, Intermediate Substations and the Project Substation. If required to be used, lighting will be directed within the Order limits. A sensitive lighting scheme will be developed as part of the final design of the Project ensuring inward distribution of light and avoiding light spill onto existing boundary features, and utilised only in the locations required at that time to avoid any impacts to the surrounding area. Lighting for the Sellindge Substation Extension is expected to be consistent with the approach that is currently applied to the existing infrastructure at Sellindge Substation. Measures to avoid or minimise lighting impacts during the operational phase of the Project are secured through the **Outline OMP (Doc Ref. 7.11)**.

Construction, operation and decommissioning phase lighting impacts on ecology are assessed in **ES Volume 2, Chapter 9: Biodiversity (Doc Ref. 5.2)**. No significant effects are identified.

Construction and decommissioning phase lighting impacts on the existing character of the night-sky are assessed in **ES Volume 2, Chapter 8: Landscape and Views (Doc Ref. 5.2)**. No significant effects are identified. An assessment of the Project's operational phase artificial light sources on the existing character of the night-sky have been scoped out in line with the Scoping Opinion, as explained in **ES Volume 2, Chapter 8: Landscape and Views (Doc Ref. 5.2)**.

Daylight, Sunlight and Overshadowing

Impacts from daylight, sunlight and overshadowing are scoped out on the bases

The **Works Plans (Doc Ref. 2.3)** secure the location of the Project components and the **Design Principles (Doc Ref. 7.5)** define the maximum heights. Components of the

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that the scale and massing of the Project will not cause changes in relation to daylight, sunlight, or overshadowing. Scoping Report paragraph 6.5.1 states that buffer zones will be employed between the Project and sensitive human receptors, which is considered sufficient to avoid impacts from overshadowing on humans. The ES should explain how panel spacing has been designed to minimising shading of vegetated areas, otherwise the Inspectorate considers that this aspect can be scoped out of the ES.

Applicant Response

Project which have the potential to cause daylight, sunlight and overshadowing effects, including the Project Substation, Inverter Stations, Intermediate Substations and Sellindge Substation Extension, are located at sufficient distances from residential properties, such that they would not result in effects.

The **Design Principles (Doc Ref. 7.5)** secure a minimum set back of PV panels from boundary habitats (hedgerows and trees) of 6.4m (comprising a distance of at least 3.2m between the edge of PV panels and the security fencing plus a distance of at least 3.2m between the security fencing and hedgerows outside of the security fencing). The maximum height of PV panels will be 3.5m AGL and therefore they would not result in overshadowing of boundary habitats.

The distance between each row of PV panels will be between 2m and 5m. This is considered sufficient to avoid levels of overshadowing which would be detrimental to growth of the grassland habitats proposed within the PV panels.

16.3 Glint and Glare

Introduction

- 16.3.1 The Scoping Report proposed that a standalone glint and glare assessment be scoped out on the basis that the assessment of glint and glare effects would be included as a technical appendix to the ES. This was accepted by the Planning Inspectorate in the Scoping Opinion. The full assessment of glint and glare effects is therefore provided as **ES Volume 4, Appendix 16.2 Solar Photovoltaic Glint and Glare Study (Doc Ref. 5.4)**.
- 16.3.2 This section provides a summary of the findings of **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref. 5.4)**.
- 16.3.3 Solar panels are specifically designed to absorb, not reflect, irradiation. However, solar panels may reflect the sun's rays at certain angles, causing glint and glare. The definitions of glint and glare used within the assessment are in line with paragraph 3.10.93 of NPS EN-3⁸ as follows:
- Glint – a momentary flash of bright light typically received by moving receptors or from moving reflectors; and
 - Glare – a continuous source of bright light typically received by static receptors or from large reflective surfaces.
- 16.3.4 The term 'solar reflection' may be used to describe both reflection types, i.e. glint and glare.

Policy and Guidance

- 16.3.5 Paragraph 3.10.95 of NPS EN-3 states that *'When a quantitative glint and glare assessment is necessary, applicants are expected to consider the geometric possibility of glint and glare affecting nearby receptors, and provide an assessment of potential impact and impairment based on the angle and duration of incidence and the intensity of the reflection.'*
- 16.3.6 Paragraph 3.10.97 of NPS EN-3 states that *'the potential for solar PV panels, frames and supports to have a combined reflective quality may need to be assessed.'*
- 16.3.7 Relevant guidance and studies taken into account in the assessment which has informed the assessment methodology is set out in **Appendices A and B of ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref. 5.4)**.

Scoping Opinion Response

- 16.3.8 **Table 16.2** sets out the matters raised within **ES Volume 4, Appendix 1.2: EIA Scoping Opinion (Doc Ref. 5.4)** relevant to glint and glare and how they are addressed within the ES.

Table 16.2: Scoping Opinion comments and response (Glint and Glare)

Consultee and Comment	Response
<i>Planning Inspectorate (30 May 2022)</i>	
<p>A standalone Glint and Glare Chapter is proposed to be scoped out on the basis that the Glint and Glare assessment would be included as a technical appendix to the ES and will assess impacts to rail, road users and aircraft (Scoping Report paragraph 6.7.5). The assessment will be used to inform other relevant chapter assessments, including the Landscape and Visual Impact Assessment (LVIA).</p> <p>The Inspectorate is content with this approach.</p> <p>At this stage it is not confirmed whether the solar arrays will use fixed or tracking panels. Given that the two different mounting structures may lead to different glint and glare effects, the Glint and Glare assessment should assess the worst-case assessment for both options and this should be considered in the ES.</p>	<p>ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study provides the full assessment of the Project which assesses impacts to all relevant receptors. The full assessment has informed other assessments including ES Volume 2, Chapter 8: Landscape and Views (Doc Ref. 5.2) and ES Volume 2, Chapter 7: Cultural Heritage (Doc Ref. 5.2).</p> <p>The Design Principles (Doc Ref. 7.5) confirm that the PV panels will be installed using a fixed tilt arrangement and therefore an assessment of tracking panels is not required.</p>

Assessment Methodology

- 16.3.9 The glint and glare assessment methodology is set out in **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study, Section 4 (Doc Ref 5.4)**.
- 16.3.10 The glint and glare assessment was based on the **Illustrative Project Layout Plan and Illustrative Project Drawings (Doc Ref 2.6)** and **Illustrative Landscape Drawings (Doc Ref 2.7)** so that a specific solar PV array arrangement and embedded mitigation could be modelled. The **Design Principles (Doc Ref. 7.5)** confirm that the angle of elevation of the PV panels will be between 20 and 25 degrees and that the PV panels will be installed using a fixed tilt arrangement. An elevation angle of 22 degrees has been assessed as this is close to the middle of the range. A PV panel centre height of 2m above ground level (AGL) has been modelled.
- 16.3.11 The conclusions of the glint and glare assessment are considered to remain valid for any scheme that could be constructed within the **Design Principles (Doc Ref 7.5)** and **Works Plans (Doc Ref 2.3)** and the assessment therefore represents a worst case assessment of the likely significant glint and glare effects.

16.3.12 The assessment approach used was to identify and map receptors (residential, road, railway and aviation) and then undertake geometric reflection calculations and, where a solar reflection is predicted, consider the screening (existing and/or proposed) between the receptor and the reflecting solar panels. The scenario in which a solar reflection can occur for all receptors was identified and discussed, and a comparison made against the available solar panel reflection studies to determine the overall impact.

Baseline Conditions

16.3.13 For context, a description of landscape and topography can be found in **ES Volume 2, Chapter 8: Landscape and Views (Doc Ref 5.2)**.

16.3.14 The following receptors are assessed in **ES Volume 4, Appendix 16.2 Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4)**:

- **Aviation Receptors** – The airstrips identified for assessment are Hamilton Farm Airstrip, Meadow Farm Airstrip, Harringe Airfield, Bonnington Airstrip, Pent Farm Airstrip and Little Engeham Farm Airstrip. The assessed airfields for receptors are based on the following characteristics:
 - 1-mile approach path with a splay angle of 5 degrees, considering 2.5 degrees either side of the extended runway centreline;
 - A descent angle of 5 degrees;
 - Circuit width of 1 nautical mile from runway centreline; and
 - Maximum altitude of 500 feet above the aerodrome threshold altitude.
- **Road Receptors** – Road receptors within 1km of the Site or have a potential view of the PV panels. A total of 80 identified road receptors are assessed including Goldwell Lane, New Hill Road / Forge Hill, Roman Road, Frith Road and Chequer Tree Lane.
- **Dwelling Receptors** – Dwellings within a 1km of the Site and have a potential view of the PV panels. In some cases, a single receptor point is adopted as being representative of a small number of separate addresses.
- **Railway Receptors** – Railways within 500m of the Site and have a potential view of PV panels, i.e. a small section of the nearby HS1 / Network Rail railway.
- **Public Rights of Way ('PRoW') Receptors** – A number of PRoW are located within and around the Site although some will be screened. A high level assessment has been provided for PRoW.

16.3.15 Receptors to the north of the Project are not included because solar reflections would not be geometrically possible towards the north when the azimuth angle is considered.

Embedded Mitigation

16.3.16 The embedded design mitigation for glint and glare effects includes new boundary and enhancement of existing boundary planting proposed as part of the Project. **ES**

Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4) has assessed the **Illustrative Landscape Drawings (Doc Ref 2.7)**.

16.3.17 As secured by Requirement in the **Draft Development Consent Order (Doc Ref 3.1)**, phase-specific detailed LEMP(s), which must be in accordance with the **Outline LEMP (Doc Ref 7.10)**, will be submitted to ABC for approval prior to the commencement of construction works to provide details of the final landscape design for the Project.

16.3.18 An area where the need for additional mitigation measures for glint and glare is identified are located on the northern edge of Field 18 adjacent to PRoW AE378, as indicated on Figures 54, of the **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4)** respectively. These measures are secured through the **Outline LEMP (Doc Ref 7.10)** and are as follows:

- Hedgerow planting which would be managed to grow to at least 4.5m; and
- A temporary 3m temporary wooden solid hoarding will be implemented and then removed once the hedgerows are of a sufficient height.

Assessment

16.3.19 A summary of the **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4)** is provided below:

- **Aviation Receptors** – The impact on aviation receptors (Hamilton Farm, Meadow Farm, Harringe Airfield, Little Engeham Farm Airstrip and Pent Farm) is identified as being low and deemed acceptable in line with the associated guidance and industry standards. No solar reflections are predicted towards Bonnington Airstrip and therefore no impact is predicted. As such, no significant effects are identified on aviation receptors.
- **Road Receptors** – Solar reflections are geometrically possible towards approximately 2.2km of Goldwell Lane, 1.8km of Roman Road, 900m of Forge Hill, 2.3km of Frith Road, and 700m of Chequer Tree Lane. Existing screening, proposed landscaping, and intervening terrain is predicted to significantly obstruct views of reflecting panels along most of Goldwell Lane and all of Forge Hill, Roman Road, Frith Road and Chequer Tree Lane. No impact is predicted, and no further mitigation is required. Partial views of the reflecting panels cannot be ruled out along a small section of Goldwell Lane, which is a local road with low traffic densities. A low impact is predicted and no further mitigation is recommended. No significant effects are identified on road receptors.
- **Dwelling Receptors** - Solar reflections are geometrically possible towards 246 of the 267 assessed dwellings. For 198 dwellings, screening in the form of existing and proposed landscaping and/or intervening terrain is predicted to obstruct views of reflecting PV panels and no impact is therefore predicted and no further mitigation is required. For 47 dwellings, effects are predicted to occur for less than three months per year and less than 60 minutes per day or the glare scenario sufficiently reduces the level of impact. A low impact is predicted, and no further mitigation is

recommended. No significant impacts are identified for these receptors. A moderate impact to Broadbanks on Bank Road (dwelling 99) was identified. However, provided suitable mitigation is implemented (as secured by the **Outline LEMP (Doc Ref 7.10)**), the impact will be negligible to low. No significant effects are identified.

- **Railway Receptors** - No impacts on railway infrastructure and operations were identified, and no further mitigation is required. As such no significant effects are identified.
- **Public Rights of Way Users** - No significant impacts are predicted on users of PRoWs. As such no significant effects are identified.

Additional Mitigation Measures and Residual Effect

16.3.20 The **Outline LEMP (Doc Ref 7.10)** includes a commitment that the detailed landscape scheme will be prepared having regard to the Glint and Glare assessment to ensure appropriate mitigation is secured such that impacts would not be significant.

Conclusion

16.3.21 A full assessment of glint and glare was undertaken, provided as **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4)**. This assessment confirms that the Project would not give rise to significant effects following the implementation of appropriate mitigation measures which are secured through the **Outline LEMP (Doc Ref 7.10)**.

Cumulative Effects

16.3.22 The cumulative schemes assessed within the EIA are presented in **ES Volume 4, Appendix 6.1: List of Cumulative Schemes (Doc Ref 5.4)**. Only Scheme ID No. 9 East Stour Solar Farm is considered to be able to result in potential cumulative glint and glare effects with the Project and is within the distance in which receptors would be shared between both sites. This cumulative scheme had been refused at the time of writing although has been considered as a worst case.

16.3.23 **Table 16.3** lists the shared receptors between ID No. 9 East Stour Solar Farm and the Project that potentially could be affected by both schemes.

Table 16.3: Shared Receptors

Receptor Type	Project Receptor Number	ID No. 9 Receptor Number
Residential	1 to 3, 6 to 8 and 130 to 145	8 to 18
Road	9	10
Rail	N/A (railway impacts are not predicted)	4, 5, 6 and 7

Airfield

Harringe Court Farm and Pent Farm

Harringe Court Farm and
Pent Farm

- 16.3.24 The residual effect findings from the ID No. 9 East Stour Solar Farm glint and glare assessment⁹ confirm that with mitigation there would be no impact to the Residential, Road and Airfield (Harringe Court Farm) receptors listed within **Table 16.3**. Therefore, no significant cumulative effects are anticipated on these shared receptors.
- 16.3.25 The findings from the ID No. 9 East Stour Solar Farm glint and glare assessment state that for Pent Farm Airstrip there is a 'Low Potential for After Image' which is an acceptable impact when pilots are approaching runways/helipads, according to FAA guidance, and the effect has been assessed as not significant. **ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref 5.4)** also identified the potential for solar reflections towards the Pent Farm Airstrip, with the assessment concluding the intensity to be no greater than 'potential for temporary after-image' and not significant with no mitigation recommended. No significant cumulative effects are anticipated on this shared receptor.
- 16.3.26 No significant cumulative glint and glare effects are therefore predicted.

16.4 Minerals

Introduction

- 16.4.1 As required by **ES Volume 4, Appendix 1.2: Scoping Opinion (Doc Ref 5.4)** this section provides an assessment of the potential impact of loss of access to mineral resources during the Project's lifetime and assesses significant effects where they are likely to occur.
- 16.4.2 This section is informed by **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** which provides a full assessment. Since minerals are a non-renewable resource, minerals safeguarding is the process of ensuring that non-minerals development does not needlessly prevent the future extraction of mineral resources, of local and national importance.

Relevant Legislation, Policy and Guidance

- 16.4.3 **Section 2 of ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** provides an overview of relevant policy in relation to minerals. There is no legislation relevant to the mineral safeguarding assessment. Relevant national planning policy guidance related to mineral safeguarding is directed to minerals planning authorities and local planning authorities and is taken into account in relevant policies considered in the assessment.
- 16.4.4 **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** has been prepared with reference to relevant policy in the NPSs, NPPF 2023¹⁰ Kent Minerals and Waste Local Plan ('KMWLP')¹¹ and KCC's Minerals Safeguarding Supplementary Planning Document ('SPD')¹².

Scoping Opinion Response

16.4.5 **Table 16.4** outlines the matters raised within **ES Volume 4, Appendix 1.2: EIA Scoping Opinion (Doc Ref 5.4)** relevant to minerals and how they are addressed within the ES.

Table 16.4: Scoping Opinion comments and response (Minerals)

Consultee and Comment	Applicant Response
<i>Planning Inspectorate (30 May 2022)</i>	
<p>Parts of the Site are located within a Mineral Safeguarding Area (MSA). Impacts to minerals are proposed to be scoped out of the ES on the basis that the Project would not sterilise the resource as they could be extracted following decommissioning of the development if required.</p> <p>The Project inhibits any access to the resource during the development’s lifetime and this has not been considered. There is no evidence that this has been discussed with the relevant mineral planning authority.</p> <p>The ES should include an assessment of the potential impact of loss of access to mineral resources during the development’s lifetime and assess significant effects where they are likely to occur. This should be informed by consultation with the relevant mineral planning authority.</p>	<p>ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4) demonstrates that, with the exception of elements of Work No. 4 that are within the Sellindge Substation, any repairs, upgrades or replacements of/to the existing bridge / agricultural drain crossings and highway improvements, the Project is of a temporary nature that will be removed during the decommissioning stage and the land returned to a condition that does not prevent future mineral extraction. The minor permanent works noted above will not result in any new areas of mineral sterilisation. The Project will therefore not give rise to significant effects on mineral resources. The findings of the assessment are summarised at Paragraph 16.4.11 to 16.4.15 of this Chapter for ease of reference.</p> <p>Discussions have taken place with KCC as the relevant minerals planning authority as set out at ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4).</p>

Assessment Methodology

16.4.6 **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** includes a desktop review of the mineral resources and feedback from minerals operators in relation to the Project. No specific minerals safeguarding intrusive site investigations have been undertaken as these were not considered necessary.

Baseline Conditions

- 16.4.7 Section 3 of **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref. 5.4)** provides a description of the mineral resource at the Site.
- 16.4.8 The KMWLP includes Mineral Safeguarding maps for all of the local planning authority areas in Kent. There are two separate Mineral Safeguarding Areas ('MSA') that that fall within the Site boundary for the Project (as shown **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)**). The extent of the MSAs is shown on **ES Volume 4, Appendix 16.3: Mineral Safeguarding Assessment, Annex B (Doc Ref 5.4)**.
- 16.4.9 The MSAs comprise:
- Sub-Alluvial River Terrace Deposits (broadly defined as sand and gravel); and
 - Limestone from the Hythe formation, known as 'Kentish Ragstone' and used primarily as building stone.
- 16.4.10 There are no existing minerals sites or Minerals Consultation Areas ('MCA') within or in the vicinity of the Site that have potential to be affected by the Project.

Embedded Mitigation

- 16.4.11 None required, although the operational lifetime of the Project is up to 40 years.

Assessment

- 16.4.12 Paragraph 5.11.19 of Overarching National Policy Statement for Energy (EN-1)¹³ states that: *'Applicants should safeguard any mineral resources on the proposed site as far as possible, taking into account the long-term potential of the land use after any future decommissioning has taken place'*.
- 16.4.13 **Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** concludes that existing Site constraints have effectively already sterilised a significant portion of the minerals indicated as being present on-Site. The majority of the Project is of a temporary nature that will be removed and the land returned to a condition that does not prevent future mineral extraction. Minor permanent works include elements of Work No. 4 that are within the Sellindge Substation, any repairs, upgrades or replacements of/to the existing bridge / drain crossings, PRow footbridges and highway improvements. These minor permanent works will not result in any new areas of mineral sterilisation as they will be carried out on land over which there are already existing constraints that have effectively sterilised that land.
- 16.4.14 Physical infrastructure built as part of the Project will be removed on decommissioning (with the exception of the minor permanent works listed above that are on land that is already constrained). The Site will then be returned to the control of the landowners. On decommissioning, the Site will therefore be returned to a condition that does not prevent future mineral extraction.

- 16.4.15 **Appendix 16.3: Mineral Safeguarding Assessment (Doc Ref 5.4)** demonstrates that the Project is not incompatible with minerals safeguarding policies since the Project will only lead to the temporary loss of access to mineral resources.
- 16.4.16 On the basis of the above and the criteria set out in **ES Volume 2, Chapter 6: EIA Methodology (Doc Ref 5.2)** the magnitude of the Project's impact on mineral resources is assessed to be negligible and the sensitivity of the resource is assessed to be low. Therefore, applying the standard matrix set out in **ES Volume 2, Chapter 6: EIA Methodology (Doc Ref 5.2)**, the overall effect of the Project on mineral resources is assessed to be **Negligible** (not significant).

Additional Mitigation Measures and Residual Effects

- 16.4.17 No additional mitigation measures are required. No significant effects are anticipated as a result of the Project.

Cumulative Effects

- 16.4.18 With the exception of minor permanent works, the Project is of a temporary nature that will be removed and the land returned to a condition that does not prevent future mineral extraction. As such, the Project is compliant with established policies as set out above and would not give rise to significant cumulative effects on mineral resources with other cumulative schemes listed in **ES Volume 4, Appendix 6.1: List of Cumulative Schemes (Doc Ref 5.4)**.

16.5 Waste

Introduction

- 16.5.1 This section provides information required by Schedule 4 of the EIA Regulations¹⁴ and committed to in **ES Volume 4: Appendix 1.1: EIA Scoping Report (Doc Ref 5.4)** including the expected quantities and types of waste during each phase of the Project. This Section considers the potential for significant effects and the mitigation measures which will be secured through the **Draft Development Consent Order (Doc Ref 3.1)**.

Relevant Legislation and Policy

- 16.5.2 The Waste Framework Directive 2008/98/EC¹⁵ ('Waste Directive') provides a framework for the management of waste across the European Community. The Waste (England and Wales) Regulations 2011 (as amended)¹⁶ transposed the Waste Framework Directive into domestic law in England and Wales. The framework requires waste prevention programmes and waste management plans that apply the 'waste hierarchy' (see **Paragraph 16.5.5**). The Waste Directive defines waste in article 3 as *'any substance or object which the holder discards or intends or is required to discard'*.
- 16.5.3 Section 34 of the Environmental Protection Act 1990¹⁷ and the Waste (England and Wales) Regulations 2011 (as amended)¹⁸ place responsibilities on producers and holders of waste to prevent the illegal disposal, treatment and storage of waste, handle waste safely and securely, and ensure that anyone dealing with their waste has the necessary authorisation. The Hazardous Waste (England and Wales)

Regulations 2005 (as amended)¹⁹ also place requirements on the producer of waste, to classify, separate hazardous waste, use authorised businesses to collect, recycle or dispose of waste and complete relevant hazardous waste consignment notes.

- 16.5.4 NPS EN-1, Section 5.15 'Resource and Waste Management' paragraph 5.15.1 states that *'Government policy on hazardous and non-hazardous waste is intended to protect human health and the environment by producing less waste and by using it as a resource wherever possible. Where this is not possible and disposal is required as a last resort, waste management regulation ensures that waste is disposed of in a way that is least damaging to the environment and to human health.'*
- 16.5.5 Paragraph 5.15.2 of NPS EN-1 states *'Sustainable waste management is implemented through the waste hierarchy, which sets out the priorities that must be applied when managing waste. These are (in order):*
- *prevention*
 - *preparing for reuse*
 - *recycling*
 - *other recovery, including energy recovery*
 - *disposal*
- 16.5.6 NPS EN-1 Paragraph 5.15.8 states that *'The applicant should set out the arrangements that are proposed for managing any waste produced and prepare a report that sets out the sustainable management of waste and use of resources throughout any relevant demolition, excavation and construction activities.'* An Outline Site Waste Management Plan ('SWMP') is provided in Section 7 of both the **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)**. The Outline SWMP sets out the arrangements for the sustainable management of waste and use of resources throughout relevant demolition, excavation and construction activities.
- 16.5.7 NPS EN-1 Paragraph 5.15.10 states *'The applicant is encouraged to refer to the Waste Prevention Programme for England: Maximising Resources Minimising Waste and 'Towards Zero Waste: Our Waste Strategy for Wales' and should seek to minimise the volume of waste produced and the volume of waste sent for disposal unless it can be demonstrated that this is the best overall environmental outcome.'* The Applicant has committed to minimise and manage waste in line with the waste hierarchy as confirmed within the **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)**.
- 16.5.8 NPS EN-1 Paragraph 5.15.12 states *'Where possible, applicants are encouraged to source materials from recycled or reused sources and use low carbon materials, sustainable sources and local suppliers. Construction best practices should be used to ensure that material is reused or recycled onsite where possible.'* The **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)** include a commitment to

design, construct and implement the Project in such a way as to minimise the creation of waste. The Outline SWMP (part of the **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)**) aims to implement best practice to ensure materials are reused or recycled on-site where possible in line with the waste hierarchy.

16.5.9 The KMWLP set out the key principles for sustainable development in line with the NPPF. Policy CSW 2 and CSW 3 in the KMWLP encourage waste to be reduced and recycled in line with the Waste Hierarchy.

16.5.10 Policy CSW 2 states *'...proposals for waste management must demonstrate how the proposal will help drive waste to ascend the Waste Hierarchy whenever possible.'*

16.5.11 Policy CSW 3 states 'The following details shall be submitted with the planning application, except for householder applications:

- 1. the measures to be taken to show compliance with this policy*
- 2. the details of the nature and quantity of any construction, demolition and excavation waste and its subsequent management*

'New development should include detailed consideration of waste arising from the occupation of the development including consideration of how waste will be stored, collected and managed.'

16.5.12 The Outline SWMP (included within the **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)**) includes best practice measures to ensure materials will be reused or recycled on-site where possible in line with the waste hierarchy. The **Outline OMP (Doc Ref 7.11)** includes similar measures of relevance to waste arisings during the operational phase of the Project.

16.5.13 Estimated waste arisings from the Project during all stages is provided in **Tables 16.6 – 16.8** of this Chapter. The principles of waste storage and management during construction, operation and decommissioning are set out in the **Outline CEMP (Doc Ref 7.8)**, **Outline OMP (Doc Ref 7.11)** and the **Outline DEMP (Doc Ref 7.12)**.

Scoping Opinion Response

16.5.14 **Table 16.5** sets out the matters raised within the Scoping Opinion (**ES Volume 4, Appendix 1.2: EIA Scoping Opinion (Doc Ref 5.4)**) relevant to waste and how they are addressed within the ES.

Table 16.5: Scoping Opinion comments and response (Waste)

Consultee and Comment	Applicant Response
<p><i>Planning Inspectorate (30 May 2022)</i></p>	
<p>Waste type and quantities are proposed to be described in the ES. A CEMP is proposed to include a Site Waste Management Plan to detail mitigation measures to minimise waste during the construction phase and decommissioning waste is proposed to be controlled via Decommissioning Environmental Management Plan (DEMP). Only limited waste volumes are anticipated during operation in relation to maintenance activities.</p> <p>Maintenance activities include servicing of plan and equipment and vegetation management (Scoping Report paragraph 4.5.2). Panel degradation is cited as a limiting factor on project lifespan and potential remains that some panels may need to be replaced during the lifetime of the Project.</p> <p>In the absence of information demonstrating the quantities and types of waste anticipated, and the dependence on mitigation measures which are yet to be provided in the CEMP/DEMP, the Inspectorate is not in a position to scope this out at this stage.</p> <p>The ES should include an assessment of waste impacts where significant effects are likely to occur and include and outline what measures, if any, are in place to ensure that panels and any associated components are able to be diverted from the waste chain.</p>	<p>A description of the potential types of construction waste and estimated volumes is provided in Tables 16.6 – 16.8 of this Chapter for construction, operation and decommissioning of the Project.</p> <p>The Outline CEMP (Doc Ref 7.8) provides an Outline SWMP and provides measures to manage waste in line with the waste hierarchy. Similar measures are also secured through the Outline DEMP (Doc Ref 7.12).</p> <p>Measures relevant to the storage and management of waste, including recycling of components, during the operational phase of the Project are provided in the Outline OMP (Doc Ref 7.11).</p> <p>ES Volume 2, Chapter 15: Climate Change (Doc Ref 5.2) sets out indicative assumptions regarding repair and replacement of equipment for assessment purposes. Based on this, and the nature of nature of the Project, the ‘Assessment’ section below (starting at Paragraph 16.5.26) of this Chapter confirms that waste generation and disposal from the Project is not expected to give rise to significant environmental effects or significant impacts on landfill capacity.</p>

Assessment Methodology

16.5.15 An estimate of the quantities and types of waste has been provided by the Applicant using industry standards and is based on activities, material requirements and staff requirements during the lifetime of the Project.

16.5.16 The waste stream estimates are based on the **Illustrative Project Drawings (Doc Ref 2.6)** and 132 (up to 199 during peak periods) construction workers/decommissioning workers and four full time operational staff (operational maintenance only).

Baseline Conditions

16.5.17 The majority of the Site is currently in agricultural use and the existing waste arisings are assumed to be low. There are no allocated waste sites within or adjacent to the Site as identified by the KMWLP or ABC Local Plan²⁰, although a waste transfer depot is understood to operate at Woodleas Farm, Goldwell Lane, TN25 7DX (Planning Ref: AS/12/0622 (KCC/AS/0153/2012)).

Embedded Mitigation

16.5.18 The detailed design of the Project will seek to minimise and design out waste streams where possible. Opportunities to re-use materials within the Site will be sought where practicable. For example, soil which is excavated from trenches, roads, compound areas and foundations will be re-used wherever possible within the Site.

16.5.19 Where re-use and prevention are not possible, waste arisings will be managed in line with the waste hierarchy as secured by the **Outline CEMP (Doc Ref 7.8)**, **Outline OMP (Doc Ref 7.11)** and **Outline DEMP (Doc Ref 7.12)**.

16.5.20 Commercial waste generated during all stages of the Project will be managed in accordance with producers' legal responsibilities in place at the time. Waste will be managed by permitted waste carriers and facilities in line with the appropriate environmental permits and requirements.

Construction/Decommissioning Phase

16.5.21 The **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)** require that contractor(s) consider the objectives of sustainable resource and waste management and seek to use material resources efficiently, reduce waste at source, reduce waste that requires final disposal to landfill and apply the principles of the waste hierarchy. This would include, where reasonably practical, working towards a cut and fill balance for excavations; segregation of construction materials on-Site for appropriate reuse, recycling and recovery, with landfill as a last resort. This would be achieved by a combination of measures, including:

- The contractor(s) will prepare and implement a detailed SWMP(s);
- All waste transported off-Site will be delivered to appropriately licenced receivers of such materials;
- Contractor(s) will segregate construction waste to be reused and recycled where reasonably practicable;
- Use of off-Site pre-fabrication will be used, where reasonably practical, including the use of prefabricated structural elements, cladding units, mechanical and electrical risers and packaged plant rooms;
- Burning of waste or unwanted materials will not be permitted on-Site;

- All hazardous materials including chemicals, cleaning agents and solvent containing products to be properly sealed in sealed containers at the end of each day prior to storage in appropriately protected and bunded storage areas; and
- Materials requiring removal from the Order limits will be transported using licensed carriers and records kept, detailing the types and quantities of waste moved and the destinations of this waste, in accordance with the relevant regulations.

16.5.22 The types, quantities and final destination of waste generated during the construction phase will be identified, measured and recorded through the detailed SWMP(s).

16.5.23 Wastewater from welfare facilities and firewater will be removed off-Site via tanker to an approved wastewater and treatment facility as secured through the **Outline CEMP (Doc Ref 7.8)** and **Outline DEMP (Doc Ref 7.12)**.

Operational Phase

16.5.24 The **Outline OMP (Doc Ref 7.11)** and **Outline BSMP (Doc Ref 7.16)** state that the Applicant will follow the hierarchy of waste management throughout the life of the Project.

16.5.25 Wastewater from welfare facilities and firewater will be removed off-Site via tanker to an approved wastewater and treatment facility as secured through the **Outline OSWSD (Doc Ref 7.14)**.

Assessment

16.5.26 Estimates of the types of waste streams and their volumes or quantities arising from the construction, operation and decommissioning of the Project are presented in **Tables 16.6 to 16.8** of this Chapter. In some cases, 'Low' is stated where volumes are expected to be minimal.

Construction Phase

16.5.27 Estimates of likely waste streams during the construction phase provided by the Applicant together with their likely destination are provided in **Table 16.6**.

Table 16.6: Estimated Waste Arisings during Construction Period

Waste	Destination	Approximate Quantities (Volume)
Paint and solvents, chemical containers	Recycling plant or landfill for hazardous waste	Low
Vegetation	Recycling plant	Low
Wood (packing materials)	Recycling plant	6,000 m ³

Waste	Destination	Approximate Quantities (Volume)
Paper and cardboard (including plastic wrapping for packing materials)	Recycling plant	3,500 m ³
Polyurethane foam padding (packing materials)	Recycling plant or landfill	3,160 m ³
HDPE corner / edge spacers (packing materials)	Recycling plant or landfill	60 m ³
Pallet nails (packing materials)	Recycling plant or landfill	1 m ³
DC Cable Drums (mixed wood, plastic, metal)	Recycling plant or landfill	54 tonnes
LV Cable Drums (mixed wood, plastic, metal)	Recycling plant or landfill	69 tonnes
Grounding cabling drums (mixed wood, plastic, metal)	Recycling plant or landfill	25 tonnes
Wastewater from welfare facilities	Removed off-site for treatment and disposal	780 m ³

16.5.28 An assessment of construction traffic effects, including the removal of waste from the Site, is provided in **ES Volume 2, Chapter 13: Traffic and Access (Doc Ref 5.2)**.

16.5.29 As set out under Embedded Mitigation, the Project will be managed in accordance with the waste hierarchy and in line with relevant legislation. Operators receiving waste materials arising from the Project will be subject to their own consenting procedures, including hazardous materials.

16.5.30 No waste sites identified in the KMWLP would be affected by the Project. Access to the waste management site at Woodleas Farm on Goldwell Lane will be affected for a short term period (approximately 5 months) during the installation of cables on Goldwell Lane. However given the short-term nature of cable installation, the construction period and traffic management measures secured through the **Outline CTMP (Doc Ref 7.9)**, there would be no effects on waste management activities at Woodleas Farm.

16.5.31 The majority of waste arisings during the construction phase will relate to packing materials. Solid waste materials will be segregated on-Site prior to transport to

appropriate recycling facilities and licensed landfill, as secured via the **Outline CEMP (Doc Ref 7.8)**. Significant impacts on the capacity of waste management infrastructure in the vicinity of the Project during the 12 month construction period are not expected to arise based on the nature of the waste streams and associated quantities. Concerns regarding waste capacity have not been identified by the local waste planning authority (i.e. KCC) or other stakeholders during consultation.

Operational Phase

16.5.32 Estimates of potential waste streams during the operational phase provided by the Applicant are provided in **Table 16.7**.

Table 16.7: Estimated Waste Arisings during Operational Phase

Waste	Destination	Approximate Quantities (Volume)
General waste	Recycling plant or landfill	Low
Food waste	Recycling plant	Low
Vegetation	Recycling plant	Low
Replacement PV modules (mixed glass, plastic, metal, electronics)	Recycling plant	1,280 units
Wood (packing materials)	Recycling plant	24 m ³
Cardboard, plastic wrap (packing materials)	Recycling plant or landfill	14 m ³
Polyurethane foam padding (packing materials)	Recycling plant or landfill	19 m ³
HDPE corner and edge spacers (packing materials)	Recycling plant or landfill	0.3 m ³
Pallet nails (packing materials)	Recycling plant	0.01 m ³
Welfare facility waste	Removed off-site for treatment and disposal	Low

16.5.33 During the operational phase of the Project waste is expected to only arise from routine servicing, maintenance activities, the replacement of equipment and management of vegetation.

16.5.34 Waste volumes generated during the operational phase of the Project will be low. Waste arisings during the operational phase are expected to be substantially less than during the construction phase and will primarily include:

- Welfare facility waste (i.e., foul water from the cess tank);
- Firewater (in the event of a fire);
- General waste (paper, cardboard, wood etc);
- Waste metals;
- Equipment that requires replacing and associated packing materials; and
- Waste associated with maintenance.

16.5.35 Waste during the operational phase will be handled and stored appropriately on-Site. Waste materials requiring removal from the Site would be transported using licensed carriers and records kept, detailing the types and quantities of waste moved and the destinations, in accordance with the relevant regulations.

16.5.36 Equipment that requires replacement during the operational period will be managed in line with the waste hierarchy and in accordance with legislation in force at the time, with materials re-used or recycled wherever possible (as secured by the **Outline OMP (Doc Ref 7.11)**).

16.5.37 With appropriate storage and handling measures operational phase waste arisings are therefore not anticipated to result in significant environmental effects.

Decommissioning

16.5.38 Estimates of potential waste streams during the decommissioning phase provided by the Applicant are provided in **Table 16.8**.

Table 16.8: Estimated Waste Arising from Decommissioning

Waste	Destination	Estimated Quantities (Volume Tonnes)
PV panels	<p>Many manufacturers offer schemes for reuse or disposal, these should be utilised if available.</p> <p>Prioritise reuse, if not possible then recycle.</p> <p>Panels will be reused/recycled in accordance with best practice guidance/legislation at the time of decommissioning.</p>	8,329
PV Frames	The materials are widely recyclable.	4,205

Waste	Destination	Estimated Quantities (Volume Tonnes)
Mounting Structures	Materials will be reused/recycled in accordance with best practice guidance/legislation at the time of decommissioning.	3,333
Cables	<p>Taken to an appropriate facility for recycling.</p> <p>Cables will be reused/recycled in accordance with best practice guidance/legislation at the time of decommissioning.</p>	1,955
Inverters	Many manufacturers offer schemes for reuse or disposal, these should be utilised if available.	118
Transformers		1,163
BESS		35,779
Concrete	Concrete and any other foundation materials shall be taken to an appropriate facility for recycling and reuse.	8,160
Aggregates	<p>Materials will be reused/recycled in accordance with best practice guidance/legislation at the time of decommissioning.</p>	194
Other	<p>Prioritise reuse, if not possible then recycle.</p> <p>Components shall be taken to an appropriate facility for recycling.</p> <p>Materials will be reused/recycled in accordance with best practice</p>	4,205

Waste	Destination	Estimated Quantities (Volume Tonnes)
	guidance/legislation at the time of decommissioning.	

16.5.39 The proposed operational period for the Project is 40 years. During the decommissioning phase, all physical infrastructure constructed as part of the Project (with the exception of elements of Work No. 4 that are within Sellindge Substation, any repairs, upgrades or replacements of/to the existing bridge / drain crossings, PRow footbridges and highway improvements) will be removed and recycled or disposed of in accordance with good practice, market conditions and available technologies for recycling/reprocessing at that time, as set out in the **Outline DEMP (Doc Ref 7.12)**.

16.5.40 Prior to decommissioning, opportunities to minimise waste as far as possible will be explored through measures secured through the **Outline DEMP (Doc Ref 7.12)**.

16.5.41 Removal of waste during the decommissioning phase is estimated to require no more than the HGV loads predicted for the construction phase over a period of 12 months, as reported in **ES Volume 2, Chapter 13: Traffic and Access (Doc Ref. 5.2)**.

16.5.42 All waste will be appropriately stored and handled on-Site and transported off-site by appropriately permitted carriers and facilities as secured through the **Outline DEMP (Doc Ref. 7.12)**.

16.5.43 It is not possible to forecast the capacity of landfill sites for decommissioning at this stage, although it is likely that recycling and re-use of solar and other electrical equipment will have advanced over the operational period. As such, decommissioning phase waste arisings are not expected to give rise to significant effects.

Conclusion

16.5.44 Waste arisings during the construction, operation and decommissioning of the Project are not expected to be of a magnitude which could lead to significant environmental effects in EIA terms. Waste would be managed in line with detailed management plans secured by the **Outline CEMP (Doc Ref. 7.7)**, **Outline OMP (Doc Ref. 7.11)** and **Outline DEMP (Doc Ref. 7.12)**. All waste arisings would be commercial in nature and managed by appropriately permitted carriers and facilities in accordance with the relevant legislation and permits. The nature of the waste streams and predicted volumes are such that the Project is not anticipated to result in significant adverse effects on landfill capacity.

Additional Mitigation Measures and Residual Effects

16.5.45 No additional mitigation measures are required. No significant effects are anticipated as a result of the Project.

Cumulative Effects

- 16.5.46 A focused long list of cumulative schemes is presented in **ES Volume 4, Appendix 6.1: List of Cumulative Schemes (Doc Ref. 5.4)**. Each cumulative scheme will generate construction and operational waste, with only a very small proportion likely to generate 'decommissioning' waste. It is assumed that each of the cumulative schemes will avoid and minimise waste in accordance with the waste hierarchy and relevant legislation.
- 16.5.47 The construction phase of the Project is unlikely to lead to significant impacts on landfill capacity in combination with other cumulative schemes due to the limited period of activity (i.e. 12 months) and given that measures will be in place to avoid and minimise waste. Combined waste streams from cumulative schemes during the construction phase are therefore unlikely give rise to significant impacts on landfill capacity.
- 16.5.48 Waste volumes generated during the operational phase of the Project will be low. As such, it is unlikely that combined waste streams from cumulative schemes during the operational phase will give rise to significant impacts on landfill capacity.
- 16.5.49 It is unlikely that decommissioning of the Project will overlap with any of the cumulative schemes.
- 16.5.50 Assuming that waste is handled appropriately, no significant cumulative effects are anticipated.

16.6 Telecommunications, Television Reception and Utilities

Introduction

- 16.6.1 In response to the Planning Inspectorate's Scoping Opinion comments, this section explains where below ground assets are located and where diversions of utility or telecommunications infrastructure will be required, these are described along with mitigation measures.

Legislation, Policy and Guidance

- 16.6.2 There is no requirement to include an assessment of effects relating to existing infrastructure under the EIA Regulations and these effects are not strictly considered environmental effects. However, solar farm developments have the potential to affect existing utility infrastructure above and below ground.

Scoping Opinion Response

- 16.6.3 **Table 16.9** outlines the matters raised within **ES Volume 4, Appendix 1.2: Scoping Opinion (Doc Ref. 5.4)** and how they are addressed within the ES.

Table 16.9: Scoping Opinion comments and response (Telecommunications, Television Reception and Utilities)

Consultee and Comment	Applicant Response
<i>Planning Inspectorate (30 May 2022)</i>	
<p>Telecommunications, Television Reception and Utilities are proposed to be scoped out on the basis that the nature of the Project means that likely significant effects are not anticipated. A desk-based study was undertaken to identify whether any diversions are required for below ground utility infrastructure however, the results are not discussed or provided in the Scoping Report. The Scoping Report proposes to avoid diversions through design and consultation with the relevant bodies will be undertaken if diversions are necessary.</p> <p>The ES should identify where below ground assets are located and should any diversions of utility or telecommunications infrastructure be required, these should be located and described in the ES along with any required mitigation measures. Impacts should be assessed where significant effects are likely to occur.</p>	<p>Information on where below ground assets are located is provided in Paragraphs 16.6.10 to 16.6.19 of this Chapter.</p> <p>Embedded Mitigation measures are described below in Paragraphs 16.6.7 – 16.6.9.</p> <p>Impacts are assessed below in Paragraphs 16.6.10 – 16.6.22.</p>

Assessment Methodology

- 16.6.4 A desk-based study was undertaken by SLR Consulting Ltd in December 2023 to provide information on the presence / absence of statutory utilities on and in close proximity to the Site. The study also sought to identify whether utilities pose physical constraints to the Project and any diversions that may need to be progressed. Consultation has also been undertaken with relevant utility providers as a routine part of the design process including water, gas, electricity and telecommunications providers.

Baseline Conditions

- 16.6.5 Through consultation and a desk-based search of existing datasets, the following utilities and infrastructure have been identified which have the potential to be affected by the Project:
- Network Rail/HS1 – Grid Connection Cable crossing;
 - Openreach Limited (telecommunications) - all roads within the Site, Field 2 and Field 25;
 - Colt Technology Services Limited - Colliers Hill, Cooper Lane, Bank Road and Roman Road;
 - Lumen Technologies UK Limited (telecommunications) – including along the length of the HS1 / Network Rail railway line and parallel to Colt

network cables;

- Southern Water Services Limited (foul sewer network) – including Calleywell Lane and Goldwell Lane, foul rising main, vacuum or syphon, travelling in a north west direction, traversing Field 19, starting from and connecting to a foul pumping station at the Calleywell Lane and Goldwell Lane intersection;
- South East Water Limited (potable water supply) – there are two distribution mains extending from Station Road to Roman Road. These mains run beneath both Calleywell Lane and Goldwell Lane. Along Goldwell Lane, there are two connected hydrants. Another distribution main is located beneath Church Lane, specifically passing through the Order limits just south of the National Grid Substation. The Goldwell Lane and Calleywell Lane distribution mains connect to a single distribution main at the junction of those two roads on the southern edge of Field 23. This single distribution main then runs north through the Order limits, Fields 23, 24 and 25 where it then exits the Order limits west of the Project Substation area in Field 26;
- South Eastern Power Networks plc and UK Power Networks Services (South East) Limited (i.e. 'UKPN') (electricity) – Low Voltage ('LV') underground/overhead cables, 11kV High Voltage (HV) underground/overhead cables, 33kV cable routes, service connection lines to existing buildings/properties, <6.6kV underground cable and 275-400kV National Grid route (UKPN cables); and
- National Grid – including an 11kV overhead line from Bank along Roman Road, LV underground cable at the intersection of Bank Road and Laws Lane, 11kV and 33kV overhead line which runs parallel south of the railway line, and 275-400kV overhead cables from Sellindge Substation and crosses the Order limits in the south near Roman Road. National Grid Interconnectors Limited infrastructure is also present at Sellindge Substation.

16.6.6 The area surrounding the Project receives television signals that were made exclusively digital after the digital switchover was completed in the Meridian region and hence no analogue TV signals are broadcast in the area. The area around the Site is predominantly served by the Ashford and Dover transmitter in Kent, approximately 19km north east of the Site.

Embedded Mitigation

16.6.7 The risk of damage to utilities during construction would be avoided through:

- Locating the Project components outside of utilities protected zones where practicable;
- Consultation and agreement with the relevant statutory undertakers of construction methods prior to works commencing; and
- Use of micro-siting and suitable structures and construction methods such as non-intrusive concrete ballast systems, pipe bridges and HDD.

- 16.6.8 These measures are secured by the **Outline CEMP (Doc Ref. 7.8)**. The **Draft Development Consent Order (Doc Ref. 3.1)** contains protective provisions which manage the interface between the Project and key statutory undertakers like utility companies.
- 16.6.9 The Project Substation, Grid Connection Cable and works at Sellindge Substation will be designed in accordance with relevant guidance. Electrical utility stakeholders have been consulted to ensure that the siting of the infrastructure is sufficiently distanced from other sensitive infrastructure.

Assessment of Potential Effects

Telecommunications

- 16.6.10 Vodafone, BT, Colt and Lumen telecommunications services have been identified in the vicinity of the Site.
- 16.6.11 A BT cable within Field 25 will need to be diverted from its current location. A BT cable within Field 2 will also need to be diverted from its current location. The final design for cable diversions is contingent upon the Project detailed design and agreement with BT. The **Draft Development Consent Order (Doc Ref. 3.1)** includes standard protective provisions for telecommunication operators. No effects are therefore anticipated.

Television Reception

- 16.6.12 The Project consists of fixed infrastructure at ground level. Therefore, it is unlikely that there will be any interference with digital television signals and no effects are anticipated during construction, operation and decommissioning phases.

Utilities

- 16.6.13 Precautionary measures will be taken during the construction and decommissioning of the Project to avoid damage to any unidentified utilities during excavation and engineering activities, these are included as part of the **Outline CEMP (Doc Ref. 7.8)** and **Outline DEMP (Doc Ref. 7.12)**. Therefore no significant effects are anticipated.

Surface Water Drainage

- 16.6.14 There are no adopted surface water drainage pipes traversing the Site. Therefore, no effects are anticipated.

Foul Water Drainage

- 16.6.15 A foul rising main, vacuum or syphon traverses Field 19. This will require diversion from its current location and it is anticipated that the new route will run inside the security fence along the eastern and northern boundary of Field 19 to avoid the need for excavation within 10m of the East Stour River. This diversion will be approximately 720m in length and will connect to the pipe's existing alignment where it crosses the fence on the northern boundary and south eastern boundary of Field 19. The existing foul rising main, vacuum or syphon pipe (approximately 650m) will be left in situ (i.e., the pipe will not be removed).

16.6.16 The final design for the foul pipe diversion is contingent upon the Project specific detailing during detailed design following DCO consent and agreement with Southern Water. However, no significant effects are anticipated.

Potable Water Supply

16.6.17 The distribution main in Field 25 will need to be diverted from its current location. It is anticipated that the new route of this pipe will run inside the security fence along the eastern boundary of Field 25 to remove the need to undertake further excavation either within 8m of the East Stour River or the AFSA embankment. This diverted pipe will be approx. 190m in length and will connect to the pipes existing alignment where it crosses the fence on the north eastern boundary and south eastern boundary of Field 25. The approx. 190m of existing distribution main pipe will be left in situ.

16.6.18 The final design for the pipe diversion is contingent upon the Project specific detailing during detailed design post DCO consent and agreement with Southern Water. However, no significant effects are anticipated.

Electric Supply

16.6.19 UKPN and National Grid cables have been identified in the vicinity of the Site. It is not anticipated that any cables adjacent to or within the Site associated with UKPN or National Grid will need to be diverted as a result of the Project, therefore no significant effects are anticipated.

Additional Mitigation Measures and Residual Effects

16.6.20 No additional mitigation is required. No significant effects are anticipated on telecommunications, television reception and utilities as a result of the Project.

Cumulative Effects

16.6.21 A focused long list of cumulative schemes is presented in **ES Volume 4, Appendix 6.1: List of Cumulative Schemes (Doc Ref. 5.4)**. The Project has been assessed to have no significant effect on telecommunication, television or utilities.

16.6.22 No assets are identified which would be impacted by both the Project and any of the schemes being considered cumulatively within **ES Volume 4, Appendix 6.1: List of Cumulative Schemes (Doc Ref. 5.4)**. Therefore, it is deemed that there would be no cumulative effects on the identified receptors as a result of the Project and the cumulative schemes under consideration on the basis that other cumulative schemes would provide appropriate mitigation.

16.7 Major Accidents and/or Disasters

16.7.1 This section describes the expected likely effects of the Project on the environment, deriving from the vulnerability of the Project to risks of major accidents and / or disasters which are relevant to the development.

Relevant Legislation, Policy and Guidance

16.7.2 The EIA Regulations require major accidents and disasters to be considered as part of the EIA process.

16.7.3 Regulation 5(4) of the EIA Regulations states that:

'The significant effects to be identified, described and assessed under paragraph (2) include, where relevant, the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to the development.'

16.7.4 Schedule 4, paragraph 8 of the EIA Regulations requires an ES to provide:

'A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the development to risks of major accidents and/or disasters which are relevant to the project concerned.'

16.7.5 The IEMA document 'Major Accidents and Disasters in EIA: A Primer' dated September 2020²¹ has been taken into account in the assessment of major accidents or disasters.

16.7.6 The IEMA guide defines major accidents as *'Events that threaten immediate or delayed serious environmental effects to human health, welfare and/or the environment and require the use of resources beyond those of the client or its appointed representatives to manage. Whilst malicious intent is not accidental, the outcome (e.g. train derailment) may be the same and therefore many mitigation measures will apply to both deliberate and accidental events'*. The IEMA guide continues to define significant environmental effect (in relation to a major accident and/or disasters assessment) as *'Could include the loss of life, permanent injury and temporary or permanent destruction of an environmental receptor which cannot be restored through minor clean-up and restoration'*.

16.7.7 For the purposes of this assessment, major accidents or disasters are defined as an event that threatens immediate or delayed loss of life or permanent injury/or serious long lasting or permanent damage to the environment and requires the use of resources beyond those of the Applicant to manage.

16.7.8 'Accidents' can be defined as an occurrence resulting from uncontrolled developments in the course of construction, operation and decommissioning (e.g. major emission, fire or explosion). 'Disasters' are naturally occurring extreme weather events or ground related hazard events (e.g. subsidence, landslide, earthquake). Major events therefore includes both man-made and naturally occurring events.

Scoping Opinion Response

16.7.9 **Table 16.10** sets out the matters raised within **ES Volume 4, Appendix 1.2: EIA Scoping Opinion (Doc Ref. 5.4)** relevant to major accidents and disasters and how they are addressed within the ES.

Table 16.10: Scoping Opinion comments and response (Major Accidents and Disasters)

Consultee and Comment	Applicant Response
<i>Planning Inspectorate (30 May 2022)</i>	
<p>The Applicant proposes to scope out a stand-alone Major Accidents and Disasters Chapter, stating that consideration of risks (i.e. flooding, climate change, fire, road accidents, glint and glare, and plant disease) will be included within other relevant aspect Chapters and will be clearly signposted as listed in Scoping Report paragraph 6.7.6.</p> <p>The Inspectorate is satisfied that the matters identified can be assessed in other ES chapters, however it is unclear where an impact such as fire would be assessed. For the avoidance of doubt, the risk of fire associated with battery storage facilities should be assessed in the ES and relevant mitigation, such as fire-fighting and containment measures should be set out and secured in the DCO.</p>	<p>Table 16.11 provides signposting to the relevant aspect chapters of the ES which address the short list of major accidents and disasters listed in ES Volume 4, Appendix 1.2: EIA Scoping Report, Paragraph 6.7.6 (Doc Ref. 5.4).</p> <p>This section describes the potential for adverse effects on the environment deriving from the major accidents and disasters relevant to the Project which includes fire risk. Embedded Mitigation measures for fire risk are secured through the Works Plans (Doc Ref. 2.3) and Design Principles Doc Ref. 7.5), and are described in ES Volume 2, Chapter 3: Project Description (Doc Ref. 5.2). Specific mitigation measures related to the fire risk associated with the BESS are provided within the Outline BSMP (Doc Ref. 7.16) which secures the mitigation measures. The Outline CEMP (Doc Ref. 7.8), Outline DEMP (Doc Ref. 7.12) and Outline OMP (Doc Ref. 7.11) also include measures relevant to the safety and accident risk during the construction, operational life and decommissioning of the Project.</p>

Assessment Methodology

16.7.10 The following methodology has been adopted to assess major accidents or disasters. In general, major accidents or disasters, as they relate to the Project, fall into the categories:

- Events that could not realistically occur, due to the nature of the Project or its location;
- Events that could realistically occur, but for which the Project, and associated receptors, are no more vulnerable than any other development;

and

- Events that could occur, and to which the Project is particularly vulnerable, or which the Project has a particular capacity to exacerbate. These events are considered within this assessment.

16.7.11 An exercise was undertaken at the scoping stage to identify possible major accidents or disasters that could be relevant to the Project. A long list was drawn from other DCO projects and the UK Government Risk Register of Civil Emergencies ('UK Risk Register')²² which provides a list of key risks that have the potential to cause significant disruption in the UK and therefore could result in a potential major accident or disaster.

16.7.12 **ES Volume 4, Appendix 1.2: EIA Scoping Report, Paragraph 6.7.5 (Doc Ref. 5.4)** set out a short list of risks and events to be taken forward for further consideration in the ES as follows:

- Flooding;
- Climate Change;
- Fire;
- Road Accidents;
- Glint and Glare; and
- Plant Disease.

16.7.13 In addition to the above, consideration is also given in this assessment to:

- Sites covered by the Control of Major Accident Hazard ('COMAH') Regulations 2015²³ which cover any establishment storing or otherwise handling large quantities of hazardous industrial chemicals, and other licensed sites which could present a potential risk of major accidents; and
- Unexploded ordnance.

16.7.14 **Table 16.11** sets out the short list of major accidents and disasters shortlisted for further consideration and signposts to relevant aspect Chapters within **Volume 2 (Doc Ref. 5.2)** of the ES where relevant.

16.7.15 It is considered that certain workers, for example construction workers, can be excluded from the assessment because standard health and safety legislation is considered sufficient to minimise any risk to these receptors from major accidents or disasters to a reasonable level, e.g. Health and Safety at Work etc. Act 1974²⁴ and the Construction (Design and Management) ('CDM') Regulations 2015²⁵.

Table 16.11: Shortlist of Major Accidents and/or disasters relevant to the Project

Major Accident or Disaster	Potential Receptors	Comments
Flooding	People and properties in areas of	The vulnerability of the Project to flooding (including climate change allowances), and the potential for the Project to exacerbate flooding are addressed ES

Major Accident or Disaster	Potential Receptors	Comments
	increased flood risk, including Project infrastructure and workers.	<p>Volume 2, Chapter 10: Water Environment (Doc Ref. 5.2) and ES Volume 4, Appendix 10.2: Flood Risk Assessment (Doc Ref. 5.4). No significant flooding effects are identified and therefore this issue is not considered further in this Chapter.</p>
Climate Change	Project infrastructure	<p>The future effects of climate change are taken into account in the assessment in ES Volume 2: Chapter 10: Water Environment (Doc Ref. 5.2) and ES Volume 4, Appendix 10.2: Flood Risk Assessment (Doc Ref. 5.4) and Outline OSWDS (Doc Ref. 7.14).</p> <p>ES Volume 2, Chapter 15: Climate Change, Part B (Doc Ref. 5.2) provides assessment of the Project’s resilience to climate change and relevant Embedded Mitigation. No other accidents and disasters relevant to climate change are identified. Further consideration is therefore not given to accidents and disasters relevant to climate change in this Chapter.</p>
Fire	Local residents, properties, habitats, species and Project infrastructure	<p>Health and safety on-Site would be managed by the contractor during construction and decommissioning phases to mitigate risks of fire in line with legislative safety requirements, such as the CDM Regulations 2015. The Outline CEMP (Doc Ref. 7.8) and Outline DEMP (Doc Ref. 7.12) include measures that prohibit the burning of any material on-Site and also require that a detailed Emergency Preparedness Plan (‘EPP’) will be developed for the Project. The Project is therefore not expected to have a significant effect on the environment due to the risk of a major accident occurring as a result of fire during construction and decommissioning. Construction and decommissioning fire risks are therefore not considered further.</p> <p>The operational phase of the Project would involve routine maintenance and servicing of equipment to ensure the safe operation. Relevant measures are secured through Outline BSMP (Doc Ref. 7.16) and Outline OMP (Doc Ref. 7.11). Fire risks from routing maintenance and servicing is therefore not considered further.</p>

Major Accident or Disaster	Potential Receptors	Comments
		<p>The Project includes energy storage capacity via the BESS. Battery fires can start for a number of reasons including physical damage, overcharging, over discharging, short circuiting and exposure to high temperatures. Battery failure causes an increase in internal temperatures created by heating and/or chemical processes within cells which results in the release of gas. This outcome is known as thermal runaway and can impact adjacent cells.</p> <p>As there is a potential fire risk associated with the BESS an Outline BSMP (Doc Ref. 7.16) has been prepared and is provided with the DCO Application Further commentary on operational phase fire risk is provided below at Paragraphs 16.7.16 to 16.7.24.</p>
COMAH / other industrial sites	Local residents, properties, habitats, species and Project infrastructure	<p>ES Volume 4, Appendix 11.2: Phase 1 Geoenvironmental and Geotechnical Desk Study (Doc Ref: 5.2) confirms that:</p> <ul style="list-style-type: none"> ▪ There are no COMAH, gas pipelines, sites determined as contaminated land or regulated explosive sites across or within 250m of the Site; ▪ There are no historical licensed industrial activities, licensed industrial activities (Part A(1)) or (Part A (2)/B), licensed pollutant release licences, or pollutant inventory records either across or within 250m of the Site; ▪ There is no hazardous substance storage/usage recorded across or within 250m of the Site; ▪ There are no radioactive substance authorisations either across or within 250m of the Site; ▪ Across or within 250m of the Site, there are no records for licensed industrial activities (Part A (1)) or (Part A (2)/B); and ▪ There are no records for List 1 Dangerous Substances across or within 250m of the Site. <p>The Project is therefore not expected to have a significant effect on the environment due to the risk of a major accident occurring as a result of its proximity to COMAH or other industrial sites.</p>

Major Accident or Disaster	Potential Receptors	Comments
Unexploded ordnance ('UXO')	Local residents, properties, habitats, species and Project infrastructure	<p>ES Volume 4, Appendix 11.2: Phase 1 Geoenvironmental and Geotechnical Desk Study (Doc Ref: 5.2) Annex E provides a UXO desk study of the Site and its surrounds. This study did not identify records indicating the Site was bombed during WWII and no other significant sources of UXO hazard are identified on the Site. Records indicate that the nearest High Explosive bomb fell on the railway, approximately 30m north of the Site in April 1944. Overall, the Site is rated as having a Low UXO hazard level. UXO will form part of the standard health and safety risk considerations when construction, operation and decommissioning is taking place on the Site. This will ensure that risks of major accidents or disasters is low and not significant during the construction, operation and decommissioning phase. Further consideration is therefore not given to UXO in this Chapter.</p>
Road (traffic) Accidents	Nearby road networks	<p>The effects of traffic related accidents and safety during the construction, operation and decommissioning phases, including abnormal load movements are assessed in ES Volume 2, Chapter 13: Traffic and Access (Doc Ref. 5.2). The assessment concludes that from a review of accident data, there is no evidence to suggest that the Project will exacerbate the frequency or severity of local road traffic accidents. No unusually hazardous or dangerous loads are anticipated for the construction, operation and decommissioning phase of the Project.</p> <p>The Outline CTMP (Doc Ref. 7.9) and Outline DTMP (Doc Ref. 7.10) require that KCC's and National Highways (NH's) abnormal loads officers will be contacted to discuss the arrangements regarding routes and traffic management measures for abnormal loads in advance of the day of delivery.</p> <p>With regard to transportation of Project infrastructure, equipment will be appropriately certified for transport and where relevant will be managed in accordance with the European Agreement Concerning the International Carriage of Dangerous Goods by Road 2019²⁶ and the UK guidance on the transport of dangerous goods 'Moving dangerous goods, Guidance' webpage²⁷.</p>

Major Accident or Disaster	Potential Receptors	Comments
		<p>These measures are secured in relation to transportation of the BESS through the Outline BSMP (Doc Ref. 7.16).</p> <p>Further consideration is therefore not given to road accidents or risks from hazardous or abnormal loads in this Chapter.</p>
Accidents (due to Glint and Glare)	Nearby railway, road users and aircraft	<p>The potential for glint and glare effects on transport users including road, railway and aircraft are assessed within ES Volume 4, Appendix 16.2: Solar Photovoltaic Glint and Glare Study (Doc Ref. 5.4) and summarised in Section 16.3 of this Chapter. This assessment concludes that with appropriate mitigation, effects on all receptors would not be significant. Further consideration is therefore not given to risks of accidents from glint and glare in this Chapter.</p>
Plant Disease	Habitats and species	<p>New planting may be susceptible to biosecurity issues, such as the increased prevalence of pests and diseases due to climate change and/or management methods. The principles of establishment, monitoring and protection of proposed planting are set out within the Outline LEMP (Doc Ref. 7.10). General biosecurity measures are included within the Outline LEMP (Doc Ref. 7.10), which includes avoidance of the spread of non-native invasive species on-Site and control measures should this occur. Key measures include:</p> <ul style="list-style-type: none"> ▪ All new planting would be sourced from reputable UK-based providers who are able to demonstrate provenance and adhere to industry good practice relating to biohazard controls; ▪ All new planting must be certified disease and pest free from the chosen supplier(s); ▪ The planting design will take account of biosecurity risks through including a mix of species; ▪ Requirement for pre-commencement surveys of invasive species;

Major Accident or Disaster	Potential Receptors	Comments
		<ul style="list-style-type: none"> ▪ Detailed LEMP(s) to include Invasive Non-Native Strategy ('INNS'), if required; and ▪ The Applicant / Operator of the Site shall remove any dead, dying, or diseased plants, which are evident during any maintenance visit.

Embedded Mitigation and Assessment

Fire Risk

16.7.16 BESS Units are located in fields throughout the Site. It is assumed that the BESS will have undergone Factory Acceptance Testing ('FAT') prior to installation. As this will be undertaken away from the Site this reduces the risks during on-Site installation with visual inspections and functional testing undertaken before any Site Acceptance Testing ('SAT'). Installation will be supervised by the Original Equipment Manufacturer. Prior to delivery of the BESS Units, the on-Site firewater provision shall be installed and operational.

16.7.17 The Project design approach is to distribute the BESS Units across the Site which will mitigate the limited risk of a major fire incident involving multiples BESS Units in a single location. The Project has also been designed to comply with good practice guidance published by the National Fire Chiefs Council ('NFCC')²⁸. Primary design measures are secured through the **Design Principles (Doc Ref. 7.5)** as follows:

- BESS Units will be spaced at least 6m apart from one another (measured wall to wall);
- BESS Units will be distributed across the Site with up to four units at an Inverter Station. Where two Inverter Stations are paired, up to eight BESS units can be located in a single area;
- The nearest residential receptor to any BESS Unit will be a minimum of 150m;
- No BESS Units or DC-DC Converters will be included within Field 9, and Fields 20 to 22;
- Water tanks for fire suppression water will have a maximum diameter of 12m and a maximum height of 3.5m;
- Water tanks will be located at least 50m from a BESS location; and
- Internal access tracks will be provided to Inverter Stations (for maintenance and emergency access to the BESS) with a minimum width of 3.7m and a carrying load in compliance with Building Regulations and NFCC Guidance³¹.

16.7.18 The **Outline BSMP (Doc Ref. 7.16)** provides the framework for a detailed BSMP to be prepared. The **Draft Development Consent Order (Doc Ref: 3.1)** includes a Requirement that secures the submission to and approval by the local planning authority of a BSMP before the commencement of the BESS. The Requirement

provides that the BSMP must either accord with the **Outline BSMP (Doc Ref. 7.16)** or detail such changes as the undertaker considers are required. The detailed BSMP will include the detailed BESS design and specification, operational procedures and training, environmental risk assessment and an emergency plan covering all stages of the Project. Further specific mitigation measures relating to the risk of fire from the BESS is included within the **Outline BSMP (Doc Ref. 7.16)**. The BSMP will be prepared in consultation with Kent Fire and Rescue Service ('Kent FRS').

16.7.19 The **Outline BSMP (Doc Ref. 7.16)** considers the risks associated with fires from the BESS equipment and therefore minimises the potential impact of incident during construction, operation and decommissioning. The **Outline BSMP (Doc Ref. 7.16)** assumes that the BESS system will be based upon LFP lithium-ion battery technology that is commonly used on other sites being developed in the UK, including at the Cleve Hill Solar Park project in Kent. This is considered to be a reasonable worst case for the purposes of the assessment in terms of safety.

16.7.20 Key fire safety principles included in the **Outline BSMP (Doc Ref. 7.16)** are:

- The BESS will be designed, selected and installed in accordance with related standards, international guidance and good practice;
- The BESS will be designed with multiple layers of protection to minimise the chances of a fire or thermal runaway. This will include integrated fire detection with automated suppression systems to deal with electrical fires. Following best practice (e.g., National Fire Protection Association ('NFPA') 855²⁹) the build-up of explosive gases will be avoided by gas venting;
- Risk assessments will be carried out for the entire system during construction and for the operational life of the BESS;
- All equipment will be monitored, maintained and operated in accordance with manufacturer instructions, with Kent FRS alerted in the event of an incident; and
- A dedicated emergency response team shall be identified and an emergency response plan ('ERP') will be put in place.

16.7.21 The final battery chemistry will be selected as part of the detailed design prior to the commencement of construction.

16.7.22 The BESS Unit locations are designed to ensure any firewater required is contained such that there will be no leakage of polluted water into the surrounding area following a fire event. Human health and other environmental impacts resulting from plumes from battery fires are considered unlikely as BESS Units will be located at least 150m from residential receptors.


16.7.23 With effective implementation of the Embedded Mitigation, the risk of fire or explosion is minimised and would be very low. In the event it did occur, the likely impact on the general public, in particular nearby residents, is deemed to be very low and no significant effect on the environment and people from a major accident is anticipated.

Cumulative Effects

16.7.24 With embedded mitigation, it is not expected that any cumulative schemes would increase the risk or severity of environmental effects from major accidents and disasters which are relevant to the Project. No significant cumulative effects are therefore identified.

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