SUNNICA ENERGY FARM

Preliminary Environmental Information Report

Chapter 16: Other Environmental Topics

Sunnica Ltd

AUGUST 2020

Contents

16. Other Environmental Topics 16-1
16.1 Introduction 16-1
16.2 Development Parameters Assessed 16-1
16.3 Glint and Glare 16-1
16.4 Ground Conditions 16-8
16.5 Major Accidents and Disasters 16-16
16.6 Telecommunications, Television Reception and Utilities 16-24
16.7 Waste 16-27
16.8 References 16-35

Tables

Table 16.1 Consultation matters raised and responses for glint and glare 16-2
Table 16.2. Impact Significance criteria for the glint and glare assessment 16-5
Table 16.3 Consultations matters and responses for Ground Conditions 16-12
Table 16.4 Consultations matters and responses for Major Accidents and Disasters 16-17
Table 16.5. Major accidents or disasters shortlisted for further consideration 16-19
Table 16.6 Consultations matters and responses for Telecommunications, Television Reception and Utilities 16-24
Table 16.7 Consultations matters and responses for Waste 16-29
Table 16.8 Waste arisings during construction 16-31
Table 16.9 Estimated waste arisings during decommissioning. 16-32

16. Other Environmental Topics

16.1 Introduction

16.1.1 The purpose of this PEI Report chapter is to collate the assessment of other environmental topics that do not warrant individual chapters, either due to the brevity of the assessment or the small impact associated with the Scheme.

16.1.2 This chapter describes and assesses the potential effects of the Scheme on:

- Glint and Glare (Section 16.3);
- Ground Conditions (Section 16.4);
- Major Accidents and Disasters (Section 16.5);
- Telecommunications, Television Reception and Utilities (Section 16.6); and
- Waste (Section 16.7).

16.1.3 Where relevant, the legislation and guidance, baseline conditions, assessment methodology and mitigation measures are outlined in the following sections for each topic.

16.1.4 This chapter is supported by the following technical appendices:

- Appendix 16A: Glint and Glare Assessment
- Appendix 16B: Ground Conditions Phase I Preliminary Environment Risk Assessment (PERA)
- Appendix 16C: Framework Construction Environmental Management Plan (CEMP)

16.2 Development Parameters Assessed

16.2.1 ***Chapter 3: Scheme Description*** presents a description of the Scheme, against which this chapter has been assessed. The assessment has been based on likely worst-case parameters; the actual impact may therefore be less than anticipated if the Scheme is built to a lesser scale.

16.3 Glint and Glare

Introduction

16.3.1 This section summarises the potential effects of the Scheme on glint and glare for surrounding road users, railway operations, dwellings, PRoW, bridleways and aviation activity.

16.3.2 The definition of glint and glare can vary; however, the definition used within this assessment is as follows[1]:

- 'Glint' refers to a momentary flash of bright light typically received by moving receptors or from moving reflectors.

[1] These definitions are aligned with those of the Federal Aviation Administration (FAA) in the United States of America.

- 'Glare' refers to a continuous source of bright light typically received by static receptors or from large reflective surfaces.

16.3.3 The full study on glint and glare, undertaken for the Scheme by Pager Power is available in ***PEI Report Volume 2: Appendix 16A***.

Relevant Legislation, Guidelines and Policy

National Planning Policy

16.3.4 The suite of relevant energy National Policy Statements and the NPPF do not expressly mention glint and glare and so there are no specific assessment requirements from national policy regarding this potential effect of solar farm development.

Planning Practice Guidance - Renewable and Low Carbon Energy

16.3.5 UK national Planning Practice Guidance dictates that in some instances, a glint and glare assessment is required; however, there is no specific guidance with respect to the methodology for assessing the impact of glint and glare.

16.3.6 Planning Practice Guidance from the Department for Communities and Local Government emphasises the need to consider the landscape effects as well as neighbouring uses and aircraft safety with regard to glint and glare assessments.

Local Planning Policy

16.3.7 No local planning policies and guidance relevant to glint and glare were identified and so there are no specific requirements for the assessment of this potential effect of solar farm development in this district.

Railway Assessment Guidelines

16.3.8 Railway Assessment Guidelines on signal positioning and visibility (Ref 16-49) provides guidance with respect to the effects of solar glare on train drivers and railway signals. This guidance has been taken into account in the development of the methodology for the glint and glare assessment and is summarised in ***PEI Report Volume 2: Appendix 16A***.

Consultation Responses

16.3.9 Consultation responses to the EIA Scoping Report are summarised below in Table 16.1.

Table 16.1 Consultation matters raised and responses for glint and glare

Consultee	*Matter raised*	*Response*
Planning Inspectorate	The Inspectorate notes that in paragraph 10.5.30, the Scoping Report confirms that assessments in Chapter 10 (Landscape and Visual Amenity) of the ES will include "general consideration" of the potential for glint and glare from the Proposed Development to cause significant effects to both landscape and visual receptors. The	The glint and glare assessment is included as ***PEI Report Volume 2: Appendix 16A*** a summary is presented in this section.

	Inspectorate also notes that the potential impacts of glint and glare to aircraft are considered within section 14.6 (Major Accidents or Disasters). Given that the Applicant will address impacts associated with glint and glare within relevant aspect Chapters of the ES, the Inspectorate agrees that a specific chapter for glint and glare is not required and is satisfied for this matter to sit more generally within 'Other Environmental Topics'.	
East Cambridgeshire District Council	It is agreed glint and glare should be scoped in and should focus on visual impact, highway safety (specifically A14/A11) and aviation safety.	The glint and glare assessment is included as ***PEI Report Volume 2: Appendix 16A*** and a summary is presented in this section. The assessment includes visual impact, aviation safety, highway safety and covers the A14 and A11.
Ministry of Defence	The MOD have no aerodrome height or technical safeguarding concerns with this proposal. With regards to glint and glare from the arrays the applicant has identified there are aviation receptors within 20km of the proposed solar farms and the closest of these are RAF Mildenhall, RAF Lakenheath and Cambridge Airport, which are within 20km of the Sunnica East Site and Sunnica West Site.	The glint and glare assessment is included as ***PEI Report Volume 2: Appendix 16A*** and a summary is presented in this section. The assessment includes aviation activity associated with RAF Mildenhall, RAF Lakenheath and Cambridge Airport.
Suffolk County Council / West Suffolk Council	With respect to glint or glare Paragraph 10.5.30 of the scoping report states that a general consideration of the potential for glint and glare from the scheme to cause significant effects to landscape and visual receptors will be provided as part of the assessment. Due to the scale of this development and the sensitivities of activities in the vicinity of the site, including neighbouring residential properties within 30m of the Sunnica East site and aviation receptors, it is recommended that full consideration of potential adverse effects of glint and glare should be provided and scoped into the ES.	The glint and glare assessment is included as ***PEI Report Volume 2: Appendix 16A*** and a summary is presented in this section.
Suffolk County Council / West Suffolk Council	There is no reference within the Scoping Report to operational effects from glint and glare on aviation receptors including RAF Mildenhall and RAF Lakenheath. It is recommended that MOD Safeguarding are fully consulted in order to ensure the approach being taken to the assessment of glint and	RAF Mildenhall and RAF Lakenheath are described as aviation receptors in Paragraph 14.3.4 of the EIA Scoping Report. The glint and glare assessment is included as ***PEI Report Volume 2: Appendix 16A*** and a summary is presented in this section.

	glare is appropriate. Any effect on flying instruments should also be considered as well as the flight paths for RAF Mildenhall and RAF Lakenheath. MOD Safeguarding can be contacted at Kingston Road, Sutton Coldfield, West Midlands B75 7RL.	Please see response above to MoD.

Assessment Methodology

16.3.10 The glint and glare assessment methodology has been defined with reference to consultation from stakeholders and review of available guidance and studies. No process for determining and contextualising the effects of glint and glare are provided in the available guidance. Additionally, there are no specific guidelines for assessing the impact of solar reflections upon surrounding roads, byways, footpaths and dwellings.

16.3.11 Therefore, the approach has been informed by the policy presented above, current studies (presented in ***PEI Report Volume 2: Appendix 16A***) and stakeholder consultation carried out by the assessor through its professional experience, and the professional judgement of the assessor. The approach is to determine whether a reflection from the proposed solar development is geometrically possible and then to compare the results against the relevant guidance and studies to determine whether the reflection is significant.

16.3.12 In summary, the assessment methodology includes the following:

- Identifying receptors in the study area surrounding the Scheme;
- Considering direct solar reflections from the Scheme towards the identified receptors by undertaking geometric calculations;
- Considering the visibility of the panels from the receptor's location. If the panels are not visible from the receptor then no reflection can occur;
- Based on the results of the geometric calculations, determining whether a reflection can occur, and if so, at what time it will occur;
- Considering both the solar reflection from the Scheme and the location of the direct sunlight with respect to the receptor's position;
- Considering the solar reflection with respect to published studies and guidance – including intensity calculations where appropriate; and
- Determining whether a significant detrimental effect is expected in line with the significance criteria set out in Table 16.2.

16.3.13 Within the assessment model, the Scheme and relevant receptor locations are defined. From this information, a chart is produced that states whether a reflection can occur, the duration, and the part of the development that can produce the solar reflection towards the receptor.

Table 16.2. Impact Significance criteria for the glint and glare assessment

Impact criteria / significance	*Definition*	*Mitigation requirement*
No impact / not significant	A solar reflection is not geometrically possible or will not be visible from the assessed receptor.	No mitigation required.
Low / not significant	A solar reflection is geometrically possible; however, any impact is considered to be small such that mitigation is not required e.g. intervening screening will limit the view of the reflecting solar panels.	No mitigation required.
Moderate / significant	A solar reflection is geometrically possible and visible for less than either 60 minutes per day or 3 months per year and therefore occurring under conditions that do not represent a worst-case.	Whilst the impact may be acceptable, further analysis should be undertaken to determine the requirement for mitigation.
Major / significant	A solar reflection is geometrically possible and visible for more than 60 minutes per day and more than 3 months per year and therefore under conditions that will produce a significant impact. Mitigation and consultation is recommended.	Mitigation will be required.

Baseline Conditions

16.3.14 The agricultural land use results in a generally 'open' character to the landscape, although there are notable areas of vegetation, in terms of field boundaries, roadside and residential garden vegetation and woodland blocks, such that the vegetation patterns are varied across the Study Area and provide existing screening for surrounding receptors.

16.3.15 Full details of the baseline conditions can be found in Section 10.6 of ***Chapter 10: Landscape and Visual Amenity.***

Receptors

Aviation receptors

16.3.16 RAF Mildenhall, operated by the MOD, is the closest aerodrome to the DCO Site and is located approximately 2.5km to the north-east.

16.3.17 RAF Lakenheath Airfield is located approximately 10km to the north-east, and Cambridge Airport approximately 19km to the south-west, of the DCO Site.

Railway receptors

16.3.18 One railway line of approximately 10km in length is considered in the assessment which runs in an L-shape approximately 0.5km from the

southern extent of the DCO Site at Sunnica West Site A and Sunnica West Site B.

16.3.19 No signals have been identified along the assessed section of railway

Road receptors

16.3.20 Roads that are within or close to 1km of the DCO Site and have potential views of the panels are considered in the assessment. These include the A14, A11, A1304, B1085, A142 and B1102.

Public Rights of Way (PRoW) and bridleway receptors

16.3.21 PRoW that are within or close to 1km of the DCO Site and have potential views of the panels are considered in the assessment. Six PRoW in total have been assessed.

Dwelling receptors

16.3.22 Dwelling receptors that are within or close to 1km of the DCO Site and have potential views of the panels are considered in the assessment. A total of 222 dwelling receptors have been assessed.

Horse facility receptors

16.3.23 Horse training facilities within the Study Area have been assessed. Sample receptor points were taken at the 6 identified facilities.

Embedded Design Mitigation

16.3.24 The preliminary embedded design mitigation is shown on the Parameter Plans 3-1 and 3-2 and described in detail in Section 10.7 of ***Chapter 10: Landscape and Visual Amenity.*** This includes:

- Careful siting of the Scheme in the landscape by the structures being offset from pine lines, vegetation patterns and road networks;
- Conserving landscape, ecology and archaeological features (including below ground) across the DCO Site, including the pine lines; and
- Creating new Green Infrastructure within the DCO Site with extensive planting proposals.

16.3.25 The preliminary embedded design mitigation is accounted for in the assessment process.

Assessment of Potential Effects

16.3.26 No reflections are predicted for aviation receptors at RAF Mildenhall and no effects are anticipated for receptors at RAF Lakenheath and Cambridge Airport due to their distance from the Scheme and orientation of the runways. Therefore, these receptors are assessed as no impact and not significant.

16.3.27 All assessed receptors, with exception of one, will not experience any significant effects due to visibility of any panels being screened from view from existing vegetation and landform and the proposed planting as part of the preliminary embedded design mitigation. Consideration has been given to those receptors that may have views of the panels prior to the proposed planting becoming established and although there may be views of the

panels the majority of the receptors have been assessed as Low impact and therefore not significant due to the location of the solar refection, reflections coinciding with direct sunlight, and therefore, not resulting in a safety hazard.

16.3.28 However, road users travelling in a south-westerly direction on a section of the A14 adjacent to Sunnica West Site A (see Plate 16-1) will have views of the panels for approximately 200m. Although, the road users would only be in the reflection zone momentarily, this is considered sufficient to result in a potential safety hazard and therefore, result in a major significant effect.

Plate 16-1 Potential for view from A14 for road users traveling in a south-westerly direction

Mitigation Measures

16.3.29 Mitigation is not recommended for the majority of receptors as impacts are not anticipated as a result of the preliminary embedded design mitigation and the existing screening. Mitigation will be provided for the road users travelling in a south-westerly direction in the form of a temporary solid hoarding that will be a maximum of 2m in height (see Plate 16-2). The hoarding would be located on a short section, approximately 300m, along the Sunnica West Site A boundary with a high percentage of evergreen (native and non-native) species, planted adjacent to the temporary hoarding in line with the indicative planting strategy shown on Figure 3-2. The temporary hoarding will be removed once the density of vegetation is sufficient to screen the views. The detail design of the hoarding will be undertaken as part of the detailed design and will be secured through a DCO Requirement. With the introduction of the mitigation the impact is anticipated to reduce to Low, which is not considered significant.

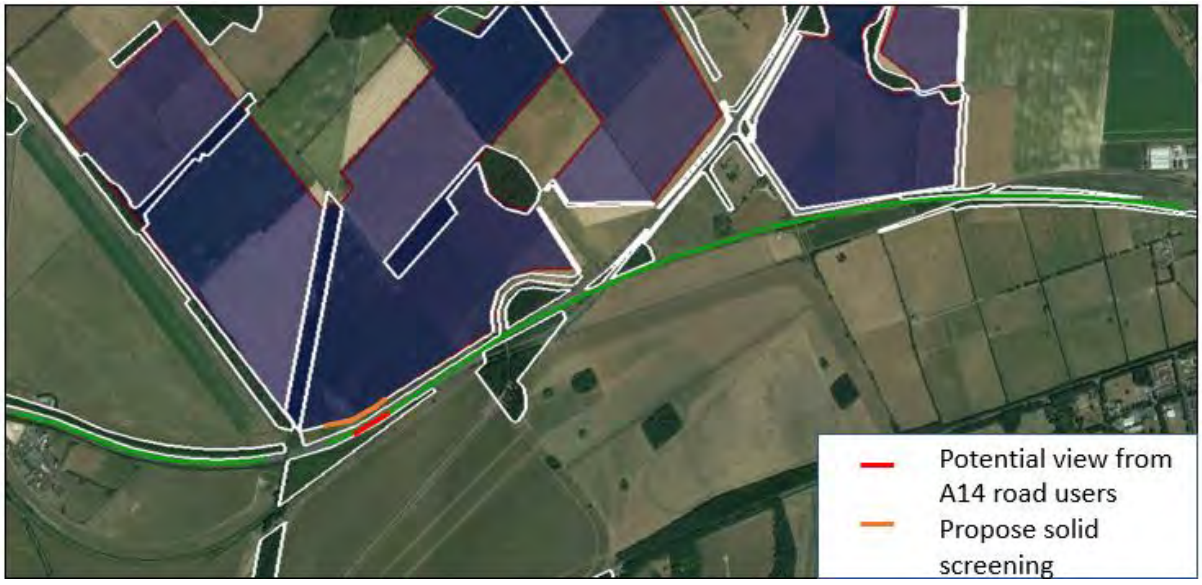

Plate 16-2 Proposed screening for A14 for road users traveling in a south-westerly direction

Residual Effects

16.3.30 With the proposed preliminary embedded design mitigation and the additional mitigation in the form of the temporary solid hoarding, no residual significant effects are anticipated as a result of the Scheme.

Cumulative Effects

16.3.31 Eight proposed solar farms have been identified in the short list of cumulative schemes within 10km of the Scheme. The assessment summarised above identified that with the introduction of the additional mitigation no receptors will experience significant effects as a result of the Scheme. Additionally, the it is anticipated that the proposed developments will be designed to ensure that there will be effective screening to prevent glint and glare effects from the individual proposed developments. Therefore, cumulative effects would be unlikely and are not considered to arise for glint and glare.

16.4 Ground Conditions

Introduction

16.4.1 The Preliminary Environmental Risk Assessment (PERA) assesses the land condition within the DCO Site to identify potential environmental land quality liabilities and constraints prior to the Scheme development. The PERA has been developed based on desk-top studies and site walkovers, and the full PERA can be found in ***PEI Report Volume 2: Appendix 16B***.

Relevant Legislation, Guidelines and Policy

16.4.2 The assessment has been undertaken taking into account relevant legislation and guidance and national and local planning policy (summarised in the sections below).

National Legislation

16.4.3 There are six key legislative drivers for dealing with risks to human health and the environment from ground conditions, namely:

- Part 2A of the Environmental Protection Act (EPA) 1990 (the Contaminated Land Regime) (Ref 16-3);
- The Water Resources Act 1991 (Ref 16-4) and the Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009 (Ref 16-5);
- Water Act 2003 (Ref 16-6);
- Building Act 1984 (Ref 16-7);
- The Building Regulations & c (Amendment) Regulations 2015 (Ref 16-8); and
- Town and Country Planning Act 1990 (Ref 16-9).

16.4.4 In the UK, Part 2A of the EPA (HMSO, 1990), as introduced by Section 57 of the Environment Act 1995 (Ref 16-10) provides the legislative framework within which site data is to be assessed. Under Part 2A, sites are identified as 'contaminated land' if they are: causing harm to human health; if there is a significant possibility of causing significant harm to human health; if the site is causing significant harm, or there is a significant possibility that it causes harm to non-human receptors; or there is pollution of controlled waters (i.e. both surface and groundwaters).

16.4.5 The Water Act 2003 (HMSO, 2004) introduced a revision to the wording of the EPA, which requires that if a site is causing or could cause significant pollution of controlled waters it may be determined as contaminated land. Once a site is determined to be "contaminated land" then remediation is required to render significant pollutant linkages insignificant (i.e. the source-pathway-receptor relationships that are associated with significant harm to human health and/or significant pollution of controlled waters), subject to a test of reasonableness.

16.4.6 The Water Resources Act 1991 (HMSO, 1991) provides statutory protection for controlled waters (streams, rivers, canals, marine environment and groundwater) and makes it an offence to discharge to controlled waters without the permission or consent of the regulators of these areas.

16.4.7 The Building Act 1984 (HMSO, 1984) and the Building Regulations & c (Amendment) Regulations 2015 (HMSO, 2015) are the two key legislative drivers when considering structural and design aspects of a development in terms of geotechnical properties of the ground. The Building Act 1984 requires that buildings are constructed so that ground movement caused by swelling, shrinkage, freezing, landslip or subsidence of the sub-soils will not impair the stability of any part of the building.

16.4.8 Other legislation of relevance to this topic includes:

- Environmental Permitting (England and Wales) Regulations 2016 (Ref 16-11) (as amended);
- Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (Ref 16-12);

- Contaminated Land (England) (Amendment) Regulations 2012 (Ref 16-13);
- Environmental Damage (Prevention and Remediation) Regulations 2015 (Ref 16-14); and
- Anti-Pollution Works Regulations 1999 (Ref 16-15).

National Planning Policy

16.4.9 As outlined in **Section 1.3** of ***Chapter 1: Introduction***, the EIA for the Scheme must have regard to the relevant policies of the NPPF and relevant NPSs. Key aspects of the NPPF and relevant NPSs, which have been considered during the development of this chapter, are outlined below.

- NPS EN-1 (Ref 16-1) – with reference to section 4.10 Pollution Control and Other Environmental Regulatory Regimes: and paragraph 5.10.8 *"applicants should also identify any effects and seek to minimise impacts on soil quality taking into account any mitigation measures proposed. For developments on previously developed land, applicants should ensure that they have considered the risk posed by land contamination".*
- NPS EN-5 (Ref 16-2). No section relevant to ground conditions.
- NPPF (Ref 16-16) with particular reference to Section 15, paragraph 170 of the NPPF states that "*planning policies and decisions should contribute to and enhance the natural and local environment by:*

  a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

  b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

  e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

  f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate".

- In Section 15, paragraph 178 also states that: "*Planning policies and decisions should ensure that:*

  a) *a site is suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination. This includes risks arising from natural hazards or former activities such as mining, and any proposals for mitigation including land remediation (as well as potential impacts on the* natural environment arising from that remediation);

b) after remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990; and

c) adequate site investigation information, prepared by a competent person, is available to inform these assessments".

- Paragraph 179 states: "*where a site is affected by contamination or land stability issues, responsibility for securing a safe development rests with the developer and/or landowner*".

a) Paragraph 180 states: "*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development*".

Local Planning Policy

- East Cambridgeshire District Local Plan Adopted April 2015 (Ref 16-19), with particular reference to Policy ENV 7: Biodiversity and geology expecting development to protect the biodiversity and geological value of land and buildings and minimise harm to or loss of environmental features, such as trees, hedgerows, woodland, wetland and ponds and Policy ENV 9: Pollution which states where pollution is suspected proposals must contain sufficient information to enable the Council to make a full assessment of potential hazards and impacts. An assessment of the extent of the contamination and any possible risks. Proposals will only be permitted where the land is, or can be made, suitable for the proposed use. Development proposals where there is a risk of pollution should include a Pollution Management Plan which includes details of the identified risks and the proposed control measures.
- Forest Heath and St Edmundsbury Councils: Joint Development Management Policies Document (last updated February 2015) with particular reference to Policy DM10 Impact of Development on Sites of Biodiversity and Geodiversity Importance and DM14: Protecting and Enhancing Natural Resources, Minimising Pollution and Safeguarding from Hazards.
- Forest Heath District Council Core Strategy Adopted 2010 (Ref 16-17) – includes Policy CS 2 Natural Environment of relevance to the ground conditions. Policy CS 2 states that "*areas of landscape, biodiversity and geodiversity interest and local distinctiveness within the District will be protected from harm and their restoration, enhancement and expansion will be encouraged and sought through a variety of measures. Links between such areas will also be sought (...)".*

Other Relevant Policy, Standards and Guidance

16.4.10 Other relevant policy, standards and guidance include the following:

- Environment Agency, (2009); Updated technical Background to the CLEA model; Science Report: SC050021/SR3 (Contaminated land exposure assessment (CLEA) spreadsheet based tool) (Ref 16-20);

- Environment Agency Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Ref 16-21);
- Human Health Toxicological Assessment of Contaminants in Soil, Science Report SC050021/SR2 (Ref 16-22);
- Environment Agency, 2004; Model Procedures for the Management of Land Contamination, Contaminated Land Report 11 (CLR 11) (Ref 16-23);
- Environment Agency, 2010; Guiding Principles for Land Contamination (GPLC) 1, 2 and 3 (Ref 16-24)
- Construction Industry Research and Information Association (CIRIA) Guidance C532, 'Control of Water Pollution from Construction Sites' (Ref 16-25);
- The Chartered Institute of Environmental Health (CIEH) Local Authority Handbooks (Ref 16-26);
- British Standard (BS) 8485:2015 - Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (Ref 16-27); and
- CIRIA Guidance C665, 'Assessing Risks Posed by Hazardous Ground Gases to Buildings' (Ref 16-28).

Consultation Responses

16.4.11 ECDC and WSC were consulted post-Scoping and invited to comment on the PERA. Both councils consider that the PERA is acceptable; and agree with the assessment, when it considers that the requirement for an intrusive investigation can be secured through a requirement of the DCO.

Table 16.3 Consultations matters and responses for Ground Conditions

Consultee	*Matter raised*	*Response*
Planning Inspectorate	As the ground conditions Phase 1 Preliminary Risk Assessment (PRA) is still “being prepared”, there is insufficient evidence that the Proposed Development will not significantly affect ground conditions, including the creation of new contamination pathways or worsen existing contamination pathways. Therefore, the Inspectorate does not agree with the approach that a ground conditions assessment can be scoped out of the ES on the basis of anticipated results. The ES should include an assessment of the potential affects the Proposed Development could have on ground conditions.	A Ground Conditions Phase 1 Preliminary Risk Assessment is included in ***PEI Report Volume 2: Appendix 16B.*** This Section summarises the findings of this report.
East Cambridgeshire District Council (Environmental Health Scientific Officer)	Consider that any land contamination or air quality implications are likely to be low or negligible.	Noted

Assessment Methodology

16.4.12 The assessment involved a desk-based review of the DCO Site to identify historic land uses and the geological, hydrological, hydrogeological and ecological setting of the DCO Site. A walkover was undertaken to inspect any storm-water, foul and off-site effluent discharges and to check the external building fabric of structures. A study area has been defined as the DCO Site plus a 250m radius, which is defined as a distance over which significant effects of human health and controlled water receptors can reasonably have a potential to occur.

16.4.13 A preliminary ground model was then prepared, followed by a Conceptual Site Model (CSM) with a view to identifying any potentially significant source-pathway-receptor linkages. This was followed by a qualitative risk assessment.

16.4.14 The risk matrix assessment is based on guidance within R&D Publication 66 (NHBC and Environment Agency, 2008) and is included ***PEI Report Volume 2: Appendix 16B,*** **Sub-Appendix D**.

Baseline Conditions

16.4.15 The land within the DCO Site is directly underlain by solid geology of the Chalk Formation, classified as a Principal Aquifer, locally overlaid by superficial deposits of the Alluvium, River Terrace Deposits, Lowestoft Formation and Blown Sand, classified as Secondary Aquifers. The land within the DCO Site is located within Source Protection Zones (SPZs) designated by the Environment Agency (EA) for the protection of potable water supply. A number of rivers, drains and isolated ponds are also located within the study area. There are identified areas of nationally designated ecological significance within 250m of the DCO Site. These are shown in Figures 2-2 and 2-3 in ***Chapter 2: Scheme Location***.

16.4.16 The PERA acknowledges that a number of current and historical uses that are potentially contaminative are present on-site or in the surrounding areas, although most of the DCO Site has remained undeveloped throughout the historical period studied, which is from the first edition of the historical Ordnance Survey (OS) maps in late 1800's to 2019. Areas of note include active and former landfills, historical and current mining sites, former sewage works and current waste water treatment works, various industrial and commercial activities, farmlands, active and historical (dismantled) railway lines, and a number of infilled pits and ponds, scattered across the land within the DCO Site, which may have been filled with a variety of (unlicensed) waste materials.

Assessment of Potential Effects

16.4.17 A risk assessment of the identified plausible contaminated linkages has been undertaken for the study area in line with current legislation. The assessment takes into consideration the sources of possible contaminant risks and the presence of any plausible pathways or receptors as outlined in the Environmental Protection Act 1990 (Part 2A) (Ref 16-70). The following contaminant linkages were assessed:

- Hazards to human health: inhalation, ingestion or contact with made ground or groundwater contaminated by metal, inorganic and organic chemicals;
- Hazards to controlled waters: leaching of contaminants from soils, lateral groundwater migration, or discharge to watercourses or made ground or groundwater contaminated by metal, inorganic and organic chemicals;
- Hazards to ecological receptors: impacts from metal, inorganic and organise chemical contaminants within the made ground and groundwater through lateral groundwater migration, discharge to watercourses, sedimentation/dust deposition, physical damage to habitat, and increased human disturbance during construction;
- Hazards to properties: impacts to crops or grazing animals from contaminated soils or contamination of ground gas to any on-site buildings; and
- Impact on mining/mineral sites: loss of resource.

16.4.18 The PERA indicates that the potential contaminant linkages associated with the current use or the Scheme are generally classified as Very low to Moderate in the absence of mitigation/control measures and site specific geo-environmental ground investigation data.

16.4.19 Potential contaminated linkage classified as moderate include lateral migration of potentially contaminated groundwater and potential discharge to surface water on areas classified as Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and National Nature Reserve (NNR).

16.4.20 The site is located within Source Protection Zones (SPZs) designated by the Environment Agency for the protection of potable water supply and licensed abstractions are located on-site. Complete pathways to controlled water may be present but current information suggests a gross source of contamination is unlikely. Potential contaminant linkages to controlled water is assessed as Moderate/low and include leaching of contaminants (if present) from overlying soils to groundwater and lateral groundwater migration and discharge to surface water.

16.4.21 Potential contaminant linkages from contaminated soil to human receptors via inhalation of vapour or contaminated soil dusts (including ACM fibres), ingestion and dermal contact have been classified as between low and very low, as a large scale potentially contaminative source is unlikely and the site comprise mainly agricultural, with limited areas of residential and commercial usage.

16.4.22 Mineral Safeguarding Areas (MSAs) for sand and gravel have been identified on-site. This would suggest a temporary sterilisation of the resource. However, the resource will not be lost permanently.

16.4.23 The identified effects (pre-mitigation) will be the same during construction, operation and decommissioning, assuming that appropriate health and safety practices during construction will be adopted during site clearance, preparation, earthworks, construction and decommissioning and appropriate environmental protection/mitigation measures will be employed.

It is also assumed that the Scheme development will not introduce contaminative substances into the ground.

Mitigation Measures

16.4.24 Intrusive site investigation is proposed by the Applicant at the post-consent stage to provide geo-environmental data to evaluate soil and groundwater quality and verify the conceptual site model. It will also verify the proposed mitigation measures so that unacceptable pollutant linkages do not exist on completion of the Scheme. The geo-environmental investigation will be designed with due consideration of the requirements of BS 10175:2011: +A2 2017: Investigation of Potentially Contaminated Sites – Codes of Practice (BSI). The requirement for an intrusive investigation is expected to be secured through a requirement of the DCO.

16.4.25 Prior to work commencing, a health and safety risk assessment will be carried out in accordance with current health and safety regulations and based on ground investigation findings. This assessment will cover potential risks to both the DCO Site staff and the local population. Based on the findings of this risk assessment, appropriate mitigation measures should be implemented during the course of any temporary works. This could include, for example, the following measures:

- Use of appropriate Personal Protective Equipment (PPE) for construction workers - including gloves and, where appropriate, dust masks, use of ground gas monitoring equipment and hygiene facilities; and
- Use of appropriate site control measures to minimise the migration of contaminated dusts and soils from the Site to adjacent areas.

16.4.26 The following design mitigation measures are anticipated:

- Plant: all plant (i.e. inverters, transformers and switchgear) will be installed on concrete bases with suitable bunding where appropriate;
- Surface water drainage: the detailed operational drainage design will be carried out pre-construction with the objective of ensuring that drainage of the land to the present level is maintained. It will follow either the design of a new drainage system taking into account the proposed new infrastructure (access tracks, cable trenches, structure foundations) to be constructed, or, if during the construction of any of the infrastructure, there is any interruption to existing schemes of land drainage, then new sections of drainage will be constructed. The surface water drainage strategy will be submitted with the DCO application. Infiltration drainage design will be in accordance with BRE 365 and infrastructure will be placed at least 10m away from watercourses;
- Operational Activities: during the operational phase, on-site activity will be minimal and would be restricted principally to vegetation management, equipment maintenance and servicing, replacement of any components that fail, and monitoring to ensure the continued effective operation of the Scheme. It is anticipated that there could be 10 to 20 visits per year with four-wheel drive vehicles or transit vans. There will be no permanent staffing or on-site office.
- A CEMP (Framework CEMP included in ***PEI Report Volume 2: Appendix 16C***) will be provided prior to construction, with the aim of

(amongst other things) reducing nuisance impacts from dust generation, soil removal and waste generation. The CEMP will be secured in the DCO.

16.4.27 Historical boreholes (including former Waterhall public water supply) are noted to exist on the DCO Site; these will need to be identified and decommissioned (if not in use) or protected, in accordance with EA guidance, to remove this potential pathway into the underlying aquifers.

16.4.28 Natural England and the EA will be consulted regarding Fenland SAC, Chippenham Fen SSSI and Snailwell Poor's Fen SSSI which adjoin or partially overlap the Sunnica West Site B prior to any intrusive works. This is because these nature conservation sites are fed by chalk springs, and water levels are controlled by a series of ditches and dykes. They also support a diverse range of aquatic flora and fauna which may be susceptible to local changes in ground and surface flows.

Residual Effects

16.4.29 The PERA has identified that the potential contaminant linkages associated with the current use or the Scheme are generally classified as Very low to Moderate in the absence of mitigation.

16.4.30 Potential contaminated linkage classified as moderate include lateral migration of potentially contaminated groundwater and potential discharge to surface water towards ecological receptors, including Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC) and National Nature Reserve (NNR).

16.4.31 Potential contaminant linkages assessed as Moderate/low include leaching of contaminants (if present) from overlying soils to groundwater and lateral groundwater migration and discharge to surface water.

16.4.32 All the remaining potential contaminant linkages have been classified as between low and very low. These include potential linkages to human health and to properties.

16.4.33 With mitigation, these effects will be minimised further and are not anticipated to be significant.

Cumulative Effects

16.4.34 The shortlisted cumulative schemes located in close proximity to the DCO Site are residential developments, solar farms and battery storage.

16.4.35 Best practice measures described above would be followed throughout the construction, operation and decommissioning phases. It is assumed that the shortlisted cumulative schemes would follow best practice guidelines to minimise the risk of impact. Therefore, no pathway has been identified for cumulative effects for ground conditions.

16.5 Major Accidents and Disasters

Introduction

16.5.1 This section summarises the potential effects of the Scheme on the risks of major accidents or disasters occurring.

16.5.2 'Accidents' are an occurrence resulting from uncontrolled developments in the course of construction, operation and decommissioning (e.g. major emission, fire or explosion).

16.5.3 'Disasters' are naturally occurring extreme weather events or ground related hazard events (e.g. subsidence, landslide, earthquake).

Relevant Legislation, Guidelines and Policy

16.5.4 The EIA Regulations (Ref 16-3) require consideration to be given to the risks of major accidents and disasters.

16.5.5 The Directive and domestic Regulations cite two specific directives as examples of risk assessments to be considered within EIA. These are the Directive 2012/18/EU of the European Parliament and of the European Council (which deals with major accident hazard registered sites) (Ref 16-52) and the Council Directive 2009/71/Euratom (which deals with nuclear sites) (Ref 16-53). Neither of these Directives is relevant to the Scheme.

Consultation Responses

16.5.6 Consultation responses to the EIA Scoping Report are summarised below in Table 16.4.

Table 16.4 Consultations matters and responses for Major Accidents and Disasters

Consultee	*Matter raised*	*Response*
East Cambridgeshire District Council (ECDC)	The table for major accidents and disasters is considered to be acceptable, but it is suggested that sabotage/criminal activity is duly considered; as pre-planned damage to this Scheme could leave it greatly vulnerable to a major accident. This element of the ES might need to be confidential.	AECOM will liaise with the design team to scope out short-listed major accidents or disasters through design. A summary will be presented in this Section.
Planning Inspectorate	The ES should include a description and assessment (where relevant) of the likely significant effects resulting from accidents and disasters applicable to the Proposed Development.	This information is provided in the relevant technical chapter, Chapters 6 to 15.
Planning Inspectorate	Relevant information available and obtained through risk assessments pursuant to European Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met.	This information is provided in the relevant technical chapter, Chapters 6 to 15.
Planning Inspectorate	The Inspectorate does not consider there to be sufficient evidence available at this stage for the Applicant to omit any major accidents or disasters from the scope of assessment and expects all shortlisted accidents and	A summary is presented in this Section and included in ***Chapter 8: Ecology***.

	disasters to be fully considered within the ES. As mentioned in 4.3.6 of this Opinion, the Proposed Development is located within the statutory birdstrike safeguarding zones surrounding RAF Mildenhall and RAF Lakenheath. Therefore, the Inspectorate suggests that the Applicant considers the risk of birdstrike in their assessment of major accidents or disasters.	
Health and Safety Executive	According to HSE's records there is one major accident hazard site and six major accident hazard pipelines within the proposed DCO application boundary of the Sunnica Energy Farm for this Nationally Significant Infrastructure Project.	The design team have taken utility constraints into account when preparing design layouts. Information on how these constraints have been avoided will be included in the ES.
Health and Safety Executive	The presence of hazardous substances on, over or under land at or above set threshold quantities (Controlled Quantities) will probably require Hazardous Substances Consent (HSC) under the Planning (Hazardous Substances) Act 1990 as amended. Further information on HSC should be sought from the relevant Hazardous Substances Authority.	This is a generic comment and not considered to be relevant to this project as no hazardous materials are expected.
Public Health England	Within the EIA PHE would expect to see information about how the promoter would respond to accidents with potential off-site emissions e.g. flooding or fires, spills, leaks or releases off-site. Assessment of accidents should: identify all potential hazards in relation to construction, operation and decommissioning; include an assessment of the risks posed; and identify risk management measures and contingency actions that will be employed in the event of an accident in order to mitigate off-site effects.	Emergency response is covered in the Framework CEMP (***PEI Report Volume 2: Appendix 16C***). Spills and leaks are discussed in the Ground Conditions Preliminary Environmental Risk Assessment (***PEI Report Volume 2: Appendix 16B***)
Public Health England	The EIA should include consideration of the COMAH Regulations (Control of Major Accident Hazards) and the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009: both in terms of their applicability to the installation itself, and the installation's potential to impact on, or be impacted by, any nearby installations themselves subject to the Regulations.	This is a generic comment and not considered to be relevant to this project.

16.5.7 The above responses have been taken into account and considered in the assessment below.

Assessment Methodology

16.5.8 In general, major accidents or disasters, as they relate to the Scheme, fall into three categories:

- Events that could not realistically occur, due to the nature of the Scheme or its location;
- Events that could realistically occur, but for which the Scheme, and associated receptors, are no more vulnerable than any other development; and
- Events that could occur, and to which the Scheme is particularly vulnerable, or which the Scheme has a particular capacity to exacerbate.

16.5.9 An exercise was undertaken to identify all possible major accidents or disasters that could be relevant to the Scheme. This list was drawn from several sources, including the UK Government's Risk Register of Civil Emergencies (Ref 16-61). Major accidents or disasters with little relevance in the UK were not included, such as volcanic eruptions for example.

16.5.10 The long list was screened to form a shortlist of events to be taken forward for further consideration. The shortlist of events and the list of relevant chapters and assessments in which they have been scoped in to are included in Section 14.6 of the EIA Scoping Report and summarised in Table 16.5 below.

Table 16.5. Major accidents or disasters shortlisted for further consideration

Major accident or disaster	*Potential risk and receptor*	*Relevant Chapter or Appendix of the PEI Report*
Floods	Risk of the Scheme flooding and it's potential to exacerbate flooding to property and people in areas of increased flood risk.	***Chapter 9: Flood Risk, Drainage and Water Resources*** ***PEI Report Volume 2: Appendix 9A Flood Risk Assessment***
Fire	Risk of fire to local residents, habitats and species.	This Section of this chapter
Road accidents	Risk posed by spillage of hazardous loads from road traffic accidents during construction / decommissioning on the aquatic environment	***Chapter 9: Flood Risk, Drainage and Water Resources*** ***PEI Report Volume 2: Appendix 16C Framework CEMP***
	Risk from glint and glare to affect road users	***Section 16.3: Glint and Glare*** ***PEI Report Volume 2: Appendix 16A Glint and Glare Assessment***
Rail accidents	Risk of rail accident as a result of the cable route corridor crossing on rail users	This Section of this chapter

Major accident or disaster	*Potential risk and receptor*	*Relevant Chapter or Appendix of the PEI Report*
Aircraft disasters	Risk from glint and glare to affect pilots and aircraft	***Section 16.3 Glint and Glare*** ***PEI Report Volume 2: Appendix 16A Glint and Glare Assessment***
Flood Defence Failure	Risk of increased flooding or flooding to the Scheme and employees	***Chapter 9: Flood Risk, Drainage and Water Resources*** ***PEI Report Volume 2: Appendix 9A Flood Risk Assessment***
Utilities failure (gas, electricity, water, sewage, oil, communications)	Risk of utilities failure to affect employees and local residents	***Section 16.6 Telecommunications, Television Reception and Utilities***
Mining / Extractive Industry	Risk of unstable ground conditions from current or past quarrying activity to affect employees	***Section 16.4 Ground Conditions***
Plant disease	Biosecurity risks from new planting to habitats and species	***Chapter 8: Ecology*** ***PEI Report Volume 2: Appendix 16C Framework CEMP***

16.5.11 Those major accidents and disasters listed in Table 16.5 that are not being considered within another technical assessment (fire and rail accidents) are being reviewed by the design team to ensure risks are addressed through the design as necessary. These events are assessed below.

16.5.12 Two additional events have been raised as relevant during consultation. ECDC has raised the need to consider criminal damage and the Planning Inspectorate has stipulated that the risk of bird strike should be considered at this stage. Therefore, both these events are included in the assessment below.

16.5.13 Where there is potential for interaction between a major accident and disaster, receptor, and the Scheme, these have been shortlisted and a qualitative evaluation is provided below. An effect is considered significant if there is a significantly increased risk of an accident or a disaster occurring as a result of the Scheme. Details on appropriate prevention measures and mitigation for significant effects on the environment from such events are either provided in the sections below or within the referenced topic chapters.

Baseline Conditions

16.5.14 A number of receptors are present in the vicinity of the Scheme which could be vulnerable to major accidents or disasters, either because of their proximity to the Scheme or their importance to the surrounding area. These include:

- Towns, villages, farms and residential homes;
- Commercial sites and buildings;
- Roads;
- Railways;
- Designated ecological sites, woodland, farmland, and waterbodies; and
- Underground infrastructure services including electricity, water, communications, and gas.

16.5.15 Details of the specific receptors that fall into the above categories are provided in ***Chapter 3: Scheme Description***. These receptors have been considered in this assessment.

Assessment of Potential Effects

Construction and Decommissioning Phase

16.5.16 Risks of major accidents and disasters occurring during construction and decommissioning are assessed in the relevant chapters outlined in Table 16.5. All works will be subject to risk assessments as required by the Framework CEMP (***PEI Report Volume 2: Appendix 16C***). Mitigation measures will be listed within the CEMP, which will be secured in the DCO.

Criminal damage

16.5.17 The DCO Site would be managed by the contractor during construction and decommissioning to mitigate the risk of criminal activity. The design will include fencing, CCTV cameras and lighting in critical areas. Therefore, the Scheme is not expected to have an effect on the risk of a major accident occurring as a result of criminal damage during construction and decommissioning. Further measures will be included as embedded mitigation and listed in the CEMP.

Birdstrike

16.5.18 The construction and decommissioning of the Scheme would not have any effect on the numbers and frequency of bird flights overhead. The DCO Site is not located along any migratory corridors for birds, within a valley or headland, or in close proximity to large water bodies which may attract large flocks of birds. This is discussed further in ***Chapter 8: Ecology***. Therefore, the Scheme is not expected to have an effect on the risk of a major accident occurring as a result of birdstrike during construction and decommissioning.

Fire

16.5.19 Health and Safety on-site would be managed by the contractor during construction and decommissioning to mitigate the risk of fire. Therefore, the Scheme is not expected to have an effect on the risk of a major accident occurring as a fire during construction and decommissioning; however, an ‘Outline Battery Fire Safety Management Plan’ will be produced for the Scheme and submitted with the ES. This will be secured through a DCO Requirement..

Rail Accidents

16.5.20 The cable route corridor for Grid Connection Route B crosses the railway line connecting Newmarket to Ely. The construction and decommissioning of the crossing will be managed to the specific requirements of Network Rail and therefore the risk of a rail accident as a result of the crossing will be minimised. Therefore, significant effects on rail accidents are not anticipated.

Operational Phase

Criminal damage

16.5.21 If the DCO Site were to be damaged through pre-planned criminal activity, the risk of a major accident occurring on-site may increase. The design will ensure that the compounds and solar equipment are secure to minimise the potential for damage to occur through criminal activity. Embedded mitigation will include fencing, CCTV cameras and lighting in critical areas. These are described in further detail in ***Chapter 3: Scheme Description***. Furthermore, the Scheme does not process or include large scale chemicals and criminal damage to the infrastructure is unlikely to lead to a large-scale leak, explosion, or other major event. Therefore, the Scheme is not expected to have an effect on the risk of a major accident occurring as a result of criminal activity during operation.

Birdstrike

16.5.22 The Scheme falls within the statutory birdstrike safeguarding zones surrounding RAF Mildenhall and RAF Lakenheath. The DCO Site is not located along any migratory corridors for birds, within a valley or headland, or in close proximity to large water bodies which may attract large flocks of birds. Birds are unlikely to be attracted to the panels. This is discussed further in ***Chapter 8: Ecology***. It is considered highly unlikely that the Scheme would have any effect on the numbers and frequency of bird flights overhead. Therefore, the Scheme is not expected to have an effect on the risk of a major accidents occurring as a result of birdstrike to overhead aircraft.

Fire

16.5.23 There is a potential fire risk associated with certain types of batteries such as lithium ion. The Scheme design includes cooling systems which are designed to regulate temperatures to within safe conditions to minimise the risk of fire.

16.5.24 The battery technologies on which the design is based details the following with regards to fire protection:

- The manufacturer undertakes extensive testing and analysis to assess fire risk;
- Do not install batteries where temperatures routinely approach or exceed 80°C – this is not the case with the Scheme;
- Do not install batteries near heating equipment or heat sources – this is not the case with the Scheme;

- Protect the installation area and equipment from flooding, which may cause electrical fires. The risk of flooding has been assessed as part of the draft Flood Risk Assessment in ***PEI Report Volume 2: Appendix 9A*** and mitigation measures to protect it from flooding have been recommended which will be developed as part of the detailed design; and
- Ensure that installation areas comply with appropriate local fire, electrical and building code requirements, including access to fire trucks in case of emergency. This would be the case with the Scheme.

16.5.25 Fire detection and suppression features will be installed to detect (e.g., multispectral infrared flame detectors) and suppress fire (e.g. water-based suppression systems) to minimise the effect of any fire. Batteries will be installed in single locked steel containers which would contain a fire and reduce the likelihood of fire spreading. The Scheme design will include adequate separation between battery banks to ensure that an isolated fire would not become widespread and lead to a major incident.

16.5.26 With the above embedded mitigation, significant effects on the risk of fire would be unlikely. However, an 'Outline Battery Fire Safety Management Plan' will be produced for the Scheme and submitted with the ES. This will be secured through a DCO Requirement.

Rail accidents

16.5.27 The cable route corridor for Grid Connection Route B crosses the railway line connecting Newmarket to Ely. The crossing will be designed to meet the specific requirements of Network Rail and therefore the risk of a rail accident as a result of the crossing will be minimised. Therefore, significant effects on rail accidents are not anticipated.

Mitigation Measures

16.5.28 Minimising the risk of major accidents during construction and decommissioning will be addressed through appropriate risk assessments as required in the CEMP.

16.5.29 An 'Outline Battery Fire Safety Management Plan' will be produced for the Scheme and will be secured through a DCO Requirement.

Cumulative Effects

16.5.30 The shortlisted cumulative schemes located in close proximity to the DCO Site are residential developments, solar farms and battery storage around Burwell Substation.

16.5.31 Increased traffic during construction and decommissioning phases of the Scheme in combination with other developments could result in a greater risk of road accidents in combination. This is assessed in ***Chapter 13: Transport and Access***.

16.5.32 The solar developments in close proximity to the DCO Site are located around Burwell Substation and adjacent to the Grid Connection Route B. They are not positioned in close proximity to the developable area of the DCO Site. Additionally, with embedded mitigation and additional mitigation listed above to reduce the risk of fire, no significant effects are expected

from the Scheme alone. For these reasons, it is concluded that no significant cumulative effects would arise from the Scheme.

16.6 Telecommunications, Television Reception and Utilities

Introduction

16.6.1 This section evaluates the effects of the Scheme on telecommunication infrastructure, television reception and existing utilities.

Relevant Legislation, Guidelines and Policy

16.6.2 Effects relating to existing infrastructure are not environmental effects and there is no requirement to include an assessment of these effects under the EIA Regulations (Ref 16-3). However, given the nature of solar park developments, they have the potential to affect existing utility infrastructure above and below ground.

Consultation Responses

16.6.3 Consultation responses in relation to telecommunications, television reception and utilities are summarised in Table 16.6.

Table 16.6 Consultations matters and responses for Telecommunications, Television Reception and Utilities

Consultee	*Matter raised*	*Response*
Planning Inspectorate	The Inspectorate notes the Applicant's conclusion that a specific chapter for this matter in the ES is considered unnecessary. The Inspectorate agrees that telecommunications, television reception, and utilities does not have to be a separate chapter of the ES. The Inspectorate is content that any significant effects that arise from affecting telecommunications, television reception, and utilities will be adequately assessed within the appropriate chapter of the ES.	A summary is presented in this section.
East Cambridgeshire District Council	The proposed approach to telecommunications and waste is considered acceptable.	Noted.
ESP Utilities Group Ltd	ESP Utilities Group Ltd are continually laying new gas and electricity networks and this notification is valid for 90 days from the date of this letter. If your proposed works start after this period of time, please re-submit your enquiry.	A check has been undertaken.
National Grid	Guidelines on electricity infrastructure has been provided by National Grid. Ground levels above our cables must not be altered in any way.	The design team have taken utility constraints into account when preparing design layouts.

	Cable and Pipeline Crossings information provided. General notes on pipeline safety provided.	
Cadent gas	We require to carry out an assessment on the whole area of the application to assess if any of our assets will be affected, therefore we require a marked out site plan of the whole proposed area.	The design team have taken utility constraints into account when preparing design layouts.

Assessment Methodology

16.6.4 To identify any existing infrastructure constraints, both consultation and a desk-based study has been undertaken. Consultation with relevant telecommunication and utilities providers is a routine part of solar development.

16.6.5 Consultees include water, gas and electricity utilities providers and telecommunications providers. Telecommunications and television providers are unlikely to be affected by Electromagnetic Interference (EMI) unless transmitters are near electrical infrastructure associated with the solar PV array (Ref 14-30).

16.6.6 A desk-based search has been undertaken for the presence of telecommunications, television reception and utilities infrastructure within the DCO Site and within the vicinity. A qualitative approach undertaken by competent experts is used to assess the likelihood of significant effects on telecommunications, television reception and utilities.

Baseline Conditions

Telecommunications

16.6.7 Two mobile phone masts are present within the DCO Site, one in Sunnica East Site B and the other within Sunnica West Site A.

Television Reception

16.6.8 The area surrounding the Scheme receives television signals that were made exclusively digital after the digital switchover was completed in the Anglian region in 2011.

16.6.9 The area within and surrounding the DCO Site is predominantly served by the Tacolneston transmitter (Norfolk), which is located approximately 48km north-east of the Sunnica East Site B (Ref 16-59). Much of the area surrounding the Sunnica East Site A, Sunnica East Site B, Sunnica West Site A, and Sunnica West Site B is also served by the Sandy Heath transmitter (Central Bedfordshire), approximately 47km south-west of the Sunnica West Site B (Ref 16-60).

16.6.10 The Linnet Valley and Bury St Edmunds repeat transmitters are located approximately 15km south-east of Sunnica West Site A, both of which are part of the Tacolneston transmitter group.

Utilities

16.6.11 Consultation is being undertaken with the following organisations:

- National Grid Electricity Transmission PLC (NGET);
- Environment Agency;
- National Grid Gas PLC (NGG); and
- Cadent Gas Ltd.

16.6.12 On-site utilities could include water, sewers, gas or oil pipelines and electrical cables. Knowledge of the utilities during design and construction allows any effects to be negated by avoiding them or by use of suitable structures, such as pipe bridges.

16.6.13 Through consultation and a desk-based search of existing datasets, the following utilities and infrastructure that have the potential to be affected by the Scheme have been identified:

- High or intermediate pressure (above 2 bar) gas pipelines and associated equipment:
  - Feeder Main 3 – Roudham Heath to Great Wilbraham
  - Feeder Main 3 – Barton Mills to Burwell.
- Low or medium pressure (below 2 bar) gas pipes and associated equipment.
- A pipeline associated with the Lodes-Granta river augmentations scheme crosses Sunnica West A.
- Electricity transmission underground cables and associated equipment.
- Electricity transmission 400kV overhead lines:
  - Burwell Main Walpole 1
  - Burwell Main Walpole 2.
- Burwell Main 400kV Substation.
- Burwell Main 132kV Substation.
- Above ground electricity sites and installations.

Assessment of Potential Effects

Telecommunications

16.6.14 The Scheme is unlikely to interfere with telecommunications infrastructure and therefore no effects are anticipated in the construction, operation and decommissioning phases.

Television Reception

16.6.15 The Scheme consists of fixed low-lying infrastructure and is therefore unlikely to interfere with digital television signals and therefore no effects are anticipated in the construction, operation and decommissioning phases.

Utilities

16.6.16 The potential exists for utilities to be affected during the construction of the Scheme through damage caused as a result of excavation and engineering

operations. Without any precautionary measures to avoid damage to utilities, this could lead to a short-term adverse effect.

16.6.17 Precautionary measures will be included as part of the embedded mitigation for the Scheme, including: locating the Scheme outside of utilities protected zones; the use of ground penetrating radar before excavation to identify any unknown utilities; and consultation and agreement of construction/ demobilisation methods prior to works commencing. These measures, along with those listed within the CEMP, would reduce the likelihood of effects on utilities during construction. Therefore, no adverse effects are expected during construction.

16.6.18 The decommissioning phase would require below ground works to remove the grid connection cables; however, works would be undertaken within the footprint excavated during construction. Additionally, the embedded mitigation measures used during construction would also apply during decommissioning. Therefore, no adverse effects are predicted during decommissioning.

16.6.19 No effects on utilities are predicted as a result of the operational phase of the Scheme because no below-ground works will be required during operation.

Mitigation Measures

16.6.20 The risk of damage to utilities during construction would be minimised through embedded mitigation, which would involve those measures listed above and mapping infrastructure that crosses the Scheme and avoiding it through the design. No further mitigation would be required.

Cumulative Effects

16.6.21 The Scheme has been assessed to have no effect on telecommunication, television or utilities. It is expected that the other solar developments included within the cumulative schemes shortlist would also have no effect on telecommunications and television reception and would adhere to the same mitigation as set out above to reduce the risk of damaging utilities. All developments will need to be managed through a CEMP and would include mitigation measures to reduce the risk of damaging utilities during construction. Therefore, no cumulative effects are expected on telecommunications, television reception, or utilities.

16.7 Waste

Introduction

16.7.1 This section discusses the expected waste streams during each phase of the Scheme. The legal definition of waste is "*any substance or object which the producer discards or intends or is required to discard*".

16.7.2 The legal definition of waste also covers substances or objects, which fall outside of the commercial cycle or out of the chain of utility. In particular, most items that are sold or taken off site for recycling are wastes, as they require treatment before they can be resold or reused.

16.7.3 In practical terms, wastes include surplus spoil, scrap, recovered spills, unwanted surplus materials, packaging, office waste, wastewater, broken, worn-out, contaminated or otherwise spoiled plant, equipment and materials.

Relevant Legislation, Guidelines and Policy

16.7.4 The Waste Framework Directive 2008/98/EC (Ref 16-66) provides a framework for the management of waste across the European community. The revised Directive (2018) (Ref 16-67) introduces new provisions in order to boost waste prevention and recycling as part of the Waste Hierarchy. All Member States are required to adopt this approach. The main principles of the Waste Hierarchy are summarised in Plate 16-3.

16.7.5 The Waste (England and Wales) Regulations 2011 (as amended) (Ref 16-68) transpose the Waste Framework Directive 2008/98/EC in England and Wales and require waste prevention programmes and waste management plans that apply the Waste Hierarchy.

16.7.6 The Waste Hierarchy will be adopted throughout the construction, operation and decommissioning phases of the Scheme.

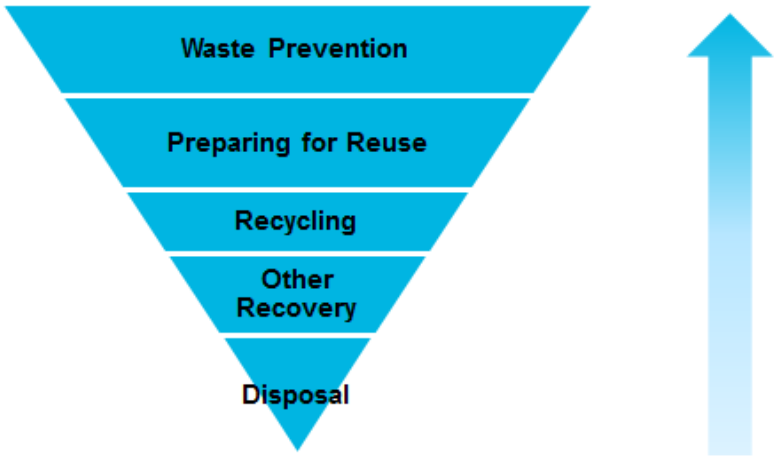

Plate 16-3 The Waste Hierarchy

16.7.7 The requirement originally under Section 34 of the Environmental Protection Act 1990 (Ref 16-70) and in the Waste (England and Wales) Regulations 2011 (Amended 2014) places a duty on producers and holders of waste to:

- Prevent illegal disposal, treatment or storage of waste;
- Handle their waste safely;
- Know whether the waste is hazardous or non-hazardous;
- Store waste securely in a manner that prevents release of the waste;
- Provide an accurate written description of the waste in order to facilitate the compliance of others with the Duty and avoidance of the offences under Section 33 of the Environmental Protection Act 1990: via a compulsory system of Controlled Waste Transfer Notes (WTNs) which controls the transfer of waste between parties; and

- Ensure anyone dealing with their waste has the necessary authorisation.

16.7.8 The Hazardous Waste Regulations (England and Wales) 2005 (amended in 2016) (Ref 16-71) places a requirement on producer of the waste to:

- Classify the waste;
- Separate hazardous waste from other general waste streams;
- Use authorised businesses to collect, recycle or dispose of your waste; and
- Complete relevant hazardous waste consignment note.

16.7.9 Under the Control of Pollution (Amendment) Act 1989 (Ref 16-72), it is a criminal offence for anyone not registered as a carrier, to transport Controlled Waste..

16.7.10 Once appointed, details of the waste carriers and contractors will be included in the Construction Resource Management Plan (CRMP) including copies of appropriate licences. Waste carrier licences will be reviewed prior to works commencing.

16.7.11 From January 2014, anyone undertaking the following activities as part of their business must register as a waste carrier, broker or dealer to:

- Transport their own waste;
- Transport or dispose of waste for someone else;
- Buy or sell waste; or
- Act as a waste broker (arrange for someone to handle other people's waste).

Consultation Responses

16.7.12 Consultation responses to the EIA Scoping Report are summarised below in Table 16.7.

Table 16.7 Consultations matters and responses for Waste

Consultee	*Matters raised*	*Response*
The Planning Inspectorate	The Inspectorate agrees that waste does not need to be a separate chapter of the ES and that the description of the potential streams of construction waste and estimated volumes can be included in the ES description of the Scheme development chapter. However, an assessment of the likely significant effects that may arise from waste should also be included within the ES. In addition, the ES should describe any measures implemented to minimise waste and state whether the Waste Hierarchy will be utilised. The CEMP should include as much detail as possible on on-site waste management, recycling opportunities, and off-site disposal. If off-site disposal is required, an assessment of likely significant	Information on waste management is presented in the CEMP and summarised in this section.

	effects including intra-cumulative effects should be included within the ES.	
Public Health England	The EIA should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal). For waste arising from the installation, the EIA should consider: • the implications and wider environmental and public health impacts of different waste disposal options; and • disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated.	Information on waste management is presented in the CEMP and summarised in this section.

Assessment Methodology

16.7.13 Waste streams and quantities have been estimated using industry standards, based on activities, material requirements and staff requirements during the construction, operation, and decommissioning phases.

Baseline Conditions

16.7.14 The waste carriers and landfill sites used will be determined by the contractor pre-construction. Two Authorised Landfill Sites are located adjacent to the site, to the east of the A11. These are Kennett Hall Farm and Kennett Phase 2 A.

Assessment of Potential Effects

16.7.15 Given the nature of the Scheme, significant quantities of waste are not anticipated. Expected waste streams during the construction, operation and decommissioning phases are discussed below.

16.7.16 A CRMP and a CEMP will be prepared for the construction and decommissioning phases. These will include measures to control and manage waste on-site. These will be secured through a DCO Requirement.

Construction Phase

16.7.17 The majority of construction equipment will be delivered to site for assembly and installation (mounting structures) and connection (solar panels).

16.7.18 The types of waste streams and vehicles associated with the removal of waste material during construction is summarised in Table 16.8 below.

Table 16.8 Waste arisings during construction

Waste	*Destination*
Metals (iron and steel)	Recycling or recovery of metals and metal components
Mixed construction / demolition wastes that do not contain hazardous substances	Recycling plant / Landfill for Construction and Demolition Waste
Cables that do not contain hydrocarbons, coal tar or other hazardous substances	Recycling plant
Plastic	Recycling plant
Paper and cardboard containers	Recycling plant
Wood	Recycling plant
Absorbents, cleaning cloths	Authorised recycling plant or authorised landfill for hazardous waste
Aerosol sprays	Authorised recycling plant or authorised landfill for hazardous waste
Land and stones containing hazardous substances	Authorised recycling plant or authorised landfill for hazardous waste
Empty containers of contaminated metal or plastics	Authorised recycling plant or authorised landfill for hazardous waste
Used oils	Authorised recycling plant or authorised landfill for hazardous waste
Oil filters	Authorised recycling plant or authorised landfill for hazardous waste

16.7.19 All waste transported off site will be delivered to the appropriately licenced receivers of such materials. Operators receiving any waste materials resulting from the Scheme will be subject to their own consenting procedures.

16.7.20 Prior to construction, opportunities to minimise waste produced through the construction phase as far as possible will be explored. Possibilities to re-use or recycle materials will be explored before resorting to landfill options.

16.7.21 Re-usable waste includes soil excavated for trenches, roads, compound areas and foundations. These will be re-used on-site where possible.

16.7.22 Toxic and / or hazardous waste must be treated by an authorised operator. Transportation of hazardous waste will also require an authorised carrier. Materials are to be dealt with in accordance with the CEMP which will be secured through a DCO Requirement, and a CRMP will be produced. With these in place and the appropriate control measures followed, no effects are anticipated.

Operational Phase

16.7.23 During the operational phase of the Scheme there will be up to five permanent staff, although given the scale of the Scheme maintenance personnel would be expected to be present on-site most days. Waste arisings are expected to minimal, and would include:

- Welfare facility waste;
- Equipment needing replacing;
- Waste metals; and
- General waste (paper, cardboard, wood, etc.).

16.7.24 During the operational phase of the Scheme, waste arisings are expected to be minimal and are not anticipated to result in a significant impact if disposed of appropriately.

Decommissioning Phase

16.7.25 It is expected that waste streams during decommissioning could include:

- Solar panels and mounts;
- Waste materials from foundations;
- Electrical equipment;
- Batteries;
- Cables;
- Welfare facility waste;
- Waste chemicals, fuels and oils;
- Waste metals;
- Waste water from dewatering of excavations; and
- Waste water from cleaning activities (e.g. wheelwash).

16.7.26 The estimated types and volumes of waste during decommissioning is discussed in ***Chapter 3: Scheme Description*** and summarised in Table 16.9 below.

Table 16.9 Estimated waste arisings during decommissioning.

Waste	*Management*	*Destination*
BESS Equipment	Approximately 17,550m^3, 585 containers	Authorised recycling or landfill
Electrical works	Approximately 10,380m^3, 346 containers	Authorised recycling or landfill
Solar PV Equipment	Approximately 12,060m^3, 402 containers	Authorised recycling or landfill
Modules	Approximately 110,400m^3, 3,680 containers	Authorised recycling or landfill

Waste	Management	Destination
Steel	Approximately 44,850m^3, 1,495 containers	Authorised recycling or landfill
Plastic	Approximately 3,105m^3, 104 containers	Authorised recycling or landfill

16.7.27 All waste transported off site will be delivered to the appropriately licenced receivers of such materials. Operators receiving any waste materials resulting from the Scheme will be subject to their own consenting procedures. It is worth noting that it is not possible to forecast the capacity of the landfill sites for decommissioning at this stage due to potential change in waste generation and operators at that time.

16.7.28 Prior to decommissioning, opportunities to minimise waste as far as possible will be explored. Possibilities to re-use or recycle materials will be explored before resorting to landfill options. There is a new industry emerging for recycling solar panels. This would be explored, in addition to any resale of any operational panels. Waste during the decommissioning phase will be dealt with as part of a decommissioning CRMP which will be prepared as part of the Decommissioning Environmental Management Plan (see ***Chapter 3: Scheme Description***) and in line with relevant legislation and guidance at that time. Therefore, it is not anticipated to result in a significant effect.

Mitigation Measures

16.7.29 As part of the embedded mitigation, a CRMP will be agreed as part of the CEMP, secured through a DCO Requirement, prior to the commencement of construction and decommissioning phases.

16.7.30 Waste arisings will be prevented and designed out where possible. Opportunities to re-use material resources will be sought where practicable. Where re-use and prevention are not possible, waste arisings will be managed in line with the Waste Hierarchy.

Cumulative Effects

16.7.31 If the construction or decommissioning phases of the Scheme align with the construction phase of another significant scheme within the local area, there may be some cumulative effects associated with waste.

16.7.32 There are a number of potential schemes that, depending on construction dates, may have cumulative effects with the Scheme. These include a number of new residential developments within the local area, two other solar schemes, and two new battery storage facilities.

16.7.33 Cumulative volumes of waste may put pressure on the capacity of local recycling plants or landfill sites. This would be managed through the SWMP and consultation with waste providers, therefore effects from cumulative volumes are not expected to be significant.

16.7.34 Additionally, cumulative effects may occur from increased HGVs transporting waste to recycling plants and landfill. This is assessed in ***Chapter 13: Transport and Access***.

16.8 References

Ref 16-1 Department of Energy & Climate Change, (2011); Overarching National Policy Statement for Energy (EN-1). Available online at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf

Ref 16-2 Department of Energy & Climate Change, (2011); National Policy Statement for Electricity Networks. Available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47858/1942-national-policy-statement-electricity-networks.pdf

Ref 16-3 Infrastructure (EN-5) Her Majesty's Stationery Office (HMSO), (1990); Part IIA of the Environment Protection Act 1990.

Ref 16-4 HMSO, (1991); The Water Resources Act 1991.

Ref 16-5 HMSO, (2009); The Water Resources Act 1991 (Amendment) (England and Wales) Regulations 2009.

Ref 16-6 HMSO, (2003); The Water Act 2003.

Ref 16-7 HMSO, (1984); The Building Act 1984.

Ref 16-8 HMSO, (2015); The Building Regulations & c (Amendment) Regulations 2015.

Ref 16-9 HMSO, (1990); Town and Country Planning Act 1990.

Ref 16-10 HMSO, (1995); The Environment Act 1995.

Ref 16-11 HMSO, (2016); Environmental Permitting (England and Wales) Regulations 2016.

Ref 16-12 The Hazardous Waste (England and Wales) (Amendment) Regulations 2016.

Ref 16-13 The Contaminated Land (England) (Amendment) Regulations 2012.

Ref 16-14 HMSO, (2015); Environmental Damage (Prevention and Remediation) Regulations 2015.

Ref 16-15 HMSO, (1999); The Anti-Pollution Works Regulations 1999.

Ref 16-16 Ministry of Housing, Communities and Local Government (MCHLG), (2019); National Planning Policy Framework (NPPF). Available online at: www.gov.uk/government/publications/national-planning-policy-framework--2.

Ref 16-17 Forest Heath Borough Council, (2010); Forest Heath Local Development Framework. Core Strategy Development Plan Document 2001-2026 (with housing projected to 2031) Adopted May 2010. Available online at: https://www.westsuffolk.gov.uk/planning/Planning_Policies/local_plans/upload/2-Question-9-Core-Strategy-2010-with-quashed-elements-struckthrough.pdf

Ref 16-18 St Edmundsbury Borough Council, (2010); St Edmundsbury Core Strategy. Available online at: https://www.westsuffolk.gov.uk/planning/Planning_Policies/local_plans/

upload/Core-Strategy-December-2010.pdf

Ref 16-19 East Cambridgeshire District Council, (2015); Local Plan. Available online at: https://www.eastcambs.gov.uk/sites/default/files/Local%20Plan%20April%202015%20-%20front%20cover%20and%20inside%20front%20cover_0.pdf

Ref 16-20 Environment Agency, (2009); Updated technical Background to the CLEA model; Science Report: SC050021/SR3 (Contaminated land exposure assessment (CLEA) spreadsheet based tool).

Ref 16-21 Environment Agency, (2006); Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination Environment Agency.

Ref 16-22 Environment Agency, (2009); Human Health Toxicological Assessment of Contaminants in Soil, Science Report SC050021/SR2.

Ref 16-23 Environment Agency, (2004); Model Procedures for the Management of Contaminated Land: Contaminated Land Report 11.

Ref 16-24 Environment Agency, (2010); Guiding Principles for Land Contamination (GPLC 1, 2 and 3).

Ref 16-25 Construction Industry Research and Information Association (CIRIA), (2001); CIRIA Guidance C532. Control of water pollution from construction sites. Guidance for consultants and contractors.

Ref 16-26 The Chartered Institute of Environmental Health (CIEH) Local Authority Handbooks (various publication dates, 2006 - 2009).

Ref 16-27 British Standard (BS) 8485:2015; Code of Practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings.

Ref 16-28 CIRIA, (2007); CIRIA Guidance C665. Assessing risks posed by hazardous ground gases to buildings.

Ref 16-29 European Commission, “The Clean Air for Europe (CAFE) Programme: Towards a Thematic Strategy for Air Quality,” 4 May 2001. Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52001DC0245

Ref 16-30 Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:02008L0050-20150918

Ref 16-31 European Council, “Council Directive 96/62/EC of 27 September 1996 on ambient air quality assessment and management,” 1996. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31996L0062

Ref 16-32 European Council, “Council Directive 1999/30/EC of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air,” 1999. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31999L0030

Ref 16-33 European Parliament, “Directive 2000/69/EC of the European Parliament and of the Council of 16 November 2000 relating to limit values for benzene and carbon monoxide in ambient air,” 2000. Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32000L0069v

Ref 16-34 European Parliament, “Directive 2002/3/EC of the European Parliament and of the Council of 12 February 2002 relating to ozone in ambient air,” 2002. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32002L0003

Ref 16-35 European Council, “97/101/EC: Council Decision of 27 January 1997 establishing a reciprocal exchange of information and data from networks and individual stations measuring ambient air pollution within the Member States,” 1997. Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31997D0101

Ref 16-36 H.M. Government, “The Air Quality Standards Regulations 2010,” 2010. Available at: http://www.legislation.gov.uk/uksi/2010/1001/contents/made

Ref 16-37 H.M. Government, “The Air Quality Standards (Amendment) Regulations 2016,” 2016. Available at: https://www.legislation.gov.uk/uksi/2016/1184/contents/made

Ref 16-38 Department for Communities and Local Government (DCLG) (2019). The National Planning Policy Framework. DCLG. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdfv

Ref 16-39 Ministry of Housing, Communities & Local Government (2014). Planning Practice Guidance. Available at: https://www.gov.uk/government/collections/planning-practice-guidance

Ref 16-40 H.M. Government (2010). The Conservation of Habitats and Species Regulations 2010. Available at: http://www.legislation.gov.uk/uksi/2010/490/contents/made

Ref 16-41 East of England Regional Assembly (2010). East of England Plan >2031 Draft revision to the Regional Spatial Strategy for the East of England

Ref 16-42 East Cambridgeshire District Council (2015). East Cambridgeshire Local Plan.

Ref 16-43 West Suffolk Council (2020). West Suffolk Local Plan (consisting of the former Forest Heath and St Edmundsbury areas). Available at: https://www.westsuffolk.gov.uk/planning/Planning_Policies/local_plans/west-suffolk-local-plan-former-forest-heath-and-st-edmundsbury-areas.cfm

Ref 16-44 Former Forest Heath District Council, (2010). Forest Heath Local Development Framework – Core Strategy Development Plan Document 2001-2026 (with housing projected to 2031) Adopted May 2020. Available at: https://www.westsuffolk.gov.uk/planning/Planning_Policies/local_plans/upload/2-Question-9-Core-Strategy-2010-with-quashed-elements-struckthrough.pdf

Ref 16-45 Former St Edmundsbury Borough Council, (2010). Local Development Framework: St Edmundsbury Core Strategy – December 2010. Available at: https://www.westsuffolk.gov.uk/planning/Planning_Policies/local_plans/upload/Core-Strategy-December-2010.pdf

Ref 16-46 Environmental Protection UK (EPUK) and Institute of Air Quality Management (IAQM) (2017), Land-use planning & development control: Planning for Air Quality

Ref 16-47 IAQM (2014). Guidance on the assessment of dust from demolition and construction. Institute of Air Quality Management.

Ref 16-48 Defra, "Local Air Quality Management Technical Guidance (TG16)," February 2018. Available: https://laqm.defra.gov.uk/documents/LAQM-TG16-February-18-v1.pdf

Ref 16-49 Guidance on Signal Positioning and Visibility (2003) Railway Group Guidance Note.

Ref 16-50 Her Majesty's Stationary Office (HMSO) (2011) The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (as amended by The Town and Country Planning and Infrastructure Planning (Environmental Impact Assessment) (Amendment) Regulations 2018). Available at: http://www.legislation.gov.uk/uksi/2017/572/pdfs/uksi_20170572_en.pdf and http://www.legislation.gov.uk/uksi/2018/695/pdfs/uksi_20180695_en.pdf

Ref 16-51 Official Journal of the European Union (OJEU) (2014) Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32014L0052&from=EN

Ref 16-52 OJEU (2012) Directive 2012/18/EU of the European Parliament and of the Council of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32012L0018&from=en

Ref 16-53 OJEU (2009) Council Directive 2009/71/EURATOM of 25 June 2009 establishing a Community framework for the nuclear safety of nuclear installations. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32009L0071&from=EN

Ref 16-54 Pager Power (2014) News: Electrical Compatibility: solar farms and wireless transmissions, Available online: https://www.pagerpower.com/news/solar-farms-electromagnetic-interference-emi/

Ref 16-55 British Standard 10175:2011+A2:2017 'Investigation of Potentially Contaminated Sites – Code of Practice'

Ref 16-56 Contaminated Land Report (CLR) 11 'Model Procedures for the Management of Land Contamination' (2004) CLR11 and updated

guidance Land Contamination: Risk Management (LCRM, 2020)

Ref 16-57 DEFRA (Department for Environment, Food, and Rural Affairs): Environmental Protection Act 1990: Part 2A Contaminated Land Statutory Guidance (April 2012); and

Ref 16-58 Environment Agency (EA), February 2018. The Environment Agency's approach to groundwater protection. Version 1.2

Ref 16-59 Full Freeview on the Tacolneston (Norfolk, England) transmitter. Available online: https://ukfree.tv/transmitters/tv/Tacolneston

Ref 16-60 Full Freeview on the Sandy Heath (Central Bedfordshire, England) transmitter. Available online: https://ukfree.tv/transmitters/tv/Sandy_Heath

Ref 16-61 Cabinet Office (2017) National Risk Register Of Civil Emergencies. Available at: https://www.gov.uk/government/publications/national-risk-register-of-civil-emergencies-2017-edition

Ref 16-62 HMSO (1974) Health and Safety at Work Act 1974. Available at: https://www.legislation.gov.uk/ukpga/1974/37

Ref 16-63 HMSO (1999) The Management of Health and Safety at Work Regulations 1999. Available at: http://www.legislation.gov.uk/uksi/1999/3242/contents/made

Ref 16-64 HMSO (1992) The Workplace (Health, Safety and Welfare) Regulations 1992. Available at: http://www.legislation.gov.uk/uksi/1992/3004/contents/made

Ref 16-65 HMSO (2015) The Construction (Design and Management) Regulations 2015. Available at: http://www.legislation.gov.uk/uksi/2015/51/contents/made

Ref 16-66 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on Waste and repealing certain Directives (Waste Framework Directive). Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN

Ref 16-67 Directive 2018/851/EC of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste (Waste Framework Directive). Available: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L0851&rid=5

Ref 16-68 HMSO (2011) The Waste (England and Wales) Regulations 2011. Available http://www.legislation.gov.uk/ukdsi/2011/9780111506462/contents (as amended by The Waste (England and Wales) (Amendment) Regulations 2014. Available: http://www.legislation.gov.uk/uksi/2014/656/contents/made2014)

Ref 16-69 Department for Communities and Local Government (2015) What are the particular planning considerations that relate to large scale ground-mounted solar photovoltaic farms? Available: https://www.gov.uk/guidance/renewable-and-low-carbon-energy

Ref 16-70 HMSO (1990) Environmental Protection Act 1990. Available: https://www.legislation.gov.uk/ukpga/1990/43/contents

Ref 16-71 HMSO (2016) The Hazardous Waste (England and Wales) (Amendment) Regulations 2016. Available at: https://www.legislation.gov.uk/uksi/2016/336/pdfs/uksi_20160336_en.pdf

Ref 16-72 HMSO (1989) Control of Pollution (Amendment) Act 1989. Available at: https://www.legislation.gov.uk/ukpga/1989/14/contents

Ref 16-73 Renewable and low carbon energy, Ministry f Housing, Communities and Local Government. Available at http://planningguidance.planningportal.gov.uk/blog/guidance/renewable-and-low-carbon-energy/ [Accessed 03/09/2020]