

Objections submitted in response to East Pye Solar PINS

Reference: EN0110014

Statutory Consultation

Submitted by BEPS

(BEPS is a community action group comprising of residents from the 16 villages affected by the East Pye Solar proposals. It has over 600 members and over 900 followers)



View from the edge of Spring Wood across site 3b to the artist's house in Lundy Green.

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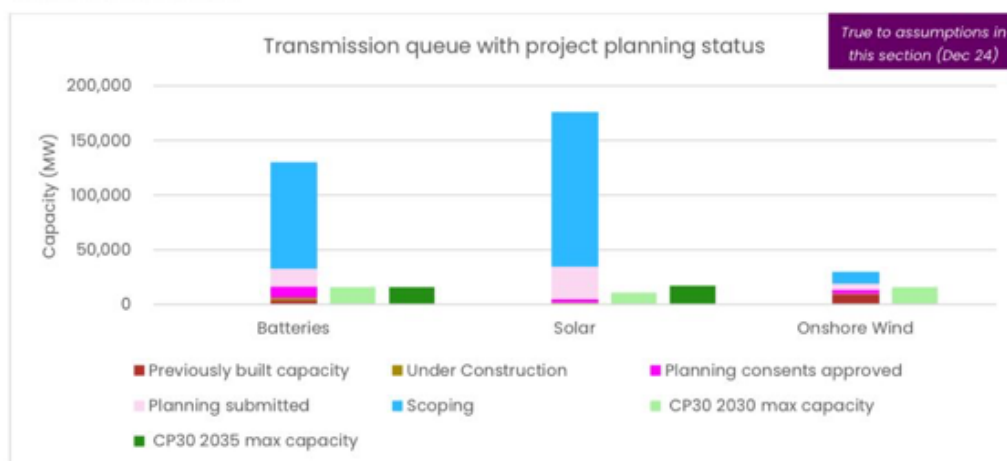
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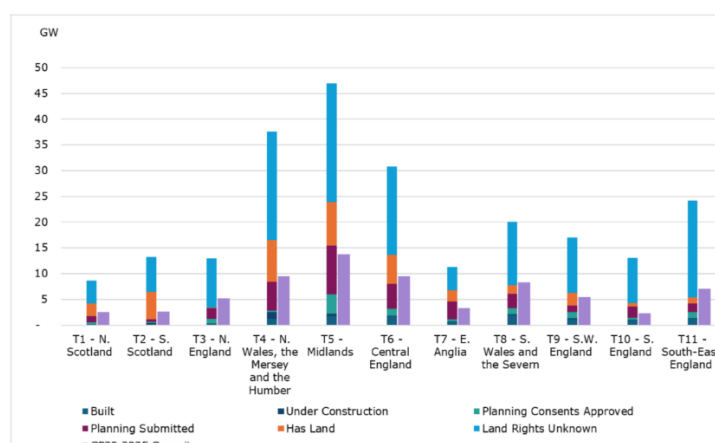
Objection: East Pye Solar is not required for Clean Power 2030 or 2035

There is no need for the East Pye Solar project. It is in excess of the CP2030 Action Plan 2030 and 2035 original and revised targets for East Anglia for both BESS and solar. The Target for BESS for the East of England is only 200MW for 2030 and for 2035 – there are already sufficient BESS projects consented or in planning to fulfill that capacity, and already enough built, under construction or approved to meet the UK’s 2030 and 2035 targets.



(Source: NESO Connections Reform Data Impact Assessment, December 2024)

Figure 25 Comparison of the combined distribution and transmission queue of solar projects in each transmission zone to CP2030 Action Plan 2035 permitted capacities (GW)



(Source: OFGEM TM04+ Impact Assessment, April 2025)

There are more than enough transmission solar projects in East Anglia that are either built, under construction or already in planning (as of April 2025) to meet both the government’s regional targets for 2030 as well as those for 2035. Given the oversupply

of transmission solar projects across all regions, and the excess projects that already have development consent in other regions, there is no requirement for the East Pye Solar project at all. This project cannot be regarded as specifically required to respond to a 'critical national priority'. A 'no development' scenario should be considered.

The harm this project will do our landscape, heritage, farmland, wildlife and communities far outweighs any benefits it might have. This project is not required in South Norfolk for Clean Power 2030 or 2035. It is not required for the whole of East Anglia or indeed the UK.

We know that Island Green Power sent a letter to Ed Miliband MP in December 2024 'to up the targets to ensure that their projects would get gate 2 connections' during the period when the connections queue reordering process was underway (FOI Request Question EIR2025/07620 to DESNZ). However, NESO allocates grid connections according to its 'ready and needed' criteria in relation to regional targets, therefore East Pye Solar should not be given a gate 2 grid connection according to the above April 2025 analysis by Ofgem.

Specific Issues: Grid Reliability and Curtailment Risks

There is no evidence in the PEIR that the applicant has assessed whether the grid in this part of East Anglia can accommodate the additional excess intermittent generation without leading to significant curtailment, where solar output is "constrained off" and generators are paid not to supply power. This is especially relevant given known constraint issues in the local grid and the oversupply of consented solar capacity regionally. Without a credible grid capacity and curtailment risk assessment, the claimed carbon and energy benefits of the scheme may be overstated.

Objection: the PEIR is inadequate under reg 12(2)(b) of the Infrastructure Planning (EIA) Regs 2017

it is therefore impossible for stakeholders to consult on it.

The overwhelming message from the Inspectorate to East Pye Solar's EIA Scoping document in January 2025 was that almost every aspect of the project required significantly more work.

This has not been addressed in the s.42 Statutory Consultation documents supplied. Of the subjects that were scoped in and those that the Planning Inspectorate advised must be scoped back in, all remain either partial (requires more work/evidence) or are entirely missing (must be brought back into scope and fully assessed).

The PEIR has **closed just three of the headline gaps** that the Planning Inspectorate highlighted: socio-economics, construction-traffic, air-quality methodology, and mapping of access/haul routes – and it has fleshed-out (but not yet fully assessed) the PV mounting-frame issue. This is not to say that the evidence provided is acceptable, just that it is present.

All other shortfalls are **still outstanding** and must be rectified: finish the water-environment/FRA work (including the Private Water Supply baseline and impact studies, produce the Major-Accident & Battery-Safety chapter, run the EMF, waste, minerals, lighting and ground-conditions studies, Fire Statement and the BNG metric, complete the ecology survey add-ons, extend the ALC survey and firm-up the cumulative-scheme list and impacts.

Category	Aspect	Status in PEIR	Planning Inspectorate's Key Comments
Project Description & Methodology	Installation of PV mounting frames	Partial	ES must assess final method or worst case
	Battery Energy Storage System (BESS)	Partial	More detail on physical/technical characteristics needed
	Underground cables	Partial	Route, dimensions, installation works to be described
	Access points	Partial	Location of all access points must be indicated
	Horizontal Directional Drilling (HDD)	Partial	Provide design parameters; assess groundwater interaction
	Mitigation vs Enhancement	Partial	Clear differentiation required
	Temporary construction compounds	Partial	Number, location and size needed
	Operation (maintenance)	Partial	Scope/duration of maintenance works to be described

Category	Aspect	Status in PEIR	Planning Inspectorate's Key Comments
	Decommissioning	Partial	Describe activities, duration, restoration
	Design flexibility (Rochdale Envelope)	Partial	Justify maximum design parameters
	Professional judgement	Partial	Identify and justify where relied upon
	Alternatives	partial	Provide full details of alternatives considered
Environmental Aspects	Construction road-traffic air-quality emissions	Missing	Traffic emissions assessment required
	De-commissioning air-quality effects	Missing	Assessment of dust & traffic emissions required
Water Environment	Water resources	Missing	Cannot be scoped out; assess impacts
	Water Framework Directive assessment	Missing	WFD screening/assessment required
	Private water supplies	Missing	Identify and assess impacts on private supplies
Major Accidents & Disasters	Unexploded Ordnance (UXO)	Partial	Further surveys/mitigation required
EMF	EMF (cables/overhead lines)	Missing	Cannot be scoped out; assess risks
Utilities	Telecoms/TV/Utilities	Missing	Receptors & mitigation must be assessed
Lighting	Lighting assessment	Partial	Impacts to be covered in other chapters. No mention of High Pressure Gas Main

Minerals	Assessment of minerals sterilisation	Missing	Must be assessed; not agreed to scope out
Waste & Materials	Waste & materials (all phases)	Missing	Full assessment of arisings required
Socio-Economics	Socio-economics	Partial	Stand-alone assessment required
Human Health	Human-health coverage	Partial	Include clear cross-references
Arboriculture	Arboricultural surveys	Partial	Surveys must inform ES, not left to detailed design
Ground Conditions	Ground-conditions assessment	Missing	Stand-alone chapter required
Landscape & Visual	Impacts on certain Conservation Areas	Missing	Cannot be scoped out; assess
	Visual impacts beyond 2 km	Missing	Assess where ZTV shows visibility
	Night-time views / lighting	Missing	Provide assessment; insufficient info to scope out
Ecology & Biodiversity	Designated sites (SACs/SSSIs)	Missing	Insufficient info; must be assessed
	Breeding birds in Cable Route Corridor	Missing	Construction impacts must be assessed
	Water vole & otter	Missing	Either assess or survey to confirm absence
	Invasive species	Missing	Assess risk of spread/ introduction
	EMF impacts on fish	Missing	Assess or show cable depth avoids effect
	Aquatic invertebrates	Missing	Must be scoped in

	White-clawed crayfish	Missing	Surveys/assessment required
	Endangered Species - Bats, GCN, Lapwing, Turtle Doves, Skylarks	Partial	Surveys/assessment required
Cultural Heritage	Indirect de-commissioning impacts	Missing	Must be assessed
Noise & Vibration	Vibration from traffic (all phases)	Missing	Evidence required; cannot be scoped out
	De-commissioning noise	Missing	Assessment required; details insufficient
Climate Change	GHG emissions at de-commissioning	Missing	Assessment cannot be scoped out
	Cumulative climate-change effects	Missing	ES must consider cumulative schemes
Soils & Agricultural Land	Effect on farm businesses	Missing	Cannot be scoped out
	Agricultural Land Classification survey extent	Partial	Survey must cover whole site & cable corridor
Cumulative Effects	List of cumulative schemes	Partial	Applicant to agree list with authorities. Missing all local NSIPs
BESS	Power capacity of BESS, duration of energy storage and battery types	Missing	Must be provided or it is impossible to assess impact

Key aspects that the Planning Inspectorate (PINS) required to be scoped into the Environmental Statement (ES) are either missing or inadequately addressed in the PEIR

Missing or Incomplete Inclusions from PINS Scoping Opinion:

1. Lighting Impacts on Ecological Receptors

- **Issue:** PINS instructed inclusion of lighting impact on **bats, designated sites, and priority habitats**.
- **PEIR Status:** PEIR commits to a future lighting strategy but currently lacks a detailed lighting plan or ecological impact assessment.
- **Implication:** Insufficient to demonstrate compliance with **BS42020:2013** and **NPPF para 180(d)**.

3. Invasive Non-Native Species (INNS)

- **Issue:** PINS required assessment of the spread risk of INNS, including **Japanese Knotweed** already present.
- **PEIR Status:** Acknowledged in principle, but **no current assessment or mitigation framework** appears in the PEIR; not listed in the Table of Commitments.
- **Implication:** Failure to meet **Wildlife and Countryside Act 1981, Section 14**.

4. White-Clawed Crayfish Surveys

- **Issue:** Required where watercourse crossings are proposed (e.g. **Hempnall Beck**).
- **PEIR Status:** No survey data is provided; surveys promised only for the ES.
- **Implication:** Gaps in the **species-level risk assessment** under the Habitats Regulations.

5. Fish EMF and Thermal Pollution Impacts

- **Issue:** PINS asked for assessment of **EMF impacts and thermal pollution** from 400kV cable near Hempnall Beck.
- **PEIR Status:** Promises future assessment, but **no technical modelling or burial-depth detail is currently provided**.

- **Implication:** Lack of evidence to support "no significant effect" claim.

6. Noise & Vibration Effects on Ecology

- **Issue:** Cross-reference between **Noise and Ecology** chapters requested.
- **PEIR Status:** Currently fragmented; cross-referencing is not adequately developed, and ecological receptor sensitivity is not evaluated alongside PEIR Chapter 12.

7. Airstrip Safety / Glint and Glare

- **Issue:** Norfolk County Council requested assessment of effects on **local airstrips and aviation safety**.
- **PEIR Status:** Claimed to be included in Chapter 18 ("Other Environmental Matters"), but no glint/glare modelling or aviation stakeholder engagement shown in the PEIR documents.

8. Cultural Heritage: Conservation Areas

- **Issue:** Required detailed impact assessment on **nearby Conservation Areas (CAs)**.
- **PEIR Status:** Chapter 7 (Landscape and Visual) refers to Chapter 9 (Cultural Heritage), but **Cultural Heritage chapter is silent on setting impacts on CAs**.
- **Implication:** Contradicts PINS Scoping Opinion and NPPF §206–208.

9. Tranquillity and Night-time Lighting (Landscape & Visual)

- **Issue:** Required assessment of tranquillity as per CPRE and night-sky protection.
- **PEIR Status:** Deferred to ES; no night-time lighting strategy or visual tranquillity baseline in PEIR.

Adequately Addressed (but only partially or as placeholders)

- Socio-Economic impacts (employment, tourism, PRow): **Scoped in and discussed** but some aspects—like tourism dependency on landscape quality—are not fully evidenced.
- Breeding Birds (CRC works): Acknowledged as in-scope but **specific survey data is not yet included**.
- Otter & Water Vole: Surveys promised for ES, but again **no data yet provided**.

Regulation 12(2) of the EIA Regulations states that the purpose of the PEIR is to provide sufficient information that ‘is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)’

Due to this missing and incomplete evidence, it is not possible for stakeholders to consult meaningfully on the proposal during this Statutory Consultation. Infrastructure Planning (EIA) Regulations 2017 (reg 12 and Sch 5) require ‘sufficient preliminary information’ at the s.42 stage, including a draft Conceptual Site Model.

We therefore consider the PEIR inadequate under reg 12(2)(b) of the Infrastructure Planning (EIA) Regs 2017.

We request that all missing and incomplete baseline surveys and impact studies are supplied and re-consulted upon. Should these deficiencies persist, we reserve the right to escalate to the Planning Inspectorate and pursue legal remedies.

Issues of particular concern:

1. Planning & Agricultural-land policy

- Best and Most Versatile (BMV) land is not justified – the applicant’s own ALC survey records c. 40 % Grade 2 and 40 % Grade 3a soils within the survey plots, i.e. BMV farmland . NPPF §180 (c) requires compelling evidence that “no poorer-quality land is available” and that benefits “clearly outweigh” loss of BMV; none is provided although there are clearly more suitable non-BMV and industrial areas for development within the 400KV corridor. Norfolk Minerals & Waste Local Plan (May 2025) Policy MW2 expects the same demonstration across the County ([norfolk.gov.uk](https://www.norfolk.gov.uk)).
- Sequential test for previously-developed sites is absent – NPPF §158 and EN-3 (2025 draft NPS) §2.48 emphasise first using rooftops, car-parks etc. The PEIR contains no site-selection matrix evidencing why 50 ha of open countryside near multiple villages, listed buildings and ecologically sensitive sites is essential. (assets.publishing.service.gov.uk)

2. Landscape / Visual / Glint & Glare

- Significant residual adverse LVIA effects already admitted on four Landscape Character Areas and six Public Rights of Way, even before mitigation, yet no mitigation has been fixed and Year-15 photomontages are omitted.

- No glint & glare assessment – “glint” is only defined in the glossary; there is no modelling of potential reflection toward nearby residences, A-roads or aviation receptors. Civil Aviation Authority CAP 764 advises such studies are essential around airfields; absence is a fatal flaw.
- Failure to apply South Norfolk DM 4.5 landscape-character policy – the LVIA never tests the scheme against DM 4.5 criteria (local distinctiveness, skyline intrusion etc.) (southnorfolkandbroadland.gov.uk).

3. Historic environment

- Archaeology left to “future trenching” – Chapter 10 promises evaluation “prior to ES submission” but none has been done, breaching NPPF §214 and Policy DM 4.10. A DCO cannot be examined without a completed Written Scheme of Investigation.
- Setting impacts on listed churches under-assessed – visualisations stop at 1 km; impacts to Grade II Listed Building are only assessed if within 100m of the site (due to their PREVALENCE!); several Grade I medieval church towers and other Grade II* medieval towers lie within 2 km and are visually elevated above the valley – this has not been taken into consideration.

4. Ecology & protected species

- Surveys incomplete and extend into 2025 – bat activity, GCN eDNA, breeding-bird mapping and water vole surveys all “to be finished July–September 2025” . Determination is unlawful until full season-appropriate data exist (Habitats Regs 2017 Reg 9 & 63; WCA 1981 § 9). GCN surveys are yet to be carried out and residents only contacted about initial surveys end June 2025, when these surveys should have been done between March and May.
- Barbastelle roosts within 30 m of site boundary (EPS species, licence history) yet operational lighting strategy is still outline only.
- Stone-curlew record 2 km north – SPA trigger species; no displacement modelling provided.
- The whole area is a protection or strategic zone for Great Crested Newts, other of the specific fields are in the Countryside Stewardship Scheme for the protection of lapwing, skylarks and turtle doves, yet no turtle dove survey has been done.
- Biodiversity-Net-Gain metric is completely missing – applicant defers to the ES, contrary to Environment Act 2021 s.99 duty (even for NSIPs) and BS 8683 good-practice guidance.

5. Public safety & amenity

- Recreational routes severed/ degraded – Chapter 11 identifies “non-motorised user fear & intimidation” on several lanes yet relies on an un-drafted CTMP to solve the problem .
- Noise from inverters/BESS undefined – Chapter 12 calculates background levels but provides no octave-band sound-power data for the actual plant, breaching BS 4142 methodology .

6. Transport & access

- HGV routing over weight-limited lanes – Long Stratton and Hempnall Beck crossings are already subject to 7.5 t restrictions and accident records, yet swept-path drawings and Stage-1 Road-Safety Audit are “to follow”. NCC Design Manual and LTN 1/20 cycling guidance therefore not demonstrably met.
- Peak construction flows trigger “severance” and “fear & intimidation” impacts on three links (Table 11.19) but the mitigation is merely ‘update CTMP later’ .

7. Flood-risk & drainage

- No standalone Flood-Risk Assessment is provided; Chapter 5 only notes trenchless crossings. NPPF Annex 3 classifies solar farms as “essential infrastructure” in Flood Zone 2/3, requiring the sequential AND exception tests – both absent. Norfolk LLFA “Guidance for Developers” (Feb 2025) requires greenfield runoff control and soil-compaction mitigation, neither of which are detailed.

8. Fire-safety deficiencies

- PV array fire risks are totally omitted – neither Chapter 5 nor any technical appendix references BS EN 62446-1/-2 (testing & maintenance for PV fire safety); the only fire scenario considered is a hypothetical BESS event, which is then *scoped out* as “extremely low probability”. NFCC national guidance expects a Fire Statement and demonstration of appliance access/ water supply – currently absent. Anglia Water has already stated this development will not be permitted to use its water.

9. Construction & decommissioning

- Soil-protection strategy is missing – there is no Construction Soil Management Plan to prevent irreversible compaction on BMV soils, breaching the Environmental Permitting Regs 2016 Schedule 3 duty to protect soil-health.
- End-of-life restoration is vague – cables may be left in situ (8 km route) “to avoid disturbance” , yet this conflicts with local plan policies seeking full reinstatement of agricultural use. There is no analysis of the implications for soil health of leaving the infrastructure in the ground.

10. Procedural / consent route issues

- The applicant relies on a future DCO but still claims some works may fall under Permitted-Development rights (e.g. minor access upgrades). PD cannot be exercised within a DCO red-line once submitted (Town & Country Planning Act 1990 s.57)

Main Legal and Procedural Objections

1. Failure to Provide a Lawful Environmental Statement (ES-equivalent) under the EIA Regulations 2017

- The PEIR omits key assessments, including:
 - Private water supplies,
 - Full ecological species surveys,
 - Proper landscape character assessments (e.g. South Norfolk Claylands),
 - Mental well-being impacts,
 - Cumulative effects on heritage and landscape.

Breach: *EIA Regs 2017, Schedule 4(2), (4), (5), and (7)* — failure to provide a full account of likely significant effects.

2. Non-Compliance with Section 42 and Regulation 12 of the Planning Act 2008

- Statutory consultation has **not provided adequate information** to allow consultees to understand:
 - Full environmental effects,
 - Visual and heritage harm,
 - Impact on health and well-being,
 - Groundwater contamination risk.

Breach: *Planning Act 2008, s42 and EIA Regs 12(3)* — invalid consultation.

3. Failure to Assess or Protect Statutorily Protected Heritage Assets

- The assessment **fails to apply the legal test under s.66(1)** of the Planning (Listed Buildings and Conservation Areas) Act 1990.

- There is no proper setting analysis for **Grade I listed churches or conservation areas**.

Breach: s.66(1) of the 1990 Act, NPPF para 208, and EN-1 para 5.8.15.

4. Inadequate Water Framework Directive (WFD) Assessment

- The WFD screening is limited and incomplete and does not address potential deterioration to sensitive receptors (eg. ditch or River Tas crossings).

Breach: *Water Environment (WFD) Regs 2017, EN-1 para 5.15.6.*

5. No Identification or Protection of Source Protection Zones or Private Water Supplies

- Fails to identify or assess proximity to **SPZ1/2 or registered private drinking water supplies**.

Breach: *Private Water Supplies Regs 2016, EIA Regs Schedule 4(5), and EA Groundwater Protection Policy.*

Main Planning Policy Objections

1. Conflict with NPS EN-1 on Landscape and Visual Impacts

- The PEIR **fails to assess or mitigate harm to the South Norfolk Claylands** and its rural character.
- No meaningful cumulative assessment or design-led mitigation has been offered.

Breach: *EN-1 paras 5.9.5–5.9.14, GLVIA3, and NPPF para 180.*

2. Heritage Policy Non-Compliance

- No proper setting assessments, mitigation or grading of harm to:
 - Grade I and II* listed buildings,
 - Conservation areas,
 - Historic farmsteads,

- Pre-modern fieldscapes.

Breach: *EN-1 paras 5.8.11–5.8.20, NPPF paras 203–210.*

3. No Assessment of “Sense of Place” or Mental Well-being Impacts

- Omits discussion of the community’s **relationship to the historic landscape** and the effect of its transformation on **mental health and cultural identity**.

Breach: *EN-1 para 4.2.1, NPPF para 92(c), EIA Regs (people as receptors).*

4. Ecology and Biodiversity Assessment Deficient

- Incomplete species surveys and missing mitigation strategies for all birds of conservation concern and endangered species listed at the sites on NBIS, including but not limited to:
 - Turtle doves,
 - Lapwings,
 - Skylarks,
 - Great crested newts (surveys not started in time)
 - Bats and invertebrates.

Breach: *EN-1 para 5.3, NPPF paras 179–181, EIA Regs Schedule 4(5) & (7).*

5. Cumulative Impacts Not Assessed

- Across landscape, heritage, ecology, water, and health, the PEIR fails to consider:
 - Combined effect of this and other developments,
 - Infrastructure creep (e.g. roads, cables, BESS, substations).

Breach: *EIA Regs 14(2)(e), EN-1 paras 4.2.1 and 5.8.5.*

Summary: Why These Are Material Objections

Category	Key Legal Breach	Planning Conflict
Incomplete assessment	EIA Regs 2017	NPS EN-1, NPPF
Invalid consultation	Planning Act 2008, Reg 12	PPS/Gov't Consultation Guidance
Heritage harm	LBCA Act 1990 s.66(1)	NPPF 208; EN-1 5.8
Water and health risks	WFD Regs; PWS Regs 2016	EN-1 5.15
Mental health & community	EIA Regs (people), Planning Act	NPPF 92(c), 130
Biodiversity gaps	EIA Regs Sch. 4, Habitats Regs	NPPF 179–181

In addition to these failings, the people East Pye Solar sent to the Statutory Consultation Events were incapable of answering many of the community's detailed questions about the scheme.

Detailed Response to Chapters

Chapter 1 Introduction

This chapter provides the legal framework, NSIP context and details of the project's promoter Island Green Power/Macquarie. Given Macquarie's previous ownership of Thames Water, the £20 million fine received by Thames Water for environmental breaches, and the numerous times Macquarie has been fined for fraud globally, we do not consider Maquarie a suitable company to which to entrust the land, heritage and wildlife around our homes and villages.

This chapter lacks a clear summary of the proposed project's scale in relation to regional planning needs, and how it relates to the Clean Power 2030 Action Plan regional targets.

There is no early statement of the project's location-specific constraints, such as its proximity to chalk streams or protected heritage, therefore lacking early candour about known environmental sensitivities.

Chapter 2 Environmental Impact Assessment Methodology

This chapter is deficient in that:

- It does not properly integrate, track or cross-reference specific requests from PINS and statutory consultees made at the EIA Scoping stage. This has meant in practice that most of those specific requests have been omitted or only partially supplied.
- There is no summary of *uncertainties, limitations* , or **deferrals** – contrary to EIA Regulation 18(3)(d).
- It fails to outline how **cumulative effects** are scoped and handled across disciplines.

In conclusion, this chapter is legally inadequate as it does not enable consultees to verify whether the EIA scope matches regulatory expectations.

Chapter 3 Site and Surroundings

Although this chapter provides very basic geographical context and baseline mapping, it has serious failings which make it inadequate under schedule 4 of the EIA Regs, which require a full description of the environment likely to be affected.

- No mention of ecologically highly sensitive chalk stream River Tas and its tributaries, Source and Drinking Water Protection Zones, private drinking water supplies, or groundwater vulnerability.
- No mention of ecological protection areas, such as protection and strategic zones for Great Crested Newts, fields within the scheme that have been in schemes specifically for the protection of red list Birds of Conservation Concern such as lapwing, skylarks and turtle doves.
- No mapping of existing infrastructure, especially the high pressure gas main, which crosses four of the solar field sites and areas of the proposed cable corridors. The project's proximity to the main London to Norwich rail line and local substations is also missing.
- It omits cultural landscape descriptors, which are especially relevant to the South Norfolk Claylands. The treatment is generic and does not convey the cultural and historical sensitivity and value of the area's medieval field systems, sunken lanes and nationally significant collection of pre-1750s farmsteads.
- This chapter and the PEIR in general does not explore how the visual or sensory characteristics of the landscape contribute to residents' sense of place or identity.
- There is no cumulative assessment of how this and nearby solar schemes would industrialise the Claylands character area. NCA 83 guidance from Natural England specifically warns against the expansion of large-scale infrastructure in these landscapes due to their low visual absorption capacity and historic openness.

- This chapter and the PEIR in general fails to demonstrate how the scheme would align with landscape management objectives for this area.
- This chapter and the PEIR in general does not properly assess the sensitivity of the landscape, the irreversibility of proposed changes or how the project aligns with national character objectives.

This chapter represents a breach of EIA Regulations (2017)

Under **Schedule 4** of the EIA Regulations, the PEIR must provide:

- A **description of the environment** likely to be significantly affected,
- A thorough **assessment of landscape and visual effects**, including **cumulative and in-combination impacts**,
- Information sufficient to enable **meaningful public and statutory consultation**.

While the PEIR mentions that the site lies within the South Norfolk and High Suffolk Claylands (NCA 83), it **fails to analyse**:

- The historic, cultural, and visual sensitivity of this landscape,
- How this industrial-scale development would **fundamentally alter the character and openness** of the area,
- The **residents' relationship with the landscape** — key for assessing well-being and sense of place.

2. Non-compliance with NPS EN-1 & EN-3

- **NPS EN-1 (National Policy Statement for Energy, §5.9.8–5.9.9)** requires applicants to assess the character of the landscape and **the capacity of the landscape to accommodate change**.
- **NPS EN-1 §5.9.12** requires particular attention to **national character areas** and their condition, sensitivity, and strategic significance.
- **NPS EN-3** specifically warns of the potential **industrialising effect** of solar PV schemes on open rural landscapes.

This chapter and the PEIR generally lacks any strategic appraisal of whether the **South Norfolk Claylands has the capacity to absorb this project** without permanent and unacceptable harm.

3. Local Plan and Landscape Strategy Conflict

- South Norfolk Council's landscape character assessments treat this area as **sensitive, historic, and lacking capacity for major built development**.

- This chapter and the PEIR in general, makes **no effort to reconcile the proposal with local landscape policies**, nor does it assess how permanent infrastructure (e.g. substations, BESS, cables) might **erode core landscape features**.

4. No Mitigation Strategy at Landscape Scale

- The PEIR **defers meaningful landscape mitigation** until the ES stage.
- It proposes **screening only at field edges**, failing to address the **cumulative horizon-wide visual impacts** from the network of infrastructure.

The PEIR's treatment of the **South Norfolk Claylands** is **legally and procedurally inadequate** at the statutory consultation stage. It does not comply with:

- The **EIA Regulations 2017** (Schedule 4),
- **NPS EN-1** obligations to assess and protect valued landscapes,
- **Local planning policy**, which recognises the sensitivity of the Claylands,
- Or the **NSIP consultation duty** to provide clear, adequate environmental information for affected communities.

There are **serious and valid questions that are unanswered about whether East Pye is an appropriate location for a solar NSIP of this scale**, and many of these concerns are **directly supported by national planning policy, legislation, and case law**. Based on what the PEIR reveals — and more importantly, what it omits — the project's location raises significant **legal and planning objections** under the **National Planning Policy Framework (NPPF)**, **National Policy Statement EN-1**, and the **EIA Regulations 2017**.

1. Conflict with National Planning Policy and Guidance

NPPF (2023) Paragraph 155

“When identifying suitable areas for renewable energy, local planning authorities should ensure that projects are located where **impacts on the local environment can be appropriately minimised**.”

The **East Pye Solar** site lies in an area of high environmental sensitivity, including:

- **Historic field patterns and a nationally significant and extensive collection of Listed pre-1750s rural architecture,**
- **Designated and non-designated heritage assets,**
- **Sensitive hydrology (chalk streams, groundwater protection zones),**
- **Locally valued landscapes (South Norfolk Claylands),**

- Important and endangered **bird species and farmland biodiversity**.

The PEIR **fails to adequately minimise these impacts**, and in many cases **does not assess them at all**— contrary to this NPPF principle.

2. Incompatible with Landscape and Cultural Character (EN-1 §5.9 & §5.8)

- **National Policy Statement EN-1**, which governs energy NSIPs, states:

“Applicants should consider how the project’s visual and landscape effects can be **minimised** and **whether the project is an appropriate type and scale for the area.**”

- The East Pye project would introduce:
 - An industrial-scale development into a **visually open, historic rural setting**,
 - Significant **intrusion into the setting of listed buildings and ancient field systems**,
 - An unmitigated **loss of rural character** and tranquillity — especially through its substations, BESS, and HGV activity.

There is a **fundamental mismatch between the development and the character of this landscape**. The PEIR does not justify the siting of such infrastructure in this context.

3. Unsuitable for Farmland Biodiversity and Protected Species

- The area is known to support **turtle doves, lapwings, skylarks, and great crested newts** — species protected under UK law (Wildlife & Countryside Act 1981, Habitats Regulations 2017).
- The **ecological mitigation proposed is vague, incomplete, and inadequately evidenced**.

The presence of these species, and the farmland mosaic they depend on, should have led the developer to **consider alternative locations** where **species sensitivity is lower**.

4. Inappropriate Given Infrastructure and Workforce Constraints

The site has:

- **Inadequate road infrastructure** (single-track lanes with no capacity for HGVs),

- **No access to public transport for construction workers,**
- **No nearby workforce with relevant skills,** and insufficient temporary housing for those imported.

This makes the site **functionally unsuited to an NSIP-scale construction operation**. The PEIR provides **no solutions or mitigation**.

5. Failure to Meet Legal Standards on Site Selection

Under the **EIA Regulations 2017, Schedule 4**, the applicant must provide:

“A description of the reasonable alternatives studied... and an indication of the main reasons for the choice made, taking into account the environmental effects.”

The PEIR **does not provide any site selection narrative**, alternatives appraisal, or justification for why this site — with so many constraints — was chosen.

This is a **procedural legal failure**, as the Planning Inspectorate expects a **clear rationale for siting decisions**, particularly where sensitive receptors are involved.

6. Absence of Policy Support in the Local Plan

While NSIPs are determined nationally, **local policy still informs acceptability**. South Norfolk’s Local Plan and the Joint Core Strategy do not identify the proposed site for East Pye or surrounding villages as suitable for **major industrial-scale energy infrastructure**. There is also no evidence of **community support** under:

- **NPPF para 158(b)**, which states that large-scale solar should only proceed on greenfield land if:
- “The proposal’s impacts are clearly outweighed by the benefits.”

In this case, the PEIR fails to demonstrate **either clear local benefit** or overriding need that justifies the harm.

The choice of this site is inappropriate because it:

- **Conflicts with national planning policies** on landscape, biodiversity, and rural character,
- **Lack of infrastructure capacity**, workforce, or housing to support the build,
- **Failure to consider alternatives**, in breach of the EIA Regulations,
- **Absence of local plan support** or community benefit justification.

Chapter 4 Reasonable Alternatives and Design Evolution

The PEIR does not adequately explore alternative grid connection points or the potential to locate the scheme in areas with less environmental constraint and lower cumulative impact. There is no evidence that the applicant considered alternative regions of the UK where National Grid data show fewer bottlenecks, spare capacity or more available brownfield and industrial land. The omission of a credible alternatives analysis, particularly in light of regional grid constraints and national energy infrastructure planning, is contrary to EIA Regulations and weakens the case for siting the project in this sensitive landscape. The fact that the developer is proposing multiple similar schemes across the UK suggests that there are many other alternative locations to this one.

This chapter is legally and procedurally deficient under the EIA Regulations 2017, the Planning Act 2008, and relevant National Policy Statements (NPS). Below is a detailed analysis of where it falls short and why this matters:

1. Failure to Provide a Lawful Consideration of Reasonable Alternatives

Under the EIA Regulations 2017, Schedule 4, Paragraph 2, developers must provide:

“A description of the reasonable alternatives studied... and an indication of the main reasons for the option chosen, taking into account the environmental effects.”

Deficiency:

Chapter 5 of the PEIR offers only superficial commentary on high-level options (e.g. general site size and technology types) and dismisses alternatives without comparative environmental analysis. It does not:

- Compare different potential locations for the project,
- Consider brownfield or previously developed land,
- Assess smaller-scale or more compact layouts with reduced environmental harm,
- Address offsite or grid-connection alternatives that could avoid trenching and habitat fragmentation.

This makes the PEIR non-compliant with EIA law, as it fails to show that less harmful options were seriously considered.

2. Non-Compliance with National Policy Statements (NPS EN-1 & EN-3)

- NPS EN-1 §4.4.2 requires developers to demonstrate how alternatives were examined, and that the chosen option offers the best environmental outcome.
- NPS EN-3 (Solar Section) expects developers to demonstrate that their chosen location minimises impact on agriculture, landscape, and heritage.

Deficiency:

Chapter 5 contains no structured assessment or scoring matrix comparing different sites or layouts. There is no mapping or justification for why this landscape — with its:

- Best and Most Versatile (BMV) soils,
- Proximity to designated heritage assets and chalk streams,
- Historic rural landscape character,
- Closeness to residential communities —

was considered suitable. The PEIR makes no effort to explain why this level of landscape and community harm is justified.

3. Absence of Consideration for Cumulative Avoidance

- Chapter 5 does not assess how selecting this site contributes to regional cumulative impact, even though multiple large-scale schemes are in planning nearby (e.g. Tasway Energy Park, EcoPower Yaxley, The Drovers, High Grove Solar).
- It fails to consider spatial separation strategies to prevent regional industrialisation of rural character areas like the South Norfolk Claylands.

This violates the cumulative planning principles set out in:

- NPS EN-1 §4.2.5, which requires “cumulative and in-combination assessment of projects”, and
- PINS Advice Note 17.

4. No adequate Assessment of “Do-Nothing” or Reduced-Scale Alternatives

- There is no serious “do-nothing” scenario assessed (which is required under Reg. 14 of the EIA Regs), even though this project is demonstrably in excess of DESNZ and NESO Clean Power Action Plan 2030 regional targets for both BESS and Solar for 2030 as well as 2035.
- No evidence is offered for why a smaller, less invasive design was dismissed, despite the harm acknowledged in other PEIR chapters. Or indeed a project in

another region, such as Northern England, where the DESNZ/NESO targets have not yet been met.

This omission prevents consultees from understanding the true necessity and proportionality of the proposed development.

5. Consultation and Transparency Failure

- Under Section 47 of the Planning Act 2008, statutory consultation must allow communities to engage with the environmental reasoning behind the project.
- Without proper analysis of alternatives, consultees cannot determine whether:
 - The chosen site and design were justified,
 - Other locations might have caused less community, ecological, and landscape harm,
 - The proposal represents a reasonable balance of benefits and harm.

Chapter 5 therefore fails to meet legal and planning obligations by omitting a structured, evidence-based comparison of reasonable alternatives. It neither complies with the EIA Regulations nor with NPS EN-1 and EN-3. As such, it:

- Undermines the legality of the PEIR at statutory consultation stage,
- Fails to support a rational or transparent site selection process,
- Prevents communities and statutory consultees from engaging meaningfully with the planning process.

Chapter 5 Scheme Description

Although this chapter includes basic description of solar arrays, substations, battery storage and underground cabling, it is missing several critical components that are required under the EIA Regulations and planning best practice:

1. Full Construction Footprint

- While the chapter includes a general layout and description of infrastructure, it does not quantify:
 - Total area of construction compound(s),
 - Extent of temporary access roads or spoil storage,

- Detailed location and impacts of underground cabling routes,
- Working width or buffer zones around construction corridors.

This is a breach of EIA Regs Schedule 4(1)(a) which requires “a description of the location and design of the development”.

2. Trenching and Ground Disturbance

- The chapter does not provide estimates or maps of:
 - The length or volume of trenching required for underground cabling,
 - The area of topsoil stripping, nor any description of soil handling or storage practices,
 - Depth or type of piling or mounting system.

This prevents proper assessment of impacts on:

- Soils and hydrology,
- Archaeology,
- Root zones of trees and hedgerows,
- Water quality and flood risk.

3. Decommissioning Impacts

- The PEIR mentions that the solar farm is temporary (40 years), but provides no strategy for:
 - Decommissioning methods,
 - Infrastructure removal,
 - Soil and vegetation restoration,
 - Ongoing monitoring post-decommissioning.

This violates Schedule 4(2) of the EIA Regs, which requires description of “the use of natural resources... during the construction and operational phases, and... the post-use phase”.

4. Operational Details

- No adequate assessment is provided for:
 - Operational water usage or source,
 - Site lighting and visual effects during operation,
 - Lifespan and replacement schedule of components (e.g. solar panels, inverters, batteries).

These are essential for understanding long-term disturbance to residents and ecology.

5. Incomplete Description of Associated Development

- The following are either not shown clearly on plans or only vaguely referenced:
 - Battery Energy Storage System (BESS) size, composition, containment,
 - Emergency access plans,
 - Firefighting water storage (if any),
 - New substations or extension of National Grid infrastructure.

This makes it difficult to assess safety, risk, and visual impacts.

Chapter 4 is procedurally and substantively deficient. It fails to meet core requirements of the EIA Regulations 2017 Schedule 4, and it does not allow for a proper assessment of:

- **Ground and soil impacts,**
- **Construction and operational emissions or hazards,**
- **Permanent infrastructure,**
- **Land recovery post-use.**

All of these elements should be present at the statutory consultation stage of an NSIP under both legal requirements and planning best practice. These omissions justify formal objection and may render the submission non-compliant at Section 55 validation.

Chapter 6 Climate Change

This chapter is inadequate.

1. It presents an incomplete assessment of Climate Vulnerability and Resilience. It fails to assess in detail how these risks may affect key infrastructure elements, such as:

- PV panel stability in extreme winds,
- Flooding of substations, inverters, or cable routes,
- Heat-related degradation of panel performance or fire risk.

The report refers to **UKCP18 projections**, but **does not provide a quantified or site-specific vulnerability assessment**.

Legal Risk: Under **Schedule 4, Paragraph 4 of the EIA Regulations 2017**, the developer must assess “the expected significant effects of the development on the environment resulting from the vulnerability of the development to climate change.” This is not met with the level of analysis provided.

2. Carbon Balance Assessment is Incomplete and Lacks Transparency

- The report asserts that the project will reduce emissions due to the generation of low-carbon electricity, but:
- Does **not quantify the full lifecycle carbon emissions** of the scheme, including:
 - **Embodied carbon** in the panels, inverters, cabling, and fencing,
 - Emissions from **land use change**, especially if grassland or cultivated soils are being disturbed,
 - **Carbon costs of construction logistics** (HGV movements, materials sourcing).

Legal Risk: Incomplete carbon accounting may conflict with:

- **EN-1 Paragraph 5.5.5**, which requires the Secretary of State to “consider the carbon emissions impacts of the proposed development.”
- **EIA Regs Schedule 4(5)**, which requires assessment of “greenhouse gas emissions of the project.”

3. No Adequate Assessment of Soil Carbon Loss

- Chapter 6 does not integrate with **Chapter 15 (Soils and Agriculture)** to estimate **carbon loss from soil disturbance**, which can be significant on BMV land or organic soils.
- This is a **well-established issue** in EIA for solar farms, particularly when grassland or arable soils are converted or disturbed.

This omission could understate **net emissions** and undermine the claimed carbon savings.

4. No Carbon Payback Period Analysis

- There is **no estimate of the carbon payback period**—i.e., how long it will take for the emissions saved by renewable energy generation to outweigh the emissions from construction, materials, and land change.
- Many well-conducted NSIP assessments include this metric to demonstrate **long-term climate benefit**.

Without a carbon payback analysis, the carbon benefit claim lacks **quantitative substantiation**, which may be challenged as **non-compliant with EIA good practice**.

5. Weak Cumulative Impact Assessment

- Section 6.10 claims cumulative effects on climate are “unlikely to be significant” but provides **no data or scenario modelling** to justify this.
- It does not:
 - Model **grid-level emissions displacement**,
 - Assess regional **infrastructure emissions**, or
 - Consider how the project interacts with **other nearby NSIPs** in terms of resilience or grid capacity.

Legal Risk: Under **Regulation 14(2)(e)**, cumulative effects must be assessed “with other existing and/or approved projects.”

6. No Adaptation or Mitigation Commitments

- The report refers to a future **Environmental Management Framework**, but:
 - Makes **no firm or secured commitments** to climate adaptation measures,
 - Does not specify how adaptation strategies will be incorporated into the **DCO** or enforceable planning conditions.

This lack of commitment may breach the **precautionary approach required under EN-1 and Planning Act 2008 Section 104**, which mandates that mitigation be secured where feasible.

Summary of Legal and Policy Conflicts

Issue	Legal/Policy Reference	Compliance Status
Assessment of climate risks	EIA Regs Sch. 4(4)	Incomplete

Issue	Legal/Policy Reference	Compliance Status
GHG emissions assessment	EIA Regs Sch. 4(5), EN-1 para 5.5	Partial
Lifecycle/embodied carbon	Net Zero Strategy alignment	Omitted
Soil carbon emissions	EIA best practice	Omitted
Carbon payback period	EIA precedent	Omitted
Cumulative climate effects	EIA Regs Reg. 14(2)(e)	Unsupported
Secured mitigation/adaptation	EN-1; Planning Act 2008	Weak/Deferred

Recommendation

To comply with planning law and EIA requirements, the applicant should be required to:

1. **Provide a full lifecycle GHG assessment**, including embodied carbon and land-use emissions.
2. **Undertake a carbon payback period analysis.**
3. **Quantify climate resilience risks** and propose **secured adaptation measures.**
4. **Integrate soil carbon loss with agricultural impact assessments.**
5. **Improve cumulative assessment with scenario-based modelling.**
6. **Clarify how mitigation will be secured through the DCO.**

These elements are also missing from Chapter 6 Climate Change:

1. Lifecycle Greenhouse Gas (GHG) Emissions Assessment

Only operational emissions reductions are discussed (i.e. avoided emissions from renewable electricity generation).

The chapter **fails to quantify or even qualitatively assess:**

- **Embodied carbon** in solar panels, inverters, racking, cabling, fencing, substations, etc.
 - Emissions from **construction activities** (site clearance, transport, materials).
 - **End-of-life decommissioning impacts.**

Missing Requirement: Schedule 4, para 5 of the EIA Regs 2017 – requires assessment of “greenhouse gas emissions of the project.”

2. Carbon Payback Period

- The PEIR does **not calculate** how long the project will take to “**pay back**” its **carbon debt** from construction and materials.
- This metric is standard in many NSIP and major renewables EIAs, as it:
 - Tests the credibility of the scheme’s climate benefit,
 - Assists with policy alignment (e.g. net zero by 2050), and
 - Helps regulators balance emissions against land use change.

Missing Requirement: While not explicitly mandated by law, it is a **normative expectation** for low-carbon infrastructure proposals.

3. Quantification of Land Use Change Emissions

The chapter does not assess:

- **Loss of soil organic carbon** through excavation or sealing,
- **Emissions from BMV agricultural land** conversion,
- Potential impact on local **carbon sequestration capacity**.

This is increasingly important as **agricultural land is a major carbon sink**. Defra and the CCC have flagged this as critical in Net Zero land use strategy.

4. Climate Resilience Assessment (Adaptation)

The chapter refers to UKCP18 projections, but does **not systematically assess**:

- How increasing flood, wind, heat, or drought risks will affect:
 - PV modules and infrastructure durability,
 - Panel efficiency under thermal stress,
 - Substation and battery fire/flood risks,
 - Grid reliability in extreme weather.
- No site-specific flood risk resilience measures are discussed.

Missing Requirement: EIA Regs 2017 Schedule 4(4) requires assessment of the **vulnerability of the project to climate change**.

Also required under **EN-1, paras 4.8.5–4.8.7**, which demand clear evidence that resilience has been considered.

5. Cumulative Effects Assessment (CEA) for Climate Impacts

- Chapter 6 asserts cumulative effects are “unlikely” without evidence.
- There is **no list of other relevant NSIPs or large-scale developments**, and **no cumulative emissions or resilience scenario analysis**.
- No consideration of how **grid-level decarbonisation benefits** or land use trade-offs interact regionally.

6. No Commitments to Mitigation or Monitoring

- There is **no secured carbon management plan**, carbon offset proposal, or adaptation strategy.
- No commitment to:
 - Low-carbon construction materials,
 - Biodiversity-led carbon sequestration on site,
 - Monitoring and reporting of in-use performance.

This is problematic from both a **planning law** and **credibility standpoint**, as EN-1 requires carbon mitigation to be **integrated and secured**.

7. No Integration with Other Relevant Chapters

The chapter **fails to cross-reference**:

- **Chapter 14 (Socio-Economics)** – re: employment and training in low-carbon skills.
- **Chapter 15 (Soils and Agriculture)** – re: land use carbon implications.
- **Chapter 10 (Hydrology)** – re: water-related emissions and flood resilience.

EIA best practice requires climate change to be a **cross-cutting theme**, not siloed.

Specific Issues: Climate Change Adaptation and Local Vulnerability

The PEIR also fails to provide a robust, site-specific assessment of the scheme’s resilience to climate change and the potential for the development itself to exacerbate local climate risks. There is no quantification or modelling of how the extensive area of solar panels may increase surface water runoff, exacerbate flash flooding, or alter groundwater recharge, particularly in light of climate projections for more intense rainfall events. Nor does the PEIR consider whether the introduction of large-scale hard

infrastructure could lead to localised overheating, changes in wind patterns, or drought vulnerability affecting adjacent farmland and communities. The absence of a detailed local climate risk assessment and adaptation strategy falls short of best practice and EN-1 requirements for demonstrating that both the project and surrounding communities will not be made more vulnerable as a result of the development.

Summary Table – Key Missing Elements

Missing Element	Planning or EIA Requirement
Lifecycle GHG assessment	EIA Regs Sch. 4(5), EN-1 5.5
Carbon payback period	Best practice
Soil carbon / land use emissions	Net Zero Strategy, CCC
Climate resilience (adaptation)	EIA Regs Sch. 4(4), EN-1 4.8
Cumulative emissions/resilience	EIA Regs Reg. 14(2)(e)
Secured mitigation/monitoring	EN-1, case law (ClientEarth)
Integration with other topics	EIA guidance (e.g. IEMA)

To be considered legally and technically robust, the chapter should include:

- A **quantified lifecycle carbon footprint**, with upstream/downstream emissions.
- A **carbon payback period calculation**.
- **Site-specific resilience modelling** for flood, heat, and wind events.
- Integration with other chapters and **cumulative emissions modelling**.
- **Secured mitigation** proposals (in a Carbon Management Plan or DCO obligations).
- **Monitoring commitments** for operational carbon performance.

Without these elements it is impossible to consult on this proposal.

Chapter 7 Landscape and Visual

Landscape Character – conflict with village-level LCA / design guides

What PEIR says

- Study Area limited to 2 km from site edge; relies on county-level character areas (NCA 83, SNDC LCA Waveney Tributary Farmland) but **does not reference any Parish or Village Landscape Character Assessments or Neighbourhood Plan design codes**. The Scoping Opinion (ID 3.14.7) asked for justification.

Key local documents missed

- *Hempnall Parish Landscape Character Assessment* (2022) – emphasises long valleys views and skylines, dark skies and hedgerow pattern;
- *Brooke & Howe Neighbourhood Plan Design Guide* (adopted 2023) – policy BKH-ENV2 resists large-scale reflective infrastructure on ridgelines
- *Shotesham Village Design Statement* (2019) – states “retain uninterrupted skylines and historic valley-side pasture”.
- *E2 Great Moulton Plateau* (2001) – states ‘Any development in the area must respect the character of the Great Moulton Plateau Farmland Character Area. Maintain the essentially open, unsettled character; Conserve large scale open views and expansive skies and consider the effects of further tall structures on these characteristics.’
- *B1 Tas Tributary Farmland* (2001) ‘Strategy: Develop a targeted woodland strategy to reinforce the wooded horizons and create additional woodland habitats, and conserve and manage existing woodland/coppice.’ ‘Ensure any developments respect the vernacular character of existing settlements and avoid urbanising of rural lanes and loss of grass verges and hedges forming property boundaries. ‘consider the impact of any development upon the skyline and sense of openness of the character area’

Local criterion	PEIR approach	Conflict
Conserving valley-side skylines	Arrays proposed on elevated fields in Sites 7A–H; LVIA records moderate–major adverse effect only “up to 1 km” then downgrades beyond.	Village LCA says valley sides visible up to 3–4 km; PEIR’s 2 km cut-off underestimates impact.
Dark-sky protection	LVIA tries to scope lighting out; local guides stress “no new lighting on plateau edge”.	Potential security lighting unquantified – contradicts local dark-sky objective.

Local criterion	PEIR approach	Conflict
Hedgerow pattern	Mitigation planting shown as single-species blocks; local guides call for “species-rich mixed hedgerows to match historic pattern”.	Proposed 3m gappy plantation belts risk alien character .

The PEIR states that the proposed mitigation planting will take up to 15 years to reach maturity and provide the level of visual screening for which it is intended. This significantly undermines the reassurance offered by the embedded mitigation measures and raises serious questions about their effectiveness in the short to medium term.

Given that many properties lie just 100 metres from the proposed development, the prospect of waiting 15 years for adequate visual screening is in breach of regulatory expectation. During that time, residents would be fully exposed to the visual and landscape impacts of the scheme, which would inevitably affect both the enjoyment and value of their homes and the rural landscape.

We therefore require more specific detail on the nature, extent, maturity and species mix of the proposed planting throughout the site, and particularly surrounding homes.

We also require a commitment to and details of interim screening or temporary visual mitigation until full maturity is achieved.

More broadly, while the PEIR outlines general design principles and mitigation approaches, it does not adequately address the specific impact on individual properties or views. The buffer zone remains set at 100 metres, yet no visual simulations or detailed assessments have been shared that demonstrate how this distance is appropriate in each instance. Without such information, it is not possible to make a fair and informed judgment about the true implications of the scheme.

There are no visualisations of the cumulative impact of groups of infrastructure in the same location – for example on the BESS/substation/Solar sites to the south of Great Moulton, and Site 5 which includes solar/substation and welfare buildings.

We request

1. LVIA add-on chapter comparing scheme with each relevant parish/VDS/LCA document, extending study area to 3–4 km where skyline valued.
2. Micro-siting away from ridge-top fields, reduction in panel height, and species-rich hedgerow reinstatement following historic enclosure lines.

3. Detailed site-specific mitigation plans, visual simulations, photomontages for each property or PRow within sight of any infrastructure.
4. Night-time photomontages from village edge to evidence dark-sky compliance.

- **1. Failure to Assess Cumulative Landscape and Visual Impacts in Detail**

- The PEIR **acknowledges the presence of other solar farms and NSIPs in the planning process**, but provides **no clear cumulative impact mapping, photomontages, or quantitative assessment**.
- Paragraph 7.5.14 and 7.10.11 refer vaguely to potential cumulative effects, but **no structured cumulative Zone of Theoretical Visibility (ZTV)** or combined receptor-level impact analysis is provided.

Legal/Planning Conflict:

- **EIA Regs 2017 Reg. 14(2)(e)** – cumulative effects with other projects must be assessed.
- **NPS EN-1 Section 5.9.8** – requires cumulative visual impact to be considered in relation to landscape character and setting.

2. Downplaying of Landscape Character Harm Despite Substantial Intrusion

- The LVIA concludes “moderate adverse” effects in most receptor areas, even where:
 - Panels are within open, **undeveloped countryside**,
 - There is **no substantial screening**, and
 - The proposed development will **transform rural landscape character for decades** (60 years).

This downplaying may be **legally challengeable** on grounds of:

- **Irrationality or failure to take into account material considerations**, especially if subjective judgments are not supported by visual evidence (e.g. photomontages).
- Conflict with **NPS EN-1 Section 5.9.7**, which says projects should be sited to “minimise harm to landscape and visual amenity.”

3. Lack of Assessment of Visual Impact on Individual Properties

- While the PEIR considers PRowS and general receptors (e.g. road users), it does **not assess visual impact on private dwellings**, even those within 200–500m of panel fields.
- There is **no viewpoint analysis from affected residential properties**, nor any receptor-specific mapping.

Legal/Planning Conflict:

- **Schedule 4 of the EIA Regs** requires assessment of effects on population and human health, which includes **visual amenity to residential receptors**.
- Omission of residential visual effects has been grounds for successful judicial review in **renewables and waste infrastructure cases**.

4. Inadequate Use of Photomontages and Viewpoints

- The document references multiple viewpoints, but:
 - **Very few are illustrated**, and
 - There is **no 3D ZTV analysis or visual wireframes** for key sensitive locations (e.g. heritage sites, homes, elevated roads).
- Viewpoint photography appears **selective and limited**, risking accusations of **cherry-picking**.

Legal/Planning Conflict:

- **National Infrastructure Planning Guidance** expects LVIA to use appropriate **visualisation tools** in line with best practice (e.g. Landscape Institute Guidance LI TGN 06/19).
- **Failure to present balanced viewpoints** may breach the **Aarhus Convention on environmental information transparency**.

5. Mitigation Measures Are Uncommitted, Unquantified, and Deferred

- Mitigation is repeatedly deferred to future planting and landscape plans.
- There is **no evidence that proposed screening will be effective**, particularly during the **first 5–10 years** before planting matures.
- Mitigation is described as “potential” rather than **committed** or tied to a legally binding DCO requirement.

Legal/Planning Conflict:

- **NPS EN-1 Section 5.9.16** requires applicants to explain how mitigation will be delivered and secured.
- Under **case law (ClientEarth v Secretary of State)**, mitigation cannot **simply be deferred or assumed**—it must be concrete and assessable.

6. No Adequate Assessment of Effects on Landscape-Based Tourism or Experience Economy

- The LVIA does **not link visual harm to possible socio-economic impacts**, despite:
 - The area's reliance on **heritage and rural tourism**,
 - Proximity to PRowS, gliding club, observatory, and cultural assets.
- No evidence is provided on how landscape change may affect **visitor experience or business viability**.

Legal/Planning Conflict:

- **EN-1 Section 5.13.6** requires landscape and amenity impacts to be considered as part of the **economic and tourism assessment**.
- Failure to address knock-on effects may render the EIA **legally incomplete**.

7. Overreliance on 'Temporary and Reversible' Framing

- The 60-year operational life is repeatedly described as “temporary,” but:
 - That is equivalent to **two human generations**,
 - The impacts on **landscape character, settlement setting, and amenity** are prolonged and potentially irreversible due to soil compaction, infrastructure retention, or decommissioning uncertainty.

This could be legally challengeable under **planning rationality principles**, as the **degree and duration of change contradict the use of “temporary”** to downplay impacts.

Summary of Key Objections

Objection	Conflict With
Weak cumulative impact assessment	EIA Regs 14(2)(e), EN-1 5.9.8
Understatement of landscape harm	EN-1 5.9.7
Omission of residential visual effects	EIA Regs Sch. 4, planning case law
Incomplete use of visual evidence	LI TGN 06/19, Aarhus Convention
Vague/uncommitted mitigation	EN-1 5.9.16, case law (ClientEarth)
No link to tourism/amenity harm	EN-1 5.13.6
Misleading “temporary” framing	Planning Act s104 tests, judicial review principles

We request additional viewpoints and visualisations, particularly from residential and sensitive receptors.

We call for a revised LVIA to include:

- Cumulative visual effects,
- Property-level assessments with **representative photomontages** from affected homes,
- Legally secured mitigation proposals.

There is Insufficient Cumulative Impact Analysis

- Cumulative landscape and visual effects are only **briefly acknowledged** in qualitative terms.
- The chapter does **not include**:
 - A **Cumulative Zone of Theoretical Visibility (CZTV)**,
 - Visualisations from receptors with **overlapping views** of this and other nearby energy schemes,

- A **cumulative impact matrix** for each viewpoint.

Why this matters: Cumulative effects are a **mandatory component** under EIA Regs 14(2)(e) and **EN-1 paragraph 5.9.8**. Without proper cumulative analysis, the landscape harm is likely **understated**.

3. Photomontages and Visualisations Are Incomplete or Selective

- The LVIA refers to various viewpoints but:
 - Provides **limited photomontage coverage**,
 - Omits **key locations** (e.g. residential, tourism-sensitive, or high elevation views),
 - Fails to **justify why certain viewpoints were chosen or excluded**.

Why this matters: Visual evidence is critical to LVIA credibility. **Landscape Institute Guidelines (LI TGN 06/19)** recommend visualisations from a full range of sensitive receptors using accurate wireframes or 3D modelling where appropriate.

It is also impossible to download the appendix of photomontages because the file-size is too large to download, which means that those unable to attend consultation events or the Library are unable to consult it.

4. No ZTV with Annotated Receptor Overlays

While Zones of Theoretical Visibility (ZTVs) are mentioned, the chapter does **not include a ZTV map that overlays key receptor locations**, such as:

- Listed buildings,
- Tourist attractions,
- PRowS,
- Residential clusters.

Without this, it is **impossible to understand which receptors will be affected** and to what extent — undermining the transparency of the assessment.

5. Mitigation Measures Are Generic and Unsecured

- Proposed mitigation relies on:

- Landscape planting,
- Bunding, and
- Future LEMP (Landscape and Ecology Management Plan),
- ...but there is:
 - **No planting schedule or maintenance commitment,**
 - **No evidence that planting will be effective for key views,** especially in early years,
 - **No binding mechanism** to secure the mitigation through the DCO or S106 obligations.

Deferred or vague mitigation **undermines the reliability of the assessment conclusions**, particularly when “moderate adverse” impacts are based on assumed future screening.

6. Lack of Consideration of Seasonal and Temporal Change

- The LVIA does not assess:
 - **Seasonal variability** in screening (e.g. leaf-off conditions in winter),
 - **Long-term degradation of landscape features** (e.g. hedgerows or planting failure),
 - **Time-based impact progression** (e.g. immediate vs 10–15 years post-construction).

Impacts will **differ over the 60-year lifespan**. A robust LVIA must address visual change over time, including **initial operational years** when mitigation is least effective.

7. No Integration with Socio-Economic and Tourism Effects

- There is **no linkage between visual impact and potential harm to rural tourism**, even though:
- The area contains **Airbnb, glamping, wedding and music venues; farm shops, food drink (vineyards and microbreweries) and heritage attractions, and a gliding club,**
- These businesses **rely on landscape quality and tranquility.**

Why this matters: NPS EN-1 (5.13.6) and EN-3 require LVIA to be linked to **tourism and business impact** if landscape change could affect economic viability or visitor experience.

8. No Consideration of Night-Time or Lighting Effects

The chapter does **not address visual impact of lighting**, e.g.:

- Temporary lighting during construction,
- Permanent lighting around security fencing, substations, or batteries.

Why this matters: Lighting can cause **intrusive night-time visual effects**, especially in rural, dark-sky areas. This is a **common oversight** but relevant under **EIA and landscape policy**.

9. Limited Assessment of Viewpoint Representativeness

There is **no explanation** of how selected viewpoints represent:

- The range of receptor types (residents, walkers, road users),
- Visual envelopes across the scheme area,
- Heritage landscapes and protected views.

Why this matters: Without this, the LVIA may **lack balance** or appear biased, exposing it to challenge under consultation transparency principles (e.g. Aarhus Convention).

Summary Table – Missing Elements

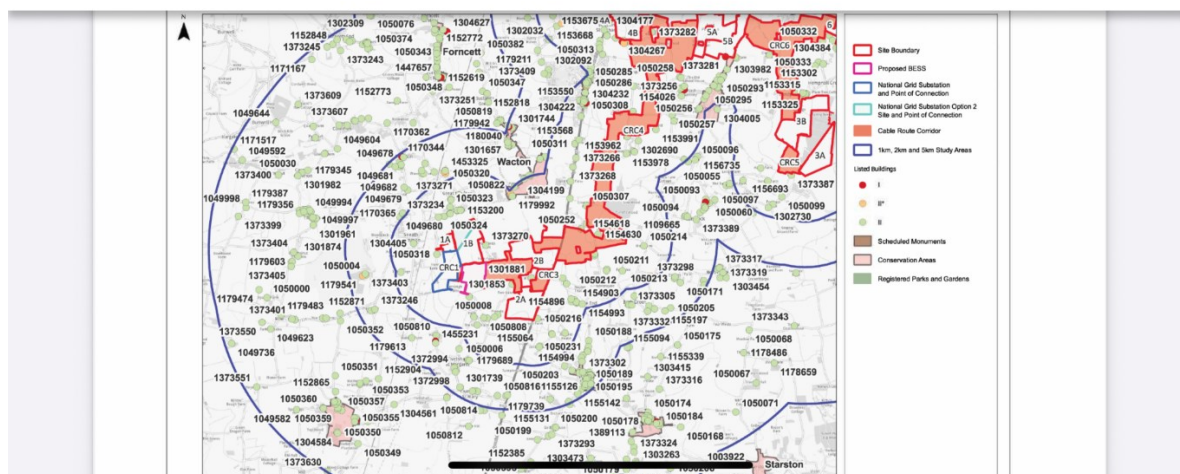
Missing Element	Legal/Policy Risk
Visual effects on individual dwellings	Breach of EIA Regs Sch. 4
Cumulative visual analysis (CZTV)	Breach of Reg. 14(2)(e), EN-1 5.9.8
Full photomontage set	Poor visualisation, fails LI guidelines
Annotated ZTVs	Reduced transparency, receptor uncertainty

Missing Element	Legal/Policy Risk
Secured mitigation	Not compliant with EN-1 or case law
Seasonal/temporal variation	Incomplete impact timeline
Tourism/business linkages	Fails EN-1 5.13.6 requirements
Night-time lighting effects	Incomplete visual impact scope
Justification of viewpoint selection	Procedural fairness / Aarhus transparency

Specific Issues: Listed Buildings (Grades I, II* & II)

As this area is valued for its nationally significant collection of pre-1750s rural architecture, much of it timber-framed medieval buildings in an surrounding Domesday Book Conservation village. There are hundreds of Listed Buildings of all Grades that will be impacted by this scheme. This maps showing the south-western most part of the scheme (sites 1, 2 and 3) provided by EPS is only one of many. The sheer number of Listed Buildings present is consistent across the whole site.

Figure 10.1 The Site Boundary Showing Heritage Assets - Sit...



EPS PEIR Heritage 3.3.8 states: ‘Due to their prevalence, only Grade II listed buildings within 100m will be detailed in this section and the relevant section for the subsequent sub-Sites.’

This is inconsistent with best practice. The fact that there are hundreds of Grade II Listed Buildings within both 1 and 2 KM of the site, suggests that a completely inappropriate site has been chosen for this infrastructure.

Historic England’s Guidance documents such as ‘The Setting of Heritage Assets’ (GPA3) suggest that impacts on setting must be assessed on visual, environmental and historical factors, not just distance. They encourage a zone of theoretical visibility (ZTV) approach – particularly for developments for solar farms.

A best practice approach would for all Listed Buildings to do a detailed assessment of an expanded area based on

1. ZTV mapping
2. Landscape character
3. Historical views or settings
4. Input from heritage specialists and statutory consultees such as Historic England.

Historic England particularly state in their response to the EIA Scoping Report that there are ‘Grade II Listed Buildings whose setting may be affected, and which should be included in any impact assessment.’ Scoping out any Grade II Listed Building beyond 100M from the site due to their ‘prevalence’ is entirely inappropriate and contrary to what Historic England have specifically requested in their response to the EIA Scoping Document.

Topic	Legislation	Where PEIR is deficient
Statutory duty	Planning (Listed Buildings & Conservation Areas) Act 1990 §66(1): “special regard” to preserving setting of listed buildings.	PEIR Cultural-Heritage Ch. 10 scopes out “direct effects”, but only provides high-level viewsheds; no asset-by-asset setting assessment, no magnitude tables or wireframes for listed farmsteads/churches near Sites 1–10.
NPS EN-1 (2024) §5.12.9–5.12.16	Requires “clear, direct and concise” assessment of setting change on significance; should cover Grade II also.	The PEIR bundles 100+ Listed Buildings into broad landscape units; no individual heritage impact tables (significance/value/sensitivity/magnitude) contrary to HE GPA3.

Topic	Legislation	Where PEIR is deficient
Historic England GPA3 & HEAN 4	Five-step setting methodology incl. fieldwork & visualisation.	Only ZTV overlays are shown; no wireline or photomontage from key receptors (e.g. St Catherine's Church, Fritton Grade I).
Mitigation hierarchy (NPS EN-1 §5.12.20)	Avoid → Minimise → Remedy → Offset.	PEIR lacks design iterations showing heritage-led avoidance (e.g. alternative panel blocks/height-reductions).

We require:

- a gazetteer with Grade, NHLE no., distance, setting description, significance, magnitude & residual effect;
- HE-compliant visualisations for all listed assets, irrespective of grade;
- a Setting Mitigation Plan tying micro-siting, planting and height-limits to each Listed building, irrespective of grade
- Clear demonstration through photomontages and wireframes that neither these Listed Buildings nor their settings will be negatively impacted by this scheme.

Chapter 8 Ecology and Biodiversity

Chapter 8 (Ecology and Biodiversity) of the East Pye Solar PEIR **fails to demonstrate legal compliance with the Conservation of Habitats and Species Regulations 2017, the Environment Act 2021 (Biodiversity Net Gain), and National Policy Statement (NPS) EN-1 requirements.** Specifically, it does **not provide sufficient evidence, clarity, or secured commitments** to ensure that adverse ecological effects are avoided, mitigated, or compensated.

There is currently not enough or adequate data provided for stakeholders to fully assess the impacts of the scheme.

At the **statutory consultation stage** (Preliminary Environmental Information Report or PEIR), developers are **required under Regulation 12 of the EIA Regulations 2017** to provide **“sufficient information”** to allow consultees to **understand the likely significant effects** of the proposed development and provide informed responses.

The ecological information should:

- Identify **designated sites** and **notable/protected species**
- Include baseline survey data that is **seasonally appropriate and up-to-date**
- Highlight **likely ecological constraints**
- Outline the need for further surveys and assessments

Adequacy of the Submitted Appendix 8.1

1. Site Context and Desk Study Coverage

The report includes a data search from the **Norfolk Biodiversity Information Service**, detailing:

- Statutory sites within 10 km
- Non-statutory County Wildlife Sites (CWSs) within 2 km
- Notable/protected species records (e.g., bats, barn owl, badger, great crested newt, lapwing, skylarks, turtle doves)

It does not however use any data from the UK Biodiversity Atlas, which records a great deal more data and records a wider range of Birds of Conservation Concern confirmed on the solar and BESS sites proposed by East Pye Solar.

List of recorded birds of conservation concern across all solar and BESS sites (we have them recorded in site-specific lists)

<u>Red List</u>	<u>Amber List</u>
Bullfinch	Black-headed Gull
Collared Dove	Brambling
Corn bunting	Bullfinch
Cuckoo	Common gull
Curlew	Common Redstart
Fieldfare	Dunnock
Flycatcher	Goldfinch
Greenfinch	Great Black-backed Gull
Grey Partridge	Great Crested Grebe
Hen harrier	Grey Wagtail
herring Gull	Greylag Goose
House martin	Kestrel
House Martin	Lesser-Black-headed gull
House sparrow	Mallard
Lapwing	Meadow Pipit
Lesser Black-backed Gull	Moorhen
Linnet	Oystercatcher
Marsh tit	Pied Wagtail
Merlin	Pink-footed Goose
Mistle thrush	Pintail
Redwing	Reed Bunting
Skylark	Rook

Spotted flycatcher	Sedge Warbler
Starling	Shelduck
Starling	Short-eared Owl
Swift	Snipe
Tree Sparrow	Song Thrush
Turtle dove	Sparrowhawk
Willow tit	Stock Dove
Woodcock	Tawny Owl
Yellow hammer	Wheatear
	White throat
	Willow Warbler
	wood pigeon
	Wren

2. Identification of Further Survey Needs

Recommends additional Phase 2 surveys for:

- **Bats (roost and activity)**
- **Great Crested Newt (GCN)**
- **Breeding birds**
- **Badgers**
- **Reptiles**

1. Absence of Phase 2 (Species-Specific) Survey Results

- No data is presented from follow-up surveys that were recommended in Phase 1
- Without results for **breeding birds, GCNs, bats, etc.**, consultees **cannot assess the full ecological impact** or adequacy of proposed mitigation.

- Many of the proposed sites are included in the Countryside Stewardship Scheme for the priority protection of **lapwing, skylark, and turtle dove**.
- Given these species are **red-listed** and **material to NSIP decisions**, this omission is significant.

2. No Preliminary Biodiversity Net Gain (BNG) Assessment

- No baseline metric is offered under the **BNG framework** (even though mandatory under Environment Act 2021 post-Nov 2023 for TCPA projects, and encouraged under NSIP guidance).
- The development includes habitat removal (hedgerows, arable conversion), but **no quantification of ecological losses/gains** is provided. **We have photographic evidence of areas of large areas of ancient hedgerow being grubbed up prior to ecological surveys** for this **project** and hedge cutting taking place during summer fledging months on several of the sites. Both of which environmental crimes have been reported to the authorities.

3. Cable Corridor Ecological Impact Largely Overlooked

- The cable route passes through sensitive areas, but **limited habitat description** and **no protected species assessment** is provided for the corridors, which stretch across tens of miles.

The ecological information provided in Appendix 8.1 is **insufficient** to meet statutory consultation standards under the EIA Regs 2017 and NPS EN-1/EN-3 for the following reasons:

- The survey data is incomplete (only NBIS has been used for the desk survey) and it lacks critical follow-up Phase 2 information, beyond the basic walk over assessment.
- There is no robust assessment of the likely significant effects on protected or priority species.
- The absence of data on BNG, the cable corridor, and species surveys, especially for bats and key farmland birds means **interested parties cannot make fully informed comments**.

The PEIR fails to demonstrate compliance with the statutory requirement to deliver Biodiversity Net Gain (BNG), and inadequately assesses the risk of harm to legally protected habitats and species.

Key Legal and Policy Failures

1. Failure to Demonstrate Compliance with 10% Biodiversity Net Gain (BNG)

No quantitative Biodiversity Net Gain (BNG) metric (e.g. Defra Metric 4.0) is presented.

Chapter 8 only refers to a “**commitment to deliver BNG**” in principle (Section 8.11.2), but:

- Does not show current **habitat baseline condition data**,
- Does not provide a **calculated post-development score**, or
- Confirm whether the **statutory 10% BNG target** will be met.

Legal Risk: Under the **Environment Act 2021**, 10% BNG is **mandatory for all new NSIPs** (enforced via the Biodiversity Gain Statement) and must be evidenced in the Environmental Statement.

Planning Conflict: NPS EN-1 (para 5.3.7–5.3.10) requires that any adverse biodiversity impacts must be offset and **net gain demonstrated**.

2. No Legally Secure Mitigation or Compensation Mechanisms

Ecological mitigation is **deferred** to a future Biodiversity Management Plan (BMP), but:

- No draft is included,
- No secured habitat creation sites are identified,
- No delivery mechanism is tied to the **DCO (Development Consent Order)** or **S106 agreement**.

This leaves mitigation **unsecured**, contrary to the principles set out in **case law (e.g. ClientEarth v Secretary of State)** which requires mitigation to be **defined, certain, and enforceable** at the decision stage.

3. Insufficient Assessment of Impacts on Priority Habitats and Species

There is **minimal discussion of UK Priority Habitats** (e.g. hedgerows, grasslands) or local Biodiversity Action Plan (BAP) species.

- Surveys are ongoing or partial for:
 - Bats (some transect data incomplete),
 - Badgers (inferred only),
 - Invertebrates (not presented in full),
 - Breeding birds and wintering birds (acknowledged as incomplete).

This violates the EIA requirement to base decisions on **complete and up-to-date information**.

5. Cumulative Impact Assessment is Inadequate

Chapter 8 mentions cumulative effects only **briefly and qualitatively**, with no:

- Map of other nearby solar farms or proposed developments,
- Analysis of **habitat fragmentation** or species movement disruption,
- Combined effect modelling on species populations.

This may breach **EIA Regs 2017 Reg. 14(2)(e)**, which requires a robust cumulative impact assessment.

6. Lack of Integration with Landscape and Land Use Chapters

Biodiversity effects are treated in isolation, despite:

- Significant landscape planting being proposed,
- Land use changes affecting soil organisms and invertebrate habitats,
- Potential for overlap with visual mitigation and BNG delivery.

EIA best practice (e.g. IEMA Guidelines) requires **cross-topic integration**, which is lacking here.

Summary Table – Legal and Planning Failures

Issue	Legal/Policy Breach
No BNG metric or calculation	Environment Act 2021; EN-1 para 5.3.7
Unsecured mitigation measures	EN-1; <i>ClientEarth</i> case law
Incomplete protected species data and surveys	EIA Regs Sch. 4(1)(a); EN-1 para 4.2
No HRA screening for SACs/SPAs	Habitats Regs 2017 Reg. 63
Inadequate cumulative impact assessment	EIA Regs 14(2)(e); EN-1 para 4.2.1
No integration with landscape or soils	EIA integration principle; IEMA

Conclusion

The application fails to meet its legal obligations under the Environment Act 2021, the EIA Regulations 2017, and the Habitats Regulations 2017. In particular, it does not demonstrate delivery of the legally required 10% Biodiversity Net Gain, lacks a

complete and enforceable mitigation framework, and fails to assess impacts on protected species and European sites. This renders the ecological assessment incomplete and non-compliant.

Chapter 8 (Ecology and Biodiversity) of the PEIR does **not meet the required standard of adequacy for the statutory consultation stage** under the **Infrastructure Planning (Environmental Impact Assessment) Regulations 2017** or the **Planning Act 2008**. The chapter contains **serious gaps** in evidence, analysis, and commitment that make it **inadequate for meaningful consultation by statutory consultees, the public, or decision-makers**.

1. Absence of a Quantified Biodiversity Net Gain (BNG) Calculation

- **No BNG metric is provided**, even though BNG is a **statutory requirement** under the **Environment Act 2021**, and is expected to be addressed at consultation stage for NSIPs.
- The chapter makes only **generic commitments** to BNG “in principle,” which are not:
 - Quantified (no Defra metric),
 - Mapped (no offset locations shown),
 - Secured (no binding commitments in the DCO).

Without this, consultees **cannot meaningfully comment** on whether the scheme will achieve net gain or cause long-term ecological harm.

2. Incomplete Baseline Survey Data

Chapter 8 admits that some key ecological surveys are:

Ongoing or incomplete, e.g. for:

- Wintering birds,
- Bats (some transects still pending),
- Invertebrates,
- Badger setts.

It is **unclear how many years of data** will be used, or whether survey timing followed best practice guidance (e.g. CIEEM). Some residents have been approached to do baseline surveys on their land at inappropriate times of year (GCN).

PEIRs at consultation must be **sufficiently complete to inform consultees** about likely significant effects. Incomplete data undermines the validity of all conclusions.

4. No Draft Outline Biodiversity Management Plan (BMP)

The chapter refers to a future **Landscape and Biodiversity Management Plan**, but **no draft is appended or summarised**.

No detail is provided on:

- Habitats to be created/restored,
- Monitoring regimes,
- Timings,
- How this will be secured through DCO or legal agreement.

Consultees cannot assess whether mitigation is **feasible, sufficient, or enforceable**, making the consultation **procedurally deficient**.

5. No Clear Impact Pathway Mapping

There is **no figure showing key ecological constraints**, such as:

- Sensitive habitats,
- Protected species zones,
- Bat flight corridors,
- Bird nesting areas.

Nor is there mapping of **impact pathways** (e.g. dust, noise, light spill, barrier effects).

Statutory consultees such as Natural England and local wildlife trusts require this information to assess **impact severity and mitigation needs**.

6. Lack of Assessment of Functionally Linked Land

- Some fields may support **wider foraging or migratory behaviour** of protected birds (e.g. pink-footed geese or waders).
- There is no discussion of whether land is **functionally linked** to nearby SPAs or other ecological networks.

Under **Natura 2000 site guidance**, even land outside an SAC/SPA must be assessed if it supports species populations.

Conclusion: Inadequate for Statutory Consultation

The PEIR fails to provide enough detail to enable informed responses from:

- **Statutory consultees** (e.g. Natural England, EA, Wildlife Trusts),
- **Affected communities,**
- **Local authorities and planning bodies.**

This lack of detail risks **non-compliance with Regulation 12 and 14** of the EIA Regs, which require the preliminary environmental information to identify and assess likely significant effects **based on available evidence**, and to provide a basis for **effective consultation**.

Missing from Chapter 8 – Ecology and Biodiversity

1. No Quantified Biodiversity Net Gain (BNG) Assessment

- There is **no use of the Defra BNG Metric (e.g. Metric 4.0)** to:
 - Assess baseline habitat units,
 - Model post-development changes,
 - Demonstrate how 10% net gain will be achieved.

Under the **Environment Act 2021**, a 10% BNG is **mandatory** for all NSIPs. Without quantified results, **net gain claims are unsubstantiated**.

2. No Draft Biodiversity Management Plan (BMP) or Outline LEMP

- Chapter 8 refers vaguely to a future management plan but **provides no outline version or summary of measures**, including:
 - Habitat creation/restoration timelines,
 - Maintenance responsibilities,
 - Monitoring protocols,
 - Legal delivery mechanisms (e.g. DCO, s106).

Without this, there's **no way to judge whether mitigation is feasible or enforceable**.

3. Incomplete Protected Species Surveys

- Several ecological surveys are **acknowledged as ongoing or incomplete**, including for:
 - Bats,
 - Badgers,
 - Invertebrates,
 - Breeding and wintering birds.
- Where results are included, they often lack:
 - Transect effort maps,
 - Seasonality context,
 - Year-on-year consistency.

This makes it **impossible to assess the full significance of likely ecological effects**.

5. No Mapping of Key Ecological Constraints

- There is **no map or figure showing**:
 - Priority habitats,
 - Protected species locations,
 - Habitat connectivity (corridors, hedgerows),
 - Functionally linked land,
 - Existing designations (e.g. Local Wildlife Sites).

This **prevents consultees from assessing where significant impacts will occur**, and undermines transparency.

6. No Adequate Assessment of Functionally Linked Land (SPA/SAC species)

- There is **no analysis of whether the land supports functionally linked activities** (e.g. foraging or roosting) by:
 - SPA bird populations (e.g. overwintering geese or lapwings),
 - SAC species (e.g. otters, bats).

Omission of such assessment is a **common flaw challenged in judicial review**, as indirect impacts must be considered under HRA.

7. Inadequate Cumulative Impact Assessment

- The chapter **briefly acknowledges other developments** but:
 - **Does not list them,**
 - **Does not model overlapping effects** on shared habitats or species populations,
 - **Provides no spatial analysis** of fragmentation, corridor loss, or population-level effects.

Required under **EIA Regs 14(2)(e)** and **NPS EN-1 para 4.2.1**.

8. No Details on Temporary vs Permanent Habitat Impacts

- There is **no breakdown of habitat impacts by phase**:
 - Construction (temporary),
 - Operation (long-term land cover change),
 - Decommissioning (restoration potential).

Best practice (e.g. CIEEM guidelines) requires phasing to be reflected in impact magnitude and significance.

9. No Measurable Monitoring Commitments

- There is **no description of post-consent monitoring**, such as:
 - Species return surveys,
 - Habitat condition checks,
 - Corrective actions if mitigation fails.

Without monitoring, mitigation cannot be **adaptive or accountable**, breaching **EN-1 para 5.3.10** and basic ecological good practice.

10. No Integration with Other Disciplines

- Ecology is **not meaningfully integrated** with:
 - **Landscape and visual mitigation** (e.g. bunding and planting could provide biodiversity gains),
 - **Drainage or soil management**, which affects aquatic species,
 - **Noise or lighting impacts** on nocturnal wildlife.

EIA guidance (e.g. IEMA 2020) stresses the importance of **cross-topic impact linkages**.

Summary Table – Missing Elements

Missing Item	Legal/Policy Significance
BNG metric (Defra 4.0)	Environment Act 2021
Draft BMP / Outline LEMP	EN-1 para 5.3.10; EIA Regs Sch. 4(7)
Complete species surveys	EIA Regs Sch. 4(1)(a); CIEEM guidelines
HRA screening & assessment	Habitats Regulations 2017 Reg. 63
Constraint maps	Transparency; consultee engagement
Functionally linked land analysis	HRA; SPA protection case law
Cumulative ecological impact analysis	EIA Regs 14(2)(e)
Phased impact assessment	EclA best practice
Monitoring strategy	EN-1; EIA follow-up

Missing Item

Legal/Policy Significance

Interdisciplinary integration

IEMA guidelines; EIA coherence

Chapter 8 (Ecology and Biodiversity) of the East Pye Solar PEIR does **not provide adequate protection for endangered or protected species**, either in terms of **legal compliance** or **practical ecological safeguards**. It lacks the necessary **evidence, mitigation commitments, and enforceable mechanisms** to demonstrate that adverse impacts to these species will be avoided, minimised, or compensated.

Despite looking through the documents very thoroughly, we have been unable to locate **any actual environmental survey data** (e.g. field survey reports or ecological data files). What the environmental files provide is **methodological frameworks**, but no raw data or baseline findings to demonstrate that ecology, habitats, or species have been formally surveyed or assessed.

Implication for Statutory Consultation

Under **EIA Regulations 2017 (Reg. 12)** and best practice:

- Baseline environmental surveys (ecology, habitats, species presence/absence) must be provided to allow meaningful consultation.
- Without these, consultees cannot verify or assess the likely impacts of the scheme on protected species or habitats.

This omission is a **procedural deficiency** and supports requests for:

- Section 25 remedies,
- Submission of full baseline survey results (e.g. PEA, bat, bird, GCN),
- Transparency in ecological risk-based assessment.
-

Inadequate Protection for Endangered or Protected Species – Key Failures:

1. Incomplete Survey Data

- Key surveys for protected species (e.g. **bats, badgers, breeding birds, invertebrates**) are:
- Incomplete,

- Ongoing,
- Summarised with insufficient detail to confirm population status or sensitivity.
- There is **no clear baseline** for some mobile and nocturnal species.

This violates the **precautionary principle** and fails to provide the baseline data needed to apply **effective species-specific mitigation**.

2. No Specific Mitigation Measures for Key Species

- The PEIR contains **generic commitments** to mitigation and habitat enhancement, but **no targeted, species-level measures** such as:
 - Bat corridor preservation or dark sky zones,
 - Nesting season constraints for birds,
 - Specific protection zones for badger setts or foraging routes,
 - Hibernation site safeguarding for amphibians or reptiles.

Without this, **European Protected Species (EPS)** and **UK Priority Species** face potential disturbance, displacement, or habitat degradation.

3. No Legally Binding Species Protection Commitments

There is **no draft species mitigation licence strategy** (e.g. under the Wildlife and Countryside Act 1981 or Conservation of Habitats and Species Regulations 2017).

The PEIR lacks:

- Licence triggers and thresholds,
- Details of consultation with Natural England,
- Conditions under which work would stop if species are encountered.

This could leave the developer in **breach of strict legal protections for EPS**, such as bats and great crested newts, if works proceed without appropriate licensing and mitigation.

4. No Adequate Assessment of Functional Habitat or Connectivity

The chapter does **not assess whether the development will sever habitat corridors**, including:

- Hedgerow networks used by bats, birds, and invertebrates,
- Linkages to SAC/SPA foraging grounds,
- Wetland and ditch systems important to amphibians or otters.

Habitat fragmentation is a **key indirect impact** and should be assessed and mitigated through corridor preservation or green infrastructure buffers.

5. No Evidence of Buffer Zones or Exclusion Areas

There is **no map showing species protection zones**, such as:

- Stand-off distances from active bat roosts or badger setts,
- No-work zones during breeding season,
- Areas of retained habitat for species refuge.

Such zones are essential to prevent illegal disturbance of species and comply with Natural England guidance.

6. Deferred and Unsecured Mitigation

Mitigation is deferred to future documents (e.g. **Biodiversity Management Plan**), which:

- Is **not appended or summarised**,
- Is **not secured through the draft DCO**,
- Does **not allow consultees or regulators to assess adequacy**.

Mitigation cannot be assumed or deferred—it must be **detailed and enforceable at the decision stage**.

7. No Monitoring Commitments for Protected Species

There is **no ecological monitoring plan** for:

- Breeding success,
- Habitat usage,
- Return of displaced species post-construction.

Monitoring is essential to determine if mitigation is working—and to trigger corrective measures if it's not.

Legal Risk

The PEIR as written risks **non-compliance** with:

Legal Obligation

Wildlife and Countryside Act 1981

Potential Breach

Disturbance, harm, or habitat loss without licence

Legal Obligation	Potential Breach
Conservation of Habitats and Species Regulations 2017	Failure to assess and licence impact to EPS
Environment Act 2021	Failure to maintain/enhance biodiversity
EIA Regulations 2017 Schedule 4	Incomplete baseline and mitigation information

Summary: Not Adequate for Endangered Species Protection

Criterion	Status
Complete protected species data	Incomplete or missing
Specific species mitigation	Generic only
Legal protections/licences addressed	Omitted
Habitat connectivity addressed	No
Buffer/exclusion zones mapped	No
Enforceable commitments	Deferred and vague
Monitoring of species recovery	Absent

Conclusion

Chapter 8 fails to provide adequate protection for endangered and legally protected species. It does not meet the legal standards required for NSIPs under UK wildlife law and planning policy, and would be highly vulnerable to statutory objections or legal challenge.

Specific Issues: Lapwing

Chapter 8 of the PEIR does *not* provide adequate protection or mitigation for lapwing (*Vanellus vanellus*), for which much of our area is particularly known and is a protection zone. Tivetshall St Mary, is derived from the Old English for ‘lapwing’s nook’.

Lapwing is a species that is:

- **Red-listed** as a Bird of Conservation Concern (BoCC),
- A **UK Biodiversity Action Plan (UK BAP)** priority species, and
- A **Species of Principal Importance** under Section 41 of the **Natural Environment and Rural Communities (NERC) Act 2006**.

The PEIR fails to demonstrate that the likely impacts to lapwing have been fully assessed or that sufficient, secured mitigation will be delivered.

1. No Species-Specific Survey or Impact Assessment

The PEIR provides **no targeted data on lapwing presence, nesting, or foraging behaviour**, even though:

- The site is **typical open farmland habitat**,
- Lapwing commonly nest in lowland grassland and arable fields, especially in East Anglia,
- Adjacent fields may offer **functionally linked habitat** to nearby SSSIs or SPAs.

Without species-specific surveys, the EIA cannot lawfully or credibly determine whether significant effects are likely, breaching **EIA Regulations Schedule 4**.

There is **no discussion of lapwing's sensitivity to disturbance**, breeding displacement, or habitat loss.

This omission indicates a **failure to recognise lapwing as a sensitive receptor**, contrary to **Natural England guidance** and **NPS EN-1 para 5.3.6**, which requires careful consideration of protected or priority species.

3. No Mapping or Protection of Nesting Sites

There is no habitat constraint mapping to:

- Identify **existing or potential lapwing nesting zones**,
- Propose **exclusion areas**, or
- Specify **buffer distances from construction activities**.

Without this, lapwing may be disturbed or **displaced during critical breeding periods**, risking population-level impacts.

4. No Mitigation Strategy for Lapwing Displacement or Habitat Loss

The PEIR does not include:

- Alternative breeding habitat proposals,
- Predator control or disturbance minimisation,
- Seasonal restrictions on vegetation clearance or construction (e.g. March–July),
- Measures to maintain open sightlines and sparse sward structures needed for nesting.

This violates Natural England and RSPB best practice guidance, which require active, tailored mitigation for ground-nesting farmland birds.

5. No Monitoring or Post-Construction Management

The PEIR includes **no commitment to monitor lapwing activity** post-construction, which is essential to:

- Evaluate displacement effects,
- Adapt habitat management if breeding success declines.

The absence of monitoring undermines the **“mitigation hierarchy”** (avoid–reduce–compensate–monitor) that underpins EIA law and good ecological practice.

6. No Cumulative Impact Assessment for Lapwing

There is **no analysis of potential cumulative effects** on lapwing populations from:

- Other local solar farms,
- Habitat fragmentation,
- Wider landscape change in East Anglia.

This is a key omission under **EIA Reg. 14(2)(e)** and **EN-1 para 4.2.1**, especially given that lapwing populations are declining regionally.

Conclusion: Inadequate Protection for Lapwing

Key Requirement	Provided?
Species-specific survey data	No
Acknowledgement of legal status	No
Nesting habitat protection	No
Mitigation strategy	No

Key Requirement	Provided?
Seasonal restrictions	No
Monitoring plan	No
Cumulative assessment	No

The PEIR fails to provide adequate protection for lapwing, a red-listed ground-nesting bird and UK BAP priority species. The omission of species-specific survey data, impact analysis, targeted mitigation, and monitoring undermines both the legal sufficiency of the ecological assessment and the credibility of the claimed biodiversity commitments. This constitutes a breach of EIA Regulations and relevant planning policy (NPS EN-1, EN-3).

Specific Issues: Skylarks

Chapter 8 of the PEIR does not provide adequate protection or mitigation for skylarks (*Alauda arvensis*)—another species for which our area is specifically protected, and a species of significant conservation concern. The **assessment is generic**, lacks species-specific evidence, and offers **no tailored mitigation measures** that reflect the skylark’s well-known sensitivity to land use change, disturbance, and habitat loss.

1. No Targeted Skylark Survey or Data Presentation

- There is **no evidence of breeding skylark territory mapping**, nesting density data, or field-level usage in the PEIR.
- Although skylarks are likely present (as they are **common in arable landscapes** like the application site), they are **not identified or discussed individually**.

Skylarks are red-listed Birds of Conservation Concern and a UK Priority Species under the NERC Act 2006, requiring focused attention in impact assessments.

2. No Adequate Assessment of Habitat Loss Impact

Skylarks depend on **open, sparsely vegetated fields** for nesting. The proposed solar infrastructure:

- **Removes these open field conditions**, and
- Replaces them with **arrays, fencing, and shaded, unmanaged grassland**, making the land **unsuitable for skylark nesting**.

The PEIR **does not quantify how much suitable breeding habitat will be lost or** altered beyond use.

3. No Skylark-Specific Mitigation Proposals

There are **no mitigation strategies** proposed to support skylark populations, such as:

- **Skylark plots** (unseeded nesting patches within retained farmland),
- **Offsite habitat enhancement,**
- **Timed works** to avoid the **March–August breeding season,**
- Management to **retain open vegetation structure.**

These are all well-established mitigation techniques. The absence of any suggests the applicant has **not considered skylark-specific needs.**

4. No Commitment to Monitoring Skylark Responses

There is **no ecological monitoring plan** that includes:

- Post-construction **breeding bird surveys,**
- Skylark population trends,
- Adaptive management based on breeding success.

Monitoring is a core requirement under **EN-1 paras 5.3.8–5.3.10** and best practice (CIEEM, RSPB).

5. No Integration with Landscape or Land Management

The proposed grassland management for solar fields is **not described in enough detail** to determine whether it:

- Could support skylarks at all (likely not),
- Could be managed to retain open ground conditions.

Landscape design is a key tool in ecological mitigation, but no such integration is shown.

6. No Compensation or Offsetting for Breeding Habitat Loss

- No part of the affected site appears to be retained or enhanced specifically for ground-nesting birds like skylarks.
- No offsite mitigation land is proposed.

Under the **Environment Act 2021 (BNG duties)**, loss of habitat for protected species should be compensated and gains demonstrated.

Conclusion: Inadequate Protection for Skylarks

Critical Requirement	Provided in PEIR?
Species-specific breeding data	No
Nesting habitat loss analysis	No
Tailored mitigation measures	No
Monitoring plan	No
Habitat management integration	No
Compensation/offsite mitigation	No

The PEIR fails to assess or mitigate likely significant impacts to skylarks, a red-listed, ground-nesting farmland bird and a UK Priority Species. The absence of targeted surveys, habitat loss analysis, species-specific mitigation, or monitoring undermines the ecological robustness of the assessment. This omission conflicts with the EIA Regulations 2017, the Environment Act 2021 (BNG duties), and relevant planning policy (NPS EN-1 paras 5.3.7–5.3.10).

Specific Issues: Turtle Doves

Chapter 8 of the PEIR does *not* provide adequate protection or mitigation for turtle doves (*Streptopelia turtur*)—a species of exceptional conservation concern in the UK and Europe, and for which fields in the scheme have been specifically protected in the Countryside Stewardship Scheme, the site being located in **East Anglia**, one of the **last strongholds** for breeding turtle doves in the UK. The assessment lacks even the **minimum site-specific in-person baseline survey information, analysis, or safeguards** to demonstrate that impacts on this highly threatened species have been considered or mitigated.

1. No Acknowledgement of Turtle Dove Presence or Conservation Status

The PEIR **does not mention turtle doves in any site-specific on-the ground species survey results, or impact analysis.**

This is despite:

Protected areas for turtle doves in the site and their presence in NBIS and uK Biodiversity Atlas wildlife records.

Turtle doves are:

- **Red-listed** in the UK,
- A **UK BAP Priority Species** under the **NERC Act 2006**, and
- **Classified as “Vulnerable” on the IUCN Red List** (globally threatened).

The lack of survey evidence for such a high-risk species at statutory consultation stage is a **major legal and planning flaw**.

2. No Targeted Surveys or Habitat Suitability Assessment

The PEIR contains **no mention of surveys conducted during the turtle dove breeding season** (May–July), when their distinct purring call allows for easy detection.

- No field-level species-specific analysis of:
- Nesting habitat in hedgerows or scrub,
- Foraging opportunities (e.g. seed-rich bare ground),
- Use of the site as a migration stopover.

Without species-specific surveys the applicant **cannot rule out significant effects**, in breach of **EIA Regulations 2017 Schedule 4(1)(a)** and **NPS EN-1 para 5.3.6**.

3. No Species-Specific Mitigation

The PEIR proposes **generic habitat enhancements**, but **none tailored to turtle dove needs**, such as:

- Sowing of **seed-rich forage areas** (e.g. fumitory, chickweed),
- Retention of wide, tall, **dense hedgerows** for nesting,
- Avoidance of **mechanical works during the breeding season** (May–August),
- Predation control or disturbance minimisation.

Turtle doves require **very specific habitat features**, and are **exceptionally sensitive to land use change**.

4. No Impact Assessment of Disturbance or Displacement

Turtle doves are known to **abandon nesting sites** due to nearby disturbance.

There is no analysis of:

- Construction noise impacts,
- Human activity near hedgerows,
- Operational disturbance during the 60-year project lifespan.

The **precautionary principle** underpins UK wildlife law. Ignoring potential disturbance to a highly sensitive species **is a material planning and legal error**.

5. No Monitoring or Adaptive Management Plan

There is **no commitment to monitor for turtle dove presence** pre- or post-construction.

No mention of an **adaptive management framework** that would allow for new species records to trigger mitigation.

This breaches **EN-1 paras 5.3.9–5.3.10**, which require monitoring where effects are uncertain or mitigation unproven.

6. No Consideration of Wider Conservation Duties

The PEIR does not demonstrate how the project contributes to the Government’s legal biodiversity duties, particularly:

- The **Environment Act 2021** duty to enhance biodiversity,
- Section 40 of the **NERC Act 2006** (duty to conserve S41 species),
- Policy goals under the **UK Biodiversity Framework** and **25 Year Environment Plan**.

For a project this size and duration, ignoring a **critically declining species** like turtle dove may amount to a **failure to meet statutory biodiversity duties**.

Conclusion: Turtle Dove Protections Are Grossly Inadequate

Protection Requirement	PEIR Status
Targeted site-specific surveys	Not provided
Species/site specific Nesting/foraging habitat analysis	Absent
Species-specific mitigation	None
Disturbance/displacement impact	Not assessed

Protection Requirement

PEIR Status

Monitoring & adaptive response

No plan

Legal conservation duties

Not addressed

The PEIR fails adequately to consider conservation requirements of turtle doves—one of the UK’s fastest-declining bird species and a legally protected Biodiversity Action Plan priority, for which sites are specifically protected in our area. There is no survey effort, no impact assessment, and no mitigation strategy. This omission conflicts with the EIA Regulations 2017, the NERC Act 2006, the Environment Act 2021, and national planning policy. It renders the biodiversity assessment incomplete and legally deficient

Summary of Objection

The PEIR fails to identify through site/species-specific on-the-ground surveys, assess, or propose adequate mitigation for likely significant impacts to several nationally and internationally threatened species that are known to be present and are specifically protected in our area, including:

- **Turtle Dove (*Streptopelia turtur*)** – UK Red List, UK BAP Priority, NERC S41 species
- **Skylark (*Alauda arvensis*)** – UK Red List, UK BAP Priority
- **Lapwing (*Vanellus vanellus*)** – UK Red List, UK BAP Priority

These omissions render the ecological assessment legally and procedurally **incomplete** under the following:

- **EIA Regulations 2017** – Schedule 4 (1)(a) and Regulation 14
- **Environment Act 2021** – statutory duty to deliver Biodiversity Net Gain
- **NERC Act 2006, s40–41** – duty to conserve priority species
- **NPS EN-1 (paras 4.2, 5.3.7–5.3.10)** – requirement for comprehensive biodiversity assessments and mitigation

Relief Sought

We respectfully request that:

1. The applicant undertakes or provides the results of **targeted surveys** for turtle doves, lapwings, and skylarks as well as all the other red and amber listed Birds of Conservation Concern recorded on the sites, during breeding season, with methodologies agreed with Natural England.

2. A **revised ecological assessment** is issued, including species-specific and site-specific impact pathways and legally binding mitigation for all species of conservation concern recorded in NBIS data for the proposed sites.
3. A draft **Biodiversity Management Plan** be provided for public scrutiny before the DCO application is submitted.
4. The PEIR be revised to integrate these measures and ensure compliance with the relevant legislation and policy.

We reserve the right to raise this issue again at Examination if not resolved, and to refer the matter to Natural England or other regulators as necessary.

Specific Issues: Great Crested Newts

Chapter 8 of the PEIR does *not* provide adequate protection or mitigation for great crested newts (*Triturus cristatus*). This species is **strictly protected under UK and European law**, and the PEIR fails to meet the **legal, technical, and planning standards** necessary to ensure their protection during and after the development of this NSIP solar scheme. Our area is specifically a protection and strategic area for Great Crested Newts and we have very large breeding populations of them distributed right across the proposed scheme (as evidenced in DEFRA's MAGIC Map).

Chapter 8 Fails to Protect Great Crested Newts (GCN)

1. No Confirmed Presence/Absence or Population Status

The PEIR refers only in passing to great crested newts as a “scoped-in” receptor, but:

- **No full survey results** are presented in the chapter,
- **No evidence of eDNA testing**, Habitat Suitability Index (HSI) scoring, or trapping is included,
- **No population class assessment** is provided (low, medium, high).

GCNs are a European Protected Species (EPS) under the **Conservation of Habitats and Species Regulations 2017**, meaning the presence of *even a single individual* triggers specific legal obligations.

2. No Specific Impact Assessment

The PEIR contains **no description of aquatic or terrestrial habitats** used by GCNs onsite or within the 250–500m zone of influence.

No analysis is provided of:

- Construction-phase disturbance,
- Habitat fragmentation (e.g. fencing, access roads),
- Operational impacts (e.g. long-term land cover change, altered hydrology).

All life stages (pond breeding, juvenile dispersal, hibernation) must be considered in the EIA under **Schedule 4(1)(a)** of the EIA Regs.

3. No Mitigation Strategy or EPS Licence Plan

There is **no outline or draft licence application** under the EPS regime.

No mention of:

- Receptor site fencing or trapping,
- Amphibian exclusion fencing,
- Timing of site clearance in relation to GCN life cycles,
- Compensatory terrestrial or aquatic habitat creation.

Under **Natural England’s licensing framework**, EPS mitigation must be planned, secured, and described **before development consent** is granted. The current PEIR does not come close to meeting that standard.

4. No Mapping of Ponds or GCN Habitat Zones

- The PEIR includes **no maps showing waterbodies** onsite or within the 500m survey buffer.
- There is **no GCN-specific habitat connectivity analysis** (hedgerows, scrub, rough grassland) that GCNs rely on for foraging and hibernation.

Mapping is required to demonstrate how GCNs move through the landscape and which features are most sensitive to impact.

5. No Legal Commitments or Secured Mitigation

All references to mitigation are deferred to a future “Biodiversity Management Plan,” which:

- Is not appended,
- Is not summarised,
- Is not tied to legally binding DCO requirements or a draft S106 agreement.

Mitigation must be **detailed, deliverable, and secured** at the time of decision—not deferred.

6. No Monitoring or Post-Development Management

The PEIR contains **no commitment to monitor Great Crested Newt populations** after construction, meaning:

- Effectiveness of mitigation cannot be tested,
- Populations could decline undetected,
- No trigger exists for corrective action.

Post-consent monitoring is a core principle of both EPS licensing and the mitigation hierarchy in ecological impact assessment.

Timing and number of surveys

Residents have been approached in the final week of June 2025 by East Pye Solar to do Great Crested Newt Surveys in their private ponds. This is concerning not merely because this is too late to undertake effective population surveys but also because **Great Crested Newt (GCN) survey for a project of this size and sensitivity *must* take place over multiple seasons** to comply with:

1. **UK planning and ecological guidance,**
2. **Legal obligations under the Habitats Regulations,** and
3. **Best practice standards published by Natural England and the Chartered Institute of Ecology and Environmental Management (CIEEM).**

If only a single-season survey has been undertaken for East Pye Solar, this would represent a **serious procedural flaw** and a potentially unlawful approach to assessing impacts on a **European Protected Species**.

Why Must GCN Surveys Be Multi-Season?

1. To Capture Variability in GCN Breeding Activity

GCN presence and detectability **fluctuate significantly between years** depending on:

- Weather,
- Pond conditions,
- Population cycles.

A single-season survey could **miss presence or underestimate population size**, especially if:

- The pond is dry or cold,
- The timing was poor,
- The methodology was sub-optimal (e.g. too few visits or methods).

2. To Satisfy Natural England Survey Guidelines

Natural England (NE, 2015) requires:

- At least **four survey visits** in the breeding season (mid-March to mid-June),
- Using **at least three different methods** (e.g. egg search, torching, bottle-trapping, eDNA),
- **Repeat surveys over 2+ years** if:
 - Results are ambiguous,
 - The habitat is suitable but no GCN were found,
 - The development is large or high impact (like an NSIP).

For nationally significant schemes like East Pye, **multi-season surveys are expected as standard practice.**

To Comply with Planning and Legal Frameworks

Obligation	Requirement	Relevance
Conservation of Habitats and Species Regulations 2017	Must not permit works that would harm GCN without full assessment and derogation licence	Legal
NPPF para 180	Requires projects to demonstrate net gain and avoid harm to protected species	Policy
EIA Regs 2017	Requires “likely significant effects” on protected species to be fully described and mitigated	Procedural

Obligation	Requirement	Relevance
CIEEM Guidelines (2018)	Recommend multi-season survey unless species absence is definitively proven	Best practice

Implications for East Pye Solar

The project **covers multiple fields, hedgerows, and ponds** in a rural area that is predominantly either a protected or strategic **terrestrial and aquatic GCN habitat**.

The project involves:

- Soil stripping,
- Road and cable trenching,
- BESS and substation construction,
- Long-term disturbance.

Without multi-season survey evidence, there is **no lawful basis for concluding no impact**, and any such claim would be **legally challengeable** under the Habitats Regulations.

A **multi-season GCN survey is required** to:

- Provide a **robust population baseline**,
- Inform **avoidance and mitigation strategies** (e.g. exclusion fencing, licensing),
- Ensure the project is **legally compliant** and **environmentally sound**.

If East Pye Solar has only done a single-season GCN assessment or provided inconclusive results without repeat surveys, this is a **significant procedural and legal failing** and forms a **valid ground for objection or judicial review**.

Conclusion: GCN Protection Is Inadequate

Requirement	Provided?
Presence/absence surveys	No
Habitat assessment	No
EPS licence strategy	No
Impact analysis	No

Requirement	Provided?
Secured mitigation	No
Habitat mapping	No
Monitoring plan	No

The PEIR fails to provide adequate protection for great crested newts, a European Protected Species. There is no presence/absence data, no EPS licensing strategy, no habitat impact analysis, and no secured mitigation or monitoring. This omission places the application in breach of the Conservation of Habitats and Species Regulations 2017, the EIA Regulations 2017, and National Policy Statement EN-1. It renders the assessment incomplete and legally vulnerable.

All of these ecological elements should be provided at the statutory consultation stage under the **Planning Act 2008** and the **Infrastructure Planning (Environmental Impact Assessment) Regulations 2017**. This includes:

- **Species-specific baseline data**
- **Impact assessments for protected and priority species**
- **Mitigation strategies (outlined and specific)**
- **Legally secured mechanisms**
- **Monitoring proposals**

Failure to provide this information at the consultation stage means that consultees—including **Natural England, local authorities, NGOs, and the public**—**cannot meaningfully assess the likely significant effects** or propose reasonable alternatives or conditions. This risks **non-compliance with the EIA Regulations** and renders the consultation process **procedurally flawed**.

Legal and Policy Basis for Early Provision

1. EIA Regulations 2017 (Schedule 4 and Regulation 14)

Requires the **Preliminary Environmental Information** (PEI) to include:

- “A description of the likely significant effects of the development on the environment.”
- “A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects.”

The PEI must be **sufficiently detailed** to allow meaningful consultation—not merely an outline or placeholder.

2. National Policy Statements EN-1 and EN-3

- EN-1 (para 5.3.6): Developers must **ensure that biodiversity and geological conservation interests are protected and mitigated**.
- EN-1 (paras 4.2.1–4.2.2): Emphasises the importance of **complete and detailed environmental information** at the time of application—*and therefore by consultation*.
- EN-1 (para 5.3.10): States that mitigation should be **secured by requirements in the DCO or legal obligations**, not left vague.

3. Natural England and CIEEM Best Practice

- **Species surveys must be seasonally and methodologically appropriate,**
- **Protected species mitigation must be specific, feasible, and legally secured,**
- Deferred or generic measures are **not sufficient** where legally protected or priority species (e.g. GCN, lapwing, turtle dove) are at risk.

What *Should* Be Provided at Statutory Consultation Stage

Requirement	Should It Be in PEIR?	Legal/Policy Basis
Full species survey results (or completed phase 1)	Yes	EIA Regs Sch. 4(1)(a); EN-1 4.2
Habitat mapping and connectivity analysis	Yes	EIA Regs; NERC Act
Species-specific impact assessments	Yes	EN-1 5.3.6; Natural England
Outline species mitigation strategy (e.g. GCN licence approach, skylark plots)	Yes	EN-1 5.3.10; EIA Regs
Legal commitments or draft requirements	Yes	EN-1 5.3.10; case law (<i>ClientEarth</i>)

Requirement	Should It Be in PEIR?	Legal/Policy Basis
Monitoring and adaptive management proposals	Yes	EN-1 5.3.9–5.3.10

Risks of Not Providing This at Consultation

- **Consultation becomes ineffective** — consultees can't evaluate impacts or recommend improvements.
- **Legal risk increases** — EIA procedural errors or breaches of the Habitats Regulations may lead to **judicial review**.
- **Trust in the assessment is undermined** — especially for protected and iconic species like **turtle doves and great crested newts**.
- **Potential DCO delay or refusal** — if the Examining Authority finds the environmental information is incomplete or misleading.

Conclusion

All of the elements discussed (**species data, impact assessment, specific mitigation, legal commitments, monitoring plans**) should be included or clearly outlined in the PEIR at the statutory consultation stage. Their absence is a **serious procedural failing**, weakening both the ecological assessment and the legal defensibility of the application.

Specific Issues: River Tas – Protected Chalk Stream

Siting the East Pye Solar project close to, and routing **cables across tributaries of the River Tas** — a **protected chalk stream** — carries **severe environmental, hydrological, and legal risks**, particularly due to:

- The extreme sensitivity and rarity of chalk stream ecosystems,
- The vulnerability of chalk aquifers and headwaters to contamination and disturbance,
- The lack of sufficient assessment and mitigation in the PEIR.

These risks pose **serious challenges to the project's legal compliance**, its environmental credibility, and its planning soundness.

What is a Chalk Stream and Why Is It Important?

- The River Tas is a **chalk stream**, one of only ~220 in the world — **85% of which are in England**, primarily in the south and east.
- Chalk streams are:
 - Fed by **clear, alkaline groundwater** from chalk aquifers,
 - Home to rare species like **brook lamprey, water crowfoot, brown trout, and white-clawed crayfish**,
 - **Legally protected** by UK and international conservation frameworks.

KEY ENVIRONMENTAL RISKS OF SITING NEAR OR CROSSING THE TAS

1. Risk of Pollution from Construction and Operation

- Cable trenching, HDD (horizontal directional drilling), or bridgework across/near the river can release:
 - **Sediment, lubricants, heavy metals, or hydrocarbons**, especially during wet periods,
 - Runoff from disturbed soil into **spring-fed headwaters**.

Even small amounts of silt or pollutants can **choke invertebrates, smother fish spawning beds**, and **alter water chemistry**.

2. Disruption to the Chalk Aquifer and Groundwater Flow

- Trenching or boring near a chalk stream can:
 - **Fracture or compact fragile chalk layers**,
 - Create **pathways for surface contaminants** to enter the aquifer,
 - Change natural **spring flow rates or locations**.

This can lead to **drying of feeder springs, altered river hydrology**, and **permanent damage to the stream's baseflow regime**.

3. Permanent Ecological Fragmentation

- Cable routes across riparian zones and floodplains can:
 - Disrupt **wildlife corridors** used by otters, bats, amphibians, and birds,

- Damage **wetland margins** critical for chalk stream function,
- **Introduce light, noise, and vibration pollution** to what should be a **tranquil and protected zone**.

4. Cumulative Hydrological Impact

- Clay soil compaction, panel runoff, and BESS platform impermeability can:
 - Alter **catchment-wide runoff rates**,
 - Increase **flash flooding** or reduce **base infiltration** to the chalk,
 - Shift hydrological inputs **away from the Tas headwaters**, leading to **perennial flow loss**.

This effect is **not modelled in the PEIR**, despite the stream's proximity and significance.

LEGAL AND POLICY OBJECTIONS

1. Violation of Statutory Environmental Duties

- The Tas is part of a **priority habitat** under:
 - **NERC Act 2006** (Biodiversity Duty),
 - **Environment Act 2021** (Biodiversity Net Gain),
 - **Habitats and Water Framework Directives** (transposed into UK law).
- These require:
 - **Avoidance of harm**,
 - **Net enhancement**, and
 - **No deterioration** of waterbody status.

The current plans risk *deterioration*, not enhancement.

2. Breach of Planning Policies

- **NPPF §174–180**: Development must protect water bodies and designated habitats,
- **NPS EN-1 & EN-3**:

- Require robust assessment of **aquatic ecosystems and catchment-scale effects**,
- Demand **alternatives and avoidance** where irreversible harm may occur.

The routing of cabling **across or near a chalk stream should trigger automatic route rejection unless no alternatives exist** — which the PEIR does not demonstrate.

3. High Bar for Justification of Infrastructure in Sensitive Habitats

- Where a **priority habitat** is affected, **public benefit must clearly outweigh environmental harm**.
- Here, **a commercial solar farm backed by an infrastructure fund does not justify damage to an irreplaceable chalk stream**.

Summary of Planning Failings and Risks

Risk	Relevance	PEIR Coverage
Contaminant release to chalk stream	EA regulations, NPPF	Absent
Disruption to aquifer and springs	WFD, NPPF §174	Not assessed
Damage to riparian ecology	BNG, NERC Act	Not mitigated
Cable routing across protected zone	EN-1 §5.15	No alternatives presented
Catchment-wide hydrology disruption	Drainage law, EN-1	Not modelled

Conclusion

Routing cables across or near the River Tas — a **nationally rare and legally protected chalk stream** — poses:

- **Severe and irreversible environmental risks**,
- **Unjustified and unassessed impacts** on groundwater, ecology, and public amenity,
- **Clear grounds for objection** under planning law, environmental law, and human rights (enjoyment of natural assets).

No such routing should be approved **without a full hydro-ecological impact assessment**, a detailed **construction method statement**, and a clearly demonstrated **absence of reasonable alternatives**.

No adequate assessments or protections for the River Tas or chalk stream environments are included anywhere in the PEIR. This represents a **critical omission** in the statutory consultation and a potential **breach of environmental and planning law**.

Summary of Findings

No Site-Specific Assessment of the River Tas

- Nowhere in the **Water Environment (Chapter 9), Ecology and Biodiversity (Chapter 8)**, or **Ground Conditions (Chapter 16)** chapters is the River Tas or its status as a **chalk stream** mentioned, described, or mapped.
- There is no:
 - Catchment-scale hydrological modelling,
 - Buffer zone delineation or construction exclusion zone,
 - Mapping of potential trenching or cable crossings,
 - Ecological receptor identification specific to the Tas.

No Acknowledgment of Chalk Stream Sensitivity

- The **unique and sensitive nature** of chalk streams (clear, alkaline, spring-fed, hosting nationally rare species) is not acknowledged or addressed anywhere in the PEIR.
- This includes:
 - No mention of **protected species** (e.g. brook lamprey, water crowfoot),
 - No adequate assessment of the **chalk aquifer's vulnerability** to trenching or infiltration.

No Safeguards or Mitigation Commitments

- No construction method statements (CMS) or embedded design mitigation measures address:
 - Cable installation techniques near watercourses,
 - Silt, oil, or chemical runoff control,

- Pollution prevention protocols specific to water-sensitive zones.

Consequences of These Omissions

Area of Concern	Required?	Status	Consequence
River Tas baseline data	Required under EIA Regs	Not present	Unlawful scoping
Hydrological impact assessment	Under EN-1 §5.15	Not present	Breach of national policy
Water Framework Directive compliance	Required	Not demonstrated	Potential legal challenge
Mitigation for trenching near watercourses	Under EA guidance	No methods specified	Risk of refusal or SEI demand

Conclusion

There are **no adequate assessments or protections in the PEIR relating to the River Tas or chalk stream systems, or other sensitive water-related and landscape features**. The documentation reviewed lacks the **specific, site-sensitive analysis** required to protect these nationally significant habitats, and falls short of **planning policy and environmental law expectations**. The applicant has failed to:

- Identify the chalk stream's existence or value,
- Assess environmental and hydrological risks from nearby or crossing infrastructure,
- Propose any safeguards or mitigation measures.

This is a **procedural and substantive failing** under the EIA Regulations 2017, **National Policy Statement EN-1**, the **Environment Act 2021**, and the **Water Framework Directive (retained in UK law)**.

This provides **strong legal grounds for objection** and requires the applicant to:

- Submit a **Supplementary Environmental Information (SEI)** report,
- Redesign the scheme to avoid sensitive areas,
- Undertake full hydrological and ecological assessments before proceeding.

Key Failures of the PEIR in Protecting Chalk Streams and Sensitive Landscapes

1. No Explicit Assessment of Chalk Streams

- Despite chalk streams being among the **UK's most endangered and biodiverse freshwater habitats**, the PEIR:
 - **Does not identify or map any chalk streams** or confirm their absence,
 - Does not assess potential **hydrological or sediment impacts** on spring-fed or calcareous watercourses,
 - Fails to evaluate **hydroecological sensitivity** (e.g. groundwater flow dependency, pollution vulnerability).

This is a major oversight: even **indirect impacts** on chalk streams from changes in surface water flow, compaction, or contamination **must be assessed** under EIA Regulations and **NPS EN-1 and EN-3**.

2. Weak Hydrology and Watercourse Mitigation

- Volume III confirms the presence of **streams and ditches onsite**, yet:
 - There is **no detailed buffer zone strategy** (e.g. 10m–20m riparian buffers),
 - There is **no water quality impact modelling** (e.g. run-off, sedimentation),
 - Construction-phase drainage impacts are discussed **only in generic terms**.

Without a **hydrological risk assessment** or watercourse protection strategy, this is non-compliant with **EN-1 paras 5.15.2–5.15.6** and the **Water Framework Directive (WFD)** principles.

3. No Cumulative or Landscape-Level Hydrological Analysis

- There is **no mapping of upstream or downstream sensitive receptors**, such as:
 - Other water-dependent habitats,
 - Protected landscapes (e.g. SSSIs or riverine LWSs),
 - Abstraction points or groundwater protection zones.

The cumulative and landscape-scale **hydrological footprint of the development**—especially from compaction, panel coverage, and drainage alteration—remains unassessed.

4. Landscape and Visual Assessment Does Not Integrate Ecological Sensitivity

- Chapter 7 separates visual/landscape mitigation (e.g. bunds, planting) from ecological functions.
- There is **no integration with habitat protection**, even though:
 - Chalk streams and riparian zones are **visually and ecologically sensitive**,
 - New planting could conflict with open habitat conservation (e.g. for ground-nesting birds or GCN dispersal corridors).

This contradicts **EIA best practice**, which emphasises **cross-topic integration** to avoid unintended impacts.

5. Lack of Legal Safeguards

- There is **no draft Construction Environmental Management Plan (CEMP)**,
- No Drainage Management Plan or Pollution Prevention Strategy,
- No secured DCO requirements to **protect aquatic and riparian habitats** during construction or operation.

This renders the proposed protection **unenforceable**, violating the **mitigation hierarchy** and **EIA Schedule 4(7)**.

Conclusion: Inadequate Protection for Chalk Streams and Sensitive Waterscapes

Protection Element	Provided?	Adequate?
Identification of chalk streams	No	No
Watercourse impact assessment	Minimal/generic	No
Hydrological modelling	None	No
Riparian buffer strategy	Absent	No

Protection Element	Provided?	Adequate?
Integration with visual/landscape mitigation	No	No
Cumulative effects on aquatic habitats	Not assessed	No
Legal safeguards in draft DCO	None referenced	No

Conclusion

The PEIR fails to identify or assess impacts to chalk streams or sensitive watercourses, despite their national conservation importance. No site-specific hydrological risk assessment, buffer strategy, or secured mitigation has been proposed. This omission conflicts with the EIA Regulations 2017, the Water Framework Directive, and National Policy Statement EN-1. The assessment is incomplete and fails to ensure the protection of sensitive aquatic habitats during and after development.

Specific Issues: Bats

Bats (all species)

- Several bat species were detected, including pipistrelle and noctule, yet:
 - The PEIR lacks **transect effort maps, roost identification, or foraging corridor mapping,**
 - There is no **lighting assessment or dark corridor strategy,**
 - No mitigation for **linear habitat fragmentation** (e.g. from fencing or roads).

All bats are **European Protected Species** (EPS). The absence of a bat mitigation licence strategy or lighting plan places the project at legal risk under the **Habitat Regulations 2017**.

PEIR element	Key deficiency	Guidance trigger
Baseline survey effort	The PEIR confirms only extended Phase 1 habitat mapping has been completed so far ; there is no evidence of bat activity-transect, static detector, swarming,	Barbastelle (Annex II, UK Red Data “Near Threatened”) forage widely over arable landscapes and

PEIR element	Key deficiency	Guidance trigger
	hibernation or roost-inspection surveys , and no seasonal coverage is reported.	commute >5 km to off-site roosts. <i>BCT Good Practice Guidelines v4 (2023)</i> require dusk–dawn activity surveys April–Oct (min. one per season) plus static loggers ≥5 nights/month. Absence of these surveys risks an unsound ES and non-compliance with Reg 43 (2) Habitats Regs.
Collision & severance assessment	No collision-risk analysis for barbastelle crossing >3 m high security fencing around arrays; no gap, hop-over or flight-corridor mapping is presented.	Barbastelles commute in the 2–6 m height band; perimeter fencing can cause barrier effects requiring 6–10 m hop-overs or dark ‘bat lanes’. BCT (Box 8.3) expects modelling of key flight routes and mitigation by “permeable boundaries”.
Lighting	The PEIR tries to scope out night-time lighting impacts, yet the Scoping Opinion (ID 3.15.16) instructs the applicant to include a lighting assessment for bats; no lighting strategy or lux-contour plots are supplied.	Barbastelle is one of the most light-averse UK bats . NPPF §185(c) and ILP Guidance GN08/23 require demonstration that light-spill at treelines/hedges ≤ 0.5 lux.
Embedded mitigation	Only generic “buffers to watercourses/trees” are mentioned; no bat-specific avoidance, mitigation or monitoring plan appears in the outline LEMP or CEMP tables.	Habitats Regs licences (or LONI) need a detailed Mitigation Strategy with avoidance hierarchy, lighting controls, retention of known flight lines, post-construction monitoring ≥3

PEIR element	Key deficiency	Guidance trigger
		yrs, adaptive management triggers.
Residual effect / significance	Barbastelle not treated as a receptor in Table 8.17 “nature-conservation importance”; significance matrix therefore omits potential Major/Significant effects.	GLVIA3 & CIEEM EcIA require high-value receptors to be assessed even if data are incomplete; omission undermines EIA robustness.

We request

1. Full bat survey programme (transect + static) April–October plus swarming & hibernation surveys this coming season;
2. Barbastelle-focused collision/barrier assessment with mapped flight corridors and evidence-based hop-over design;
3. Draft Lighting Strategy with lux modelling (<0.5 lux on hedgerows/woodland edges), motion-sensor specs and dim-down protocols;
4. Bat Mitigation & Monitoring Plan (pre-commencement DCO requirement) with 3-year post-construction monitoring and adaptive measures.

We advise:

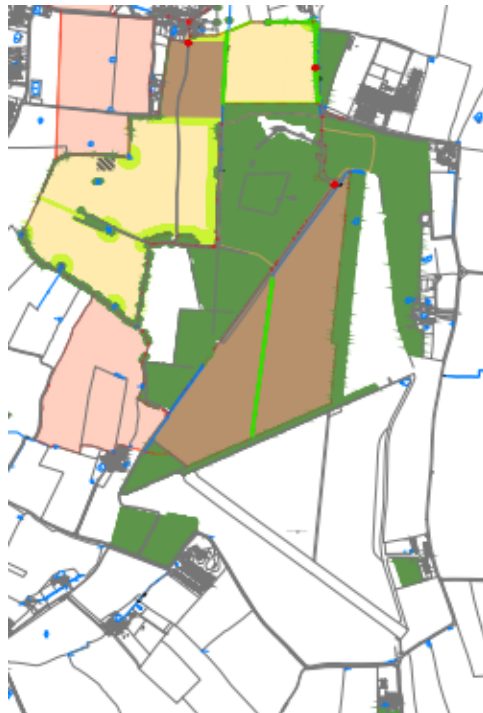
The local community affected by the East Pye Solar scheme has commissioned an independent bat survey from the Barbastelle Study Group. Barbastelles have so far been recorded in several areas of ancient woodland across the whole area of the site. Two pregnant Barbastelles have been tagged and are currently being tracked.

The former bomb shelters of the WWII Hardwick Airbase bordering sites 3a and 3b were converted by their owners into bat hibernacula and are now home to a wide range of bat taxa, in addition to the Barbastelle colonies roosting in Spring Wood. The extreme ecological sensitivity of this area was cited by the owners as a significant harm when objecting to a planning application for Spring Wood, which was consequently refused by South Norfolk Planning.

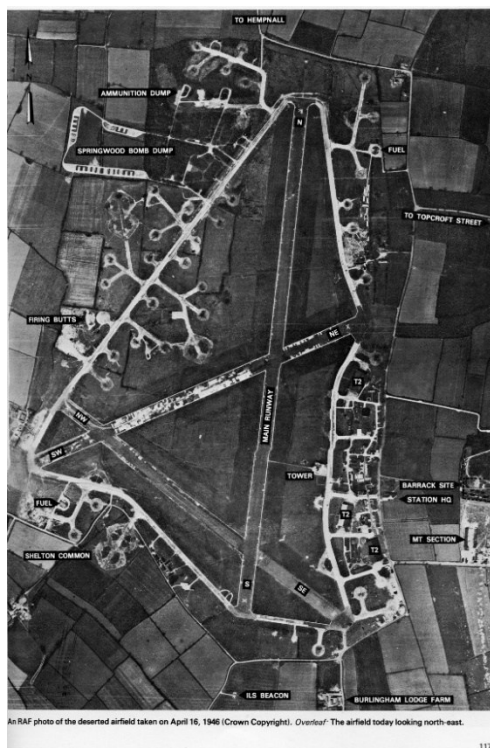
Site 3b is not a suitable location for either solar infrastructure, fencing or an inverter given that the adjoining area has been consciously developed as a significant series of

bat hibernacula. Tracker solar panels horizontal at night when bats are hunting, which presents a risk as 'bats confronted with any sufficiently large horizontal surface having these mirror properties will perceive it to be (Greif, S., Siemers, B. Innate recognition bodies in echolocating bats. *Nat Commun* 1, 107 (2010).

The area is also the location of the heavy bomb dump of Hardwick Airfield require UXO surveys in addition to site the airfield stretched over both sites area where bombs were stored and into planes adjoins 3b. The bomb which are now hibernacula were so those loading the planes could take shelter. There is a significant risk in pile driving on site 3b or undertaking any construction work in relation to UXO. This has not been addressed in on-site surveys. The daily noise of construction will also be harmful to roosting bats in the purpose-built hibernacula adjoining this site. 3b is also a priority area for lapwing, so again unsuitable.



are actively smooth, acoustic water' of water former and will 3a, as and the loaded shelters situated



An RAF photo of the deserted airfield taken on April 16, 1946 (Crown Copyright). Overlaid: The airfield today looking north-east.

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There is a need for ‘Sensitive siting of infrastructure such as inverters, maintenance compounds and battery storage systems away from valuable bat foraging habitat and/or known roosts.’ (‘Do Solar Farms Affect Foraging & Commuting Bats’ *BSG Ecology* 11 Jan 2024) as the mean activity for these species of bat has been found to be 7.3% lower at solar farms versus the control sites. (Lizy Tinsley University of Bristol Press release issued: 8 August 2023)

Under Regulation 55, development affecting EPS must meet all three legal tests:

1. Imperative reasons of overriding public interest (IROPI)
2. No satisfactory alternative
3. Maintenance of favourable conservation status

Site 3B fails all tests, making any development in this location unlawful without a licence, which is unlikely to be granted.

Case law confirms (*R (Morge) v Hampshire CC* [2011] UKSC 2) that decision-makers must actively ensure EPS protection at the planning stage and cannot defer responsibility to future licensing. Granting consent for Site 3B without meeting Habitat Regulations obligations risks rendering the development consent order unlawful and open to judicial review.

Spring Wood is a known maternity roost zone and a Priority Habitat. Site 3B lies within the commuting and foraging zone of these bats. Fencing, lighting, inverter noise and solar panel placement would fragment habitat and sever essential corridors, disrupting species viability. This violates NPPF paragraph 180(d), which requires refusal of proposals that risk the loss or deterioration of irreplaceable habitats.

Specific Issues: Badgers

- The PEIR notes the presence of badgers but omits:
 - Locations of active setts (for confidentiality, summaries can still be provided),
 - Buffer zones,
 - Sett closure or exclusion measures,
 - Legal compliance with the **Protection of Badgers Act 1992**.

Without mapped exclusion zones and secured mitigation, the assessment is incomplete and vulnerable to challenge.

Specific Issues: Invertebrates and Arable Flora

- Arable land and grassland habitats may support:
 - Priority invertebrates (e.g. solitary bees, butterflies),
 - **Rare arable plants**, yet the PEIR:
 - Acknowledges that invertebrate surveys are incomplete,
 - Makes no floristic assessment of rare or declining arable flora.

This contradicts the **mitigation hierarchy** and undermines BNG credibility. There is no explicit Invertebrates and Pollinator Action Plan compliance (DEFRA's Insect Pollinator Strategy).

Specific Issues: Hedgerows

(Important under Hedgerow Regulations 1997)

- There is **no detailed hedgerow condition survey**, or mapping of “important” hedgerows.
- No strategy for:
 - Hedgerow retention,
 - Reinstatement post-construction,
 - Use of hedgerows for connectivity or nesting.

Hedgerows are **priority habitats**, and their removal or degradation requires justification and compensation. Please refer to the Hedgerows Regulations 1997 and landscape “memory.”

Already significant areas of ancient hedging have been grubbed out immediately prior to environmental surveys to prevent birds from nesting in them. We have evidence of this vandalism, and environmental crime which we will present at the ES stage.

Specific Issues: Sensitive Landscape Features

Although the site is not in an AONB or National Park, there are:

- **Valued landscape elements**, such as riparian zones, veteran trees, and traditional farmland hedgerow networks,
- **No visual-ecological impact crossover assessment**,
- Landscape bunds proposed **without ecological integration** (which may **block flight paths or fragment habitats**).

There is no landscape-scale habitat connectivity or green infrastructure strategy—required under **NPPF para 174 and EN-1 para 5.3.10**.

Specific Issues: Omissions in Cumulative Impact Assessment

- The PEIR **fails to list or model impacts from other nearby solar developments** and infrastructure (even though these exist),
- **No population-level effects** are assessed for wide-ranging species like bats or farmland birds,
- No consideration is given to **landscape-scale habitat fragmentation**.

Summary Table – Additional Receptors Not Adequately Protected

Receptor	Problem	Legal/Policy Issue
Bats	No corridor mapping, no lighting strategy	Habitats Regs 2017
Badgers	No sett buffer zones or method statement	Protection of Badgers Act

Receptor	Problem	Legal/Policy Issue
Invertebrates	Incomplete surveys, no mitigation	EIA Regs, BNG duties
Arable flora	No survey, no compensation	NERC Act S41
Hedgerows	No condition survey or mapping	Hedgerow Regs 1997
Veteran trees/streams	Not mapped or buffered	NPPF 180, EN-1 5.3
Cumulative impact	Not addressed	EIA Regs 14(2)(e)

Conclusion

The PEIR's ecological assessment is **fragmented, generic, and underdeveloped**. It fails to identify or mitigate for multiple legally and ecologically important receptors, which is inconsistent with:

- **EIA Regulations 2017,**
- **National Policy Statements EN-1 and EN-3,**
- **Natural England standing advice,**
- **And UK biodiversity and nature recovery commitments.**

All of this ecological information should be provided at the statutory consultation stage of a Nationally Significant Infrastructure Project (NSIP), in accordance with the:

- **Planning Act 2008**
- **Infrastructure Planning (EIA) Regulations 2017**
- **National Policy Statements (especially EN-1 and EN-3)**
- Relevant case law (e.g. *ClientEarth v SoS*)
- Best practice guidance from **Natural England, CIEEM, and IEMA**

The PEIR must provide **“sufficient information to enable consultees to develop an informed view of the likely significant environmental effects of the development.”** (EIA Regs 2017, Reg. 12(3))

If field surveys of key ecological receptors (e.g. bats, great crested newts, turtle doves) are omitted, only generically described, or have no mitigation, then consultees **cannot meaningfully respond**, making the consultation **procedurally defective**.

2. What Should Be Provided at Statutory Consultation Stage

Requirement	Legal/Policy Source	Required at PEIR Stage?
Species-specific survey results	EIA Regs Sch. 4(1)(a); EN-1 5.3.6	Yes
Identification of priority/protected species	NERC Act 2006; WCA 1981	Yes
Habitat mapping (hedgerows, ponds, corridors)	EN-1 5.3.10; CIEEM guidance	Yes
Assessment of likely significant effects	EIA Regs Reg. 14(2)(d); EN-1 4.2.1	Yes
Specific mitigation proposals (not deferred)	EN-1 5.3.10; <i>ClientEarth</i> case	Yes
Legally enforceable measures or draft requirements	EN-1 5.3.10	Yes
Cumulative effects on biodiversity	EIA Regs 14(2)(e); EN-1 4.2.1	Yes
Draft monitoring strategy	EN-1 5.3.9	Yes
Consideration of sensitive landscapes and hydrology	EN-1 5.15; WFD; NPPF 174	Yes

Any deferment of surveys, mitigation, or legal safeguards to a **later DCO stage or a future management plan** undermines the **validity of the PEIR** and breaches core principles of the **EIA process**.

Risks of Not Including This at Statutory Consultation

- **Ineffective consultation** (undermining Regulation 12(3)),
- **Non-compliance with the EIA Regulations,**
- **Possible legal challenge or judicial review,**

- **Delays or refusal at the DCO stage** due to information gaps,
- **Failure to meet biodiversity net gain (BNG) and nature recovery duties** under the **Environment Act 2021**.

Conclusion

All ecological surveys, impact assessments, specific mitigation, habitat mapping, and draft legal safeguards must be provided at the statutory consultation stage.

Anything less is **incompatible with the law, policy, and purpose** of the NSIP regime's frontloaded environmental consultation process.

Specific Issues: Inadequate Assessment or Mitigation for Common Species

The proposed East Pye Solar Scheme will likely have **adverse impacts on a range of common species**, and **the PEIR does not provide sufficient protection or mitigation** for them. These "common" species may not hold the same legal protections as priority species like turtle doves or great crested newts, but they are still **ecologically important**, contribute to **biodiversity net gain (BNG)**, and are **relevant under planning and environmental law**.

Likely Impacts on Common Species

Based on habitat loss, disturbance, and operational changes, the scheme is likely to affect:

Farmland Birds (non-priority species)

- Species such as yellowhammer, linnet, reed bunting, chaffinch, and starling may use the site for:
 - **Breeding** in arable or hedgerow habitats,
 - **Foraging** in grassland and stubble fields.
- Loss of open fields and habitat fragmentation will **reduce nesting success and feeding range**.

Brown Hare

- Likely present in arable habitats and field edges.
- Sensitive to visual and acoustic disturbance and **excluded from fenced panel zones**.
- The PEIR **does not mention this species** or propose any habitat corridors.

Hedgehog

- Uses hedgerows and field margins for **movement and shelter**.
- The PEIR includes **no provision for hedgehog-accessible fencing** or retained refuge habitat.

Woodpigeon, blackbird, robin, dunnock

- Common hedgerow and garden birds.
- Subject to nesting disturbance and habitat loss if **vegetation clearance is not seasonally restricted**.
- PEIR **lacks a clear timing restriction strategy** for vegetation clearance.

Small Mammals & Amphibians (e.g. voles, frogs, toads)

- Impacted by:
 - **Compaction and soil sealing,**
 - Drainage changes,
 - Loss of grassy margins and damp microhabitats.
- The PEIR **does not assess these functional groups** at all.

Shortcomings in Protection and Mitigation

Issue	Adequately Addressed?	Details
Field-scale bird habitat loss	No	No assessment or compensation (e.g. wild bird seed mixes, scrapes, skylark plots)
Connectivity for small mammals/hedgehogs	No	No accessible fencing or habitat corridors proposed
Seasonal constraints on clearance	No clear commitment	PEIR lacks enforceable avoidance measures for breeding periods

Issue	Adequately Addressed?	Details
Compensatory habitat	Not targeted	Habitat proposals are general (grassland mixes), not tailored to species needs
Monitoring of common species	None proposed	No plan to measure effects on non-priority species post-construction

Common species often **benefit from measures targeted at priority species**, but in this scheme, **neither group is adequately addressed**.

Legal and Policy Relevance of Common Species

- **Environment Act 2021** requires all new development to contribute to **biodiversity net gain**—which includes common species.
- **NPPF para 174** requires planning to protect and enhance all biodiversity—not just rare species.
- **EIA Regulations 2017** require assessment of **likely significant effects**, including cumulative loss of common species across landscapes.

Populations of formerly common species (e.g. hedgehog, starling, yellowhammer) are **already in national decline**. Their omission from robust mitigation frameworks increases ecological risk.

Conclusion

The East Pye Solar PEIR **does not provide adequate protection or mitigation for common species**. These species:

- Will be affected by **habitat loss, disturbance, and landscape fragmentation**,
- Are **not individually assessed** or monitored,
- Receive only **minimal or generic mitigation**,
- Are not considered under a legally enforceable framework tied to the DCO.

Next Steps respectfully requested:

- A **quantified BNG metric (Defra 4.0 or equivalent)**.
- Completion and publication of **all baseline survey data**.
- A full **Habitats Regulations Screening Report (HRA)**.
- A **draft Biodiversity Management Plan**, tied to measurable outcomes.
- A detailed **cumulative and in-combination effects matrix**.

Chapter 9 Water Environment

The Water Environment chapter of the East Pye Solar PEIR is not adequate in terms of legal and planning policy at the statutory consultation stage. It fails to meet key requirements of the EIA Regulations 2017, National Policy Statements (NPS), and best practice guidance from the Environment Agency and Natural England.

Key Deficiencies in Chapter:

1. Inadequate Assessment of Groundwater and Drinking Water Protection Zones

- There is insufficient detail or mapping of private drinking water supplies, despite multiple references to land within Drinking Water Safeguard Zones (DWSZs) and Source Protection Zones (SPZs).
- Risks from leachate, BESS fire runoff, or construction spills are acknowledged but not quantified or spatially assessed.
- There is no site-wide hydrogeological risk assessment, contrary to EA and EIA expectations.

2. Missing Assessment of Flood Risk to Key Infrastructure

- While surface water and fluvial flood maps are included, climate change allowances are vague, and there is no commitment to full drainage design.
- No assessment is made of the flood resilience of sensitive infrastructure such as:
 - Substations,
 - Battery Energy Storage Systems (BESS),
 - Cable trenches.
- Sequential and exception tests are not transparently applied or evidenced.

3. No Proper Evaluation of Chalk Streams or Sensitive Hydrology

- The chapter acknowledges proximity to the River Tas, a chalk stream, but:
 - Provides no ecological or hydrological sensitivity mapping,
 - Fails to assess the impact of trenching, compaction, or soil movement near this catchment,
 - Does not reference the relevant catchment-based approach (CaBA) or Chalk Stream Restoration Strategy.

4. Incomplete Drainage Strategy

- The outline drainage plan is deferred, with no information on:
 - Pre- vs post-development runoff rates,
 - Management of runoff from panels and tracks,
 - Interception or treatment of polluted water during construction or fire events.

Policy and Legal Failures

EIA Regulations 2017 – Schedule 4

- Requires that effects on water, hydrology, and pollution pathways be assessed, and that mitigation be specified. The PEIR's commitments are vague and deferred.

NPS EN-1 & EN-3

- EN-1 §5.15–5.16 requires a Flood Risk Assessment for all infrastructure in flood zones, plus detailed surface water management.
- EN-1 §5.11 and EN-3 §2.47 require water contamination risks to be assessed, especially from construction and hazardous components like BESS.
- These are not met in the current chapter.

Best Practice

- EA and Natural England guidance requires risk-based mapping and cumulative risk assessment for groundwater-dependent habitats and private water supplies.
- **These are missing or insufficiently developed in Chapter 9.**

The Appendix Water Framework Directive Assessment is equally deficient:

It identifies two water bodies:

- **River Tas (GB105034050180) – a designated chalk stream.**
- **Broadland Rivers Chalk and Crag groundwater body.**
- Confirms both are WFD-designated water bodies.
- Outlines basic WFD objectives: no deterioration, no prevention of improvements, no harm to protected areas.
- Provides a high-level screening stating the project is not expected to cause deterioration or prevent achievement of good status with no actual evidence.

Missing or Inadequate:

Required Element	Finding	Comment
Detailed impact pathway analysis	Not present	The assessment does not quantify risks of trenching or HDD near water bodies, nor does it assess interaction with groundwater flows.
Hydrogeological context	Lacking	It does not consider the karstic or fissured nature of chalk aquifers, which may allow rapid pollutant movement.
Surface water and flood flow modelling	Absent	No detail on surface water run-off pathways or how they could carry pollutants into the River Tas.
Construction phase risks	Vague	Mentions standard mitigation (e.g. CEMP) but offers no evidence of effectiveness in the specific hydrological context.
Justification of screening conclusion	Weak	Simply asserts no likely deterioration without supporting evidence or quantitative assessment.
Reference to EA consultation	Missing	No confirmation that the EA was consulted on WFD risks, which is best practice.
Assessment of potential for cumulative deterioration	Omitted	No review of other pressures on River Tas or groundwater body from nearby projects.

Required Element	Finding	Comment
Consideration of source protection zones (SPZs)	Absent	Does not mention any Drinking Water Protection Zones or abstraction boreholes, though these exist near the BESS.

Legal and Planning Implications

Under Schedule 4(5) of the EIA Regulations 2017 and paragraphs 5.15.4–5.15.7 of EN-1, the developer must assess likely significant effects on water quality, hydrology, and compliance with WFD objectives. This appendix fails to demonstrate such an assessment in any substantive way.

Furthermore, Environment Agency WFD guidance requires applicants to provide:

- Baseline water body condition and pressures,
- An impact screening and risk matrix,
- Identification of mitigation and monitoring needs.

Appendix 9.2 does not meet these standards. It is not adequate as a WFD assessment at the statutory consultation stage.

It constitutes a brief, unsubstantiated screening statement, lacking detailed analysis of:

- Water body interactions,
- Pollution pathways (especially from the BESS or construction runoff),
- Groundwater vulnerability,
- WFD compliance under realistic construction and operational conditions.

This is a procedural deficiency and supports a Section 25 remedy request or statutory objection.

Specific Issues: River Tas Chalk Stream Crossing

Based on a detailed review of Appendix 9.2 – Water Framework Directive Assessment from the East Pye Solar PEIR, the ditch and River Tas crossings are *not* adequately assessed.

1. River Tas Crossing – Inadequate Consideration

The document mentions the River Tas (GB105034050180) as a WFD water body but does not specify whether or how the development crosses it (e.g. for cabling or access).

- **What's currently missing:**

- No clear mapping of cable route, trenching or crossing in relation to the River Tas.
- No description of the crossing method (e.g. HDD vs open cut).
- No assessment of temporary or permanent impacts on channel morphology, bank stability, or riparian habitat.
- No in-channel habitat condition or mitigation measures (e.g. buffer zones, runoff controls).
- No analysis of potential for deterioration of WFD status due to sedimentation, pollution, or hydrological disruption.

WFD guidance from the Environment Agency requires a specific assessment of any works in, under or near a WFD water body, including physical modification or pollution pathways.

2. Ditch Crossings – Not Assessed

The appendix generally mentions “ditches” or minor water features, but does not identify them individually or assess whether they are connected to designated WFD water bodies.

- **What's currently missing:**

- No identification or characterisation of ditches to be crossed by cable or access routes.
- No consideration of flow paths or connectivity to River Tas or groundwater.
- No assessment of cumulative deterioration risk if multiple minor crossings are proposed.
- No detail on pollution control during crossing works.

Even though small, ditches can be hydrologically linked to WFD water bodies (especially in chalk catchments). Not assessing these crossings is a failure to comply with the requirement to assess likely significant effects under the EIA Regs and the Water Environment Regulations 2017.

Conclusion

The WFD Assessment in Appendix 9.2 does *not* adequately assess impacts of crossings of the River Tas or associated ditches.

This is a substantial gap in:

- WFD compliance screening,
- Ecological impact assessment (especially on a chalk stream),
- Hydrological risk analysis under EIA regulations.

Conclusion

The PEIR Water Environment is legally and procedurally inadequate at statutory consultation stage. It fails to:

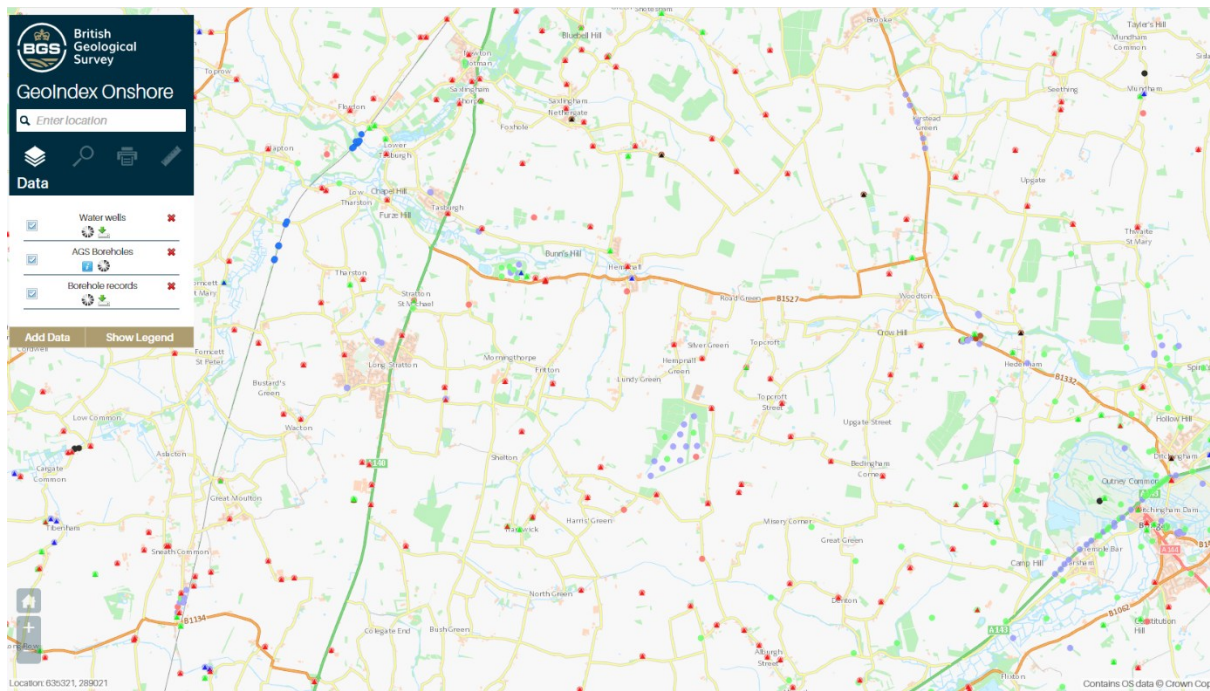
- Protect sensitive groundwater or chalk streams,
- Map or assess drinking water supply risk,
- Provide flood resilience evidence for key infrastructure,
- Comply with the EIA Regulations or NPS policy.

This deficiency justifies a Section 55 procedural objection and forms a strong planning basis for refusal or further information under Regulation 25.

Specific Issues: Private Water Supplies and Drinking Water Protection Zones

Despite the Planning Inspectorate specifically stating that evidence of baseline and impacts to private water supplies should be scoped in, this data is entirely missing from the PEIR.

- The PEIR fails to identify any other than one private water supply impacted by the scheme. An outline map of their locations is provided here.

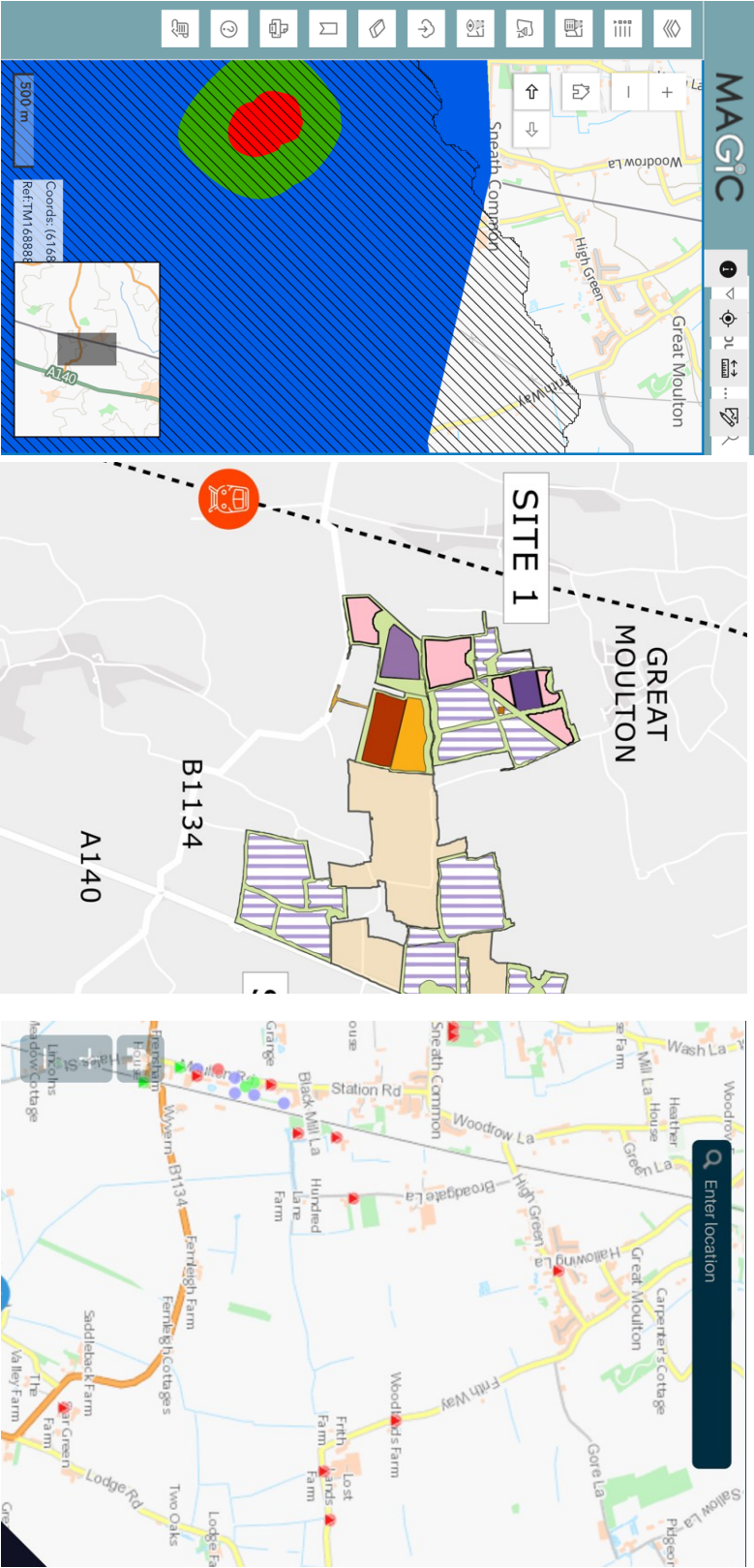


Private drinking water supplies (PWS) and Drinking Water Protection/Safeguard Zones (SPZ) occur throughout the area covered by the proposed site.

Several of the proposed solar and both 400KV substation sites are surrounded by private drinking water supplies (wells and boreholes); meaning they are all SPZ. The proposed BESS/substation 1 site is also a Drinking Water Safeguard Zone (ground water). Great Moulton Simpson Maltings uses their private water supply as part of their daily production processes. This is a wholly inappropriate location to site this type of hazardous infrastructure and an alternative site must be found.

Siting any hazardous infrastructure on these locations presents significant risks and is enforceable under EA GP3 2023.

BESS and Substation 1 sites, showing drinking water safeguard zones and private water supplies



Private Drinking Water Supplies at Site 5 and Substation 2, beside and opposite construction access entry point. The High pressure gas main also runs across this site.



- No PWS Risk Assessment has been presented as required by regs 6-9 of the Private Water Supplies (England) Regulations 2016 and EA GP3 Position Statements.
- The Outline Battery Safety Management Plan omits SPZ1 compatibility and secondary containment details.
- Alternative site justification for the BESS is missing. Why have non-hazardous alternatives (e.g., flow batteries) not been considered? NPS EN-1 §4.4 (“do something else” test)
- The PEIR’s deferral of groundwater assessment to the ES stage violates the requirement to show ‘no adverse effect’ on private water supplies, which is a clear breach of national policy EN-1 (2024) 5.15 and NPPF 183.
- The lack of a hydro-geological risk assessment (HRA) for SPZ1 is contrary to South Norfolk Local Plan DM 4.2 and Norfolk Minerals and Waste Plan MW2.
- The Infrastructure Planning (EIA) Regulations 2017 (reg 12 and Sch 5) require ‘sufficient preliminary information’ at the s.42 stage, including a draft Conceptual Site Model, identification of private water supplies and mitigation strategies.
- Delaying private water supply identification is unacceptable (precedent: A47 to North Tuddenham (2022))

At statutory-consultation stage this project does not yet meet the legal tests for private-supply protection. **We therefore consider the PEIR inadequate under reg 12(2)(b) of the Infrastructure Planning (EIA) Regs 2017.**

We require East Pye Solar to supply before DCO submission, a hydro-geological CSM, a detailed PWS-RA, and a SPZ1 mitigation plan endorsed by the EA and SNC Environmental Health. Without this information, Statutory Consultation cannot be fulfilled.

(copy to EA Groundwater and Contaminated Land East Anglia, South Norfolk Environmental Health, UKHSA).

A Private Water Supply Risk Assessment (PWS-RA) should be provided that:

- Maps each supply with well ID, depth, abstraction rate and SPZ classification;
- Sets out worst-case contaminant scenarios (BESS thermal runaway, transformer oil spill, fire-water, cement washout, HDD drilling fluids)
- Demonstrates compliance with reg 6 PWS Regulations and GP3 SPZ1 rules

For this statutory consultation stage, East Pye Solar must provide:

- Alternative site justifications, especially for substations and the BESS: why the battery compound has to sit inside SPZ contrary to EA Position Statements, and why other locations were rejected.
- A SPZ-specific design statement: secondary containment drawings, impermeable hardstandings, firewater retention tanks and commitment to EA's Pollution Prevention Guidance (PPG) 1, 2, 5 & 6.
- Liaison evidence: minutes of engagement with all private water supply owners and SNC Environmental Health confirming the scope of the RA and agreed monitoring triggers.
- A monitoring and contingency protocol: baseline sampling of each well (pH, conductivity, major ions, metals, PFAS, VOCs) and post-construction quarterly monitoring for at least five years overseen by an independent EA approved hydrogeologist, plus a funded remediation bond.

Specific Issues: Flooding

Flooding is *not* adequately addressed in Chapter 9 of the PEIR. While the document references flood zones and states that a Flood Risk Assessment (FRA) has been carried out, the assessment is **superficial, generic, and incomplete** in several key areas, leaving the proposal vulnerable to legal and planning objection.

The PEIR fails to provide a site-specific flood risk assessment. Surface water flooding, construction-phase drainage, and displacement risk to third parties are not modelled or mitigated. No SuDS strategy is presented, and there are no secured DCO provisions for flood mitigation. This omission conflicts with the EIA Regulations 2017, NPS EN-1, the

NPPF, and the Environment Agency's flood risk guidance. The development could increase local flood risk and has not demonstrated safe operation over its lifespan.

Key Deficiencies in Flood Risk Assessment

1. No Site-Specific Surface Water Flooding Assessment

- The PEIR focuses primarily on fluvial (river) flood zones but:
 - **Fails to assess surface water flood risk** across the full extent of the site,
 - Does not consider **increased run-off from access roads, compacted ground, cable trenches, and solar panels**,
 - Does not model overland flowpaths or localised pooling on altered terrain.

This is a critical omission. NSIPs must consider **surface water and localised flooding** under **NPPF paras 167–169** and **EN-1 para 5.7.5**.

2. No Detailed Drainage Strategy or SuDS Plan

- Although the PEIR mentions that drainage will be designed to mimic greenfield run-off, it:
 - Provides **no sustainable drainage system (SuDS) design**,
 - Offers **no schematic or spatial layout** of swales, attenuation basins, or infiltration features,
 - Does not address **construction-phase drainage** or sediment control.

A drainage strategy is required to demonstrate that the development will not increase downstream flood risk, per **NPPF para 169** and **EIA Regs Schedule 4(5)**.

3. Out-of-Date or Absent Flood Zone Mapping

- The PEIR relies on **static Flood Zone maps (FZ1–3)** without using up-to-date:
 - **Surface Water Flood Risk (SWFR) maps**, or
 - **Climate-adjusted rainfall models** from the **Environment Agency (EA)**.

A credible FRA must include **future climate conditions** and rainfall intensities, as required by **EN-1 paras 5.7.5–5.7.9** and **EA/Lead Local Flood Authority (LLFA)** guidance.

4. No Assessment of Flood Risk Displacement

- There is **no evidence that increased runoff will not displace flood risk onto adjacent landowners or downstream settlements.**
- The FRA does not include **run-off rate calculations or attenuation volume estimates.**

This is a direct breach of **NPPF para 167(b)**: developments must “**not increase flood risk elsewhere**”.

5. No Legal Commitment to Flood Mitigation

- There is:
 - No proposed DCO requirement to enforce the drainage or FRA,
 - No design safeguards secured through conditions or an outline CEMP,
 - No clarity on how the LLFA or EA will be engaged in final design approval.

EN-1 para 5.7.10 requires that **flood mitigation be secured** as a condition of consent—not deferred to post-consent approval.

Summary Table – Flooding Assessment Gaps

Issue	Addressed?
Surface water flooding (SWFR)	No
Drainage/SuDS design	Not included
Climate change modelling	Not used
Run-off and displacement risk	Not quantified
Legal commitment via DCO	Absent

The document titled “**Appendix 9.1 – Flood Risk Assessment and Outline Surface Water Drainage Strategy**” does include some elements of a Flood Risk Assessment (FRA), but it is **not fully adequate** for the statutory consultation stage of an NSIP, based on national policy and regulatory expectations.

It Includes:

- Identification of **Flood Zones** (mostly Zone 1, with some minor areas near Zone 2/3).
- General **site topography and runoff characteristics**.
- Outline of a **surface water drainage strategy** based on greenfield runoff rates.
- Reference to design parameters (1 in 100 year + climate change storm event).
- Conceptual SuDS (e.g. swales, attenuation, discharge locations).

Omissions and Deficiencies:

Requirement	Finding	Comments
Site-specific flood modelling	Not included	No modelling of flood extents, depths, or velocities using EA data or hydraulic models.
Sequential Test (required if any part is in Flood Zone 2/3)	Not presented	EN-1 and NPPF require justification of site location relative to flood risk zones.
Groundwater flood risk	Not assessed	No mention of groundwater flooding potential, despite being in a permeable chalk catchment.
Surface water flow paths	Minimally addressed	Briefly acknowledged, but not analysed in terms of runoff routing and hazard to infrastructure.
Fluvial and ordinary watercourse risk	Weakly assessed	No detail on culverts, ditch blockage risk, or potential backflow/flooding.
Climate change allowances	Mentioned, but not quantified	Cited, but no sensitivity testing or robust hydraulic analysis included.
Access and egress during flood conditions	Not evaluated	No mention of safe access routes for emergency services or staff during floods.

Conclusion

This Appendix document is a **preliminary surface water strategy**, not a **full site-specific FRA** as required under:

- **NPPF §168–170,**
- **EN-1 §§5.7.9–5.7.21,**
- **EIA Regs Schedule 4(5).**

It does not demonstrate that flood risk to and from the development is fully understood or can be safely managed, especially:

- For temporary construction compounds,
- For BESS safety (if placed in lower-lying areas),
- Or in relation to climate change resilience.

This FRA is inadequate for a statutory consultation-stage PEIR under the Planning Act 2008 and EIA Regulations. It lacks the detail, evidence, and modelling required to satisfy NSIP policy and Environment Agency guidance. A full FRA is needed before the application can be considered procedurally sound.

For the **Chapter 9 (Water Environment)** of the PEIR to be **legally compliant and policy-sound**, the applicant must **significantly expand and improve the assessment** in line with the **EIA Regulations 2017, National Policy Statement EN-1, the NPPF**, and guidance from the **Environment Agency (EA)** and **Lead Local Flood Authority (LLFA)**.

Required Additions to Ensure Compliance

1. Detailed Flood Risk Assessment (FRA)

Add:

- Full **Flood Risk Assessment (FRA)**, appended or summarised within the PEIR.
- Identification of:
 - **All flood zones** (fluvial, pluvial, groundwater, sewer).
 - **Surface Water Flood Risk (SWFR)** from latest EA mapping.
 - Climate change-adjusted flooding scenarios (e.g. 40% uplift in rainfall intensity).

Required under **EIA Regs Schedule 4(5)** and **EN-1 paras 5.7.4–5.7.9**.

2. Site-Specific Drainage Strategy & SuDS Plan

Add:

- A **Sustainable Drainage Systems (SuDS)** strategy showing:
 - Location and design of swales, attenuation ponds, infiltration trenches.
 - Greenfield run-off calculations.
 - Drainage management during **construction and operation**.
- Include **maintenance responsibility** and timeframe (e.g. 60-year lifespan).

SuDS are required by **NPPF paras 167–169** and **EN-1 para 5.7.5** for all major development.

3. Assessment of Increased Run-Off and Flood Displacement

Add:

- Quantitative modelling of:
 - **Increased impermeable areas** (e.g. panel footings, roads),
 - Resulting change in run-off rates,
 - **Downstream displacement risk** to adjacent land or properties.

NPPF para 167(b) requires assurance that development “**does not increase flood risk elsewhere.**”

4. WFD Compliance Statement

Add:

- A formal **Water Framework Directive (WFD) compliance screening** for all waterbodies:
 - Assess risk of deterioration,
 - Determine if objectives under the **WFD Regulations 2017** are maintained,
 - Include mitigation for sedimentation or pollution.

WFD applies to **any activity potentially affecting surface or groundwater status**.
Required by **EN-1 para 5.15.6**.

5. Draft Construction Environmental Management Plan (CEMP)

Add:

- Outline or draft CEMP containing:
 - Pollution control measures (e.g. spill kits, bunding, silt fences),
 - Drainage controls during site clearance,
 - Timing restrictions during wet seasons.

CEMP required under **EIA Regs Schedule 4(7)** and industry best practice.

6. Legally Secured Mitigation in the DCO

Add:

- Proposed **DCO Requirements** or planning conditions for:
 - Implementation of the drainage strategy,
 - Construction according to the CEMP,
 - Monitoring of flood risk and SuDS effectiveness.

EN-1 para 5.7.10 requires **binding mitigation**, not just aspirational statements.

7. Cumulative Impact Assessment

Add:

- A cumulative hydrological impact matrix or narrative, assessing:
 - Other solar NSIPs, roadworks, or large-scale developments in the area.
 - Potential compounded surface water/flood risk.
 - Shared drainage catchments or watercourses.

Required under **EIA Reg 14(2)(e)**.

Summary Table – Required Additions

Required Element	Legal/Policy Basis	Status	Action Needed
Full FRA (incl. surface water & climate change)	EN-1 5.7; EIA Regs	Missing	Add detailed FRA
SuDS strategy	NPPF 167–169	Missing	Add design & layout
Flood displacement modelling	NPPF 167(b)	Missing	Add quantitative analysis
WFD compliance	WFD Regs 2017; EN-1	Absent	Add formal WFD statement
CEMP with pollution controls	EIA Sch. 4(7)	Not included	Provide draft plan
Legally binding mitigation	EN-1 5.7.10	Absent	Add draft DCO requirements
Cumulative flood/hydrology assessment	EIA Reg 14(2)(e)	Not done	Include new section

Specific Issues: Hydrology, Microclimate, and Surface Water Effects

The transformation of large tracts of arable land to solar arrays has the potential to significantly alter local hydrology, including increased surface runoff, localised flooding, and changes in groundwater recharge dynamics. The PEIR does not address whether the “cooling” or “shading” effect of extensive panel coverage could impact crop productivity or wildlife in adjacent fields, nor does it provide detailed modelling of the impacts on local microclimate or water cycling. This represents a critical evidence gap given the site’s proximity to sensitive chalk streams and the high reliance on local water resources.

Specific Issue: Water Contamination Risks

Water contamination risks are *not* adequately covered or mitigated in Chapter 9 of the PEIR. The treatment of pollution risk from construction, operation, and runoff is **high-level, generic, and lacks enforceable detail**. This leaves the scheme inconsistent with key planning and environmental regulations.

Key Deficiencies in Contamination Risk Coverage

1. No Specific Pollution Pathway Assessment

- The PEIR does not identify or assess potential pollution sources such as:
 - Fuel and chemical storage during construction,
 - Herbicide or pesticide use for vegetation management,
 - Runoff containing hydrocarbons or heavy metals from solar panel washing or access roads.
- No site-specific pathways to surface water or groundwater are described.

Required by:

- **EIA Regulations 2017, Schedule 4(5) & (7),**
- **NPS EN-1 paras 5.15.3–5.15.6,**
- **Environment Agency pollution control guidance.**

2. No Groundwater Vulnerability or SPZ Analysis

- There is **no mapping or discussion of Source Protection Zones (SPZs)** or groundwater vulnerability designations from the Environment Agency.
- No conceptual hydrogeological model is presented, meaning **potential contamination of shallow aquifers is not ruled out**.

Groundwater is protected under **WFD Regulations 2017** and **Groundwater Directive obligations**. Risk to drinking water sources must be assessed.

3. No Construction-Phase Pollution Control Plan

- While the chapter mentions general mitigation, there is:
 - **No draft Construction Environmental Management Plan (CEMP),**

- No description of spill prevention, emergency response procedures, or storage protocols.

This contradicts EIA best practice and violates the principle of the **mitigation hierarchy** (avoid–reduce–compensate).

4. No Operational-Phase Water Quality Safeguards

- No measures are proposed to:
 - Prevent runoff from panel surfaces carrying nutrients, metals, or sediment,
 - Manage wash water or panel cleaning activities,
 - Prevent degradation of water quality in connected ditches, streams, or drains.

Water quality must be protected during **operation**, not just construction. This is a gap in the PEIR's mitigation framework.

5. No Legal Commitment or Secured Controls

- There are no:
 - **Draft DCO requirements** ensuring water quality protection,
 - Conditions for Environment Agency approval,
 - Binding commitments to monitor or manage water quality post-consent.

Per **EN-1 para 5.15.10**, mitigation must be **secured through planning obligations or requirements**—not aspirational or deferred.

Summary Table – Contamination Risk and Mitigation Gaps

Risk Area	Addressed?	Adequately Mitigated?
Fuel/chemical pollution (construction)	Generic only	No CEMP or measures
Groundwater contamination	Not assessed	No SPZ or hydro data
Surface water runoff from panels/roads	Not modelled	No pollution treatment
Herbicide/pesticide use	Not mentioned	Not controlled

Risk Area	Addressed?	Adequately Mitigated?
Emergency spill response	Not described	Not enforceable
Legal mechanisms (DCO/S106)	None proposed	Not compliant

Chapter 9 of the PEIR fails to assess or mitigate risks of water contamination during construction and operation. No specific pollution control strategy, groundwater vulnerability analysis, or secured mitigation is provided. This is inconsistent with the EIA Regulations 2017, the Water Framework Directive, and National Policy Statement EN-1. Without enforceable measures or a CEMP, there is a significant risk to local water resources and downstream receptors.

To make **Chapter 9 – Water Environment** compliant with the **EIA Regulations 2017, National Policy Statement EN-1**, and relevant environmental protection laws, the applicant must **substantially revise and expand the chapter**. It currently lacks the necessary detail, evidence, and enforceable measures to ensure protection of water quality, flood risk, and hydrology.

To Achieve Compliance

1. Add a Detailed Pollution Risk Assessment

What to include:

- Identification of all pollution sources:
 - Fuels, lubricants, chemicals used during construction,
 - Wash water from solar panels,
 - Potential herbicide/pesticide use,
 - Disturbance of contaminated ground (if applicable).
- Source-pathway-receptor analysis (SPR model).
- Assessment of **risk to groundwater and surface water**.

Required under:

- **EIA Regulations Schedule 4(5) & (7),**
- **NPS EN-1 paras 5.15.3–5.15.6,**
- Environment Agency groundwater protection policies.

2. Include Groundwater Sensitivity Mapping and Risk

- Mapping of:
 - **Source Protection Zones (SPZs),**
 - **Groundwater Vulnerability** layers,
 - Local boreholes or drinking water abstraction points.
- Conceptual hydrogeological model for groundwater movement.

To ensure compliance with:

- **Water Framework Directive (WFD),**
- **Groundwater Directive 2006/118/EC,**
- **EA groundwater protection position statements.**

3. Provide a Draft Construction Environmental Management Plan (CEMP)

Include:

- Pollution control measures:
 - Spill kits, refuelling protocols, bunded storage,
 - Wheel wash, silt fencing, temporary attenuation.
- Emergency spill response procedure.
- Clear assignment of responsibilities.

Mitigation must be clearly defined and **not deferred**—as required by:

- **EIA Regs Schedule 4(7),**
- **EN-1 para 5.15.10,**
- Best practice from CIRIA C532 and C741 guidance.

4. Add Operational Pollution Controls

include:

- Controls on:
 - Panel washing frequency and water use,

- Sediment and nutrient runoff,
- Maintenance of tracks and access roads.
- Runoff treatment features (e.g. grass filter strips, swales, settlement ponds).

This prevents long-term degradation of watercourses and complies with:

- **NPPF para 174**, and
- **EN-1 para 5.15.6**.

5. Include a Sustainable Drainage Strategy (SuDS)

What to include:

- Location and design of:
 - Swales,
 - Detention basins,
 - Infiltration zones,
 - Flow control devices.
- Greenfield runoff rate and volume comparison.
- Maintenance strategy for 25–60 year lifespan.

Why: Required under:

- **NPPF paras 167–169**,
- **Lead Local Flood Authority (LLFA)** guidance,
- **EA SuDS non-statutory technical standards**.

6. Include a Water Framework Directive (WFD) Compliance Screening

Include:

- List of **all water bodies** (surface and groundwater) potentially affected,
- Assessment of whether the development would:
 - Cause deterioration in status,
 - Prevent achievement of Good Ecological Status.

Compliance with:

- **Water Environment (Water Framework Directive) (England and Wales) Regulations 2017,**
- **EN-1 para 5.15.6.**

7. Add Cumulative Impact Assessment

Include:

- Assessment of water environment impacts from:
 - Other solar farms or proposed NSIPs nearby,
 - Agricultural or drainage intensification,
 - Urban developments downstream.
- Cumulative effects on runoff volume, water quality, sediment load.

Required under:

- **EIA Regs Reg. 14(2)(e),**
- **EN-1 para 4.2.1.**

8. Secure All Mitigation via Legal Planning Mechanisms

Include:

- Draft **Development Consent Order (DCO) Requirements** to:
 - Enforce drainage strategy,
 - Mandate CEMP implementation,
 - Secure WFD compliance measures,
 - Establish pollution monitoring conditions.
- Reference to possible **Section 106 obligations** or **Environmental Permits** (as needed).

As per **EN-1 para 5.15.10**—mitigation must be **legally binding** and enforceable.

Summary Table – Required Additions

Requirement	Why It's Needed	Legal/Policy Basis
Pollution risk assessment (SPR)	Covers construction/operational risks	EIA Regs, EN-1, EA
Groundwater/SPZ mapping	Protects drinking water	WFD, Groundwater Directive
Draft CEMP	Specifies construction mitigation	EIA Regs, EN-1 5.15.10
Operational controls	Prevents long-term water impacts	NPPF, EN-1
SuDS strategy	Controls runoff/flooding	NPPF 167–169
WFD screening	Assesses impact on waterbody status	WFD Regs, EN-1 5.15.6
Cumulative impacts	Required for legal compliance	EIA Regs 14(2)(e)
DCO Requirements/legal securing	Ensures enforceability	EN-1 5.15.10

Neither **PEIR Chapter 9 (Water Environment)** nor **Volume III** adequately assess or protect private drinking water supplies. There is a **complete absence of site-specific investigation or mitigation** for potential impacts on **private wells, boreholes, or small-scale abstractions**, which may exist in rural areas surrounding the proposed solar farm.

Specific Issue: Contamination Risks to Private Drinking Water Supplies

1. No Identification of Private Water Sources

- The documents **do not mention private water supplies at all**—no survey has been conducted to identify:
 - Private boreholes,
 - Domestic wells,
 - Farm abstractions for drinking or livestock.

This is a critical omission, especially in rural areas where **mains supply may be absent or supplemented by private sources**.

2. No Groundwater Risk Assessment

- There is **no conceptual hydrogeological model** showing:
 - Aquifer type (e.g. chalk, sand and gravel),
 - Depth to groundwater,
 - Groundwater flow direction,
 - Hydraulic connectivity to neighbouring properties.

Without this, it is impossible to determine whether construction or operation could **pollute or reduce yield from private water sources**.

3. No Source Protection Zone (SPZ) or Abstraction Safeguarding

- There is **no mapping or reference to SPZs** from the Environment Agency,
- **No check for nearby abstractions** on the EA's public register (which includes licensed and exempt private sources).

These are standard steps in any water environment or WFD screening assessment.

4. No Consultation with Local Authorities or Landowners

- The PEIR does not report any **consultation with the local Environmental Health team**, who maintain the **Private Water Supply (PWS) Register**.
- Landowners who may rely on boreholes or wells have not been surveyed.

This is contrary to basic environmental due diligence and the requirements of **effective stakeholder engagement under Reg. 12 of the EIA Regulations 2017**.

5. No Specific Mitigation or Monitoring Measures

- There is **no commitment to baseline water quality testing** of private supplies before construction,
- No pollution protection measures targeted at preventing contamination from:
 - Fuel, cement, silt during construction,

- Operational panel runoff,
- Chemical use (e.g. herbicides),
- No **monitoring framework** for groundwater or water supply complaints.

This is a breach of the **precautionary principle** and standard groundwater protection policy.

Relevant Legal and Policy Framework

Requirement	Legal Basis	Status in PEIR
Identification of private water supplies	EIA Regs Schedule 4(5)	Not done
Assessment of risk to drinking water	EN-1 para 5.15.3	Not included
WFD protection of groundwater	WFD Regs 2017	No compliance check
Source Protection Zone consideration	EA groundwater guidance	Absent
Stakeholder consultation	EIA Reg 12; NPS EN-1 4.2.2	Not reported
Monitoring and mitigation strategy	EN-1 5.15.10	Not provided

Conclusion

The failure to assess and protect private drinking water supplies is a **serious procedural and legal flaw**. The omission exposes the project to:

- Risk of judicial review for **inadequate environmental assessment**,
- Potential damage to third-party property rights,
- Objections from local authorities, landowners, and the Environment Agency.

Specific Issues: BESS Sited on SPZ and surrounded by private drinking water supplies

In addition to this, a **Battery Energy Storage System (BESS)** *should not* be sited on a **drinking water Source Protection Zone (SPZ)**—especially where **private drinking water supplies** surround the site—unless a **very high standard of risk assessment, mitigation, and regulatory approval is in place**. In most cases, such a location presents **significant legal, regulatory, and environmental risks**.

Legal and Regulatory Framework

1. Groundwater Protection and Source Protection Zones (SPZs)

- **Source Protection Zones (SPZs)** are defined by the **Environment Agency (EA)** to protect drinking water sources, including:
 - **Public supply boreholes**, and
 - **Private supplies** (e.g. farms, rural homes).
- BESS facilities pose a **pollution risk** from:
 - Battery leaks (e.g. lithium, nickel, cobalt),
 - Fires causing toxic water runoff,
 - Fire suppression systems (PFAS, aqueous film-forming foams),
 - Construction activities (fuel, concrete, siltation).

EA's "**Groundwater Protection Position Statements**" make clear that **polluting activities in SPZ1 (inner zone)** are **strongly discouraged** or require **exceptional justification and controls**.

2. Water Framework Directive (WFD) Compliance

- Siting a BESS in or near an SPZ without effective control could:
 - Cause **deterioration of groundwater quality**, and
 - **Prevent achievement of "good status"**, which breaches WFD objectives under the **Water Environment (WFD) (England and Wales) Regulations 2017**.

3. EIA and Planning Requirements

- Under the **EIA Regulations 2017** and **NPS EN-1 para 5.15.3–5.15.6**:

- All developments in water-sensitive areas must identify receptors and demonstrate:
 - No increased pollution risk,
 - Full mitigation,
 - Long-term protection.

If private supplies are nearby, failure to protect them could lead to **legal liability under private nuisance or environmental damage regulations**.

Risks of Siting a BESS on a SPZ with Private Supplies Nearby

Risk Type	Example
Contamination of aquifers	Battery leaks, firefighting runoff infiltrating to groundwater
Damage to private water supplies	Toxic metals or fuel entering shallow wells or boreholes
Regulatory non-compliance	Breach of EA groundwater protection rules
Legal liability	Private claims for loss of potable water or contamination
Fire response complications	Use of water-based suppression could worsen pollution
Planning challenge	Likely objection from EA, LLFA, Environmental Health

Conclusion

Siting a BESS on or near a drinking water protection zone surrounded by private drinking water supplies is **not appropriate without exceptional justification and robust protections**. In most cases, this would:

- Contravene **EA guidance, WFD regulations, and NPS EN-1**,
- Create **unacceptable risks to water quality**, and
- Be **legally vulnerable** to objection or challenge.

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- Create **unacceptable risks to water quality**, and
- Be **legally vulnerable** to objection or challenge.

Specific Issue: Risks Of Pile-Driven And Concrete-Mounted PV Arrays To Drinking Water Supplies

Pile-driven and concrete-mounted solar PV arrays, and concrete foundations for substations can also pose contamination risks to drinking water supplies, particularly if located within or near **Source Protection Zones (SPZs)** or surrounded by **private drinking water supplies**. While the pollution risks are generally lower than for substations or BESS units, the **cumulative effects of ground disturbance, chemical use, and drainage changes** can still be **significant**, especially in **vulnerable groundwater catchments**.

Risk Factors for Solar PV Arrays in Drinking Water Protection Zones

Activity or Feature	Potential Impact
Pile driving	Can create vertical pathways for contaminants through protective soil layers into aquifers, especially in SPZ1 and SPZ2 .
Concrete foundations	Alkaline leachate from wet concrete may enter groundwater, especially where drainage is poorly controlled or aquifers are shallow.
Ground clearance and grading	Increases erosion and runoff of sediments , potentially affecting water quality.
Use of herbicides or pesticides	Can infiltrate and contaminate private water supplies if not tightly controlled.
Surface sealing and compaction	Affects recharge and can alter groundwater flow paths .

These impacts may be **indirect but cumulative**, and are **amplified in chalk or sand/gravel aquifers**, where infiltration is rapid.

Legal and Policy Considerations

Issue	Legal/Policy Framework	Applicability
Groundwater protection	EA Groundwater Protection Policy, WFD Regs 2017	Yes
Pollution risk from materials	EIA Regs Schedule 4(5), EN-1 para 5.15.6	Yes
Private water supply protection	Local authority (PWS) duties under Private Water Supplies Regs 2016	Yes
Construction-phase water risk	CEMP required under EIA Regs Schedule 4(7)	Yes

What Should Be Done if Pile-Driven or Concrete Arrays Are Planned in SPZs or Near Private Supplies

To make such a proposal compliant and defensible, the applicant must:

1. Undertake a Groundwater Risk Assessment

- Confirm:
 - Depth to aquifer,
 - Location and vulnerability of private water supplies,
 - Flow direction relative to solar development.

2. Identify and Map SPZs

- Determine whether any part of the array lies in:
 - **SPZ1 (inner zone)** – strictest controls,
 - **SPZ2 or SPZ3** – still require mitigation and justification.

3. Specify Piling and Concrete Methods to Minimise Risk

Use **non-infiltrative concrete pads**, or limit wet concrete pour near sensitive receptors.

If piling is used:

- Avoid deep piles penetrating aquitards.
- Use protective sleeves if in SPZ1.

4. Ban Herbicides or Use Closed Application Systems

- Commit to **no broadcast application** of chemicals near sensitive receptors.
- Avoid persistent or groundwater-mobile substances (e.g. glyphosate).

5. Implement and Secure a Construction Environmental Management Plan (CEMP)

- Must cover:
 - Pollution prevention,
 - Ground compaction,
 - Drainage controls during and post-installation,
 - Emergency response protocols.

6. Consult Local Authority Environmental Health Officers

- Identify **registered private water supplies** (PWS) in the area.
- Assess potential legal risk under **Private Water Supplies Regulations 2016** if contamination occurs.

Conclusion

Pile-driven and concrete-mounted solar PV arrays can pose significant risks to drinking water supplies if not properly assessed and mitigated—especially when sited in **SPZs or aquifer recharge zones** surrounded by **private supplies**.

Failure to assess and protect these resources would breach:

- The **EIA Regulations**,
- The **Water Framework Directive**,
- The **Environment Agency’s groundwater protection policies**, and
- **Private nuisance or public health law**, if contamination occurs.

PEIR Chapter 9 – Water Environment confirms that several **critical assessments and safeguards are missing**, making the chapter **incomplete and non-compliant** under the **EIA Regulations 2017**, the **National Policy Statement EN-1**, and other water protection frameworks.

Key Omissions in the Water Environment Assessment

Omission	Legal/Policy Implication
No private water supply assessment	Breach of PWS Regs 2016, EIA Sch. 4(5)
No SPZ or abstraction protection	Non-compliance with EA Groundwater Policy
Inadequate WFD screening	Breach of WFD Regs 2017, EN-1 5.15.6
No hydrogeological model	Inadequate pollution risk analysis
No CEMP	Contravenes EIA Schedule 4(7)
No pollution prevention for BESS/substations	High-risk infrastructure left unmitigated
No operational runoff plan	Risk to water quality not controlled
No cumulative impact assessment	Breach of EIA Reg 14(2)(e)

Conclusion

PEIR Chapter 9 is missing critical components necessary for lawful and effective assessment of water environment impacts. These gaps expose the applicant to:

- **Legal challenge under the EIA or WFD Regulations,**
- Objections from **the Environment Agency, local authorities, or residents,** and
- Reputational and compliance risk at the **Development Consent Order (DCO)** stage.

All of these elements *should be present at the statutory consultation (PEIR) stage* of a Nationally Significant Infrastructure Project (NSIP). Their absence renders the consultation **procedurally flawed, non-compliant with the EIA Regulations 2017,** and **contrary to the purpose of early engagement set out in the Planning Act 2008 and NSIP guidance.**

Why These Elements Must Be Included at Statutory Consultation Stage

1. Legal Requirement under the EIA Regulations 2017

The **Infrastructure Planning (EIA) Regulations 2017**, Regulation 12(3), require that:

“The preliminary environmental information must be sufficient to enable consultees to develop an informed view of the likely significant environmental effects of the proposed development.”

If key environmental risks — such as impacts on drinking water, private water supplies, or pollution pathways — are **unassessed or absent**, consultees **cannot provide meaningful feedback**, and the consultation **fails in law**.

2. Policy Requirement under National Policy Statement (NPS) EN-1

EN-1 sets out clear expectations that developers must:

- Identify and assess all water environment impacts (para 5.15.3),
- Demonstrate WFD compliance (para 5.15.6),
- Clearly secure mitigation (para 5.15.10),
- Avoid siting polluting infrastructure near sensitive receptors like SPZs (para 5.15.4).

These assessments **cannot be deferred to post-consent documents**; they must be disclosed **at consultation**.

3. Front-Loading is a Core NSIP Principle

The NSIP regime is designed to be **front-loaded**, meaning that:

- **Impacts and mitigation must be transparently disclosed early,**
- Later DCO stages are **not the place for fundamental impact discovery,**
- The consultation must allow **communities and statutory consultees to shape the proposal.**

Deferring these matters:

- Prevents early identification of fatal flaws,
- Frustrates the purpose of the PEIR process,
- Increases the likelihood of judicial review or Planning Inspectorate criticism.

What Happens If These Elements Are Missing?

Missing Item	Consequence
Private water supply assessment	Risk to health and breach of Private Water Supply Regs 2016
SPZ mapping	High likelihood of EA objection or delay
WFD screening	Legal non-compliance with EU-derived UK law
CEMP or construction pollution controls	Breach of EIA Schedule 4(7)
Hydrogeological model	No basis for groundwater pollution judgment
Pollution risk analysis for BESS/substations	Potential for unmitigated contamination
Runoff and SuDS strategy	Flood and pollution risk, particularly cumulative
Legal securing of mitigation	Breach of EN-1 para 5.15.10, leading to unenforceable promises

Any one of these missing elements may constitute a legal defect. Their combined absence at this stage is **procedurally and substantively indefensible**.

Conclusion

These elements are **essential and must be included at the statutory consultation (PEIR) stage**. Their omission:

- **Undermines effective consultation,**
- **Breeches legal duties under the EIA Regulations, WFD, and NSIP guidance,**
- Exposes the application to **statutory objection, procedural challenge, and judicial review.**

Chapter 10 Cultural Heritage

PEIR Chapter 10 – Cultural Heritage, along with its supporting appendices in Volume III, contains multiple **legal and planning deficiencies** under the **EIA Regulations**

2017, National Policy Statement EN-1, and relevant planning and heritage legislation. Below is a summary of the **key objections**:

1. Incomplete Assessment of Non-Designated Heritage Assets

- The PEIR **fails to comprehensively identify and effectively assess non-designated heritage assets (NDHAs)**, including:
 - Undesignated archaeological remains,
 - Historic farmsteads and landscape features,
 - Assets of local or regional importance.

This contravenes **NPPF paras 203–205**, which require **balanced consideration of NDHAs** and appropriate mitigation. It also falls short of **EIA Regs Schedule 4(5)** which requires a complete baseline.

Objection: The assessment does not meet policy or legal expectations for NDHAs and is procedurally defective.

2. Insufficient Visual Impact Assessment on Heritage Settings

The PEIR does not adequately assess:

- **Setting impacts** from large-scale infrastructure (e.g. substations, BESS),
- **Long-distance and cumulative views** across historic landscapes,
- Intervisibility between solar panels and designated heritage assets.
- No visualisations or photomontages are provided showing how the development will appear in context of key listed buildings or conservation areas.

This undermines compliance with **EN-1 para 5.8.11–5.8.19** and the principle in **NPPF para 208** that setting is a material consideration, not just direct physical impact.

Objection: Without an adequate setting assessment, the applicant cannot demonstrate that harm is “less than substantial” or justified.

3. No Adequate Mitigation Strategy Secured

No detailed mitigation measures are set out for:

- Known or potential archaeological sites within the site boundary,
- Landscape enhancement to reduce heritage setting harm,
- Buffer zones or design changes to avoid impact.

- No binding commitment to post-consent archaeological investigation, no outline Written Scheme of Investigation (WSI), and no mitigation legally secured via draft DCO requirements.

Mitigation must be proposed and secured at this stage under **EN-1 para 5.8.20** and **EIA Regs Schedule 4(7)**.

Objection: The mitigation framework is aspirational and unenforceable, in breach of NSIP standards.

4. No Geophysical or Intrusive Archaeological Survey

The PEIR appears to rely solely on desk-based assessment.

There is **no evidence that geophysical survey or trial trenching has been undertaken**, despite the scale of ground disturbance from pile-driven foundations, cable routes, access roads, and substation platforms.

This violates **Historic England guidance** and **NPPF para 194(b)**, which require developers to assess the potential significance of buried heritage using proportionate field evaluation.

Objection: The PEIR lacks credible evidence to support its heritage conclusions, making it incomplete and non-compliant.

5. No Assessment of Impact on Historic Landscape Character

There is no dedicated assessment of:

- **Historic field patterns, enclosures, drove roads, or routeways,**
- The **historic landscape setting** of heritage assets as a whole.
- This is especially important where solar PV development transforms **large-scale rural landscapes**.

EN-1 para 5.8.5 and the **EIA Regs** require assessment of indirect and cumulative effects on the wider historic environment.

Objection: The PEIR disregards landscape-level heritage impacts and provides no cumulative heritage evaluation.

6. Lack of Statutory Consultation Detail and Specialist Input

The PEIR lacks clear evidence of consultation with:

- Local authority archaeological officers,
- Historic England (in respect of scheduled monuments or Listed buildings).

NSIP procedures and the **EIA Regulations Reg. 12(3)** require statutory consultees to be provided with sufficient information to form an informed view.

Objection: Consultation has not been properly informed by adequate assessment, undermining its validity.

Summary Table of Deficiencies in Chapter 10 Cultural Heritage

Deficiency	Legal/Policy Basis	Objection Summary
Missing NDHA coverage	EIA Regs 4(5), NPPF 203	Procedural and policy failure
Setting not assessed	EN-1 5.8.11–19, NPPF 208	Cannot judge level of harm
No secured mitigation	EN-1 5.8.20, EIA Regs 4(7)	Enforceability gap
No field surveys	NPPF 194, HE guidance	Incomplete assessment
No landscape context	EIA Regs 4(5), EN-1 5.8.5	Underestimates cumulative impact
No specialist engagement	EIA Reg 12, NSIP Guidance	Weakens consultation process

Specific Issues: Key Failures in Protecting Conservation Areas

PEIR Chapter 10 – Cultural Heritage does *not* adequately protect or mitigate impacts to local conservation areas. The chapter treats conservation areas only briefly and fails to meet the level of detail and legal rigour required under the **EIA Regulations 2017**, **National Policy Statement EN-1**, and the **National Planning Policy Framework (NPPF)**.

1. No Proper Assessment of Setting Impact on Conservation Areas

- The PEIR **fails to provide detailed assessments of views from or into conservation areas** potentially affected by the scheme.

- There is **no systematic Zone of Theoretical Visibility (ZTV) analysis** showing how key solar infrastructure (e.g. arrays, substations, fencing, BESS) would be seen from:
 - Historic street scenes,
 - Open edges or sightlines,
 - Designed views or historic routes.

This contravenes **EN-1 para 5.8.15–16** and **NPPF para 208**, which require setting impacts to be considered for all designated heritage assets — including conservation areas.

2. No Photomontages or Visualisations from Conservation Area Viewpoints

The PEIR does not include **heritage-specific viewpoints**, visualisations, or photomontages from within or near conservation areas.

This makes it impossible to:

- Determine **the degree of visual harm** to historic character,
- Weigh that harm against public benefit,
- Apply the **NPPF “less than substantial harm” test** (para 208).

Without this, consultees cannot meaningfully assess impact, and the PEIR **fails its legal consultation function** (EIA Reg 12(3)).

3. No Mitigation Strategy for Conservation Area Impacts

- There are **no specific design responses or screening proposals** to mitigate harm to conservation areas.
- No mention of:
 - Buffer planting or design adjustments near CA boundaries,
 - Use of layout revisions to reduce visibility,
 - Protection of historic views or building groups.

EN-1 para 5.8.20 and the **EIA Regs Schedule 4(7)** require concrete mitigation proposals — not generic commentary.

4. No Conservation Area Appraisal Engagement or Analysis

The PEIR does not reference or engage with:

- **Conservation Area Appraisals (CAAs)** or
- **Management Plans** published by the local planning authority.

This fails to respect **the development plan and local heritage evidence base**, which are material planning considerations under the **Planning and Compulsory Purchase Act 2004** and **NPPF paras 194–197**.

5. No Cumulative Impact Assessment on Conservation Areas

The PEIR does not consider:

- Combined or sequential views across multiple solar schemes,
- Collective degradation of rural setting around historic villages or conservation areas.

This is a legal breach of **EIA Regulation 14(2)(e)** and policy failure under **EN-1 para 5.8.5**.

Conclusion

The PEIR does not provide adequate protection or mitigation for conservation areas. Specifically, it:

- Fails to assess setting and views properly,
- Lacks visual evidence (e.g. photomontages),
- Omits targeted mitigation or buffer measures,
- Ignores local authority appraisals, and
- Overlooks cumulative impacts.

This leaves the assessment **legally incomplete** and **policy non-compliant**, exposing the application to valid objection from:

- Local planning authorities,
- Historic England,

- Conservation bodies, and
- Community stakeholders.

PEIR Chapter 10 does *not* adequately protect listed buildings. The assessment of listed building impacts is **superficial, lacks setting analysis, omits visual evidence, and fails to comply with national planning policy and legal obligations** under the **Planning (Listed Buildings and Conservation Areas) Act 1990**, the **EIA Regulations 2017**, and **NPS EN-1**.

Key Failures in Protection of Listed Buildings

1. Inadequate Assessment of Setting and Intervisibility

The PEIR provides only **brief or generic references** to listed buildings within the study area and **does not assess setting impacts in detail**. There is:

- No clear description of how the development would be experienced from each listed building,
- No analysis of **historic or aesthetic relationships** between buildings and their landscapes.

This fails to comply with **NPPF para 208**, which requires assessing the impact of development on the significance of a heritage asset — including its **setting** — and with **EN-1 para 5.8.15–16**.

Objection: The significance of listed buildings cannot be assessed without robust setting analysis.

2. No Visual Evidence (Photomontages or Viewpoints)

No photomontages or verified visualisations are included to show how the development would appear **in views to or from listed buildings**. This:

- Undermines the claim that visual or setting impacts are minor or negligible,
- Prevents consultees from understanding the **true magnitude of harm**.

Visual evidence is essential under **Historic England guidance**, the **EIA Regs**, and **EN-1 para 5.8.19** to ensure informed judgement.

Objection: Without visual aids, conclusions about visual harm to listed buildings are unsupported.

3. No Impact Grading Consistent with Policy Tests

The chapter uses **undefined or inconsistent terms** like “low magnitude” or “negligible effect” without applying the correct legal policy tests:

- Is the harm **substantial** or **less than substantial**?
- How does the harm relate to **the significance of the building**?

This fails to apply the **NPPF paras 207–208** test and the **s.66(1) duty** under the Planning (Listed Buildings and Conservation Areas) Act 1990, which requires “**special regard**” to the **preservation of setting**.

Objection: This omission undermines lawful and policy-based decision-making.

4. No Tailored Mitigation for Specific Listed Buildings

The PEIR does not propose specific design mitigation to reduce harm to listed buildings, such as:

- Altered layout,
- Screening vegetation or buffer zones,
- Dark-sky lighting design near historic receptors.

✦ **EN-1 para 5.8.20** requires that mitigation be “**proposed and secured.**” General promises of good design or planting are not adequate.

Objection: There is no secured mitigation specific to any listed building’s setting.

5. No Cumulative or Sequential Setting Impact Assessment

The assessment fails to consider whether:

- The development will degrade the **broader historic landscape**,
- **Multiple listed buildings** may be affected together,
- Visibility across the landscape leads to a **domino effect** on setting.

Required by **EIA Regulation 14(2)(e)** and supported by **NPPF para 210**.

Objection: Ignoring cumulative impacts makes the assessment legally deficient.

Summary Table – Listed Building Protection Failures

Issue	Requirement	Status
Setting assessment	NPPF 208; EN-1 5.8.15	Inadequate
Visualisations	EIA Regs; Historic England guidance	Missing
Legal heritage tests	Planning (LBCA) Act 1990	Not applied
Tailored mitigation	EN-1 5.8.20	Absent
Cumulative impacts	EIA Reg 14(2)(e)	Omitted

Conclusion

PEIR Chapter 10 **does not meet the required standard for assessing, mitigating, or protecting listed buildings**. The failures outlined above make the chapter:

- **Legally inadequate** under s.66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990,
- **Policy non-compliant** under NPPF paras 208–210 and EN-1,
- **Procedurally flawed** under the EIA Regulations.

Specific Issues: Key Failures in Protection of Grade I Churches

PEIR Chapter 10 and the appendices in Volume III do **not offer adequate protection for Grade I listed churches**, which are among the **most highly protected heritage assets in English planning law**. Its current approach is **legally insufficient, procedurally flawed, and fails to reflect the heightened duty of care required for such assets**.

1. No Setting Assessment Specific to Grade I Churches

The PEIR does **not provide a detailed assessment of how views to or from Grade I churches may be affected**.

It does not assess:

- **Historic landscape context** (e.g. church towers as rural focal points),
- The **spiritual, aesthetic, and communal values** associated with setting,
- **Topographic prominence**, particularly where churches overlook or are intervisible with the site.

NPPF para 208 and **Historic England guidance** require explicit analysis of setting to determine significance and harm.

2. No Photomontages or Visualisations from Grade I Churches

The PEIR and its appendices **do not include any photomontages or visual viewpoints from Grade I listed churches.**

This makes it impossible to:

- Understand the degree of visual intrusion,
- Judge whether harm is “substantial” or “less than substantial.”

Visual evidence is necessary to comply with **EIA Regulations 2017, NPS EN-1 para 5.8.19**, and to satisfy **s.66(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990**.

3. No Tailored Mitigation Measures

There is **no bespoke mitigation strategy** to protect the setting of Grade I churches (e.g. adjusted layout, exclusion zones, screening, height limitations).

Grade I churches are often visible across wide rural landscapes; the scheme fails to account for this with respect to:

- **Panel layout,**
- **Substation siting, or**
- **Battery storage locations.**

4. No Grading or Justification of Harm in Policy Terms

The PEIR does not apply the proper tests under:

- **NPPF para 208** (weighing harm against public benefit),
- **EN-1 para 5.8.14–5.8.20** (assessing need and design vs. heritage harm),
- **The statutory duty in s.66(1)** (special regard to preserving setting).

Without this analysis, the Planning Inspectorate and Secretary of State **cannot legally approve the scheme** without a fresh assessment.

To be legally and procedurally sound, the PEIR should:

Action	Why It's Required
Identify all Grade I churches within 5–10 km ZTV	To ensure visibility and setting are accounted for
Avoid these areas from the start in site design	Mitigation hierarchy
Provide photomontages from each Grade I church with potential intervisibility	Required under EIA and heritage guidance
Apply statutory tests under s.66(1) and NPPF 208	To judge and justify any level of harm
Propose tailored mitigation (buffer zones, layout changes, planting)	To reduce harm and comply with EN-1 para 5.8.20
Consult Historic England directly	Required under NSIP protocols for high-grade assets
Assess cumulative and sequential views	Especially important for rural churches across open land

Conclusion

Grade I listed churches are **of exceptional national importance**. The PEIR does **not meet the legal or policy threshold** for assessing or protecting them. Specifically, it fails to:

- Assess setting,
- Provide visualisations,
- Apply legal tests,
- Offer mitigation,
- Engage statutory consultees.

This omission represents a **serious procedural flaw** and forms strong grounds for **statutory objection or legal challenge**.

the PEIR does **not adequately protect or assess the pre-modern agricultural landscape**. This is a significant gap, particularly in large-scale solar developments where historic rural character and field patterns are often integral to **landscape significance** and the **setting of heritage assets**. The PEIR fails to meet the

requirements of the **EIA Regulations 2017**, **NPS EN-1**, the **NPPF**, and **Historic England guidance**.

Specific Issues: Key Failures in Protecting the Pre-Modern Agricultural Landscape

1. No Dedicated Historic Landscape Character (HLC) Assessment

- The PEIR lacks a standalone or integrated **Historic Landscape Characterisation (HLC)** study.
- There is **no mapping of medieval or post-medieval field systems**, enclosure patterns, or historic routeways (e.g. drovers' roads, green lanes).

This contravenes best practice guidance from **Historic England** and **NPPF para 210**, which expect landscape-scale historic character to be assessed where it may be harmed.

2. No Consideration of Surviving Ancient Boundaries or Field Morphology

The PEIR does not identify or analyse:

- Fossilised ridge-and-furrow patterns,
- Medieval or pre-Enclosure hedgerows,
- Historic parish or estate boundaries.

These are often **non-designated heritage assets** and can be protected under **NPPF para 203** and the **Hedgerow Regulations 1997**. Their destruction without assessment may also breach the **EIA Regs**.

3. No Assessment of Visual or Spatial Harm to Historic Landscape Form

The proposal involves large-scale structures (panels, fencing, substations, BESS) across what appears to be a **cohesive and legible historic rural landscape**.

Yet, the PEIR:

- Provides **no photomontages from rural landscape viewpoints**,
- Does not discuss **loss of historic openness, continuity or legibility**.

This breaches **EN-1 para 5.8.5**, which requires cumulative and indirect impacts on the historic environment to be considered — including landscape-scale effects.

4. No Mitigation or Design Response to Protect Historic Landscape Character

The PEIR includes no:

- **Layout adjustments** to avoid fossilised landscapes,
- **Preservation in situ** of historically significant field systems,
- **Interpretive or conservation-led landscaping measures.**

Mitigation is required under **EIA Regs Schedule 4(7)** and **NPPF para 209**, where harm cannot be avoided.

5. No Use of Local or County Landscape Character Evidence

The assessment does not draw on:

- Local Historic Landscape Character assessments (HLCAs),
- County Historic Environment Records (HERs),
- Local Plan policies relating to **historic rural character**.

These are material considerations under the **Planning and Compulsory Purchase Act 2004** and essential to a lawful PEIR.

What the PEIR *Should* Include to Address This

Required Element	Reason
Historic Landscape Character (HLC) study	To identify key landscape forms and heritage sensitivity
Mapping of ridge-and-furrow, historic hedgerows	Often protected by policy and statute
Assessment of field morphology, routes, boundaries	Supports understanding of cumulative harm
Landscape-scale photomontages and setting views	Needed for visual and spatial context
Mitigation strategy (avoidance, in situ preservation, buffers)	Required under EIA and NPPF 209

Required Element	Reason
Reference to local/county landscape evidence base	Needed to ensure compliance with development plan

Conclusion

The PEIR **does not provide adequate protection for the pre-modern agricultural landscape**, which is:

- Often a valued and legible part of the historic environment,
- Legally protected in part under heritage and hedgerow law,
- Material to both setting and landscape character under EN-1 and NPPF policy.

This omission represents a **serious gap in the environmental assessment** and is a valid ground for **formal objection**.

the PEIR does **not adequately acknowledge the importance or unique characteristics of the South Norfolk Claylands landscape**. This is a significant omission given that the proposed development is located within or adjacent to this distinct and valued landscape character area.

Specific Issues: Failures in Acknowledging the South Norfolk Claylands

1. Lack of Reference to National or County Landscape Character Types

The PEIR does **not directly** discuss the **specific features that define this landscape**, such as:

- Undulating clay plateau,
- Irregular field patterns bounded by ancient hedgerows,
- Scattered farmsteads and prominent churches,
- Long rural views.
- Sunken rural lanes,
- Irregular and intact pre-modern enclosure patterns.

This contradicts best practice in landscape and visual impact assessment (LVIA), which requires explicit reference to national and local **Landscape Character Assessments (LCAs)**.

2. No Integration of Local Landscape Evidence

The PEIR **does not appear to integrate findings from the Norfolk Landscape Character Assessment** or other regional studies that define the **South Norfolk Claylands** as a **landscape of high sensitivity** to solar and infrastructure intrusion.

NPS EN-1 (paras 5.9.5 and 5.9.8) and GLVIA3 require **landscape character receptors** to be identified, assessed, and mapped.

3. No Landscape Value or Sensitivity Assessment

The PEIR fails to assess:

- The **sensitivity** of the South Norfolk Claylands to visual change,
- The **cumulative erosion** of its characteristics from similar infrastructure,
- The **landscape value** assigned by local policy or community.

This weakens the LVIA's credibility and does not comply with the **EIA Regulations** or **EN-1 landscape policy**.

4. No Landscape-Led Design or Mitigation

Because the PEIR does not identify or describe the South Norfolk Claylands, it also **fails to propose any design changes, buffers, or mitigation measures** specifically targeted at preserving its key characteristics.

A landscape-led approach is required under **NPPF para 180(a)** and **EN-1 para 5.9.14**.

5. No Cumulative Landscape Character Impact Assessment

The PEIR does not assess the cumulative impact of this proposal and other NSIPs or solar schemes on the **coherence and visibility of the Claylands landscape** as a regional asset.

Required under **EIA Reg 14(2)(e)** and **EN-1 para 5.9.8**.

Conclusion

The PEIR **fails to recognise or respond to the South Norfolk Claylands** as a distinct and sensitive landscape. This represents a major procedural and policy omission. Specifically, the PEIR:

- **Does not adequately define** the South Norfolk Claylands,

- **Ignores relevant local landscape evidence,**
- **Fails to assess landscape sensitivity, value, or cumulative change,** and
- **Proposes no mitigation tailored to this landscape.**

This leaves the LVIA **non-compliant with EIA Regulations, EN-1 policy, and GLVIA3 guidance.** It is a valid and material ground for **planning objection or legal challenge.**

Chapter 7 (Landscape and Visual Impact Assessment) nor the associated **appendices in Volume III** provide **adequate protection for the South Norfolk Claylands landscape.** Both the main chapter and the supporting material **fail to properly identify, assess, or mitigate impacts** on this **locally distinctive and historically sensitive landscape character area.**

These features contribute directly to the **landscape's cultural and historic value,** and their loss or visual degradation must be avoided or mitigated — which the PEIR does not do.

4. No Cumulative Landscape Character Impact Assessment

The LVIA does **not evaluate cumulative effects** of:

- This scheme in combination with other consented or proposed solar or infrastructure developments,
- Gradual erosion of rural character across the Claylands as a whole.

This is a legal requirement under **EIA Regulation 14(2)(e)** and a policy requirement under **EN-1 para 5.9.8.**

5. No Landscape-Led Mitigation Strategy for the Claylands

Mitigation is generic and limited to low hedgerow planting around site perimeters.

There is **no design adaptation or avoidance strategy** based on the specific character and sensitivity of the South Norfolk Claylands.

EN-1 para 5.9.14 requires mitigation to be tied to landscape characteristics, which is not the case here.

Conclusion

The Landscape and Visual chapter and Volume III appendices **do not protect or even adequately acknowledge the South Norfolk Claylands landscape**. Key legal and policy shortcomings include:

Deficiency	Planning Implication
Sensitivity of area not assessed	Invalidates LVIA judgements
Features not protected	Loss of local character and potential heritage setting harm
Cumulative impacts omitted	Procedural breach under EIA Regs
No targeted mitigation	Non-compliance with EN-1 para 5.9.14

This is a material and procedural failure and forms a **strong basis for objection** during statutory consultation and at examination.

no part of the PEIR provides an adequate assessment of the scheme's impact on the community's sense of place or their relationship with the historic landscape.

This represents a serious shortfall, both in terms of policy expectations and the intent of the NSIP consultation process.

Key Gaps in the PEIR Regarding Community Sense of Place

1. No Analysis of Community Attachment to the Historic Landscape

The PEIR **does not explore how residents relate to the historic rural setting**, such as:

- Longstanding views of church towers, hedgerows, or open fields,
- Use of footpaths, lanes, or village edges as **cultural and sensory experiences**,
- The lived experience of **heritage in the everyday environment**.

This ignores **NPPF para 92(b)** and **EN-1 para 4.2.1**, which stress the role of planning in promoting social well-being, and the EIA requirement to consider **people as receptors**.

2. No Qualitative Community Impact Assessment

The documents are **silent on how the development may affect community identity, sense of belonging, or place attachment**.

There is no engagement with:

- Local oral histories,
- Landscape meanings for different generations,
- Potential **loss of community character** through industrialisation of the landscape.

These themes are increasingly recognised under **EIA social impact best practice** and the **Landscape Institute’s guidance on Landscape and Visual Effects on People (GLVIA3)**.

3. No Reference to Landscape as Cultural or Historic Identity

The PEIR treats landscape largely in visual or physical terms. It **does not treat the landscape as a cultural construct** — as something shaped by and meaningful to the community over time.

This is contrary to Historic England guidance on **Historic Landscape Characterisation** and ignores the **intangible heritage dimension** required under **EN-1 para 5.8.5** and **NPPF para 203**.

4. No Use of Local Plan Policies on Landscape or Cultural Identity

The PEIR **does not cross-reference local planning policies** that protect local distinctiveness, community setting, or rural character — common elements in Local Plans for South Norfolk and Breckland.

This omission weakens the policy basis of the assessment and opens the proposal to valid local plan conflict objections.

What a Proper Assessment Should Include

Missing Element	Why It Matters
Mapping of valued community views or routes	To assess loss of meaningful views and sense of place
Surveys or qualitative feedback	To reflect real-world connections to the landscape
Use of local cultural heritage sources	To show identity links between people and place

Missing Element	Why It Matters
Policy cross-reference	To demonstrate consistency with development plan
Landscape as cultural as well as visual resource	Required under national and local policy

Conclusion

The PEIR **completely fails to assess or acknowledge the impact of the scheme on the community's sense of place and connection to the historic landscape**. This oversight is:

- A **material planning failure**,
- A **breach of the EIA principle of “people as receptors”**, and
- Contrary to the **intent of meaningful consultation and social impact planning**.
- It is a **valid and significant ground for objection** under EIA law, planning policy, and community engagement standards.

The PEIR **does not assess how the loss of sense of place and disruption to the historic landscape may impact residents' mental well-being**. This is a **major oversight** given that large-scale changes to cherished rural settings can have **profound emotional, psychological, and social consequences** for local communities. This is not to mention that many residents are being threatened with potentially losing their homes or gardens to this scheme to widen access routes or lanes, construct HGV passing places or construction vehicle compounds, which is proving devastating to our rural community. This is particularly because it is mainly affecting elderly vulnerable residents who have lived in their homes for many decades, some for their entire lives. To them it is not merely a matter of moving to another house – these homes are intrinsic to their identities and well-being.

Key Failures in Assessing Mental Well-being Impacts

1. No Consideration of Psychological or Emotional Effects

Nowhere in the PEIR is there any analysis of:

- **Distress caused by landscape industrialisation**,
- **Loss of tranquillity, familiarity, or aesthetic coherence**,
- **Community anxiety or alienation** linked to visual and cultural rupture.

This ignores a growing body of research — and public inquiry precedent — showing that degradation of rural landscapes can contribute to **stress, grief, and a sense of displacement**, particularly among long-term rural residents.

2. No Reference to Landscape as a Health Resource

The PEIR does not acknowledge the **therapeutic and mental health benefits of historic rural landscapes**, such as:

- Walking familiar lanes and footpaths,
- Visual connection to open space and traditional landforms,
- Informal recreation or spiritual refuge.

These benefits are supported in national policy:

- **NPPF para 92(c)**: Planning should aim to enable “healthy, inclusive and safe places.”
- **National Design Guide**: Encourages connection with nature and heritage for well-being.

3. No Assessment of Harm to Tranquillity or Emotional Landscape

The PEIR does not quantify or characterise:

- The loss of **visual or auditory tranquillity**,
- The emotional value of views to features like church towers, ancient hedgerows, or open skies,
- The cumulative psychological impact of **enclosure by infrastructure**.

This undermines compliance with **EN-1 paras 5.9.5 and 5.9.7**, which call for assessment of **indirect and experiential effects** on landscape.

4. No Use of Qualitative Community Evidence

No surveys, community workshops, or stakeholder interviews were conducted to assess:

- **Emotional reactions to the development**,
- Perceived **loss of heritage or place**,
- Any risk of **mental distress or identity dislocation**.

This omission contradicts emerging **best practice in social impact assessment (SIA)** and fails to satisfy the **spirit of the Planning Act 2008**, which calls for **front-loaded, participatory assessment**.

What the PEIR Should Have Done

Requirement	Why It Matters
Qualitative surveys or focus groups	Capture lived experience and emotional response
Well-being assessment linked to landscape change	Reflect human health as part of environmental assessment
Analysis of tranquil rural settings	Identify loss of calm, continuity, and rootedness
Acknowledge rural visual identity as mental health asset	Especially important in post-pandemic rural planning

Conclusion

The PEIR **entirely fails to assess the real and foreseeable mental well-being impacts** of a development that would:

- Transform a culturally rooted rural setting,
- Disrupt emotional and spiritual relationships to landscape and heritage,
- Enclose or sever visual and physical access to places of solace and memory.

This is a **glaring procedural and ethical omission** and forms a **strong ground for objection**, especially given:

- **The Planning Act's aims for inclusive, healthy communities,**
- **The EIA Regulations' requirement to consider human health,** and
- **The NPPF's focus on well-being, place, and landscape character.**

Conclusion

Chapter 10 and its appendices **fail to meet legal and policy requirements** for the assessment of cultural heritage in an NSIP. The PEIR is:

- **Incomplete under the EIA Regulations,**

- **Non-compliant with EN-1 and NPPF**, and
- **Legally vulnerable** to challenge or objection by Historic England, local authorities, and the public.

Chapter 11 Transport and Access

This chapter contains several legal and planning deficiencies that provide **valid grounds for objection**. These arise from omissions, vague data, and procedural non-compliance that fail to meet the expectations of the **EIA Regulations 2017, NPS EN-1, local transport policy**, and NSIP standards for statutory consultation.

Main Legal and Procedural Objections

1. Insufficient Detail to Meet EIA Consultation Requirements

- The chapter lacks key details necessary for consultees to form an informed view, including:
 - Precise **routing of HGVs and construction vehicles**,
 - Full quantification of **daily peak traffic volumes**,
 - **Cumulative impact assessment** from other infrastructure schemes,
 - Site access safety and visibility analysis at proposed entrances.

Breach: *EIA Regs 2017, Reg 12(3)* — the PEIR must provide sufficient detail to enable meaningful statutory consultation.

2. No Proper Construction Traffic Management Plan (CTMP) or Access Strategy

- No draft or outline CTMP is provided, and the PEIR defers crucial routing, phasing, and timing data to future DCO submissions.
- No assessment of:
 - Construction vehicle impacts on narrow rural roads,
 - Use of passing places, temporary widening, or traffic controls.

Breach: *NPS EN-1 para 5.13.4* and *EN-1 para 5.13.5* require a full understanding of traffic effects, and this is not possible without a CTMP or equivalent mitigation strategy.

3. Omission of Road Safety Impact Assessment

- The chapter contains **no Road Safety Audit** or visibility splays assessment for new or intensified access points.
- No consideration is given to:
 - Increased risk to local cyclists, horse riders, and pedestrians,
 - School routes or vulnerable road users.

Breach: *NPPF para 115(c)* and *DfT Circular 01/2013* — failure to show that the development can operate safely.

4. No Assessment of Cumulative Construction Traffic Impact

- The PEIR omits cumulative effects of construction traffic with:
 - Other solar or NSIP schemes in the area,
 - Regional infrastructure and development pressures on the same rural road network.

Breach: *EIA Regs 14(2)(e)* and *EN-1 para 4.2.1* — requires cumulative impact consideration, especially on constrained rural transport corridors.

5. No Defined Access Routes or Highway Impact Mapping

- HGV routes are described vaguely, with **no detailed route mapping** or turning movement diagrams.
- The chapter does not assess:
 - Highway capacity or structural wear on minor roads,
 - Effects of repeated HGV movements through villages.

This undermines statutory consultees' ability to assess risk and propose mitigation — contrary to *Reg 12(3)*.

Main Planning Policy Conflicts

1. Conflict with NPPF Safe and Suitable Access Principle

The PEIR does not demonstrate that **safe and suitable access can be achieved for all users**, as required by:

- **NPPF para 115,**
- **DfT standards (DMRB, Manual for Streets),**
- **Local highway authority policies.**

2. No Assessment of Impact on Public Rights of Way (PRoW)

- Public footpaths and bridleways likely cross or border the site, yet the PEIR:
 - Does not identify these routes with a PRoW plan,
 - Offers no mitigation for visual intrusion, construction disruption, or safety conflicts.

Breach: *EN-1 para 5.13.5* and *NPPF para 100* — public access must be protected.

3. No Specific Mitigation Secured by Draft DCO or Requirements

- Mitigation for transport effects is non-specific and deferred to post-consent plans.
- Without legally binding CTMP, access design drawings, or route protections, there is **no enforceable mitigation**.

Breach: *EN-1 para 4.1.3* and *EIA Regs Sch. 4(7)* — mitigation must be proposed and secured at the application stage.

Summary Table of Key Objections

Issue	Legal Breach	Policy Conflict
Lack of construction traffic detail	EIA Reg 12(3)	EN-1 5.13.4–5
No CTMP or access drawings	EIA Reg 12(3), Sch. 4(7)	EN-1, NPPF 115
No road safety or visibility assessment	NPPF 115(c)	DfT guidance
No cumulative traffic analysis	EIA Reg 14(2)(e)	EN-1 4.2.1
PRoW unassessed	NPPF para 100	EN-1 5.13.5

Issue	Legal Breach	Policy Conflict
No mitigation tied to DCO	EIA Regs; Planning Act 2008 EN-1 4.1.3	

Conclusion

PEIR Chapter 11 **fails to meet the legal and planning requirements for assessing transport and access impacts in a nationally significant infrastructure project (NSIP)**. Its omissions and deferrals make meaningful consultation impossible and expose the application to formal objection or legal challenge.

PEIR Chapter 11 – Transport and Access is missing several critical components required for a legally compliant, policy-consistent, and consultation-ready assessment under the **EIA Regulations 2017**, **National Policy Statement EN-1**, and the **National Planning Policy Framework (NPPF)**. These omissions significantly undermine the chapter’s reliability and transparency.

1. Detailed Construction Traffic Management Plan (CTMP)

- No outline or draft CTMP is included.
- Missing content includes:
 - **HGV delivery routing** (with maps),
 - **Access point designs and visibility splays**,
 - **Vehicle movement schedules** (daily peaks, time restrictions),
 - **Traffic control measures** (temporary signals, road closures, escort vehicles).

A CTMP is fundamental for assessing **risk, road safety, congestion**, and **timing impacts** — its absence means no mitigation can be secured.

2. Access Route Mapping and Highway Impact Diagrams

- There is no GIS-based mapping of:
 - Anticipated HGV or abnormal load routes,
 - Access points to the site from the public highway,

- Potential village pinch-points, blind bends, or vulnerable road users.

This prevents proper **scrutiny by local authorities and the public** and leaves highway impacts unquantified.

3. Road Safety Audit or Risk Assessment

- There is no:
 - Road Safety Audit (RSA),
 - Accident analysis,
 - Risk screening for narrow lanes or school routes.

Particularly important where **rural roads with no pavements, passing places, or visibility** will be used by construction vehicles.

4. Assessment of Impact on Public Rights of Way (PRoW)

- No plan or table of affected PRoWs is provided.
- No assessment of:
 - Diversions,
 - Temporary closures,
 - Visual or safety impacts to footpath users.

This contravenes **EN-1 para 5.13.5** and **NPPF para 100**, both of which require PRoW impacts to be mitigated.

6. Cumulative Impact Assessment

- The PEIR does not assess how construction traffic might interact with:
 - Other NSIPs or solar schemes using the same roads,
 - Concurrent agricultural, delivery, or school-related traffic.

This is a **legal requirement** under **EIA Regulation 14(2)(e)**.

7. Legally Secured Mitigation Commitments

- No specific mitigation is tied to DCO requirements or planning obligations.
- The chapter relies on **general statements** like “a CTMP will be provided” — which has **no legal force** at the statutory consultation stage.

EN-1 para 4.1.3 and the **EIA Regs Schedule 4(7)** require mitigation to be **set out and enforceable** at application stage.

8. Consultation with Highways Authorities

- There is no evidence of engagement with:
 - National Highways,
 - Norfolk County Council (as LHA),
 - Local parish councils concerned about traffic safety or nuisance.

Failure to demonstrate such engagement undermines **Reg 12(3)** compliance and consultation credibility.

Summary of Missing Elements

Missing Element	Why It Matters
CTMP and routing plans	Essential for traffic impact, mitigation, and safety
Access design and visibility analysis	Required to assess risk to road users
Daily traffic volumes and peaks	Needed to judge road capacity and disruption
Road safety audit	Key to protect pedestrians and rural road users
PRoW impact assessment	Required by policy and EIA law
Cumulative effects	Legal obligation under EIA Reg 14(2)(e)
Legally binding mitigation	Must be secured at application stage
LHA consultation record	Required to validate assessment and routes

Conclusion

The Transport and Access chapter is **incomplete and procedurally deficient**. These missing elements make the chapter:

- **Non-compliant with statutory EIA requirements,**
- **Inconsistent with national infrastructure and highway policy, and**
- **Open to challenge as part of any formal representation or legal objection.**

At this **statutory consultation stage** for a Nationally Significant Infrastructure Project (NSIP), **best practice for Transport and Access assessment** requires a clear, transparent, and legally robust presentation of likely impacts, supported by enforceable draft mitigation. The goal is to enable stakeholders—especially the public, local authorities, and statutory consultees—to provide **informed and meaningful feedback**.

Appendix 11.1 – Transport and Access Data Tables are not adequate for the **statutory consultation stage** of a Nationally Significant Infrastructure Project (NSIP) either:

Data Provision: Meets Basic Requirements

- **Baseline traffic flows** (AADT and AAWT) are provided for 27 road links across multiple dates in November 2024.
- **HGV percentages** are identified — important given the expected construction intensity.
- **Sensitivity scores** are assigned to road links (e.g. high near schools, nurseries, and narrow residential roads).
- **Forecasts of construction traffic volumes** (including HGVs) are broken down by road segment, comparing baseline vs. with development.

This meets the **Regulation 12** duty to provide preliminary information on likely significant transport effects at the statutory consultation stage.

Analysis and Presentation: Deficient

Although the raw data is provided, neither the **PEIR chapters not the appendix clearly explain the implications** of the traffic data. Key deficiencies:

Required Analysis	Status	Comment
Construction traffic impacts clearly interpreted?	No	Appendix gives volumes but lacks narrative analysis of how this will affect communities, safety, congestion, or vulnerable road users.
Sensitive receptors (schools, houses, narrow roads) clearly identified in the impact analysis?	Partial	Scored for sensitivity but not cross-referenced to actual mitigation or route selection decisions.

Required Analysis	Status	Comment
Details of mitigation (e.g. banksmen, signage, timing restrictions)?	No	No formal Construction Traffic Management Plan (CTMP) or route enforcement strategy is presented.
Cumulative traffic impacts discussed?	NO	No reference to cumulative effects with other potential NSIPs or local construction projects.
BESS construction traffic risk addressed?	No	No special provisions noted for abnormal loads, hazardous cargo, or access to/from BESS compounds.

Transport

The Transport Statement and Construction Transport Management Plan are contradictory and inadequate

What is present reveals massive HGV volume and inadequate passing places which equals a severe safety risk and highway capacity breach (Local Plan Policy DM 3.11).

Transport Statement (Appendix E1)

The text claims “negligible” traffic which is then contradicted by East Pye Solar’s own CTMP. The Operational spin says only “2–3 vehicles per week” once built, but this does not take into account lithium swap-outs, coolant, oil, transformer testing, vegetation flailing, etc.

The Construction peak is dressed down to 96 movements/day (57 LGVs + 39 HGVs) . But the CTMP totals show a very different story (see below). There is no pedestrian provision. East Pye Solar admit “lack of continuous footpaths... pedestrian access is unviable”, yet the CEMP promises staff travel-plan and “sustainable access”. This is contradictory and nonsensical.

Construction Traffic Management Plan (Appendix E2)*

The hidden avalanche of HGVs during the construction phase. Figures from CTMP § 5.1.5

Element	HGV trips (arrivals + departures)	Period
Initial site prep	4,598	16 months

Geotextile import	3,280	12 months
Foundation steel	2,459	6 months
Fencing/landscape/security	1,920	6 months
TOTAL (all HGV only)	14,912	30 months

Add ~10,000 LGV/worker trips and the figures are approaching 25,000+ vehicle movements down single-track Market Lane and Carr Lane — worlds away from the “96/day” headline in the Transport Statement.

Two abnormal-load transformer convoys are proposed (each four specialist deliveries) on narrow, 60 mph lanes.

The plan cites peak worker traffic 67 movements/day for seven months — yet there is no site car-park capacity calculation.

On **rural lanes** like Fairstead Lane or Littlebeck Lane, where baseline flows are <100–200 vehicles/day, a **tenfold increase** could have significant impacts.

- **No swept path or visibility analysis** is provided for these narrower routes.
- The PEIR does not appear to assess **road suitability** for the projected traffic increase.

Conclusion

The **interpretation and analysis of the data tables are insufficient**. This is a **procedural deficiency** under NSIP standards because:

- Likely significant effects on local roads and vulnerable users are **not adequately described**.
- **Traffic mitigation measures** are **absent or generic**.
- **Cumulative and route-specific risk analysis** is missing.

Best Practice Requirements for Transport & Access – NSIP Statutory Consultation

1.Provision of a Draft or Outline Construction Traffic Management Plan (CTMP)

Should include:

- **Confirmed and mapped HGV and abnormal load routes** to/from the site.
- **Access point details** with swept path analysis and visibility splays.

- **Phasing of traffic movements**, peak delivery times, and duration of key phases.
- **Traffic control measures** (e.g. banksmen, temporary lights, escort vehicles).
- Mitigation for:
 - **Sensitive receptors** (schools, homes, equestrian facilities),
 - **PRoWs and NMUs** (non-motorised users).

Supports safe operation and satisfies **EN-1 paras 5.13.4–5.13.5**, **NPPF para 115**, and **EIA Regs Schedule 4(7)**.

2. GIS-Based Mapping of Access and Movement Impacts

Should include:

- Site access locations (new, altered, or intensified),
- Anticipated HGV routes overlaid on OS mapping,
- Identification of highway constraints (e.g. pinch points, bridges, weight limits),
- **Sensitive receptor mapping** (residential, school, pedestrian, and cycling areas).

Ensures accessibility, transparency, and spatial impact clarity.

3. Baseline and Forecast Traffic Assessment

Should include:

- Baseline weekday and weekend traffic counts on key roads,
- Predicted **daily and peak hour traffic volumes** by vehicle class,
- Impacts on junctions and visibility envelopes.

Enables consultees to judge **scale of impact** and verify whether “negligible” claims are realistic.

4. Road Safety Appraisal and Audit

Should include:

- Screening of accident data and collision clusters,
- Risk assessment of HGVs on **narrow, shared-use, or unsurfaced roads**,
- Visibility splay compliance with **Manual for Streets / DMRB**.

Satisfies **NPPF 115(c)** and ensures protection of vulnerable road users.

5. Public Rights of Way (PRoW) Impact Assessment

Should include:

- Full mapping of affected PRoWs,
- Identification of temporary or permanent **closures/diversions**,
- Proposed **mitigation or enhancements** (surfacing, signage, screening).

Required under **NPPF para 100** and EN-1.

6. Cumulative Impact Assessment

Should include:

- Identification of other potential NSIPs or large projects using the same roads,
- Combined traffic flow analysis,
- Effects of overlapping construction periods.

EIA Reg 14(2)(e) and **EN-1 para 4.2.1** mandate it.

7. Clear Record of Early Engagement with Highway Authorities

Should include:

- Minutes or summaries of pre-consultation engagement with:
 - **National Highways** (if trunk roads are used),
 - **Norfolk County Council** (as Local Highway Authority),
 - Local councils or parish feedback.

Validates routing, access point design, and shows **meaningful stakeholder participation**.

8. Secured and Specific Mitigation Measures

Should include:

- Draft DCO requirements tied to:
 - A Construction Traffic Management Plan (CTMP),
 - Enforcement of routing and timing restrictions,
 - PRow protections.

Under **EN-1 para 4.1.3** and EIA regulations, **mitigation must be proposed, not deferred.**

Consequences of Not Meeting Best Practice

- Statutory consultees **cannot meaningfully assess the development.**
- NSIP applicant risks **procedural challenges or representations to PINS** (Planning Inspectorate).
- Public consultation becomes **ineffective or invalid**, potentially undermining the DCO process.

Summary

At statutory consultation stage, **best practice demands clarity, completeness, and enforceable proposals**

Neither the transport plan in **PEIR Chapter 11** nor the appendix **assess or account for the impacts on horse riders**, despite the proposal being in a **rural area where equestrian use of roads and bridleways is common**. This represents a serious oversight, and potentially **puts horse riders at risk**, breaching national policy and guidance on transport safety and rural road use.

Specific Issues: Key Failures to Address Equestrian Impacts

1. No Identification of Equestrian Routes or Use

The PEIR:

- Does **not identify any bridleways or rural lanes regularly used by horse riders**,

- Provides **no mapping of designated or informal equestrian routes**,
- Ignores local equestrian facilities, yards, or clubs near the site or routes.

This omission breaches **NPPF para 115(c)**, which requires that developments provide **safe and suitable access for all users**, including **equestrians**.

2. No Assessment of HGV Conflict with Horse Riders

- Large vehicles on rural roads:
 - Create **significant danger and noise disturbance** to horses and riders,
 - May cause horses to bolt or become uncontrollable, especially in narrow lanes with no verges or passing bays,
 - Introduce cumulative risk on **unlit or enclosed rural lanes**.

British Horse Society (BHS) guidance and **DfT's Manual for Streets** warn of safety risks where **HGVs share space with horses**.

3. No Road Safety Measures for Horse Riders

The plan does not include:

- **Speed restrictions or timing restrictions** to avoid peak riding periods,
- **Warning signage**, passing protocols, or construction driver training in **horse-aware driving**,
- Any proposal to **upgrade bridleways or create off-road alternatives**.

These are standard rural road mitigations under **best practice and equestrian safety guidance**.

4. No Baseline or Consultation with Equestrian Users

The PEIR does not:

- Record existing levels of horse rider use in the area,
- Consult equestrian businesses or local riders on preferred routes or concerns,
- Assess cumulative effect with **other schemes generating construction traffic**.

EN-1 para 4.2.1 and **EIA Reg 12(3)** require **meaningful consultation** and identification of affected groups — this has not been done.

Likely Impacts on Horse Riders

Impact	Consequence
Increased HGV traffic on narrow rural roads	Startling or endangering horses; risk of collision or rider injury
No alternative routes or bridleway upgrades	Riders forced to use unsafe roads
Lack of driver training or awareness	Heightened risk of unpredictable horse reactions
No signage or visibility control	Increases likelihood of unsafe encounters at bends or crests
Cumulative impact with other developments	Increases frequency of risk and reduces safe riding windows

Conclusion

The transport plan **completely fails to account for equestrian use**, which is a major omission in a rural setting. This:

- **Contravenes national safety policy** under the **NPPF and EN-1**,
- **Violates best practice** in rural NSIP planning,
- Forms a **strong material objection** on the grounds of **unassessed and unmitigated risk to vulnerable road users**.

Specific Issues: Failure to Assess or Mitigate Likely Impacts on Pedestrians and Children

The **Transport and Access chapter** of the PEIR fails to assess or mitigate the likely **negative impacts on pedestrians and children**, especially in **rural settlements and along local access routes**. This omission poses **potential safety, health, and community access risks** and breaches **EIA requirements, national transport safety policy**, and principles of **inclusive planning**.

1. Increased Conflict Between HGVs and Pedestrians

- Construction traffic, including **heavy goods vehicles (HGVs)** and abnormal loads, will use **narrow rural lanes**—many of which:
 - **Lack pavements or verges,**
 - **Are frequently used by pedestrians** (including walkers, dog-walkers, and families),
 - **Are shared with schoolchildren** travelling on foot, by bike, or waiting for school transport.

Without designated walking infrastructure, **pedestrians become vulnerable road users** exposed to construction-related risks.

2. No Assessment of Impacts on Children Walking or Cycling to School

- The PEIR:
 - Does **not identify local schools** or child-heavy pedestrian routes (e.g. to school buses),
 - Fails to assess:
 - Crossing points,
 - Walking/cycling paths used by schoolchildren,
 - The **timing of peak vehicle movements** versus school travel times.

This fails to meet **NPPF para 115(c)** and **DfT guidance** on providing **safe, inclusive access for vulnerable users**.

3. No Identification or Mapping of Key Pedestrian Routes

- There is **no map of local footways, PRowS, or walking desire lines** across or adjacent to the site.
- No mention of:
 - **Temporary closures,**
 - **Safety provisions near entrances,**
 - **Visibility for turning HGVs at footpath crossings.**

This violates **EN-1 para 5.13.5**, which requires identification of transport users and protection of pedestrian movement.

4. No Road Safety Measures for Pedestrians

- The PEIR omits:
 - Footpath diversions or upgrades,
 - Signage to warn drivers about pedestrians or school routes,
 - Driver safety training or speed enforcement near populated areas.

Manual for Streets and **EIA Regs** require these safety steps when introducing significant HGV flows into pedestrian-access areas.

5. No Health or Well-being Impact Analysis

- The plan does not address the broader effect of:
 - Loss of **safe walking routes** (particularly for older adults and children),
 - **Noise, dust, and disruption** from traffic near homes, schools, or footways,
 - **Social isolation or loss of independence** for children, elderly, or disabled residents.

These are relevant to the **EIA requirement to assess human health**, as well as **NPPF paras 92 and 130**.

Summary of Impacts

Impact	Likely Consequences
HGVs on pedestrian routes	Physical danger, near misses, restricted access
No mitigation near schools	Children exposed to increased accident risk
Footpaths and PRoWs unassessed	Potential closures, severance, or intimidation

Impact	Likely Consequences
No safe crossings or signage	Prevents independent access for children
Noise and dust from traffic	Harm to child health, wellbeing, and play

Conclusion: The transport chapter **fails to assess or mitigate key pedestrian risks**, particularly those affecting children. This:

- **Contravenes legal duties** under the **EIA Regs and NPPF**,
- **Undermines inclusive design principles**,
- **Exposes the applicant to challenge** on public safety and access equality grounds.

Specific Issues: Serious and Unassessed Impacts on Cyclists

The proposed scheme, as described in **PEIR Chapter 11 (Transport and Access)**, has **potentially serious and unassessed impacts on cyclists**, particularly those using **narrow rural roads** in and around the site. Cyclists—like pedestrians and horse riders—are **vulnerable road users** whose safety and route access must be considered in any infrastructure project involving increased traffic, especially construction HGVs.

However, **the PEIR does not adequately identify, assess, or mitigate these risks**.

Key Impacts of the Scheme on Cyclists:

1. Increased Risk of Collision on Narrow Rural Roads

- The PEIR indicates that **construction traffic, including large HGVs**, will use local B-roads and unclassified country lanes, which:
 - Often **lack cycle lanes or hard verges**,
 - Are **curved, undulating, and enclosed by hedgerows** (reducing visibility),
 - Have **limited passing space**, increasing the risk of close passes or forced overtakes.

Cyclists may be **intimidated or endangered** by large vehicles, especially if no passing protocols or speed control measures are in place.

2. No Mapping or Assessment of Existing Cycle Routes

- The PEIR does not:
 - Identify **National Cycle Network (NCN) routes**, local cycling corridors, or informal but commonly used cycle routes, especially those used for professional and amateur races – which are frequent.
 - Provide a **map showing potential conflict points** between cycle routes and construction access roads.

This undermines the EIA's transparency and prevents stakeholders from understanding the **risks to cycle safety or connectivity**.

3. No Mitigation Proposed to Reduce Cyclist Risk

- There is **no mention** of:
 - Temporary or permanent **cycle signage** (e.g. "Cyclists on Road"),
 - **Driver training** on cyclist overtaking,
 - **Speed limits, laybys or timing restrictions** to avoid cyclist-HGV conflicts during peak leisure or commuting times.

This violates **DfT guidance**, **NPPF para 115**, and **EN-1 para 5.13.5**, all of which require safe and inclusive road access for non-motorised users.

4. Cycling Tourism and Commuting Not Assessed

- The rural Norfolk setting is widely used by:
 - **Leisure cyclists**, particularly in summer and holiday periods,
 - **Utility and commuter cyclists** between villages and market towns.
- The PEIR contains **no assessment of impact on local cycling activity**, despite potentially discouraging or displacing regular riders.

This oversight **misses both a socio-economic and health impact**, contravening the EIA's requirement to assess human well-being.

5. No Cumulative Risk Assessment

- Other infrastructure schemes, farming operations, and utility projects in the area may already **increase traffic on key cycling roads**.
- No cumulative effects on road safety, route stress, or accessibility for cyclists are considered.

This is a **legal requirement under EIA Reg 14(2)(e) and EN-1 para 4.2.1**.

Summary of Cyclist Impact Failures

Area	Issue
Route mapping	No identification of key cycle routes or NCN links
Safety assessment	No analysis of HGV-cyclist conflict risk
Mitigation	No signage, driver training, or speed control proposed
Well-being	No account of displacement of leisure/commuter cyclists
Legal compliance	Breach of EIA Regs, EN-1, NPPF, and DfT safety guidance

Conclusion:

The PEIR **fails to meet its legal and policy obligations to protect cyclists**, and:

- Ignores known conflict risks between cyclists and construction HGVs,
- Omits basic mitigation measures and route mapping,
- Neglects both safety and wider health/recreation consequences of cycle route disruption.

This omission is a **material planning objection** and could also expose the applicant to **legal challenge** under environmental and transport safety law.

Specific Issues: Failure to Assess Serious Impacts of Traffic on Wildlife

Despite this being a rural area with acknowledged populations of endangered and common species of wildlife, for which this project will be destroying habitat and designing 'wildlife corridors', the PEIR completely fails to take into account the impacts of traffic on the movement of wildlife, whether this is natural or due to displacement from their habitats either during the construction, operation or decommissioning stages.

1. No Species-Specific Traffic Impact Assessment

- The chapter **makes no meaningful reference to wildlife or habitat sensitivity** in relation to construction or operational traffic.
- There is **no assessment of traffic-related mortality risks** to protected or priority species (e.g. **great crested newts, badgers, bats, birds**).
- There is **no mapping of road networks relative to wildlife corridors or migration routes**, even though parts of the site border or bisect semi-natural habitat and field margins known to be used by wildlife.

2. No Analysis of Noise, Vibration or Light from Vehicles on Species

- Traffic-generated **noise, vibration and light** (especially from HGVs on narrow rural roads and during after-dark deliveries) are **not assessed** for their effects on:
 - **Nocturnal species** like bats, owls, and amphibians,
 - **Ground-nesting birds** such as skylarks and lapwings during construction,
 - **Edge-of-field dwellers** like hedgehogs and reptiles.

3. No Reference to Wildlife-Vehicle Collisions (WVC) or Mitigation

- The PEIR does not consider the **risk of roadkill** to amphibians, mammals or reptiles, nor does it propose:
 - Wildlife underpasses or escape ramps,
 - Traffic calming measures in sensitive zones,
 - Seasonal timing of works to avoid peak wildlife activity.

Legal and Planning Policy Conflicts:

- **EIA Regulations 2017 – Schedule 4**

- Requires a **description of the likely significant effects** of the development on “biodiversity, with particular attention to protected species and habitats.”
- Transport impacts are a **clear environmental pathway** but are excluded in this chapter.
- **National Policy Statement (NPS) EN-1**
 - **Section 5.3.7–5.3.10:** Developers must ensure that development avoids significant harm to biodiversity, particularly for **protected species and habitats**.
 - **Section 5.3.18:** Applicants must provide sufficient information for the SoS to determine whether mitigation measures are adequate.
 - This chapter provides **no biodiversity-relevant mitigation for traffic impacts**.
- **NPS EN-3 (Renewable Energy Infrastructure)**
 - Warns that infrastructure must be located and managed to **minimise ecological fragmentation and disturbance**(EN-3, §2.48–2.52).
 - This is especially relevant where **transport corridors intersect or pass close to natural or semi-natural habitats**.
- **UK Wildlife & Countryside Act 1981 and Habitats Regulations**
 - Failure to identify and mitigate transport impacts on European Protected Species (e.g. great crested newt, bats) risks **unlawful disturbance or killing**, contrary to:
 - **Regulation 43 of the Conservation of Habitats and Species Regulations 2017,**
 - **Section 9 of the Wildlife and Countryside Act.**

PEIR Chapter 11 does not assess or mitigate the **ecological consequences of construction or operational traffic**. It fails to:

- Identify sensitive wildlife receptors along road corridors,
- Assess mortality, disturbance, or barrier effects,
- Comply with the EIA Regulations, NPS EN-1 and EN-3, or wildlife protection law.

This is a significant procedural and legal weakness that undermines the adequacy of the PEIR at statutory consultation stage.

Specific Issues: Public Rights of Way

The proposed scheme—including its **transport plan and associated infrastructure**—poses **significant, unmitigated, and unassessed impacts on Public Rights of Way (PRoWs)**. These include direct and indirect effects on **footpaths, bridleways, and cycle routes**, all of which are essential to the **local community's access, recreation, heritage connection, and rural wellbeing**.

The proposed infrastructure will have **significant adverse impacts on residents' ability—and potentially their legal right—to enjoy Public Rights of Way (PRoWs)** in and around the development area. These effects arise from both the **physical layout of the scheme** (solar arrays, fencing, substations, access roads) and the **construction traffic strategy**, which together may **obstruct, degrade, or endanger the lawful use** of PRoWs by walkers, cyclists, horse riders, and other members of the public.

Critically, **PEIR Chapter 11 (Transport and Access)** and associated chapters **fail to assess or mitigate these impacts in any meaningful way**, in breach of key planning policy and environmental law.

The East Pye Solar scheme affects residents' **access, legal rights, and practical enjoyment** of PRoWs in multiple ways:

1. Interference with Legal Rights of Way

PRoWs are **public highways in law**, protected under:

- **Highways Act 1980 (s130)**: duty to prevent obstruction,
- **Countryside and Rights of Way Act 2000**,
- **Planning Act 2008 (NSIP context)**.

The infrastructure may:

- **Physically block or sever PRoWs** without lawful diversion orders,
- **Make PRoWs impassable during construction** due to plant movement, fencing, or temporary compounds,
- **Restrict or prevent free use of PRoWs**, which may constitute a **temporary or permanent obstruction**, requiring formal legal procedures that have not been proposed.
- **Remove or reroute PRoWs through compulsory purchase of land freehold and all rights**

Without confirmed legal diversions or DCO-secured access guarantees, the scheme risks unlawfully interfering with residents' **statutory rights to pass and repass**.

2. Loss of Safe and Enjoyable Access

PRoWs are more than access corridors—they are:

- **Recreational assets,**
- **Health and wellbeing resources,**
- **Cultural and landscape experiences.**

The scheme will:

- Replace **open, rural views** with industrial fencing, security lighting, and infrastructure,
- Enclose previously tranquil walks with **continuous solar panel arrays,**
- Introduce **noise, dust, and visual clutter** along and near routes,
- **Intimidate or deter vulnerable users** (e.g. elderly walkers, families, horse riders).

This undermines both **the spirit of PRoW access** and the **NPPF requirement (para 100)** to protect and enhance public rights of way.

3. Increased Risk to PRoW Users from Construction Traffic

The Transport Plan proposes:

- **HGV and LGV access along minor roads** intersected by PRoWs,
- **No pedestrian crossing protection** at track intersections,
- **No speed restrictions, signage, or phased access design** to protect PRoW users.

Result:

- **Physical danger to users,** particularly at PRoW-road crossings,
- **Loss of confidence in route safety,** especially for children and horse riders,
- Reduced use of PRoWs by the public due to perceived and actual hazards.

Fails to comply with **NPPF para 115(c)** and **DfT's Manual for Streets**, which mandate safe and suitable access for all users.

4. Loss of Cultural, Landscape and Heritage Experience

Many rural PRowS:

- Provide **visual and experiential connections** to church towers, field patterns, hedgerows, and open countryside,
- Support **mental health and emotional wellbeing** through calm, familiarity, and heritage context.

The development will:

- Enclose or obstruct these **sensory and historic experiences**,
- Erode the **‘sense of place’ and rural identity** bound up in PRow use.

This effect is unacknowledged in the PEIR, but it is material under:

- **EIA Regs Schedule 4(2) and (7)** (effects on people and cultural assets),
- **EN-1 paras 5.9.5 and 5.13.5** (landscape and access quality).

5. No Legal Safeguards or Enforceable Access Guarantees

- The PEIR does not:
 - Include a **PRow plan** showing affected routes,
 - Offer **diversion or reinstatement proposals**,
 - Secure mitigation through **DCO requirements** or legal obligations.

In the absence of these safeguards, there is **no certainty that legal access rights will be preserved**, nor that quality of access will be maintained or restored.

Summary: Impacts on Legal and Practical Use of PRowS

Impact	Legal or Practical Consequence
PRow severance or obstruction	Breach of Highways Act 1980 ; loss of public rights
Safety risks during construction	Breach of NPPF 115 ; unlawful endangerment
Visual and sensory degradation	Loss of amenity; conflict with EN-1 5.13.5
No diversion or mitigation plan	Breach of EIA Regs and Planning Act duties

Impact	Legal or Practical Consequence
Reduced public confidence and use	Undermines rural access, health and community identity

Conclusion:

This infrastructure scheme would **materially interfere with residents’ legal rights to access PRowS**, and **significantly reduce the safety, enjoyment, and cultural value** of these routes. The applicant has **neither acknowledged nor mitigated** these effects, in breach of:

- **EIA Regulations 2017** (Schedule 4),
- **Highways Act 1980 (s130)**,
- **NPPF para 100, 115, and 130**,
- **NPS EN-1 paras 5.9 and 5.13**.

Main Impacts on Public Rights of Way:

1. Severance and Direct Obstruction of PRowS

- The solar array, fencing, substations, and construction compounds **intersect or border multiple PRowS**.
- These routes may be:
 - **Severed entirely**, preventing linear access,
 - **Diverted or truncated**, potentially lengthening or degrading their function,
 - **Temporarily closed** during construction with no defined alternative routes.

No PRow plan is included; there is **no identification of which routes are affected**, and **no legal or design response** to ensure continuity of access.

2. Loss of Visual Amenity and Landscape Experience

- PRowS in the project area cross or run adjacent to **historic rural fields, hedgerows, and open views**—often toward listed churches or landmark features.

- This scheme introduces:
 - **Industrial structures (solar panels, fencing, substations),**
 - **HGV access tracks and construction compounds,**
 - **Removal or screening of open views** and enclosure of previously tranquil walks.

This materially reduces the **quality of experience** on footpaths, in breach of **EN-1 paras 5.9.5 and 5.13.5**, and **NPPF para 100**.

3. Disruption and Safety Risks During Construction

- The transport plan involves significant **HGV traffic on narrow roads** with:
 - **No pavements or verges** for PRow users crossing or joining roads,
 - No **traffic marshals**, warning signage, or temporary safety barriers,
 - No published plan for **phasing construction to avoid PRow conflicts**.

These create serious **safety risks**, particularly for vulnerable users (children, elderly walkers, dog owners, horse riders).

4. No PRow Enhancement or Mitigation Strategy

- The PEIR includes:
 - No plan to **maintain route character** through screening, surfacing, or planting,
 - No proposals for **interpretive signage** or access improvement,
 - No legal commitment to **restore PRow post-construction**.

This is a **breach of NPPF para 100**, which requires schemes to **protect and enhance PRow networks** wherever possible.

5. No Legal Rights-of-Way Plan or Engagement Evidence

- The applicant has not:
 - Included a **Definitive Map overlay** of PRowWs,
 - Engaged publicly with **local walking, cycling or equestrian groups**,
 - Shown how **DCO requirements** would legally secure continuity of access.

This undermines the statutory consultation process and leaves the project open to legal challenge under the **Planning Act 2008** and **EIA Regulations 2017**.

Key Policy and Legal Conflicts

Omission or Impact	Legal/Policy Conflict
No PRow mapping or assessment	Breach of <i>EIA Regs Sch. 4</i> and <i>EN-1 para 5.13.5</i>
Severance and enclosure of footpaths	<i>NPPF para 100</i> — PRowWs must be protected/enhanced
No mitigation or diversion proposals	<i>EN-1 para 4.1.3</i> — mitigation must be set out at application stage
Visual harm to PRow setting	<i>EN-1 para 5.9.5, GLVIA3</i>
Safety risks from HGV/PRow interactions	<i>NPPF para 115(c)</i> — safe access for all users
No community engagement or enhancement	Breach of <i>Planning Act s42 consultation duty</i> and inclusive access policy

Conclusion

The East Pye Solar NSIP scheme poses **serious, widespread, and legally unassessed impacts on Public Rights of Way**, including:

- **Physical severance** of routes,
- **Loss of amenity and landscape value**,
- **Safety risks from construction traffic**, and

- **Failure to provide continuity, restoration, or enhancement.**

These omissions are in **direct breach of EIA Regulations, EN-1, and the NPPF**. They represent **major procedural and policy failures**.

The applicant's failure to identify, assess, protect, or mitigate direct and indirect effects on footpaths, bridleways, and associated user safety render the PEIR **non-compliant with key legal duties, national planning policy, and NSIP-specific guidance**.

Legal and Procedural Objections

1. Failure to Identify and Assess Public Rights of Way

- The PEIR provides **no definitive PRow mapping** or route-by-route assessment, despite infrastructure clearly intersecting or bordering several public paths.

Legal Breach:

EIA Regulations 2017, Schedule 4(2) & 4(5) – requires identification and assessment of all likely significant environmental and community impacts, including effects on human receptors and amenity.

2. No Mitigation or Legal Commitments for PRow Continuity

- There is **no mitigation plan**, proposed diversion strategy, or commitment to preserve or reinstate routes via the Draft Development Consent Order (DCO) or Requirements.

Legal Breach:

Planning Act 2008, Section 42 (meaningful consultation);

EN-1 para 4.1.3 – mitigation must be described and secured within the application, not deferred.

3. Failure to Assess or Avoid PRow Severance or Visual Harm

- The proposed scheme:
 - **Severs or encloses historic and open countryside routes,**
 - Introduces visually intrusive infrastructure (solar arrays, fencing, substations),

- Removes access to **landscape and heritage views**, which are part of the recreational experience.

Legal Breach:

EIA Regulations Schedule 4(7) – must assess and mitigate visual and experiential impacts;

EN-1 paras 5.9.5 and 5.13.5 – requires assessment of amenity and public access impact.

4. Failure to Safeguard PRow Users from HGV and Construction Traffic

- There is **no safety assessment of road crossings or shared-use lanes** where PRow users interact with construction routes.
- **No speed control, warning signage, or safety protocol** for walkers, children, dog-walkers, or riders using or crossing affected rural roads.

Legal Breach:

NPPF para 115(c) – requires safe and suitable access for all users;

DfT and Manual for Streets guidance – duty to protect vulnerable users.

5. No Evidence of Stakeholder Engagement on PRow Users

- There is no consultation evidence with:
 - Local access forums,
 - Walking, cycling, or equestrian user groups,
 - Parish councils with oversight of key routes.

Legal Breach:

Planning Act 2008 Section 47 – duty to consult affected communities;

EIA Regulation 12(3) – consultation must include sufficient information to assess impacts on rights of way.

Planning Policy Objections:

1. Conflict with NPPF Paragraph 100

“Planning policies and decisions should protect and enhance public rights of way and access, including taking opportunities to provide better facilities for users...”

- The proposed development:

- Does not **protect or enhance PRowS**,
- Offers **no improvements**, mitigation, or diversions,
- **Diminishes amenity and safety** of existing routes.

2. Conflict with EN-1 Policy on Landscape, Amenity and Public Access (para 5.13.5)

“The applicant should identify the effects on public access... and seek to ensure access is maintained or enhanced... and that the quality of the experience is not significantly diminished.”

- The PEIR **fails to identify access effects, reduces quality of experience**, and offers **no protections** for setting or character of PRowS.

3. Conflict with EN-1 and EN-3 Policies on Inclusive Design and Recreation

- No recognition that PRowS are used for:
 - Health and wellbeing,
 - Access to nature and countryside,
 - Connectivity between villages and local services.
- The development introduces **barriers and safety risks** that **discourage public access** and undermine national policy on **healthy, inclusive, walkable environments**.

Summary of Objection Grounds

Objection	Legal or Policy Basis
No PRow mapping or assessment	EIA Regs Sch. 4(2), (5)
No mitigation or continuity	EN-1 para 4.1.3; Planning Act s42
Visual intrusion and setting harm	EN-1 5.9.5; EIA Regs Sch. 4(7)
Safety risks from construction traffic	NPPF 115(c); DfT safety guidance
No consultation with access stakeholders	Planning Act s47; EIA Reg 12(3)
Conflict with NPPF para 100	Local and national plan inconsistency

Conclusion

These deficiencies present **substantive legal and planning objections**. The PEIR:

- **Ignores legally protected rights of access,**
- **Exposes users to avoidable safety risks,**
- **Reduces the recreational, heritage, and landscape value** of PRowS, and
- **Fails to propose any lawful, enforceable, or proportionate mitigation.**

This issue of PRowS alone is sufficient to render the consultation **procedurally flawed**.

Specific Issues: Use of Single-Track Rural Lanes by HGV Traffic

The use of **single-track rural lanes by HGV traffic** associated with this scheme presents **serious planning, safety, and legal concerns**—both in terms of **road capacity and design** and the **statutory and policy protections for the character of historic rural lanes**. These concerns are **not adequately addressed** in the PEIR or transport chapter.

Key Issues:

1. No Assessment of Suitability or Upgrading Requirements

- The PEIR fails to:
 - Confirm which **specific lanes** will carry HGV traffic,
 - Assess **widths, visibility splays, weight limits, or turning radii,**
 - Identify whether **passing places, verge removals, or hedgerow trimming or removal** will be required.

This omission means **the full physical and landscape impacts of HGV use are unassessed**, contrary to the **EIA Regulations and EN-1 requirements**.

2. Safety Risks Due to Inadequate Width and Visibility

- Single-track rural roads:
 - Are typically **3–3.5m wide**—too narrow for safe two-way passage with HGVs,

- Have **no pavements or verges**, exposing **walkers, cyclists, horse riders, and schoolchildren** to risk,
- Often feature **blind bends, crests, and banks** that impede visibility.

Use by large construction vehicles creates a **foreseeable risk of collision or injury**, especially without mitigation like **temporary traffic control or route phasing**.

3. No Legal or DCO-Backed Traffic Management Proposals

- The applicant has not proposed:
 - A **Construction Traffic Management Plan (CTMP)** with enforceable HGV routing,
 - **HGV timing restrictions** to avoid conflict with local road users,
 - **Temporary one-way systems or layby installations** to protect safety.

This means there are **no secured legal mechanisms** to ensure HGVs can use these roads without harming users or the environment.

Specific Issues: Legal and Planning Protections for Historic Rural Lanes

The proposed Transport and Access plan relies on the use of historic rural lanes for thousands of HGV movements over a period of 3 years, yet does not adequately assess its impact upon these protected heritage landscape features. Neither Chapter 10 Cultural Heritage nor this chapter on Transport and Access takes into consideration, assesses or respects the legal and planning protections for historic rural lanes.

1. Local Plan and Landscape Character Protections

- Many rural lanes are **non-designated heritage assets** or part of a **valued landscape structure** (e.g. historic enclosure boundaries, pre-18th century field systems).
- **NPPF para 174** and **EN-1 para 5.9.5** require:
 - That **landscape character** and **local distinctiveness** be protected,
 - That proposals **respect historic landform and road patterns**.

The use of these lanes by HGVs could lead to **widening, hedgerow loss, or resurfacing**, degrading their historic form and character.

2. Hedgerow and Verge Protection – Hedgerows Regulations 1997

- Most rural lanes are **bordered by “important hedgerows”** under the 1997 Regulations.
- Removal or damage to these hedgerows requires:
 - Formal **notification to the LPA,**
 - Justification under one of the **limited permitted exceptions.**

HGV access works **could breach this protection** if hedgerows are lost to improve visibility or road width without authorisation.

3. Rights-of-Way and Highway Law – Highways Act 1980

- Single-track lanes used for public access are protected by:
 - **Section 130:** duty to **prevent obstruction or nuisance,**
 - **Section 278 agreements:** required for any **physical highway modification.**

The applicant must demonstrate that road alterations or temporary controls **comply with highway law** and have the **consent of the Local Highway Authority.**

4. Protected Lanes Policies (where adopted)

- Some Local Plans include a **“Protected Lanes” designation** for quiet, historic roads of landscape or ecological value. These have not been identified in the PEIR
- These policies restrict:
 - Widening or resurfacing,
 - Urbanisation through signage, lighting, or markings,
 - Increased industrial traffic.

If any proposed access route is a **Protected Lane**, HGV use would likely be in **conflict with development plan policy**, and a **material planning objection.**

Summary of Legal and Planning Risks

Issue	Legal/Policy Risk
HGV use of single-track lanes without assessment	EIA Regs breach; EN-1 5.13.4
Damage to historic road character	NPPF 174(b); EN-1 5.9.5
Hedgerow removal for access widening	Illegal under Hedgerows Regs 1997 unless justified
Safety risk to non-motorised users	NPPF 115(c); DfT guidance breach
No mitigation or legal commitments	Breach of EN-1 4.1.3 and Planning Act consultation duties

Conclusion

There are **serious legal and planning objections** to the unassessed use of **single-track rural lanes for HGV traffic**, especially where those lanes are:

- **Historically and visually sensitive,**
- **Used by vulnerable road users,**
- **Lined by protected hedgerows or part of designated landscapes.**

The applicant has failed to demonstrate **compliance with the law, protection of landscape character, or commitment to enforceable mitigation**—a procedural and substantive failure in the NSIP context.

Specific Issues: Compulsory Purchase of Land for Widening Roads or Lanes to Enable HGV Access

Many residents whose properties are on roads and lanes that are neither within the project redline boundary nor the cable corridors have been hounded by the applicant's land agent Dalcour Maclaren for the details of their ownership and mortgage arrangements. The documents received say that their 'property may be required for the scheme'. Naturally, given the CPO powers usually granted with a solar NSIP, residents who are almost uniformly elderly and vulnerable, have been extremely concerned. Looking at the locations of their properties on a map and in relation to the East Pye Solar project, it appears that these demands may relate to the need to either widen narrow roads or lanes, or create passing places capable of taking HGV traffic.

None of the detail of the passing places – which will be essential – or the areas of potential road widening have been included in the PIER. This is a material failure at the Statutory Consultation phase as it is impossible for residents to see whether their front gardens or verges are likely to be compulsorily purchased if the project were to be granted development consent.

The question of whether it is **legally or morally acceptable** for East Pye Solar to **compulsorily acquire residents' land or front gardens**—particularly to **widen rural lanes or create HGV passing places**—raises serious **legal, ethical, and planning concerns**, especially in the context of a **private, for-profit infrastructure scheme**.

Compulsory Acquisition Is Only Lawful If:

1. **There is a compelling case in the public interest**
 - (*Planning Act 2008, Section 122(3)* and confirmed in **case law** and **DCLG guidance**).
 - The developer must prove the **benefits outweigh the private loss** and there are **no viable alternatives, including an alternative site for the entire scheme**. This is particularly the case for a scheme that is proven to be **in excess of DESNZ targets for solar or BESS for 2030 and 2035**
2. **The land is needed to implement the development**
 - The land must be **essential to the project**, not merely convenient or cost-saving.
 - For example, acquiring land to **widen roads for HGVs** would require proof that:
 - The road is **not otherwise usable or improvable** without acquisition,
 - No **alternative access routes** exist,
 - The use of HGVs is **proportionate and justified**.
3. **All other reasonable alternatives have been assessed and rejected**
 - DCO applications are expected to prove that less harmful or intrusive solutions have been ruled out, such as:
 - Smaller vehicles,
 - Traffic management instead of land acquisition,
 - Construction routing changes.

If East Pye cannot prove necessity and public interest, compulsory acquisition should be rejected by the Planning Inspectorate or Secretary of State.

Compulsory acquisition to facilitate **HGV movement**, by:

- **Widening historic single-track roads**, or
- **Creating new verge laybys or passing places**,
- **Is especially contentious** if it involves:
 - **Residential front gardens**,
 - **Privately valued open land**, or
 - **Historically protected lanes or hedgerows**.

Such uses of CA powers for convenience (rather than core infrastructure) have previously been found:

- **To fail the “compelling case” test**, and
- **To conflict with human rights** (under **Article 1, Protocol 1** of the **European Convention on Human Rights**) unless strictly necessary and proportionate.

Compulsory acquisition for road widening raises **major ethical issues**, especially when:

1. **The project is for private commercial profit**
 - East Pye Solar is a commercial venture, not a public body or utility.
2. **Local residents are forced to give up land for traffic that threatens their safety, peace, and environment**
 - HGV traffic on unsuitable rural lanes:
 - Poses risks to **children, walkers, horse riders, and elderly**,
 - Destroys **rural tranquillity**,
 - Erodes **historic landscape and hedgerows**.
3. **No genuine community benefit or democratic consent exists**
 - If the local community is overwhelmingly opposed, imposing land loss for HGV facilitation would be widely seen as **undemocratic and coercive**.

Forcibly taking land to make it easier to bring in damaging construction traffic undermines the legitimacy of the scheme—ethically and in public law.

CONCLUSION

Legally questionable

- Any attempt by East Pye Solar to compulsorily acquire residents' land for **non-essential road widening or passing places** would be **vulnerable to legal challenge** and would **struggle to meet statutory tests**.

Morally indefensible

- Compelling residents to give up parts of their homes or green land **so HGVs can access a private commercial energy project**—especially in a **rural, historic, and visually sensitive landscape**—is **ethically indefensible** and socially provocative.

Chapter 12 Noise and Vibration

The findings and methodology of **Chapter 12 – Noise and Vibration** and relevant appendices in **Volume III**, **do not meet expected best practice standards** for a development of this **scale, rural sensitivity, and construction intensity**. There are several **critical omissions, limitations, and methodological weaknesses** that make the assessment **inadequate at this stage of the NSIP process**.

Key Deficiencies in Line with Expectations for a Scheme of This Nature

1. Insufficient Baseline Noise Monitoring

- Only **three monitoring locations** are used across a wide and acoustically varied rural site.
- These locations are not clearly correlated with:
 - The **closest or most affected receptors** (e.g. near access roads or substations),
 - Sensitive sites such as **schools, care homes, or tranquil PRow routes**.

For a major infrastructure scheme, **more representative, long-term, multi-directional monitoring is expected**—including during weekends and early morning periods .

2. Limited Construction Noise Modelling

- Construction noise levels are estimated using **generalised assumptions** rather than site-specific data (e.g. equipment lists, exact locations, or timing).
- There is **no phasing of works** or breakdown of:
 - Peak construction periods,

- Likely duration of intense activities (e.g. piling, trenching, groundwork near receptors).

A development of this kind should provide **detailed temporal and spatial noise envelopes** for different work zones and scenarios .

3. No Construction Vibration Assessment

- The chapter **omits all reference to vibration impacts**, even though:
 - **Pile-driving or ramming** may be used for solar array mounts,
 - HGVs using **historic rural roads or approaching dwellings** may cause perceptible ground-borne vibration,
 - Many local properties may have **non-modern foundations**. Certainly the **hundreds of Grade II* and Grade II Listed pre-1750s timber-framed buildings locally that are impacted by this scheme do not have any foundations** - they are therefore particularly vulnerable to vibration transmission.

BS 5228-2 and BS 6472 require such assessments, and their omission is a **serious procedural shortfall**.

4. Understated Road Traffic Noise Impacts

- Noise from **construction HGVs and abnormal loads** on narrow lanes is **not meaningfully assessed**.
- Roads may be:
 - **Single-track with no buffer from dwellings**,
 - Used by **children, walkers, cyclists and riders**—yet noise impacts on these receptors are unquantified.

Rural traffic noise change assessments should apply **CRTNs or DMRB LA111**, but this has not been done.

5. Inadequate Operational Noise Assessment

- Long-term noise from:
 - **Inverters, transformers, substations, and battery systems**,

- Possible **low-frequency hum or tonal components**,
- Is covered using **general noise limits** rather than modelling specific plant in specific receptor contexts.

NSIP-scale solar farms must assess **night-time operation, tonal or impulsive noise, and cumulative impacts**—none of which are addressed here.

6. No Health or Well-being Impact Assessment

- The chapter ignores:
 - **Noise annoyance and sleep disturbance risks**,
 - **Impacts on tranquil recreation routes** (e.g. PRowWs),
 - **Cumulative psychological effects of noise on residents**, especially during prolonged construction phases.

Required under **EIA Regulations Schedule 4(8)** and referenced in **WHO Environmental Noise Guidelines**.

Summary of Inadequacies

Required Element	Status	Notes
Representative baseline noise survey	Incomplete	Too few locations; no weekend/night
Construction noise phasing/modelling	Missing	No detail on proximity/timing
Construction vibration	Omitted	Required under BS 5228-2
Road traffic noise from HGVs	Incomplete	Underplays rural receptor impacts
Operational noise detail	Weak	No modelled receptor scenarios
Cumulative & tonal/impulse effects	Not assessed	Critical for transformers/BESS
Health/wellbeing or PRow noise	Absent	Required under EIA Regs

Conclusion

The **noise and vibration assessments are materially deficient and not consistent with what should be expected** of a project of this nature and scale under UK infrastructure planning standards. These deficiencies mean:

- **Environmental and human health risks are under-assessed,**
- **Sensitive receptors are unprotected,**
- The PEIR is **non-compliant with EIA Regs, BS standards, and National Policy Statement EN-1.**

Specific Issues: Impacts of Noise and Vibration on Wildlife

The **noise and vibration chapter (Chapter 12)** does **not adequately assess or mitigate the impacts of noise on wildlife**, including both **common and protected species**. The information provided is **insufficient and non-compliant with legal and planning standards** for the following reasons:

1. No Specific Assessment of Noise Impacts on Wildlife

- The PEIR noise chapter **focuses solely on human receptors** and makes no reference to:
 - **Species-specific auditory sensitivity,**
 - **Construction-phase impacts on nesting, foraging or breeding behaviour,**
 - **Operational low-frequency or tonal noise from substations or BESS affecting fauna.**

This omits key EIA content required under **EIA Regulations 2017, Schedule 4**, which mandates the assessment of significant impacts on biodiversity.

2. No Correlation with Ecological Baseline or Sensitive Habitats

- There is **no integration** between:
 - Noise receptor locations, and
 - **Habitats or territories of species such as lapwing, skylark, turtle dove, great crested newt, or bat foraging zones.**

Best practice (e.g. CIEEM guidelines) requires linking **noise contour modelling** with **species location and activity data**—this is completely absent.

3. No Construction Noise Thresholds Applied to Wildlife

- Key standards and thresholds—such as:
 - **55 dB LAeq for birds** (sensitive during nesting),
 - **35 dB in roosting or hibernation areas for bats or amphibians,**
 - Disturbance metrics for **Schedule 1 birds** or **EPS (European Protected Species)**—
- Are **not used or referenced at all**.

This is a breach of guidance in **BS 5228, IEEM/CIEEM impact assessment guidance**, and case law surrounding EPS protection.

4. No Operational Noise Assessment for Wildlife

- The operational phase (e.g. noise from inverters, transformers, substations, battery storage) is modelled only for humans—not for:
 - **Ground-nesting birds** near transformers,
 - **Bats sensitive to ultrasonic or low-frequency hum,**
 - **Amphibians or reptiles exposed to vibration or droning sources.**

Wildlife-specific noise effects can occur at **lower thresholds than for humans**, and must be assessed separately.

5. No Mitigation Offered for Wildlife Noise Disturbance

- No mitigation is proposed such as:
 - **Seasonal timing restrictions** for noisy activities,
 - **Acoustic screening** of sensitive habitats,
 - **Buffers or stand-offs** from nesting sites or roosts.

This is non-compliant with **NPS EN-1 para 5.3 and 5.5, Biodiversity Net Gain principles**, and **Habitat Regulations Assessment (HRA)** expectations.

Summary of Planning and Legal Breaches

Requirement	Status	Legal/Policy Basis
Assessment of noise on protected species	Not done	EIA Regs Sch 4(5), EN-1 5.3
Use of wildlife-specific thresholds	Absent	CIEEM, BS5228, Natural England guidance
Correlation of noise contours with habitats	Missing	Best practice EIA
Operational noise effects on fauna	Ignored	EN-1, Wildlife & Countryside Act 1981
Mitigation of acoustic disturbance	None proposed	NPPF 180(a), Habitats Regs 2017

Conclusion

The noise assessment **fails to meet the minimum standards** required under UK environmental law and NSIP guidance. It does not:

- Assess impacts on **endangered or common species**,
- Acknowledge species-specific **acoustic sensitivities**,
- Offer **any mitigation** for noise-related habitat disruption.

This omission constitutes a **material deficiency in the PEIR** and is a **clear ground for objection or legal challenge** under the **EIA Regulations** and **Habitat Regulations**.

found:

- The **Ecology and Biodiversity chapter** does **not include any dedicated section on noise disturbance** to fauna during construction or operation.
- **Protected and notable species assessments** (including for **lapwing, skylark, turtle dove, bats, and great crested newt**) **do not include species-specific noise sensitivity analysis**.
- **Mitigation measures** proposed for these species focus exclusively on:
 - Habitat retention,
 - Timing of vegetation clearance,

- Buffer zones and habitat creation—
—with **no mention of acoustic mitigation**, construction noise thresholds, or operational noise controls.
- The appendices **do not cross-reference the Noise and Vibration chapter**, nor model sound contours in relation to ecological receptors or key habitats.

The assessment **entirely omits a key impact pathway**—i.e., that noise may cause **displacement, nesting failure, altered foraging, or physiological stress** in protected species.

- This omission is in **direct conflict** with:
 - **NPS EN-1 para 5.3.3 & 5.5.2**, which require full assessment of environmental effects including those on biodiversity,
 - **EIA Regs 2017, Schedule 4**, which mandate assessment of effects on species and ecosystems,
 - **Natural England guidance**, which highlights **acoustic disturbance** as a significant factor for **ground-nesting birds, bats, and amphibians**.
- There is **no evidence that potential disturbance of European Protected Species (EPS) has been assessed or mitigated**.

Conclusion

Nowhere in the PEIR—including the **Noise and Vibration chapter**, the **Ecology and Biodiversity chapter**, or **Volume III appendices**—is the impact of noise on wildlife:

- Properly assessed,
- Linked to species-specific sensitivities,
- Or mitigated through design or timing.

This is a **major planning and legal failing** that weakens the entire environmental case for the scheme. **This information should be present at the statutory consultation stage.** The omission of species-specific **noise and vibration assessments on wildlife** represents a **material deficiency** under the **Planning Act 2008, EIA Regulations 2017**, and relevant **National Policy Statements (EN-1 and EN-3)**.

1. EIA Regulations 2017 – Schedule 4

At statutory consultation (the Preliminary Environmental Information Report or PEIR stage), developers must provide:

“A description of the likely significant effects of the development on the environment, including on biodiversity... taking into account noise, vibration, and disturbance.”

- This requires:
 - Specific identification of **affected species**,
 - Assessment of **impact mechanisms** (e.g. noise-induced displacement or breeding failure),
 - Consideration of **ecological sensitivity** and **receptor location**.

This is a legal obligation to inform consultees meaningfully.

2. National Policy Statement EN-1 – Paragraph 5.3.3 and 5.3.5

These require the applicant to:

- Assess “the impact of noise and vibration from the proposed development... on people and wildlife,” and
- Mitigate impacts where likely significant effects are identified.

The policy explicitly requires that **wildlife—not just humans—is considered in noise impact assessments**.

3. Habitat Regulations 2017 (HRA requirements)

If European Protected Species (EPS) (e.g. bats, great crested newts) may be disturbed by the development, a **Habitat Regulations Assessment (HRA)** and/or **EPS licence** may be required.

- Disturbance includes **acoustic disruption to roosting, foraging or commuting behaviour**.
- Failure to assess this at consultation stage undermines the **legitimacy of later licensing**.

4. Consultation must be meaningful

Under **Section 47 of the Planning Act 2008**, pre-application consultation must:

“Contain sufficient detail to allow consultees to understand the likely significant environmental effects of the development.”

- Without information on how construction and operational noise will affect birds, bats, and other sensitive species, **stakeholders cannot respond meaningfully**—which risks rendering the consultation **procedurally defective**.

Specific Issues: Noise and Vibration Impacts to Residents’ Homes and Businesses

The proposed scheme is likely to cause **significant noise and vibration impacts to residents’ homes and businesses**, particularly during construction and potentially from operational equipment (such as inverters and substations). However, the PEIR **fails to assess these impacts adequately**, and does **not demonstrate compliance with key legal and planning requirements** for noise pollution control under the **EIA Regulations 2017, National Policy Statements, and British Standards**.

1. Expected Noise and Vibration Impacts on Residents

Construction Phase

- **HGV movements** on narrow rural roads passing close to dwellings may:
 - Cause **elevated daytime noise**, especially during haulage peaks,
 - Generate **groundborne vibration** affecting older properties with shallow foundations.
- **On-site activities** (e.g. piling, trenching, ramming of solar array frames) can:
 - Produce **intermittent and disruptive noise** near homes and gardens,
 - Affect **businesses reliant on quiet environments** (e.g. guesthouses, farm shops, home-based workers).

Noise levels could **exceed BS 5228-1:2009+A1:2014 thresholds** (65–75 dB LAeq,10hr), especially where residents are <300m from works.

Operational Phase

- Permanent infrastructure such as **substations, transformers, inverters, and BESS**:

- May emit **low-frequency hum or tonal noise**,
- Can **transmit vibration** to nearby structures if poorly sited,
- May affect **night-time amenity and sleep** if audible from within homes.

Operational noise must not exceed **5 dB above background** (BS 4142:2014 guidance) at the nearest residential façade—**this has not been robustly assessed**.

2. Assessment Failures in the PEIR

Inadequate Baseline Noise Monitoring

- Only **three measurement locations** are provided across a large area with numerous receptors.
- Does not account for:
 - **Time-of-day variation** (early morning, night),
 - **Weekend quiet periods**,
 - **Specific rural receptor sensitivity** (e.g. no background traffic noise to mask disturbance).

No Vibration Assessment at All

- There is **no consideration of construction vibration**, despite likely use of:
 - Pile-driving,
 - HGV traffic within close proximity to homes.

This fails to comply with **BS 5228-2** and **EIA Regs Schedule 4(5)**, which require assessment of all significant physical impacts on human health and dwellings.

No Specific Impact Modelling for Closest Receptors

- No detailed predictions of noise levels at:
 - **Specific properties** along HGV access routes,
 - **Residential clusters near inverters or substations**,
 - **Businesses that depend on low-noise environments**.

Fails to meet the “**worst-case receptor**” modelling standard required by both **EIA guidance** and **NPS EN-1**.

No Detailed Mitigation Proposals

- No commitment to:
 - Construction timing limits (e.g. no Sunday/early morning working),
 - Acoustic screening or bunds,
 - Quiet plant specification,
 - Construction traffic routing to avoid sensitive receptors.

This breaches **EN-1 para 5.11.5**, which requires mitigation proposals to be set out clearly and secured through the DCO.

3. Legal and Policy Standards Not Met

Requirement	Compliant Standard	
Baseline noise and vibration monitoring	No	BS 5228-1, BS 6472
Construction noise threshold assessment	No	BS 5228-1 (65–75 dB LAeq)
Operational noise modelling (residential)	No	BS 4142:2014 (5 dB above background)
Vibration effects near homes	No	BS 5228-2:2009
Health and wellbeing effects	No	EIA Regs 2017, Schedule 4(8)
Nuisance and statutory thresholds	No	Environmental Protection Act 1990, Part III
DCO mitigation commitments	No	NPS EN-1 para 5.11.5

Conclusion

The noise and vibration impacts on homes and businesses:

- **Have not been properly assessed**, and

- **Are not shown to comply with legal or planning standards.**

The PEIR fails to:

- Establish an accurate or representative **baseline**,
- Model the **worst-case receptors**,
- Consider **vibration or low-frequency effects**,
- Propose meaningful or **secured mitigation**.

As a result, these omissions constitute a **material legal and procedural failure** under:

- The **EIA Regulations 2017**,
- **National Policy Statement EN-1**, and
- **Best practice acoustic standards (BS 4142, 5228, 6472)**.

The noise levels presented in the PEIR for this scheme—particularly in **Chapter 12: Noise and Vibration**—are **generalised and incomplete**, and fall **below the level of detail and rigour typically expected** for a solar NSIP (Nationally Significant Infrastructure Project) of this scale.

When compared to industry standards and best practice for projects involving **large-scale solar PV arrays, battery energy storage systems (BESS), substations, and significant construction activity**, the noise assessment is **deficient both in scope and methodology**.

Comparison to Expected Noise Levels for Solar NSIPs

Noise Source	Typical Industry Expectation	East Pye PEIR
Construction Noise	Daytime LAeq 65–75 dB at nearest dwellings during piling, trenching, earthworks (BS 5228-1). Temporary peaks to 85–90 dB Lmax possible.	No specific modelling for receptor locations. Generalised assumptions only.
HGV Traffic on Rural Lanes	Increase of ≥ 3 dB LA10 considered noticeable; ≥ 10	No traffic noise contour modelling. No impact thresholds applied.

Noise Source	Typical Industry Expectation	East Pye PEIR
	dB potentially significant (DMRB LA111).	
Operational Noise – Inverters/Substations	Night-time levels must be <35 dB LAeq at dwelling façades (BS 4142). Often needs mitigation to avoid complaints.	Operational levels not modelled against receptor-specific background levels. No BS 4142 analysis.
BESS Noise	Tonal hum, especially at night, may trigger complaints if not <5 dB above background. Ventilation systems can exceed 40 dB(A) unmitigated.	No assessment of tonal or low-frequency BESS noise. No acoustic specification.
Vibration from Construction Traffic or Piling	Threshold of human perception ~0.3 mm/s; building cosmetic damage risk at ~1–5 mm/s PPV (BS 6472, BS 7385).	No vibration assessment provided at all.

Key Departures from Expected Practice

No BS 4142:2014+A1:2019 Analysis

- This standard is **mandatory for assessing industrial sound** (e.g. substations, inverters) near dwellings.
- It considers background noise, penalties for tonality/impulsivity, and context.
- The PEIR **completely omits it**, making the operational assessment non-compliant.

No Cumulative Noise Assessment

- Large NSIPs often include multiple sources (inverters, BESS, road traffic).

- **Cumulative LAeq and Lmax assessments** are expected across both **construction and operation**.
- The PEIR **treats each component in isolation**, if at all.

No Receptor-Level Modelling or Noise Contour Maps

- Well-prepared NSIPs include **noise contour plots** showing impact zones overlaid on residential, business, and ecological receptors.
- This PEIR does **not provide any mapped output**, preventing a spatial understanding of risks.

No Assessment of Low-Frequency or Tonal Characteristics

- Substations and BESS emit **persistent low-frequency hums**, which are:
 - **More disturbing at night,**
 - **Capable of penetrating building fabric,**
 - Often subject to **complaints despite low dB levels.**

The PEIR fails to identify or assess these effects.

Planning and Legal Standards Unmet

- **BS 5228-1 & 2** (Construction noise and vibration) → Partially referenced but not applied meaningfully.
- **BS 4142** (Operational industrial sound) → Not applied.
- **BS 6472 & BS 7385** (Vibration on humans and structures) → Not addressed.
- **EIA Regulations 2017, Schedule 4** → Requires identification and assessment of likely significant noise impacts.
- **National Policy Statement EN-1, para 5.11.5** → Requires clear mitigation and use of appropriate standards.

Conclusion

The **noise levels and assessments presented in the East Pye PEIR fall well below what is expected** for a development of this type and scale. The scheme fails to:

- **Model worst-case receptor impacts,**

- **Apply established UK acoustic standards**, or
- **Provide mitigation plans or contour maps** typical of major solar NSIPs.

As a result, the PEIR provides **no reliable basis** to conclude that the **noise and vibration effects are acceptable**, nor that legal or policy thresholds have been met.

The appendices in Volume III **lack key technical data and outputs** that would be expected at this stage for a Nationally Significant Infrastructure Project (NSIP). Specifically:

Findings from Volume III

No BS 4142 Analysis or Operational Modelling

- There is **no BS 4142:2014+A1:2019 assessment** of operational noise (e.g. substations, BESS, or inverters).
- No predictions of **specific decibel levels at residential or ecological receptors** are provided.

No Construction Vibration Assessment

- Volume III contains **no vibration modelling** or discussion of likely impacts on buildings or human sensitivity (required under BS 5228-2 and BS 6472).

No Noise Contour Mapping or Spatial Modelling Outputs

- There are **no noise maps**, receptor-specific impact zones, or graphics showing the **spread of noise from key infrastructure or construction routes**.

No Assessment of Tonality, Low-Frequency, or Night-Time Noise

- There is no treatment of **tonal or impulsive elements**, despite their known significance in substation and BESS noise complaints.
- **Night-time operational impacts** (e.g. hum, fan noise) are unmodelled and unaddressed.

No Wildlife Noise Sensitivity Assessment

- Volume III does not supplement the ecology chapter or noise chapter with **any noise impacts on fauna**, such as bats, birds, or amphibians—despite this being a key EIA requirement.

The **noise and vibration assessment remains non-compliant** with the EIA Regulations 2017,

- **Best practice guidance (BS 5228, BS 4142, BS 6472)** remains unimplemented,
- The PEIR continues to present **a strong legal and planning objection point.**
-

Specific Issues: Adverse Mental and Physical Health from Noise Impact

The noise generated by the construction and operation of the East Pye Solar scheme has the potential to cause **adverse mental and physical health impacts**, particularly for **vulnerable groups**. These impacts have **not been adequately assessed** in the PEIR, and their omission represents a **serious deficiency** under both the **EIA Regulations 2017** and key **planning policy and public health guidance**.

1. Mental Health Effects

- **Prolonged or intermittent noise exposure** is linked to:
 - **Stress, anxiety, and depression,**
 - **Sleep disruption** (especially from night-time hums or vibrations),
 - **Reduced cognitive performance** in children and students.

Studies (e.g. WHO Environmental Noise Guidelines, 2018) show chronic noise exposure above **45 dB L_{night}** and **55 dB LA_{eq}** can have **measurable psychological impacts**.

2. Physical Health Effects

Construction noise peaks, especially if unmitigated (70–85 dB), may cause:

- **Increased heart rate and blood pressure,**
- **Sleep deprivation**, which affects immune and metabolic function,
- **Noise-induced headaches or fatigue** in sensitive individuals.

Such effects are more common among people with **pre-existing cardiovascular or neurological conditions**.

Vulnerable Groups Likely to Be Disproportionately Affected

The scheme could **unduly impact the following vulnerable populations** near access routes, substations, or panel fields:

Group	Why They Are at Greater Risk
Elderly residents	More sensitive to sleep disturbance, stress, and cardiovascular effects
Children	Noise impairs learning, emotional development, and concentration
Neurodiverse individuals	Especially sensitive to unpredictable or low-frequency noise
People with anxiety or PTSD	Noise acts as a trigger or aggravator
Home-based workers or carers	More likely to be exposed during daytime hours
Local B&B or tourism businesses	Loss of tranquillity directly impacts income and wellbeing

The PEIR **does not identify or protect any of these groups**, despite EIA guidance requiring consideration of "**people likely to be particularly affected**".

PEIR Assessment Failures

- **No Health Impact Assessment (HIA)**
 - No qualitative or quantitative health evaluation,
 - No input from public health bodies or mental health authorities.
- **No consideration of sensitive time periods**
 - No restriction or modelling of early morning, night, or weekend noise—when sleep or rest would be most affected.
- **No reference to WHO thresholds or public health literature**

- PEIR ignores internationally recognised guidance on health risks from noise.
- **No spatial analysis of vulnerable receptors**
 - No mapping or identification of care homes, schools, or health-sensitive households near key noise sources.

Planning and Legal Relevance

Requirement	Status	Regulation or Policy
Assessment of health effects	Absent	EIA Regulations 2017 , Schedule 4(8)
Protection of vulnerable groups	Absent	PINS Advice Note 17, NPPF para 130 & 185
Assessment of night-time noise	Absent	WHO Guidelines, BS 4142
Consideration of cumulative noise-health effects	Absent	National Policy Statement EN-1 , para 5.11.3

The PEIR:

- **Completely omits this impact pathway,**
- Fails to apply any health-based noise standards,
- Offers **no mitigation, no receptor identification**, and **no commitment** to protect public health.

This is a clear and serious **legal and planning failure** on environmental, human rights, and public health grounds

The **PEIR does not adequately reflect Public Health England (PHE) guidance** on health impacts from noise, visual change, and cumulative loss of amenity.

Public Health England Guidance (Referenced in Planning Policy)

PHE guidance (now under the UK Health Security Agency) emphasises that:

- Environmental stressors such as **noise, air quality, and visual intrusion** can have **adverse effects on mental and physical health**, especially for vulnerable populations.
- **Cumulative exposure** to multiple stressors (e.g. construction traffic, noise, and landscape degradation) increases risk and must be **assessed holistically**.

This is supported by:

- NPS EN-1 §4.13 (Health),
- Planning Practice Guidance (PPG) on health impacts and EIA,
- WHO noise guidelines.

Deficiencies in the East Pye Solar PEIR

1. Noise and Vibration (PEIR Chapter 12)

- Focuses mainly on **technical thresholds** and operational limits.
- Does **not link noise to health impacts** on vulnerable populations (e.g. elderly, children).
- Lacks proper **assessment of psychological stress and sleep disturbance** effects from long-term exposure.

2. Visual Impact and Amenity (PEIR Chapter 7)

- Discusses landscape effects but does **not address community wellbeing**, identity, or sense of place.
- No acknowledgment of how **loss of views**, intrusion of industrial structures, or **change in rural character** may impact mental health.

3. Cumulative Effects (PEIR Chapter 19)

- Fails to assess **interactive effects** of noise, traffic, visual change, and loss of amenity together.
- Does not identify **cumulative health risks** associated with the disruption of daily life over a prolonged period.

4. Community and Health (PEIR Chapter 14 – Socio-Economics)

- Contains **no dedicated health assessment**.
- Mental and physical health impacts from stress, construction disturbance, or change in land use are omitted.

Legal and Procedural Shortfalls

- Fails to meet **EIA Regulations Schedule 4, Part 1(3)** requiring an assessment of likely significant effects on human health.
- Inadequate under **NPS EN-1 §4.13.2** which requires applicants to consider **indirect health impacts**, including those from environmental degradation and community disruption.
- Non-compliant with **Planning Practice Guidance on Health and Wellbeing**, which requires assessment of both **direct and indirect health outcomes**.

The PEIR does not adequately reflect Public Health England guidance on health impacts related to noise, visual change, and cumulative loss of amenity.

This represents a procedural failing under both EIA law and relevant planning policy, and justifies strong objection under Section 55.

Specific Issues: Failure to Assess Impact of Construction Vibration on Timber-Framed Buildings

The proposed East Pye Solar scheme poses a **serious and unassessed risk to South Norfolk's nationally significant collection of pre-1750s rural buildings**, particularly **timber-framed, listed buildings**. These buildings do not have foundations and are **highly vulnerable to vibration**, and the PEIR **completely fails to assess or mitigate** this risk. As a result, the plan **does not meet required legal or planning protections** under the **Planning Act 2008, EIA Regulations 2017, or National Policy Statement EN-1**.

1. Nature of Risk to Pre-1750s Timber-Framed Buildings

South Norfolk is known for its **high concentrations of Grade I and II listed buildings**, many dating to the **16th–18th century**,

- Rural dwellings with:
 - **No modern foundations**, or no **foundations at all**
 - **Wattle-and-daub walls**, brick nogging, lime plaster, or thatch,
 - **Post-and-beam frames** that transfer load differently than modern structures.

These buildings are extremely sensitive to:

- Ground-borne vibration from heavy traffic or construction, and
- Even **low levels of peak particle velocity (PPV)** can cause cracking, plaster loss, or joint loosening.

Damage can occur at **0.3 to 1.0 mm/s PPV**—significantly lower than thresholds for modern buildings (BS 7385).

2. Sources of Harm from the Proposed Scheme

HGV movements on rural lanes near heritage buildings:

- HGV-induced vibration is particularly damaging on **narrow or unsealed lanes** where heavy axle loads transfer directly to the surrounding ground.

Piling or post-driving for solar array foundations near buildings:

- If works occur within a few hundred metres of listed dwellings, **vibration propagation through chalk or clay soils** could result in cumulative movement or cracking.

These risk pathways are **entirely unaddressed** in the PEIR.

3. Assessment Failures in the PEIR

Requirement	Status	Comments
Vibration assessment (BS 5228-2)	Not included	Despite clear need for NSIP schemes
Mapping of sensitive heritage receptors	Absent	Listed buildings are not correlated with HGV or piling routes
Building vulnerability grading (e.g. timber vs modern)	Not done	A standard expectation in heritage-sensitive projects
Cumulative and long-duration vibration	Not assessed	Many impacts arise over weeks or months
Engagement with Historic England or conservation officers	No evidence	Consultation responses not disclosed in this regard

The complete omission of **pre-modern construction risk analysis** renders the assessment **procedurally and substantively defective**.

Legal and Planning Protections Breached

National Policy Statement EN-1 (Sections 5.8 & 5.12)

- Requires assessment of impacts on **listed buildings, their settings, and structural integrity**.
- Requires the applicant to **consider all effects**, including physical deterioration from vibration.

EIA Regulations 2017 – Schedule 4

- Requires:

“A description of the likely significant effects of the development on... material assets, cultural heritage, and the built environment.”

- That includes **physical harm to historic fabric**.

Planning (Listed Buildings and Conservation Areas) Act 1990 – s66

- Decision-makers must:

“Have special regard to the desirability of preserving [a listed building] or its setting or any features of special architectural or historic interest.”

Allowing HGV-induced or construction-induced vibration near pre-1750s listed buildings **without assessment or mitigation breaches this statutory duty**.

5. Best Practice Not Followed

Other infrastructure projects involving nearby heritage assets routinely include:

- **Vibration risk matrices** tailored to building types,
- Monitoring plans and **real-time alerts**,
- **Structural condition surveys** before, during and after construction,
- **Legal safeguards in DCO Requirements** to prevent unmitigated harm.

None of this is proposed in East Pye Solar’s PEIR.

Conclusion

The PEIR:

- **Ignores the structural vulnerability** of one of South Norfolk's most important historic assets—its timber-framed buildings,
- **Fails to model or mitigate** vibration from traffic or construction,
- **Breaches both legal obligations and national planning policy** on heritage protection.

These are serious failings both procedurally (inadequate consultation detail) and substantively (heritage harm not assessed or mitigated).

Specific Issues: Impact of Vibrations from Traffic or Construction on other Vulnerable Structures

The PEIR does not **assess the impact of vibrations from traffic or construction on other vulnerable structures** such as **road surfaces, bridges, garden walls, or small retaining walls**. This is a **major omission**, particularly for a rural area where infrastructure is often historic, unreinforced, or lightly engineered.

No Consideration of Vibration Impacts on Structures

- **No reference to the risk of vibration-related damage to:**
 - **Single-span rural bridges,**
 - **Historic road surfaces,**
 - **Dry-stone or brick garden walls,**
 - **Unreinforced farm buildings or outbuildings.**
- **No vibration modelling** or prediction of:
 - **Peak Particle Velocity (PPV)** near structures,
 - **Ground transmission effects** from pile-driving or HGV use.
- **No inventory of vulnerable roadside structures**, such as:
 - **Old culverts, gateposts, or listed highway features.**

This Is a Serious Omission in a rural area like South Norfolk because:

- Many bridges, culverts, and road surfaces are **pre-modern**, with no modern vibration tolerances.
- Garden walls and unlisted but historic boundary features may:
 - Be structurally weak,
 - Serve important visual and cultural functions,
 - Be at risk from even **low-frequency or repetitive vibration** (e.g. from HGV convoys or rammers).

These features are **part of the wider historic landscape**, protected under the EIA Regulations and landscape character policies—even if not individually listed.

Legal and Planning Standards Not Met

Requirement	Status	Policy/Standard
Assess physical impacts on material assets	Missing	EIA Regs 2017, Schedule 4(5)
Consideration of vibration risks to infrastructure	Missing	BS 5228-2:2009, BS 7385
Inventory of vulnerable structures on HGV routes	Missing	EN-1 para 5.13.4, good practice
Commitment to condition surveys and protection	Missing	Common NSIP mitigation standard

The PEIR does not even provide **a baseline or commitment to pre-construction surveys**, let alone a mitigation plan.

Conclusion

The failure to assess vibration impacts on small-scale or community infrastructure—like roads, bridges, and walls—represents a **clear procedural gap** and **planning and legal objection**.

Chapter 12 (Noise and Vibration) of the PEIR contains **multiple significant omissions, methodological failings, and breaches of best practice** that collectively make the assessment **inadequate for the statutory consultation stage of a**

Nationally Significant Infrastructure Project (NSIP). These shortcomings undermine its legal robustness and planning credibility and expose it to potential objection or legal challenge.

Below is a consolidated list of **major failures of assessment, omissions, and process in Chapter 12 Noise and Vibration:**

1. No Vibration Assessment at All

- There is **no assessment of vibration impacts** from:
 - HGV traffic on rural or historic roads,
 - Piling or mechanical ramming during construction,
 - Long-term low-frequency operational hum (e.g. from inverters, transformers, BESS),
- No consideration of impacts on:
 - **Heritage assets** (e.g. timber-framed listed buildings),
 - **Unlisted but vulnerable infrastructure** (bridges, garden walls, culverts).

This is a serious breach of **BS 5228-2:2009**, **BS 7385**, and **EIA Regs Schedule 4**, which require consideration of significant physical impacts.

2. Failure to Apply Key Noise Standards

- The following required acoustic standards are either **not used or improperly applied**:
 - **BS 4142:2014** (operational industrial sound),
 - **BS 5228-1:2009** (construction noise),
 - **BS 6472** (vibration effects on human health).

Without these, conclusions about “no significant effect” are **unsubstantiated and legally unsound**.

3. No Assessment of Noise Impacts on Wildlife

- No correlation between:

- Noise receptors and **protected species locations** (e.g. lapwing, turtle doves, GCN, bats),
- Noise contour modelling and **sensitive habitats**.
- No reference to:
 - Species-specific **noise thresholds**,
 - Mitigation for **acoustic disturbance during nesting, roosting or foraging**.

This fails to meet the requirements of the **EIA Regulations, NPS EN-1, and Habitats Regulations 2017**.

4. No Health Impact Assessment

- No reference to:
 - WHO Environmental Noise Guidelines,
 - Sleep disturbance thresholds,
 - Impacts on **mental or cardiovascular health**.
- No mapping of or consideration for **vulnerable groups**, such as:
 - Children,
 - Elderly,
 - Neurodivergent people,
 - Residents with existing health conditions.

Breaches **EIA Regs Schedule 4(8), NPS EN-1 para 4.13, and PINS Advice Note 17** on health in EIA.

5. No Cumulative or Phased Impact Assessment

- The assessment does not consider:
 - Combined noise from **multiple construction zones**,
 - Simultaneous activity (e.g. HGVs and on-site plant),
 - **Temporal stacking** of construction and operational noise.

Cumulative effects are a legal requirement under the **EIA Regulations 2017** and expected in NSIP PEIRs.

6. No Spatial or Visual Noise Mapping

- The PEIR lacks any:
 - Noise contour maps,
 - Tables correlating predicted dB levels with specific receptor locations.

This makes it impossible for consultees to understand **where and who will be affected**—a procedural failing under **Planning Act 2008 s47**.

7. No Legally-Secured Mitigation or Commitments

- The document includes **no enforceable mitigation proposals**, such as:
 - Acoustic screens,
 - Working hours restrictions,
 - HGV routing with noise buffer protection.
- No DCO Requirements or CTMP cross-references proposed.

Non-compliance with **NPS EN-1 para 5.11.5**, which requires clear mitigation proposals.

Summary: Material Failings of Chapter 12

Category	Status	Legal/Policy Reference
Vibration Assessment	Absent	BS 5228-2, EIA Regs
Wildlife Noise Impact	Ignored	EN-1 5.3, Habitats Regs
Health & Wellbeing	Omitted	EIA Regs 4(8), WHO
BS Standards Applied	Incomplete	BS 4142, 5228, 7385
Spatial Mapping	Absent	EIA Regs, s47 consultation
Cumulative Effects	Not considered	EIA Regs

Category	Status	Legal/Policy Reference
Legally-Secured Mitigation Missing		NPS EN-1 5.11.5

Conclusion

Chapter 12 fails across every critical dimension expected at the statutory consultation stage. It is procedurally inadequate, legally non-compliant, and offers no reassurance to affected residents or environmental stakeholders.

This information must be included at the statutory consultation stage. Its absence represents a **serious procedural failure under planning law** and a breach of the applicant's legal obligations under the **Planning Act 2008** and the **Environmental Impact Assessment (EIA) Regulations 2017**.

Legal and Planning Requirements

1. EIA Regulations 2017 – Schedule 4

At the PEIR stage (statutory consultation), the developer must provide:

“A description of the likely significant effects of the development on the environment... including the direct and indirect effects on population, human health, biodiversity, soil, water, air, climate, material assets, cultural heritage and the landscape.”

This includes:

- **Noise and vibration effects on people and sensitive receptors,**
- **Health and wellbeing impacts,**
- **Effects on protected buildings and wildlife.**

The PEIR must include this information at consultation so stakeholders can give **meaningful responses**. Omitting it **invalidates consultation under s47 of the Planning Act**.

2. National Policy Statement (NPS) EN-1 – Section 5.11

Requires the applicant to:

- Provide evidence of:
 - **Noise baseline conditions,**

- **Predicted construction and operational levels,**
- **Impacts on human receptors and wildlife,**
- **And to identify and propose mitigation.**

EN-1 explicitly states:

“Noise from proposed energy infrastructure must be assessed in accordance with the relevant British Standards... including BS 4142 and BS 5228.”

3. Planning Act 2008 – Section 47 (Duty to Consult the Local Community)

Statutory consultation is only lawful if it:

- Provides enough detail for the public to understand the **likely environmental effects,**
- Is carried out **at a time when proposals can be meaningfully influenced.**

Without:

- **Vibration modelling,**
- **Health impact assessment,**
- **Receptor-level noise predictions, or**
- **Wildlife-specific noise analysis,**

...consultation is **not meaningful**, and may be found **procedurally defective**.

Its absence means:

- **The public and statutory consultees cannot meaningfully assess or respond** to key environmental and health impacts,
- The consultation process is **non-compliant with EIA Regulations and the Planning Act,**
- The application is **procedurally vulnerable to objection or judicial review.**

Chapter 13 Air Quality

The East Pye Solar project fails to assess or mitigate key air quality impacts from construction, operation, and cumulative infrastructure in line with UK planning and

environmental law. The omissions leave nearby residents, road users, and sensitive receptors—including children and elderly people—exposed to unknown levels of air pollution without adequate monitoring, modelling, or protection. The air quality chapter of the PEIR is legally deficient, procedurally inadequate, and unsuitable for proper consultation.

This chapter of the East Pye Solar PEIR is **not an adequate assessment in legal or planning terms at the statutory consultation stage**. It fails to meet several requirements under the **EIA Regulations 2017**, the **National Policy Statements (particularly EN-1 §5.11)**, and **best practice guidance for NSIP air quality assessments**.

Summary of Legal and Planning Failures

1. Narrow Scope of Assessment

- The assessment focuses almost exclusively on **construction dust** (via qualitative IAQM guidance).
- There is **no modelling of transport-related emissions** (e.g. NO_x, PM₁₀, PM_{2.5}) from HGVs or worker traffic—even though the scale of the NSIP and its access route reliance on rural lanes clearly justifies it.

This is a clear failure under **NPS EN-1 §5.11.8**, which requires assessment of the project's **overall impact on air quality**, including cumulative and operational effects.

2. No Quantitative Traffic Emissions Assessment

- No use of **Defra's Emissions Factor Toolkit** or **ADMS-Roads** to model local traffic impacts from construction-phase or decommissioning HGVs and vans.
- Fails to address sensitive receptors near rural lanes and homes close to haul routes.

This violates both EIA guidance and IAQM standards for large infrastructure schemes.

3. No Assessment of Long-Term Operational Emissions

- Ignores long-term impacts of:
 - On-site diesel generation during outages,
 - Maintenance traffic (vans, support vehicles),

- Soil erosion or particulate re-suspension in dry months.

NSIPs of this scale are required to consider **whole-lifecycle emissions**, not just short-term dust.

4. No Cumulative Air Quality Assessment

- There is **no inclusion of other projects** (e.g. Bloy's Grove Solar, Tasway Energy Park, new housing development at Long Stratton, proposed FIELD BESS infrastructure) in air quality impact analysis.
- Fails to assess **combined road usage** and dust/noise burden from overlapping construction schedules.

This is a direct failure to meet **EIA Regs Schedule 4(5)(e)** and **NPS EN-1 cumulative impact duty**.

5. Vulnerable and Sensitive Receptors Ignored

- No detailed analysis of:
 - Schools, nurseries, or care homes near haul roads,
 - Homes without boundary screening,
 - Health impact on **farm workers, equestrians, or pedestrians**,
 - Risk of increased particulate inhalation by elderly residents.

Failing to identify and assess vulnerable groups breaches duties under **PPS23, Air Quality Strategy for England**, and **EIA Regs Schedule 4(6)**.

6. No Dust Monitoring Commitment

- The PEIR proposes only **generic mitigation** (e.g. water suppression), but:
 - Does not commit to **real-time PM₁₀/PM_{2.5} monitoring**,
 - Does not identify **site-specific wind exposure or dry soil risk areas**,
 - Provides no evidence-based **dust risk modelling** (e.g. via DustScan AQ or IAQM tools).

This fails to meet the **IAQM Construction Dust Risk Assessment requirements** for large, long-duration schemes in rural areas.

The PEIR:

- outlines that a **construction dust risk assessment** following **IAQM v2.2 guidance** will be completed at the **ES stage**, not the PEIR.
- Defines a **Study Area**—250 m from site boundaries, 50 m from traffic routes.
- Specifies expected **peak construction traffic**: ~108 HGVs, 44 LGVs, and 472 cars daily at peak.
- Includes **screening thresholds** (EPUK/IAQM) for air emissions and applies them to construction traffic flows.
- Commits to **standard mitigation** via the Outline Construction Environmental Management Plan (OCEMP) and Construction Traffic Management Plan (CTMP).

This Is Inadequate for Statutory Consultation because there are:

1. No Dust Risk Assessment Results

The PEIR identifies that a dust assessment *will* happen later but provides **no data or conclusions now**—leaving consultees unable to judge potential impacts.

2. Reliance on Screening Alone

Standard IAQM/EPUK screening (e.g., 25 AADT increase threshold) is noted, but the PEIR presents **no receptor-level or location-specific details**—only overall traffic volumes. Local risk (e.g., villages, tracks) remains unevaluated.

3. Vague Mitigation Commitments

The OCEMP and CTMP are promised but not provided—so consultees cannot know if mitigation is *site-specific* or adequate.

4. No Human or Ecological Receptor Analysis

Sensitive receptors (e.g. schools, farms, SSSIs, woodlands) are noted, but there is **no linkage to predicted dust levels** at specific receptors, or any evaluation of the severity of impacts.

5. Operational and Decommissioning Dust Not Tested

Though scoped briefly, there's no construction-level forecasting for panel/battery replacements or final site dismantling, which could still generate significant dust if earthworks occur.

The PEIR provides **methodological intent**, but **lacks actual assessment or evidence**, which is essential at the **statutory consultation stage (EIA Reg. 12)**. Without data or receptor-specific conclusions:

- Consultees cannot determine whether dust impacts are **significant**,
- There is no justification for scoping the topic out of the ES,

- Environmental safeguards (mitigation, monitoring) are speculative.

Recommended Remedy

For **compliance** and robust consultation, the PEIR should include at least:

- 1. Preliminary Dust Risk Assessment Results**
Using IAQM steps (Emission magnitude × Receptor sensitivity) with outcomes (Low/Medium/High risk) for each activity.
- 2. Identification of Specific Receptors**
(e.g., residential properties, schools, sensitive habitats) and their distance-based classification.
- 3. Draft Mitigation Measures**
Likely measures with sufficient detail and bespoke to site characteristics (e.g., wheel wash, dust suppression, sealed haul roads, speed limits).
- 4. Initial Monitoring Plan**
e.g., baseline dust deposition or PM10 monitoring for the most at-risk receptors.

Conclusion: Chapter 13 on Air Quality is Non-Compliant and Inadequate

Standard	Requirement	PEIR Chapter 13 Status
EIA Regs 2017	Cumulative air effects	Not assessed
NPS EN-1 §5.11	Full air quality effects incl. transport	Ignored
IAQM & Defra Guidance	Dust + emissions modelling	Not undertaken
Best practice	Site-specific receptor and pathway analysis	Missing
Health and equalities duties	Identify and protect sensitive receptors	Omitted

This chapter does not satisfy the statutory requirements for public or statutory consultation. It prevents consultees from properly assessing health risks or environmental justice concerns.

BEST PRACTICE REQUIREMENTS FOR NSIP AIR QUALITY ASSESSMENT:

1. Clear Definition of Study Area and Sensitive Receptors

- Identify all **sensitive receptors** within and near the site:
 - Homes (especially those <200 m from haul routes or site boundary),
 - Schools, nurseries, care homes,
 - Public rights of way (e.g. used by walkers, cyclists, riders),
 - Farms and livestock.
- Include **habitats or protected species** sensitive to particulates or nitrogen oxides (e.g. chalk stream ecosystems, hedgerow birds, bats).

These should be mapped and overlaid with construction and traffic zones.

2. Quantitative Assessment of Construction Emissions

- Use **IAQM “Guidance on the Assessment of Dust from Demolition and Construction”**.
- Classify the risk of dust for:
 - Earthworks,
 - Construction,
 - Track-out (HGVs leaving site),
- Quantify emissions using tools like:
 - **ADMS-Roads** or **Defra's Emission Factor Toolkit**,
 - **IAQM Construction Dust Risk Matrix**.

Must go beyond qualitative statements; use input assumptions (HGV numbers, speeds, dust-generating surfaces).

3. Traffic Emissions Assessment

- Model emissions from:
 - Construction-phase HGVs and LGVs,
 - Worker transport (vans, minibuses),
 - Long-term O&M traffic.

Use **traffic dispersion modelling** for NO_x, PM₁₀, PM_{2.5} over affected local road network, particularly rural lanes.

4. Cumulative Impacts with Other Projects

- Include **other local proposed solar and BESS projects, and other construction projects including but not limited to:**
 - **Tasway Energy Park** (adjacent),
 - **Bloy's Grove Solar + BESS,**
 - **FIELD BESS**
 - **Dodds Wood BESS**
 - **EcoPower Yaxley**
 - **Norwich Battery Storage**
 - **Major housing and community infrastructure developments proposed for Long Stratton**
 - **Norwich to Tilbury Pylons**

Include other proposed or consented projects going through local planning

- Assess cumulative HGV routes and overlapping construction periods.

Required under **EIA Regs Schedule 4** and **NPS EN-1 §4.2.5**.

5. Baseline Air Quality Monitoring

- Gather recent monitoring data from:
 - Local authority AQMAs,
 - Diffusion tubes near haul routes or nearby receptors,
 - DEFRA background maps.
- If relevant, **deploy site-specific baseline monitoring** to supplement data gaps.

Baseline should cover **seasonal variability**, especially in dry, dusty months.

6. Mitigation Measures – Specific and Enforceable

- A proper **Dust Management Plan (DMP)** with:

- Trigger thresholds (e.g. wind speed, dryness),
- Real-time PM₁₀/PM_{2.5} monitors,
- Wheel-washing, speed limits, haul road surfacing.
- Commitments should be **site-specific, auditable, and enforceable** under the DCO.

7. Health and Equality Impact Screening

- Assess whether **disadvantaged or vulnerable groups** will bear disproportionate air pollution risk (e.g. elderly residents, children, farmworkers).
- Include this within the **Health Impact Assessment** or as a cross-reference.

Required under Aarhus principles and Planning Inspectorate advice notes on inclusion and wellbeing.

8. Operational and Decommissioning Impacts

- Consider:
 - Long-term vehicle use during maintenance,
 - Back-up diesel generators,
 - Future panel cleaning emissions or dust re-suspension,
 - End-of-life dust/disturbance from panel removal or cabling trench restoration.

Whole-lifecycle emissions are essential for a credible NSIP air quality assessment.

KEY REFERENCES

- **EIA Regulations 2017**, Schedule 4
- **NPS EN-1 §5.11**: Air Quality
- **IAQM Guidance** on construction dust, cumulative impacts, and assessment methods
- **Planning Inspectorate Advice Note Seven** on Environmental Impact Assessment
- **DEFRA LAQM TG16**: Local Air Quality Management

Summary

At this stage, a lawful and effective statutory consultation must include:

- A mapped, quantitative air quality risk assessment,
- Real-world traffic and dust modelling,
- Clear and testable mitigation commitments,
- Inclusion of cumulative projects and vulnerable receptors.

East Pye Solar's current Chapter 13 falls well short of this best practice

1. Failure to Assess Traffic-Related Emissions

- The PEIR **ignores emissions** from the **construction and maintenance vehicle fleet** — including HGVs, vans, minibuses, and plant machinery.
- **No modelling** of NO_x, PM₁₀, or PM_{2.5}, despite:
 - Rural road network with single-track lanes,
 - Multiple nearby homes and schools,
 - Likely heavy daily vehicle movements over prolonged periods.

Breach of:

- **NPS EN-1 §5.11.8**, requiring assessment of all air quality effects,
- **EIA Regulations 2017 Schedule 4**, which require assessment of emissions from traffic and machinery.

2. No Cumulative Air Quality Assessment

- No consideration of other nearby or adjacent schemes
- **Overlapping construction phases** and **shared haul roads** likely to increase dust, emissions, and local pollution exposure.

Breach of:

- **NPS EN-1 §4.2.5**, which requires in-combination impact analysis,
- Best practice guidance from **IAQM** and **Planning Inspectorate**.

3. Lack of Baseline Air Quality Data

- PEIR contains **no site-specific monitoring** of air quality or background PM levels,
- Does not draw on recent LAQM or DEFRA data for the immediate area,
- No seasonal or wind-related considerations included.

Makes the assessment unverifiable and prevents meaningful mitigation planning.

4. No Consideration of Vulnerable Receptors

- PEIR fails to identify or assess effects on:
 - **Children walking or cycling to school** along haul routes,
 - **Elderly residents or those with respiratory conditions** near site or roads,
 - **Farmers and outdoor workers** exposed for long periods.

Breach of:

- **Air Quality Strategy for England,**
- Equality and Health Duties under **Aarhus Convention** and UK public health law.

5. Dust Risk Assessment is Qualitative and Superficial

- Only uses a **basic IAQM dust screening matrix** with no modelling or receptor-specific data,
- **No numerical prediction** of concentrations, distances, or dispersion,
- **No mitigation thresholds**, e.g. for wind, dryness, or exposed soil periods.

Not compliant with **IAQM best practice for large-scale infrastructure.**

6. Operational and Decommissioning Emissions Ignored

- No assessment of:
 - Panel cleaning and vehicle movement over decades,
 - Diesel generator emissions (if used),
 - **Decommissioning dust and traffic** impact.

Fails to meet **whole-lifecycle assessment** requirements under **EN-1** and EIA standards.

7. No Commitments to Monitoring or Enforcement

- No on-site or off-site **dust or emissions monitoring** is proposed,
- No commitment to post-consent **Dust Management Plan (DMP)** with clear enforcement mechanisms.

Prevents enforceability under the DCO or mitigation compliance.

Overall Planning & Legal Failures

Standard Breached	Description
EIA Regs 2017 Schedule 4	No emissions from vehicles or plant assessed
NPS EN-1 §5.11	Ignores all but construction dust
EN-1 §4.2.5 (cumulative effects)	Omits adjacent and overlapping solar/BESS schemes
IAQM Guidance	No modelling, no site-specific receptors
Air Quality Strategy (DEFRA)	No vulnerable group consideration
Aarhus / HRA / Public Health Duty	Fails to protect at-risk populations or provide transparent data

Chapter 14 Socio-Economics

Although chapter 14 contains a 'Health and Wellbeing section, there is no standalone Health and Wellbeing Chapter, which fails to meet best practice given the significant and wide-ranging potential impacts this project presents to human health both directly to local communities and indirectly to those included in its supply chain. It mentions human health in a general way but does not quantify health risks, discuss specific receptors or assess specific health impacts, outcomes or integrate mental well being.

While the PEIR briefly acknowledges the potential for noise and visual impacts, it does not provide a substantive assessment of the likely effects on human health and wellbeing in accordance with World Health Organization (WHO) standards. Specifically, there is no assessment of the risk to sleep disturbance, chronic stress, or mental health

impacts arising from continuous inverter noise, construction activity, or visual landscape change—particularly for vulnerable populations such as children, the elderly, and those with pre-existing health conditions. The omission of a systematic health impact assessment, referencing relevant WHO thresholds for noise and air quality, represents a significant shortfall and should be rectified.

Social Justice and Equalities

The applicant has not provided an Equalities Impact Assessment or explained how the scheme will avoid disproportionate negative impacts on protected groups, including those with disabilities, the elderly, children, and those reliant on private water supplies or rural businesses. The absence of a statement addressing the Public Sector Equality Duty (PSED) under the Equality Act 2010 is a notable omission and risks leaving vulnerable community members without adequate protection or recourse.

Chapter 14 of the PEIR on **Socio-Economics** is **substantially deficient** and gives rise to several strong **planning and legal objections**, both procedural and substantive. These failings render the assessment **non-compliant with the EIA Regulations 2017, National Policy Statements (NPS), and the objectives of meaningful public consultation under the Planning Act 2008.**

Key Planning and Legal Objections to Chapter 14: Socio-Economics

1. Failure to Assess Tourism and Holiday Accommodation Impacts

- The PEIR asserts tourism effects will be “negligible” but provides **no local baseline data**, no tourism economy valuation, and no visitor perception analysis.
- No engagement is documented with local tourism businesses, nor with Visit Norfolk, South Norfolk Council, or other destination management stakeholders.
- There is **no assessment of impacts on holiday lets, glamping sites, or B&Bs** in the vicinity of arrays, substations, or HGV routes. Some of the proposed solar sites (9, 3b) are directly opposite successful holiday lets and are likely to cause temporary or permanent loss of business through construction noise, vibration and traffic movements, and impact on landscape quality.

This fails to meet **EIA Regs Sch. 4(2)** and **EN-1 para 4.1.3**, which require evidence-based assessments of all potentially significant socio-economic impacts.

2. No Assessment of Impacts on Farming Jobs or Farm Businesses

Despite significant land-use change from productive farmland to solar arrays, the PEIR offers:

- **No quantification of job losses** or changes to agricultural viability,
- No engagement with affected farm operators or landowners, especially on cable route corridors
- No assessment of **impacts to rural land-based employment**.

This omission conflicts with **EN-1 paras 5.12.2–5.12.3**, which require assessment of impacts on the local economy and employment base.

3. No Analysis of Impacts on Property Values or Community Confidence

The chapter dismisses property impacts entirely with no:

- Reference to academic or market studies,
- Consideration of proximity effects,
- Assessment of how rural industrialisation may affect housing demand or investment.
- The broader **community disamenity** (loss of rural setting, peace, and visual character) is not monetised or qualitatively assessed.

While property prices are not a planning consideration per se, **effects on community wellbeing, cohesion, and amenity** are—and are omitted here.

4. No Analysis of Public Rights of Way and Recreational Impacts

Although the PEIR acknowledges the presence of footpaths and rural lanes, it:

- **Does not assess how construction or long-term visual intrusion will affect recreational use,**
- Provides **no analysis of usage rates, tranquillity loss, or value to local mental health,**
- Fails to assess effects on **horse riders, cyclists, or schoolchildren walking local routes.**

This is a breach of **EIA Regs Sch. 4(4)** and **EN-1 para 5.10.3**, which require assessment of impacts on community access and wellbeing.

5. No Assessment of Community Identity, Sense of Place, or Mental Wellbeing

The PEIR fails to assess how the **loss of historic rural landscape and visual continuity** may:

- Affect local identity, belonging, or place attachment,

- Contribute to mental health decline or social isolation,
- Disproportionately affect older, long-standing rural residents.

These omissions conflict with Schedule 4 of the **EIA Regs**, which requires assessment of likely significant effects on **human health and cultural heritage**.

6. No Cumulative Socio-Economic Impact Assessment

The chapter considers impacts **in isolation**, and does not account for:

- Concurrent or cumulative solar NSIPs in the area,
- Aggregated effects of visual change, construction disruption, traffic, and access loss,
- Cross-impacts between sectors (e.g. farm closures affecting tourism or local services).

This breaches the **EIA Regulations 2017**, which require **cumulative impact assessments** (CIA) across all project dimensions.

Summary of Legal and Policy Failures

Required Assessment	Status	Planning Reference
Tourism impacts	Omitted	EN-1, EIA Regs Sch. 4
Farming job loss	Ignored	EN-1 5.12.3
Public rights of way and amenity	Unassessed	EN-1 5.10, NPPF para 100
Community mental health & wellbeing	Absent	EIA Regs Sch. 4(8), WHO Guidance
Cumulative impacts	Not done	EIA Regs 2017, EN-1 4.2.6

1. Inadequate Consideration of Adverse Socio-Economic Effects Contrary to EN-1 and EN-3

Under Section 5.13 of the Overarching National Policy Statement for Energy (EN-1) and paragraph 2.6.2 of the Renewable Energy Infrastructure NPS (EN-3), NSIP applicants are required to assess both **positive and negative socio-economic impacts**, including those related to tourism, local services, and businesses. The PEIR:

- Emphasises speculative positive impacts on employment and skills based on assumptions not substantiated by specific local data or contracts (e.g., the use of generic employment multipliers from HM Treasury Green Book).
- **Minimally engages with the negative impacts** on local tourism assets, PRowS, or farming businesses despite local stakeholder concerns.
- **Fails to quantify potential losses** to tourism or local enterprises due to visual intrusion, disruption of rural character, or glint and glare.

Legal Basis: The failure to adequately assess adverse impacts undermines the requirements of the EIA Regulations 2017 (as amended), particularly Regulation 18 and Schedule 4, which require identification and assessment of the "likely significant effects" of the development on the environment, including the population.

2. Deficient Baseline and Leakage Assumptions

The socio-economic assessment relies on **unverified assumptions**:

- A **50% employment displacement** and up to **90% leakage** rate from South Norfolk, yet still claims significant benefits. These figures are drawn from unrelated projects and lack site-specific grounding.
- No local labour market engagement or survey has been conducted to confirm the realistic capacity for employment or upskilling.
- No breakdown of **how many jobs will actually be accessible to residents** of the district, in clear breach of the principles in Suffolk County Council's "The Socio-Economic Effects of NSIPs" guidance (January 2025), which the applicant purports to follow.

Legal Basis: Under the Planning Act 2008 and EIA Regs 2017, the Environmental Statement (and hence the PEIR) must be based on a robust and evidence-led assessment. This is not met here, especially considering the reliance on conjectural data and the absence of evidence of effective consultation on employment distribution.

3. Inadequate Mitigation Measures Contrary to NPS and Best Practice

The PEIR references a future Outline Skills, Supply Chain and Employment Plan (OSSCEP), but:

- Provides no enforceable commitments.
- Offers **no secured mitigation** through draft Development Consent Order (DCO) obligations at this stage.
- Fails to propose planning obligations or local labour agreements, in contrast with best practice for NSIPs impacting rural labour markets.

Legal Basis: EN-1 and EN-3 require that the applicant demonstrate how adverse socio-economic effects will be **avoided, mitigated, or compensated**. The approach taken here—deferring these matters without clear mechanisms or enforceability—fails to meet that threshold.

4. Improper Scoping Out of Local Economic Receptors

The PEIR **inappropriately scopes out** socio-economic effects on local shops and retail services based on the assumption that construction worker spending will be minimal.

This scoping decision:

- Contradicts feedback from Parish Councils (Alburgh, Alpington with Yelverton, Bergh Apton, among others) which explicitly raised concerns about business impacts.
- Is not justified through any quantitative or qualitative evidence and therefore may violate Regulation 14(3)(d) of the EIA Regs 2017, which requires that any topic scoped out must include "a clear explanation of why".

Legal Basis: Procedurally flawed scoping may render the EIA incomplete and vulnerable to legal challenge.

Conclusion and Relief Sought

Given the significant procedural, evidential, and legal deficiencies in Chapter 14 of the PEIR, particularly:

- The speculative and non-quantified benefits;
- The failure to fully assess negative socio-economic impacts;
- The absence of enforceable mitigation measures;
- The improper scoping decisions made without sufficient justification;

We object to the acceptance of this PEIR as a lawful foundation for progressing under the NSIP regime and request that:

1. A revised socio-economic chapter be submitted incorporating robust local data and analysis;
2. The PEIR include binding mitigation proposals (e.g., local employment targets and funding obligations);
3. The Planning Inspectorate require further consultation with affected local authorities and communities on the revised socio-economic baseline and impact model;
4. The DCO application be delayed or deemed invalid unless these failures are remedied.

Inadequate Consideration of Impacts on Tourism and Holiday Accommodation in the PEIR

1. Holiday Accommodation Impacts Are Underexplored and Minimised

The PEIR briefly discusses the **temporary accommodation market** in Section 14.4.31–14.4.36. It acknowledges:

- 22 local establishments with 596 rooms (hotel/B&B-type).
- 557 Airbnb listings (1,009 rooms).
- Average occupancy of ~78.3% for hotels and 60% for Airbnbs.
- Approx. 734 rooms estimated to be available.

However, it **does not assess**:

- The **competition between construction workers and tourists** for this accommodation, particularly during peak season (summer). Or indeed whether the local community will even agree to rent their accommodation to construction workers for this scheme, which given its unpopularity (75% of residents are against the scheme), looks highly unlikely.
- Whether increased demand from workers could **inflate room prices** or reduce availability for visitors, thereby **discouraging tourism**.
- The **economic displacement** effect on tourism-dependent businesses (e.g. B&Bs or pubs reliant on leisure visitors vs. commercial/contractor stays).

Key omission: No modelling of seasonal overlap between construction activity and peak tourism season.

2. Tourism Impacts Are Largely Descriptive, Not Analytical

The PEIR describes the presence of attractions (e.g. Seething Observatory, Norfolk Gliding Club, museums, etc.), and notes that 5% of South Norfolk's jobs are in tourism, but:

- **No visitor or business surveys** were undertaken to determine anticipated impact.
- **No mitigation measures** (e.g. compensation, tourism promotion) are proposed.
- No distinction is made between day-trip tourism and overnight stays, even though the latter is more likely to be affected by local accommodation and environmental quality.

These are serious omissions, especially given the Scheme's rural setting where **tranquillity and landscape character are central to the tourism offer**.

3. Inadequate Spatial Assessment of Holiday Accommodation Clusters

- The report **aggregates all accommodation data** across South Norfolk and does not assess proximity to specific **sub-sites** (e.g. near Seething or Hardwick).
- **Rural accommodation providers**, such as farm stays, caravan parks, or heritage inns close to the proposed solar arrays, **will experience a disproportionate impact**—but this is not explored even though specific sites where this is the case have been flagged on numerous occasions to the applicant.

There is also no analysis of **glint/glare effects or viewsheds** from holiday lets, despite concerns raised by stakeholders on landscape intrusion and visual amenity.

4. Absence of Cumulative Assessment for Holiday Accommodation

The PEIR does not consider the **cumulative impact of multiple NSIPs or renewable schemes** in the wider area on:

- Visitor perceptions of rural industrialisation.
- Saturation of local accommodation with non-tourist use.
- Diminished competitiveness of the region as a tranquil holiday destination.

5. Failure to Apply National Policy Statement Requirements

Under **EN-1 (Section 5.13)** and **EN-3 (para 2.6.2)**, NSIP applicants must evaluate how a scheme will affect:

- Local businesses,
- The tourism economy, and
- Visitor attractions.

By **excluding quantified analysis** of likely loss of bookings, changes in visitor behaviour, and stress on accommodation supply, the PEIR **fails to meet the evidential threshold** required under the EIA Regs 2017 and the NSIP policy framework.

What the PEIR Does Include (Summary of Evidence Base)

Topic	Adequacy
Total number of accommodation rooms	Adequate as a baseline
Occupancy data for hotels and Airbnbs	Descriptive only
Visitor attractions listed	No impact analysis
Employment and GVA from tourism	Not tied to impact
Tourism-specific stakeholder input	Not included
Effects on holiday accommodation availability/pricing	Omitted
Seasonality and peak use conflicts	Omitted
Cumulative impacts on tourism	Omitted

Conclusion

The PEIR does not fully assess impacts on tourism and holiday accommodation. Specifically:

- It omits a **quantified or qualitative assessment** of how the Scheme will affect:
 - **Room availability and price volatility** for visitors.
 - **Perceptions of the area as a rural, tranquil destination.**

- **Visitor behaviour and demand for nearby heritage or landscape-based attractions.**
- The analysis relies on **static baseline data** and avoids applying **dynamic or spatially resolved modelling**.
- **Cumulative impacts, visual amenity degradation, and seasonal conflict with peak tourism** are not addressed.

Recommendation

We respectfully suggest that the applicant should be required to:

- Conduct a **targeted tourism and accommodation impact assessment**;
- Engage directly with local holiday accommodation providers;
- Propose **clear mitigation**, e.g. tourism support funds, seasonal construction scheduling, or accommodation impact plans.

1. Minimal Direct Analysis in Chapter 14

Although **farming is explicitly part of the local economic baseline**, the **impact on farming jobs is not assessed in detail in Chapter 14 (Socio-Economics)**.

- The topic is instead "**scoped in via PEIR Chapter 15 – Soils and Agriculture**" (see Table 14.3).
- However, from a socio-economic perspective, **Chapter 14 fails to evaluate how the loss of agricultural land will affect local agricultural employment**, supply chains, or the future viability of farm operations.

This separation of environmental (soils) and socio-economic (employment) effects is inappropriate under EIA best practice, especially for NSIPs in rural areas.

2. Baseline Shows Agriculture Is Significant

From the PEIR's own data:

- **2.1% of all jobs in South Norfolk** are in agriculture (Table 14.15).
- This is **significantly higher than the national average (0.5%)**, reflecting the rural nature of the area and the reliance of the local economy on farming.

Despite this:

- The PEIR does **not estimate how many hectares of farmland will be lost**, or how many **farm jobs** are linked to that land.
- No analysis is provided on how **farm businesses may be displaced, downsized, or restructured**, nor is there mention of consultation with landowners or tenants.
- There is also significant concern that the freehold of the solar fields themselves will be acquired by the applicant either through negotiation or compulsory purchase, hence significantly impacting the operation of the farms of which they form a part.

3. No Employment Loss Modelled

There is:

- **No estimate of the number of farm jobs lost** due to the Scheme,
- **No employment multiplier analysis** (unlike the construction job gains, which are modelled in detail), and
- **No offsetting strategy or re-employment plan** for affected farm workers.

This is inconsistent with:

- The approach taken to assess construction job benefits, and
- The EIA Regulations 2017, which require *both positive and negative* effects to be quantified where possible.

4. No Discussion of Agricultural Labour Market Resilience

- The PEIR makes no reference to whether displaced farm workers can be absorbed into other sectors or projects.
- It does not consider the **age profile of agricultural workers**, or the **low skills transferability** of many rural labourers.
- There is no evaluation of whether **local farming employment is vulnerable**, nor whether loss of land to NSIPs could have a **cumulative destabilising effect**.

5. Policy Requirements Overlooked

According to:

- **EN-1 Section 5.13** and
- **Suffolk County Council's NSIP socio-economic guidance**,

...the applicant must consider how development will affect:

- The **continuity of land-based businesses**, and
- The **knock-on effects to employment and rural service provision**.

This obligation has not been met. The PEIR **relies on Chapter 15 (Soils and Agriculture)** to address land quality and physical loss, but omits any analysis of **employment loss or impact to the agricultural labour market**.

What Is Included

Topic	Included?	Comment
% of workforce in agriculture	✓	Table 14.15
Treatment of land loss	✓	Scoped to Chapter 15
Farming job loss estimate	X	Not included
Impact on rural employment	X	Not discussed
Mitigation or retraining for farm workers	X	Not proposed
Stakeholder engagement with farmers	X	No evidence provided

Conclusion

The **PEIR fails to properly assess the impact on farming jobs**, despite agriculture being more significant in South Norfolk than regionally or nationally. Specifically:

- It offers **no estimate** of agricultural job losses or changes to farm business viability.
- It treats the **loss of productive farmland as a land use issue**, not an economic one.
- There is **no socio-economic mitigation proposed** for the loss of farming employment.

Recommendation

The applicant should be required to:

- Quantify the **number of farm jobs lost** based on land area removed from production.
- Consult affected **landowners, tenants, and farm workers**.
- Assess the **downstream impacts** to local agricultural suppliers and support businesses.
- Propose **economic mitigation or diversification strategies**, such as skills retraining or rural economic support packages.

No Direct Assessment in Chapter 14 or Elsewhere

The PEIR:

- **Does not contain any analysis, data, or discussion** regarding potential impacts of the scheme on **local property values**.
- Does not reference:
 - Existing studies,
 - Local real estate trends,
 - Stakeholder concerns about property values,
 - Or the effects of proximity to utility-scale solar developments.

This is despite the fact that many NSIP consultations, especially in rural areas, raise **property devaluation** as a material concern.

2. Relevance of Property Price Impact in an NSIP Context

While property value impacts are not *directly* a statutory planning matter under the Planning Act 2008, they are **indirectly material** when tied to:

- **Visual amenity and landscape change,**
- **Perception of industrialisation in rural areas,**
- **Impact on desirability of an area to new residents or investors,**
- **Effects on the local housing market linked to loss of environmental quality.**

The Planning Inspectorate and Examining Authorities have in other NSIPs accepted that **substantial adverse visual or environmental impacts may have indirect effects on local property values**—especially in areas reliant on rural appeal and landscape quality.

3. Omission Contrasts with Detail Elsewhere

The PEIR:

- Includes detailed economic modelling of **construction employment, GVA** gains, and **labour market statistics**.
- Yet provides **no equivalent modelling or even qualitative assessment** of a matter that could significantly affect **households and personal wealth**—especially those located near to panels, substations, cable routes, or converter stations, who even on announcement of this scheme are now finding themselves in negative equity.

This selective approach to socio-economic valuation risks appearing **imbalanced and potentially biased** toward benefits.

4. Key Factors Likely to Affect Property Prices

Although not analysed in the PEIR, evidence from peer-reviewed research and comparable schemes suggests the following may occur:

Impact Factor	Effect on Property Value	Comments
Proximity to solar panels	↓ 5–15% for adjacent properties. Some local estate agents have quoted as much as 30%	Especially if panels are visible from living areas/gardens.
Visual impact	↓ for properties with landscape views replaced by industrial infrastructure	No Zone of Theoretical Visibility (ZTV) modelling is referenced in terms of house visibility.
Noise, glint/glare risk	↓ where substations or infrastructure are close to housing	Chapter 18 deals with glint/glare but without property-level mapping.

Impact Factor	Effect on Property Value	Comments
Perceived stigma	↓ due to fear of health, aesthetics, or blight	Social perception can affect market demand even if fears are not technically substantiated.
Construction disruption	Short-term ↓ in saleability or lettings	2-year construction period may deter buyers or tenants.

These effects are **not uniform**, but **likely to be most significant for properties within 500m–1km** of development zones or infrastructure corridors.

5. Lack of Mitigation or Compensation Mechanisms

The PEIR does **not propose any mitigation** for households potentially affected by property devaluation.

No community compensation fund, property value guarantee, or hardship mechanism is discussed—despite such approaches being used or considered in other NSIPs (e.g. wind farms or HS2).

6. Contrary to Guidance and Best Practice

While **property price impacts are not always a formal EIA requirement**, they can fall under:

- **Schedule 4 of the EIA Regulations 2017**, which requires assessment of “population and human health” and “material assets.”
- The **Overarching NPS EN-1**, which calls for the assessment of “impacts on human health, including those arising from noise, vibration, air, water, soil and visual impacts.”
- Local expectations under **NSIP-specific socio-economic guidance** from Suffolk County Council, which emphasises localised, receptor-based impact analysis.

Summary Table: Property Price Considerations in the PEIR

Topic	PEIR Coverage
Identification of property value as issue	Not mentioned
Mapping of sensitive residential receptors	No proximity-based property analysis
Evidence from comparator studies	None referenced
Impact of visual/landscape change on property	Not discussed
Mitigation or compensation	None proposed
Planning policy or EIA links to material assets	Ignored despite being indirectly relevant

Conclusion

The PEIR does not assess impacts on local property prices, despite the scale and visual nature of the East Pye Solar scheme, and the rural setting where properties may be particularly sensitive to landscape and environmental change.

This is a material gap because:

- Property values represent a key aspect of **individual financial wellbeing**,
- Visual and noise impacts may translate into **economic harm**, and
- **Public perception** of devaluation can lead to long-term community opposition and reputational damage to the project.

Recommendation

The applicant should be required to:

13. Commission a **Property Impact Assessment** using accepted methodologies (e.g., hedonic pricing, comparator site analysis).
14. Publish a map of **residential receptors within proximity zones** (e.g., 250m, 500m, 1km).
15. Engage local estate agents and planning authorities for market insights.
16. Consider **mitigation mechanisms**, such as:

- Voluntary compensation funds,
- Property value guarantees,
- or hardship compensation for loss of saleability.

Based on a review of **Chapter 14 of the PEIR (Socio-Economics)** for the East Pye Solar NSIP, as well as related national policy and EIA requirements, several **potentially significant socio-economic impacts** have been **under-assessed, downplayed, or omitted entirely** from the current analysis. These effects go beyond jobs, tourism, farming, and property values — and could cumulatively lead to significant change in the local socio-economic fabric.

1. Loss of Agricultural Supply Chain Activity

Even though agricultural jobs are discussed briefly, the **wider economic ecosystem that supports agriculture** (machinery suppliers, agronomists, veterinary services, hauliers, grain processors, rural banks, etc.) is not assessed.

Indirect economic impacts from the loss of farming land can ripple through multiple sectors, potentially resulting in job losses and reduced rural enterprise viability.

2. Disruption to Rural Business Operations and Self-Employment

- The area contains many **small-scale, home-based rural enterprises**, including craftspeople, consultants, equestrian businesses, farm shops, etc.
- Construction activity (e.g. HGV traffic, noise, dust) could:
 - Disrupt customer access,
 - Impact working environments, or
 - Deter new business formation.

The PEIR does not identify or consult these economic stakeholders nor model potential business disruption.

3. Impacts on Local Infrastructure and Public Services

While the PEIR claims minimal impact on shops and services, it **does not consider potential strain on:**

- **Local road infrastructure**, especially minor rural routes near sub-sites,

- **Healthcare services**, if temporary workers require urgent or emergency care,
- **Waste management**, with increased demand from workers and contractors.

The lack of spatial modelling of workforce accommodation and travel patterns is a serious limitation.

4. Effects on Skills Training and Education (Positive or Negative)

The PEIR makes vague references to upskilling and an eventual “Outline Skills, Supply Chain and Employment Plan (OSSCEP),” but:

- Provides **no commitment**, targets, or mechanisms,
- Lacks partnership details with **local FE colleges, training providers, or job centres**,
- Does not explore how this temporary scheme will leave **any lasting skills legacy**.

A major opportunity for local workforce development may be lost if not properly secured.

5. Change in Landscape Character May Affect 'Experiential Economy'

The PEIR fails to consider impacts on rural lifestyle businesses and experiential services such as:

- **Holiday lets with rural views**,
- **Wedding venues**,
- **Outdoor yoga/fitness retreats**,
- **Farm-based cafes** (CRC bisects one of them) **or glamping sites**.

Such operations rely on a sense of place and **landscape quality**, not just visitor numbers. **Loss of amenity** may reduce bookings and viability, but this is not assessed.

6. Community Cohesion and Perception Effects

Large infrastructure projects in rural areas often generate:

- **Polarised public opinion**,

- **Erosion of trust in local authorities or developers,**
- **Stress or conflict among neighbours,** especially where property values or views are affected.

These effects:

- Are **well-documented in NSIP literature,** but
- Are **not discussed** at all in the PEIR.

Emotional and psychological wellbeing are part of the “**population and human health**” scope under the EIA Regulations 2017.

7. Long-Term Opportunity Cost of Land Use Change

The Scheme has a proposed **60-year operational lifespan**, effectively removing agricultural land from the market for multiple generations. The PEIR:

- Does not evaluate what **alternative socio-economic uses** may be foregone,
- Ignores potential conflicts with future **rural housing, employment land, or local food security** strategies.

This “opportunity cost” of land use is a serious omission, particularly in areas of high farming productivity.

8. Inequitable Distribution of Benefits and Burdens

- The **economic benefits (construction jobs, GVA, etc.)** are diffuse and **largely external**, with leakage of up to 90% from the district.
- Meanwhile, the **impacts (visual intrusion, disruption, devaluation)** are **localised**, concentrated on a small number of parishes.

This raises concerns about **economic fairness**, which the PEIR does not address through any proposed **benefit-sharing** or **community investment funds**.

Summary Table of Under-Assessed Socio-Economic Impacts

Impact Category	Included in PEIR?	Significance	Notes
Farming supply chain effects	No	Moderate–Major	No indirect sectoral analysis
Disruption to rural microbusinesses	No	Moderate	Especially in affected parishes
Impact on roads/services	Minimally	Moderate	No modelling of transport-worker interactions
Skills and education outcomes	Vague	Potentially Significant	No plan or targets yet
Rural experience economy	No	Moderate	No analysis of landscape-sensitive businesses
Community stress/cohesion	No	Moderate	Omitted entirely from assessment
Long-term land opportunity cost	NO	Moderate	60 years of land loss not assessed economically
Equity of impact/benefit spread	No	High	Local cost vs regional or national gain is unbalanced

The PEIR's socio-economic assessment **fails to assess a broad range of important and potentially significant effects** beyond headline employment benefits. It focuses narrowly on **quantifiable construction jobs and GVA** while neglecting:

- Wider rural economic interdependencies,

- Long-term structural change from land use conversion,
- Community-level socio-economic resilience and equity.

To address these omissions, the applicant should be required to:

- **Extend the socio-economic assessment** to include indirect and long-term effects.
- **Engage with small rural businesses and community stakeholders** about impacts and mitigation.
- **Publish a draft Skills and Community Benefit Plan**, including training targets and financial contributions.
- **Undertake a cumulative impact and distributional equity analysis.**

Conclusion

Chapter 14 fails to meet basic planning and legal standards in its treatment of socio-economic issues. It omits key categories of impact, ignores local economic vulnerabilities, and provides no meaningful data to support its conclusions.

These are failures under:

- **The Planning Act 2008 (consultation and assessment duties),**
- **EIA Regulations 2017 (Schedule 4 requirements),**
- **NPS EN-1 and EN-3** (policy on socio-economics and community impacts).

The **East Pye Solar Project**, as described in Chapter 14 of the PEIR, makes only **minimal and largely speculative claims of benefit to the local community**, and provides **no detailed or secured community benefit package**. What it offers does **not meet the expectations of Nationally Significant Infrastructure Projects (NSIPs)** and lacks legal enforceability or demonstrable planning merit at this stage.

Claimed Local Benefits (According to Chapter 14)

The PEIR asserts the following potential benefits:

1. Short-term construction employment

- It suggests local contractors *may* be involved in construction.
- No commitment to local labour sourcing or training is provided.
- No quantification of how many jobs would realistically be based in the local area.

This is a **generic benefit** claimed by nearly all infrastructure projects and is **not specific, guaranteed, or secured**.

2. Contributions to renewable energy targets

- The project claims alignment with national carbon reduction goals.
- However, this benefit is **regional/national**, not local, and does not address direct impacts to local communities.

Renewable generation is a planning benefit when aligned with regional CP2030 or CP2035 targets—but **it must be balanced against localised harm**, especially to landscape, heritage, and rural economy.

3. "Indirect economic activity"

- Vague references are made to local shops or services experiencing modest increased trade during construction.
- No economic modelling or local case studies are cited.

This kind of economic benefit is **speculative**, unmeasured, and **not substantial in planning terms**.

What Is Not Offered

No legally binding community benefit fund

No commitment to a Section 106 agreement or voluntary community benefit fund to:

- Support local services,

- Provide grants for energy efficiency,
- Fund local green infrastructure, community centres, or environmental improvements.

Most well-prepared solar NSIPs include such provisions—this PEIR does not.

It is also noted that the ‘local groups’ identified for consultation are not actually from the local area impacted by the scheme. Many are from Norwich or even as far as Wymondham and have clearly just been plucked off the internet rather than identified within the impacted communities.

No local energy supply or discount scheme

Unlike some renewable schemes, East Pye Solar does not propose:

- Local tariff reductions,
- Grid-connected community energy access,
- Local energy resilience investments.

No formal legacy commitments (skills, access, infrastructure)

No legacy plan for:

- Local job creation or apprenticeships,
- Public access to green corridors or footpath enhancements,
- Enhancement of rural infrastructure (e.g. broadband, roads).

Planning Policy Context

Under **NPS EN-1 and EN-3**, applicants are encouraged to provide **clear, proportionate community benefit** where a scheme involves:

- Landscape change,
- Disruption of access,
- Potential harm to heritage or sense of place.

None of this is meaningfully offered in this proposal.

Conclusion

The project offers **no secured or substantial local benefits**:

- **No local energy, no binding community fund, no employment guarantees, and no public amenity improvement.**
- All suggested benefits are **unquantified, generalised, and speculative.**
- Meanwhile, **significant localised harm** is forecast to landscape, heritage, farming, and amenity.

The East Pye Solar proposal, as outlined in the PEIR (Chapter 14: Socio-Economics), provides **no committed or enforceable skills training, employment programme, or workforce development benefits** to the local community. What it does include are **generalised, speculative references** to potential job creation during construction, with **no detail, targets, funding, or delivery mechanisms.**

What the PEIR Says — and Fails to Deliver

Construction Phase Employment

- The PEIR states there will be a **“temporary increase in employment”** during the construction period.
- It **does not quantify** how many jobs would be sourced locally vs brought in from outside the area.
- There is **no commitment to local hiring targets, preferred contractor schemes, or training placements.**

This means any benefit to the local workforce is **unsecured and incidental** — not a planned or structured outcome of the development.

No Skills Training or Apprenticeships

There are **no proposals for training schemes** in:

- Solar PV installation,
- Environmental management,

- Battery storage systems,
- Construction logistics or HGV operation.

There is **no engagement described with local FE colleges**, training providers, or economic development bodies in South Norfolk.

For an NSIP with a multi-year construction window, the **lack of any skills uplift plan is a significant missed opportunity**.

No Legacy Jobs or Long-Term Employment

The PEIR admits that **the operational phase will generate very few jobs**, likely just maintenance contractors and periodic inspections.

There is **no proposal for a permanent site base** or integration with local businesses.

No commitment is made to support **local supply chain development** or link with rural innovation.

Policy Context

Under **National Policy Statement EN-1 (para 4.2.1 and 5.12)**:

Developers should assess the socio-economic impacts of a project, including **job creation**, and demonstrate **economic benefits** where appropriate.

Similarly, **EIA Regulations 2017 (Schedule 4)** require:

An outline of **likely significant effects on population and employment**, including indirect effects.

East Pye Solar does not meet this bar: it offers **no structured employment benefits, no training, and no measurable local economic uplift**.

Conclusion

East Pye Solar does not provide any meaningful skills training or employment benefits to the local community. The PEIR:

- Makes **only vague references to short-term job opportunities**,
- **Fails to assess or secure local benefit** through planning obligations or policy measures,
- Does **not meet the socio-economic expectations** for an NSIP of this scale.

Specific Issues: Failure to Assess Construction Workforce

There is **no mention in the PEIR chapters of who the construction workforce will be, where they will be sourced from or where they will be housed**, nor is there any confirmation or follow-up on the **proposal in the EIA Scoping Report** to house construction workers in **on-site portacabins**.

Additionally:

No chapters of the PEIR reviewed (including Chapter 14: Socio-Economics, Chapter 2: Project Description, and Chapter 11: Transport) provide:

- Details of the **expected workforce size**, origin, or recruitment area,
- Description of any **temporary accommodation**, either on-site or off-site,
- Assessment of the **impact of housing workers in the local area** (e.g. pressure on rental markets or tourism accommodation),
- Discussion of **traffic or amenity impacts from temporary compounds** for housing workers.

This omission is particularly serious if **on-site accommodation is planned**, as it would:

- Affect **visual, noise, water, and waste impacts**,
- Trigger further **assessments under EIA Regulations**, and
- Potentially impact **local amenity, landscape, and infrastructure capacity**.

Planning and Legal Significance

Under the **EIA Regulations 2017**, Schedule 4, and **NPS EN-1**:

The applicant must assess likely significant effects of construction, including **population impacts, temporary infrastructure, and site-based activities**.

If a **construction compound including accommodation** is to be established, it must be assessed for:

- **Visual and landscape impacts,**
- **Drainage and water use,**
- **Wastewater and foul drainage,**
- **Lighting and activity patterns.**

None of these have been addressed in the PEIR.

Conclusion

Despite being raised in the EIA Scoping Report, the **proposed use of on-site portacabins for housing workers is not addressed anywhere in the PEIR**. There is also:

- No mention of the workforce's likely origin,
- No assessment of local housing pressure,
- No provision for worker welfare facilities other than those at the two 400KV substations, which will be inadequate for the construction workforce.

This is a **significant procedural and assessment failure**, especially for a Nationally Significant Infrastructure Project. It raises valid **planning and legal objections** due to the lack of transparency, risk assessment, and community consultation.

Specific Issues: Failure to Assess the Suitability and Availability of Local Construction Workforce.

Despite suggesting that local construction workers may be used for this project, there is **no evidence in the PEIR that East Pye Solar has assessed the availability of suitably skilled construction workers in South Norfolk**. Based on publicly available regional labour data and typical NSIP solar construction requirements, it is **highly unlikely** that South Norfolk alone has a sufficient pool of skilled and experienced workers to deliver a project of this complexity without significant in-migration of contractors and labour. Below is a breakdown by key trades.

Likely Construction Trades Required for East Pye Solar

1. Electrical Engineers / HV Technicians

High demand for solar farm connections, substations, BESS units, and grid interface systems.

Must be **NICEIC or NAPIT certified**, with **experience in utility-scale solar or grid-scale battery systems**.

South Norfolk availability: LOW.

- Regional skills shortages reported in HV engineering (BEIS and ONS data).
- Most projects import these workers from national contractors.

2. Solar PV Installers / Technicians

Required for mounting structures, panel installation, cable routing, and commissioning.

Must have **CSCS cards**, **Working at Height** training, and **experience with solar-specific components**.

South Norfolk availability: LIMITED.

- Few solar projects of scale previously in the region.
- Workforce may exist for **domestic and small-scale commercial solar**, but not NSIP-scale.

3. Civil Engineers and Groundworkers

Needed for:

- Roadways and site tracks,
- Foundations for inverters, substations, BESS,
- Earthworks, drainage, and fencing.

South Norfolk availability: MODERATE.

- Local firms may be able to provide some capacity, but large-scale mobilisation will likely need external teams.

4. HGV Drivers and Plant Operators

- Required for transporting materials and operating:

- Excavators, telehandlers, trenchers, rammers, rollers.
- All must have relevant CPC/NPORS cards and experience.
- **South Norfolk availability: LIMITED.**
 - The area has **no major construction hubs**, and labour shortages in HGV and plant sectors persist nationally.

5. Mechanical Fitters and Cable Jointers

- Key for:
 - Substation internals,
 - BESS assembly,
 - Cable jointing (LV, MV, and potentially HV).
- Requires significant experience and certification.
- **South Norfolk availability: VERY LOW.**
 - Usually contracted through **national engineering firms** or hired in from regional centres (e.g. Cambridge, Norwich, or nationally).

6. Site Management, HSE, and Security Staff

- Needed for:
 - On-site supervision,
 - Health & Safety enforcement,
 - Compound security and welfare.
- **Moderate availability** regionally.

- These roles are more transferable from general construction but may still be in short supply locally.

Key Observations

- The required workforce includes a **mix of certified, experienced trades** not typically found in volume in South Norfolk.
- The region is **largely rural, agricultural, and tourism-focused**, with no major infrastructure build programmes historically.
- The PEIR fails to acknowledge that **much of the workforce will have to be imported**, with knock-on effects for:
 - **Local traffic and housing pressure,**
 - **Community amenity,**
 - **Potential social tensions or service burdens.**

Policy Context

Under **NPS EN-1 para 5.12.3**, developers must:

“Consider whether the project has an impact on the supply chain or skills base, and propose measures to ensure local benefit.”

The **PEIR does not assess this at all**. No training, local labour plan, or contractor engagement is proposed.

Conclusion

South Norfolk **does not have a large enough or appropriately skilled workforce** to construct the East Pye Solar NSIP on its own. Key trades such as HV technicians, cable jointers, and solar PV specialists will need to be brought in from outside the area.

The PEIR:

- **Fails to recognise or address this gap,**

- **Provides no mitigation or skills uplift plan,** and
- **Ignores potential social and economic impacts** from workforce in-migration.

It is **highly unlikely** that **Norfolk**, and even **East Anglia as a whole**, currently has **sufficient numbers of skilled and experienced tradespeople** to deliver the **East Pye Solar NSIP** without importing a substantial proportion of the workforce from **outside the region**. This applies especially to key specialist roles required for a complex, grid-connected solar farm with associated substations, BESS, and HV infrastructure.

Planning and Policy Relevance

National Policy Statement EN-1 (5.12.3)

Applicants should assess whether the project will create new employment or training opportunities and whether there are local skills to support the development.

EIA Regulations 2017 – Schedule 4

Likely significant effects on the population must include indirect and cumulative impacts, including demand for labour and services.

The PEIR fails to acknowledge or assess any skills gap, training requirement, or regional workforce availability. It simply assumes construction capacity will be found without evidence.

Conclusion

Norfolk does not have a large or specialised enough construction workforce to deliver the East Pye Solar NSIP.

East Anglia has partial capacity, but **critical specialist roles are already stretched** by other major infrastructure schemes.

This workforce gap will necessitate:

- **Importation of contractors and labourers,**
- **Temporary housing provision,**
- **Additional local traffic and social pressure,**
- And possibly **lower local economic benefit** than claimed.

The omission of this analysis in the PEIR is a **material failing** in both planning and legal terms

Based on the available evidence and local context, **there is not enough temporary accommodation in the local area to house the workforce required to construct the**

East Pye Solar project, particularly if a significant portion of that workforce is imported from outside Norfolk or East Anglia. The PEIR fails to address this issue entirely, which is a **serious planning and procedural omission**.

Local Temporary Accommodation Context

South Norfolk District (including the East Pye area)

A rural district with no large hotels or construction camps.

Local accommodation consists mainly of:

- **Holiday lets and B&Bs** (seasonal and limited),
- **Small inns and pubs with rooms,**
- **Airbnbs and glamping sites,**
- Some rural caravan or touring sites with planning restrictions.

These options are **insufficient in number, size, or availability** to house a large, rotating workforce of skilled tradespeople.

The housing of the workforce will either require **significant commuting, pressure on holiday/tourist accommodation**, or the **creation of temporary compounds** — none of which are addressed in the PEIR.

Risks and Impacts of Inadequate Accommodation

1. Displacement of Tourists

Workers occupying local holiday lets or B&Bs during peak season will:

- **Displace tourists** and reduce income for tourism businesses,
- Alter the atmosphere of rural hospitality venues,
- Risk reputational damage to local destinations.

2. Pressure on Housing and Rents

If workers attempt to access private rentals, this could:

- Exacerbate the local **housing affordability crisis**,

- Displace low-income tenants or first-time renters,
- Cause friction in tight-knit rural communities.

3. Strain on Local Services

An influx of workers could strain:

- **GP surgeries and emergency services,**
- **Parking and transport infrastructure,**
- **Waste collection and water use,** particularly if an on-site camp is created (none is proposed or assessed).

All of these represent likely **indirect but significant socio-economic impacts**, required to be assessed under the **EIA Regulations 2017** — but **none are addressed in the PEIR**. This makes it impossible to fully assess the impacts of this project at the Statutory Consultation stage.

Planning and Legal Relevance

Requirement	Status	Reference
Assessment of construction-phase population effects	Omitted	EIA Regs 2017, Schedule 4
Assessment of strain on services	Not addressed	NPS EN-1 para 5.12.2
Community consultation on housing/workforce	None documented	Planning Act 2008 s47
Mitigation for temporary accommodation needs	No plan or proposal	Best practice in major energy schemes

The PEIR's failure to:

- Identify the **number or origin of workers**,
- Assess the **impact on housing or infrastructure**, or
- Propose **mitigation (such as worker housing, travel plans, or community funding**

constitutes a **serious legal and planning failing** at statutory consultation.

Specific Issues: Construction Workforce and Public Transport

The construction workforce for the East Pye Solar NSIP would place **significant additional pressure on local transport infrastructure**, particularly **rural roads**, while **existing public transport services are entirely inadequate** to support their commuting or mobility needs. The PEIR fails to assess or mitigate these impacts, which also constitutes a **serious procedural deficiency** under planning law and policy.

Road Use Impacts from Workforce Travel

1. Personal Vehicle Dependence

Due to poor public transport, most workers will be **forced to travel by private car or van**.

This would add:

- **Dozens or hundreds of vehicle trips per day** to narrow, often single-track country lanes,
- Peak-time congestion at **bottlenecks, bends, and village junctions**,
- Additional strain on already limited **parking facilities** near compounds or staging areas.

The PEIR's Transport and Access chapter focuses on **HGV movement**, but **fails to model or assess light vehicle impacts** from workforce commuting.

Inadequacy of Local Public Transport

South Norfolk's Public Transport Situation:

The area is characterised by:

- **No nearby rail stations** (nearest in Norwich),
- **Sparse, infrequent bus services** — mostly inter-village and school-oriented,

- **Virtually no early-morning or late-evening services**, making commuting by bus unfeasible for shift-based construction work,
- **No cycle infrastructure or footpath connectivity** from major towns to the work site.

Construction Workforce Needs:

Requirement	Local Public Transport Response
Daily early-morning transport	Not available
Shift flexibility	Buses not frequent enough
Worker access from regional towns	No direct connections
Last-mile access to remote compounds	No service exists
EV or shuttle integration	Not proposed or assessed

Existing public transport is fundamentally inadequate to serve a large, shift-working, distributed construction workforce.

Additional Transport Risks

Worker vehicles may conflict with HGVs on narrow roads without footpaths or verges, increasing:

- Risk of accidents,
- Damage to rural road verges,
- Stress for local road users, especially vulnerable ones (e.g. pedestrians, horse riders, children).

No transport management strategy for workforce trips is presented:

- No shuttle service proposed,
- No carpooling incentive,
- No site access restrictions or permits described.

Legal and Planning Context

Requirement	Status	Source
Assessment of all construction-related traffic	Not complete	EIA Regs 2017, Schedule 4(6)
Consideration of commuting impacts	Omitted	NPS EN-1, para 5.13.3
Mitigation of workforce transport impacts	Absent	Planning Practice Guidance (PPG), para 42-007
Provision of sustainable transport options	Not proposed	NPPF paras 104, 105, 110

This is a **clear failure to assess significant indirect impacts** and creates legal vulnerability in the consultation and later DCO process.

Conclusion

The workforce's transport needs will:

- **Increase car traffic on already constrained rural lanes,**
- **Be unsupported by local public transport,**
- **Cause additional congestion, road degradation, and safety risks,**
- **Disproportionately impact local residents and vulnerable road users.**

The PEIR:

- **Fails to model this impact,**
- **Provides no transport mitigation strategy for workers, and**
- **Ignores the inadequacy of public transport in the region.**

This is a material **failing of the PEIR at Statutory Consultation stage.**

Specific Issues: Additional Socio-Economic Impacts That Have Been Missed

Chapter 14 (Socio-Economics) of the East Pye Solar PEIR **omits several key socio-economic impacts** and **fails to follow several well-established best practice guidelines** for NSIP-scale infrastructure assessments.

Additional Socio-Economic Impacts That Have Been Missed

1. Impacts on Mental Health and Wellbeing

No assessment of how:

- Loss of rural landscape,
- Industrialisation of views and surroundings,
- Noise, vibration, and disruption
...may affect **residents' psychological wellbeing**, particularly:
 - Elderly people,
 - Neurodivergent residents,
 - Those with long-standing emotional ties to place and landscape.

This is required under **EIA Regulations 2017 (Schedule 4(8))**, which mandates consideration of likely effects on **human health**.

2. Impact on Vulnerable Groups

No equality impact assessment (EqIA) or demographic analysis.

No consideration of disproportionate impacts on:

- **Children** (e.g. loss of safe access routes, reduced outdoor space quality),
- **Low-income or rural-isolated residents**,
- **Older people who rely on tranquillity, footpaths, or public rights of way** for wellbeing.

NSIP guidance from PINS and WHO recommends explicit identification of **disproportionate burdens** on vulnerable or protected groups. None of this assessment has been carried out.

3. Impacts on Community Cohesion and Rural Identity

No exploration of:

- The long-term cultural or psychological impact of landscape transformation on **rural community identity**,

- The risk of **loss of social cohesion** from traffic, construction disturbance, or visual industrialisation.

This is a common concern in rural NSIP proposals and should have been addressed, particularly given the scale of the scheme.

4. Strain on Local Public Services

The PEIR fails to assess impacts of the workforce on:

- **GP surgeries,**
- **Waste management services,**
- **Water supply and wastewater systems,**
- **Emergency services,** particularly if worker housing is off-site and dispersed.

NSIP best practice (e.g. for Sizewell C and Hornsea) requires a **worker services impact assessment** — this PEIR provides none.

5. Impact on Access to Public Rights of Way and Informal Recreation

No consideration of:

- **Disruption or deterrent effect on walkers, cyclists, and riders,**
- How loss of amenity may affect **community physical activity and wellbeing,**
- **Economic impacts** on small businesses tied to rural recreation (e.g. riding schools, farm cafés).

This links socio-economic, amenity, and health impacts — yet it is entirely omitted.

6. Food Security and Agricultural Viability

The proposed loss of a substantial area of Best and Most Versatile (BMV) farmland to solar infrastructure raises significant concerns regarding food security and the long-term viability of local farm businesses. The PEIR does not engage with national food strategy objectives or provide a credible assessment of the cumulative impact on local or regional food production capacity (or in combination with other cumulative local development projects and NSIPS). In a context of increasing policy emphasis on food security, it is incumbent upon the applicant to demonstrate that the development will not harm local or national food supply resilience, and to provide a transparent accounting of the loss of productive agricultural land.

Best Practice Guidelines and Frameworks Not Followed

Guideline	Purpose	PEIR Compliance
PINS Advice Note 17 (Health in EIA)	Requires assessment of direct and indirect health impacts	Ignored
Welsh Government Toolkit: Community Benefits from Renewable Energy	Establishes standards for identifying and delivering local community benefits	Not followed
WHO Environmental Noise Guidelines	Recommend assessing mental health and stress outcomes from noise exposure	Not referenced
Cabinet Office Social Value Model (2021)	Requires public-sector projects to quantify local value and community impact	Not applied
NPPF Paragraph 92	Requires development to support healthy, inclusive, and safe places	Not addressed

These standards are now routinely referenced in **NSIP socio-economic assessments**.

Conclusion

The PEIR's socio-economic chapter is inadequate at Statutory Consultation stage as it:

- **Misses key community and wellbeing impacts**, especially on vulnerable groups,
- **Fails to follow established health and community benefit frameworks**,
- **Does not meet best practice expectations** for an infrastructure project of this scale,
- And provides **no quantifiable local benefit or mitigation strategy**.

This is unacceptable under:

- **EIA Regs 2017**,
- **NPS EN-1 paras 4.13 and 5.12**, and

- **NPPF paras 92, 155, 158.**

Chapter 15 Soils and Agriculture

The PEIR admits that this project is proposed to be sited on 80% BMV land (40% Grade 2 and 40% Grade 3a). Research by the Welsh Government shows that soil quality of BMV land is particularly badly impacted by solar infrastructure, it is therefore particularly important that there is a clear and comprehensive plan for land management, planting and soil quality protection.

Chapter 15 (Soils and Agriculture) of the PEIR contains several serious **planning and legal failings**, omissions, and unsupported assumptions. These deficiencies violate expectations under the **Environmental Impact Assessment (EIA) Regulations 2017, National Policy Statements (NPS EN-1 & EN-3)**, and core principles of **sustainable land use planning** in the **NPPF**. The following points set out the **key legal and planning objections** to this chapter:

1. Inadequate Protection of Best and Most Versatile (BMV) Land

The chapter acknowledges that **BMV land (Grades 1–3a)** is present but fails to:

- Map its precise distribution across the site,
- Assess potential **permanent versus temporary loss**,
- Justify use of BMV land over lower-grade land elsewhere.

This breaches **NPPF Paragraph 180** and **EN-1 Para 5.10.8**, which require the **avoidance of BMV land unless absolutely necessary**, and only with **full justification and mitigation**.

2. No Quantification of Agricultural Job or Economic Losses

The PEIR provides **no assessment of economic impacts** to:

- Farm operators or tenants,
- Local agricultural jobs or supply chains,
- Land-based businesses dependent on rural continuity.

This contradicts **NPS EN-1 para 5.12.3**, which requires applicants to assess economic and employment impacts, and **EIA Regs Schedule 4(5)** (material assets, including land use).

3. Lack of Clear Mitigation or Soil Protection Strategy

- No detailed Soil Management Plan (SMP) is presented.
- No mitigation is proposed for:
 - **Soil compaction or damage from construction plant,**
 - **Drainage alteration,** especially on clay soils,
 - **Long-term topsoil degradation beneath solar panels or access roads.**

This fails to satisfy **Defra's Code of Practice for Sustainable Soil Use** and **PINS advice** that NSIPs must include robust soil handling and restoration plans.

4. Failure to Demonstrate Reversibility and Restoration

- The chapter claims the development is “reversible,” but provides **no enforceable restoration commitments** or DCO-linked mechanisms.
- No lifecycle soil condition assessment, no strategy for:
 - Topsoil recovery or reseeded,
 - Fertility reinstatement,
 - Drainage rehabilitation.

This is procedurally inadequate under the **EIA Regs**, and materially conflicts with **NPPF para 180(c)** and **EN-3**, which expect clear restoration plans for temporary land-use change.

5. No Cumulative Impact Assessment

- The chapter entirely omits:
 - Impacts of other solar NSIPs or developments on local/regional agricultural land availability,
 - Effects of **loss of contiguous farm parcels** on rural land viability.

This fails to meet EIA Regulation 5(2)(a) on cumulative effects, and Planning Inspectorate expectations that **land fragmentation and landscape-scale change** be assessed.

6. No Consideration of Agricultural Transition Impacts

- No assessment is made of how this transition:
 - Affects existing farm business structures or succession planning,
 - Could **displace or deter future agricultural investment** in the area.

Such analysis is common in NSIPs and solar schemes on productive farmland — its omission suggests a failure to assess the **full socio-economic impact of land use change**.

7. Site Selection Justification Missing

- No alternatives analysis is provided to demonstrate that:
 - This specific site, including its BMV land, was preferable to others,
 - Other lower-value agricultural land was ruled out for technical or planning reasons.

This violates **EIA Regs Schedule 4(2)**, which require the PEIR to describe alternatives considered and the reasons for site selection.

Summary of Legal and Policy Failures

Issue	Compliance	Relevant Policy
BMV land protection	Inadequate mapping & justification	NPPF para 180; EN-1 §5.10
Agricultural economic impacts	Not assessed	EN-1 §5.12; EIA Regs
Soil mitigation strategy	Absent	Defra SMP guidance; EN-1 §5.10
Restoration and reversibility	Unsupported claims	NPPF 180(c); EN-3
Cumulative impacts	Not considered	EIA Regs Sch. 4
Site selection alternatives	Not presented	EIA Regs Sch. 4(2)

Conclusion

Chapter 15 fails to meet national policy, legal, and technical expectations on soil protection and sustainable agricultural land use.

Specific Issues: Failure to Acknowledge or Assess Impacts of Solar Infrastructure on Soil Quality

The Welsh Government has conducted detailed research and issued policy guidance that raises **significant concerns about the impact of large-scale solar schemes on soil quality**, particularly on **Best and Most Versatile (BMV) land** and soils with **high carbon content**. These findings are directly relevant to the East Pye Solar scheme, and expose **serious shortcomings in the PEIR Chapter 15 (Soils and Agriculture)**.

Key Welsh Government Findings on Solar and Soil (2021–2023)

The Welsh Government’s work on solar energy and soils—particularly the “**Land Use Planning and Solar Farms**” research (2021) and updated **Planning Policy Wales (PPW) 11 (2021)**—highlights the following:

1. Soil Structure Damage from Solar Arrays

“Mounting structures and access roads compact soils, disrupt soil profiles, and interfere with water infiltration and root systems.”

Even where land is not sealed, **long-term compaction and shading** can lead to:

- **Reduced microbial activity and fertility,**
- **Disruption of hydrology,** especially on clay-rich or poorly drained soils,
- **Irreversible degradation of soil structure.**

2. BMV Land Should Be Avoided

“Solar farms should be directed away from Grades 1, 2, and 3a land unless there is no reasonable alternative.”

The Welsh approach puts **BMV protection above developer convenience**, requiring:

- Precise soil classification at the field level,
- Justification for using BMV land,
- Detailed mitigation plans.

3. “Reversibility” is Often Overstated

“Soil quality rarely returns to baseline levels after 30 years, even if the site is decommissioned.”

Welsh evidence shows:

- **Soil nutrient cycling declines** under panels,
- **Compaction from access tracks and piles can persist** decades after removal,
- Poor restoration results where soil protection was not implemented at construction.

4. Dual Use Is Often Not Achieved

“Claims of continued agricultural use (e.g. grazing or wildflower planting) often fail in practice.”

Key findings:

- Poor ground preparation prevents regrowth,
- Lack of maintenance leads to degraded pasture,
- Panels restrict sunlight and rainfall, reducing productivity even with sheep grazing.

Comparison with East Pye Solar PEIR

Key Welsh Concern	East Pye PEIR Response	Legal/Policy Issue
Avoid BMV land	Acknowledges presence of BMV but gives no justification for using it	Violates NPPF para 180 & EN-1 para 5.10.8
Soil compaction from piles & roads	No mitigation or soil handling plan	Fails EIA Regs Sch. 4(5)
Permanent impact risk	Claims development is "reversible" with no supporting evidence	Contradicts Welsh evidence and best practice
Long-term fertility loss	Not assessed or monitored	Breach of Defra and EA soil management guidance
Grazing as mitigation	Claimed, but with no secured land management plan	Ignores Welsh findings on failure of dual use

Policy Relevance in England

While the Welsh planning system is devolved, its evidence base is:

- **Robust and widely referenced** across the UK,
- **Increasingly used as a benchmark** in England by inspectors, councils, and legal challenges—especially when English policy or guidance is silent or vague.

The East Pye PEIR ignores these well-documented risks, which:

- Contradicts emerging UK-wide best practice,
- Undermines its claims of sustainability and reversibility,
- Fails to meet **legal obligations under the EIA Regulations 2017** to assess likely significant effects on land and material assets.

Conclusion

The Welsh Government’s research shows that **large-scale solar on agricultural land degrades soil quality in ways that are often permanent and not mitigated in practice**. The East Pye PEIR:

- **Fails to acknowledge or respond to this evidence,**
- **Does not justify the use of BMV land,** or propose enforceable mitigation,
- **Presents reversibility claims that Welsh research finds untrue.**

Specific Issues: Soils and Contamination

There are **significant and credible risks that soils could be contaminated or degraded** as a result of the East Pye Solar project. These risks are **not adequately assessed or mitigated** in Chapter 15 of the PEIR, which represents a material **failure to comply with environmental law, policy, and best practice guidance**.

Key Soil Contamination and Degradation Risks

1. Compaction and Structural Degradation

Heavy plant and HGV movement, particularly on clay-rich soils, can:

- Compress soil layers,
- Reduce aeration and water infiltration,
- Cause long-term damage to root zones and microbial activity.

The PEIR offers no detailed **soil management plan (SMP)**, no vehicle movement zoning, and no seasonal restrictions to protect vulnerable soils.

2. Contamination from Construction Materials and Activities

Risk of spills or leaks from:

- Diesel, hydraulic fluid, and oils,
- Concrete washout from pile foundations or transformer bases,
- Paints, sealants, and solvents used in BESS and substation construction. These substances can:
 - Infiltrate topsoil and contaminate subsoil layers,
 - Disrupt microbial processes and pH levels,
 - Persist and affect restoration decades later.

No site-wide contamination risk assessment is provided in the PEIR.

No measures for **spill response**, **soil remediation**, or **chemical storage** control are described.

3. Battery Energy Storage Systems (BESS) Failure

BESS units contain lithium-ion batteries with:

- Electrolytes that are **toxic to soil biota**,
- Components that can release **hydrofluoric acid, cobalt, or nickel** in a fire or rupture.

The PEIR makes **no reference to soil contamination risks from BESS failure**, despite clear Environment Agency guidance (2022) identifying it as a major risk.

4. Waterborne Pollution and Soil Erosion

- Altered hydrology from access roads and impermeable structures can cause:
- **Surface runoff**, washing fine soils and nutrients into watercourses,
- **Erosion** of topsoil during storm events,
- Polluted runoff carrying hydrocarbons, cement, or dust.

No erosion control, sedimentation plans, or waterborne contaminant pathways are assessed in the soils chapter.

5. Dust Deposition During Construction

Fine particulate dust from:

- Groundworks,
- Vehicle movement on dry soils,

- Panel installation,
...can change surface soil chemistry and clog pore space, reducing fertility and altering pH.

No dust risk assessment or control plan (e.g. wheel wash, suppression) is presented.

Legal and Policy Failures

Obligation	Breach	Reference
Assess impacts on material assets (including land)	No full assessment of contamination or degradation	EIA Regulations 2017 , Schedule 4
Provide a soil protection and restoration strategy	No SMP, drainage plan, or remediation protocols	Defra Code of Practice (2011); EN-1 §5.10
Mitigate BESS contamination risks	Not mentioned	EA Position Statement on BESS (2022)
Prevent irreversible damage to BMV land	Unsupported reversibility claim	NPPF para 180(c)
Justify use of agricultural land and secure protection	No binding safeguards	EN-3 and EN-1 policy tests

Conclusion

This project presents **real and avoidable risks of soil contamination and degradation** through:

- Compaction,
- Chemical spills,
- Runoff and erosion,
- Dust and construction disturbance,
- Catastrophic failure of BESS units.

Chapter 15 of the PEIR **completely fails** to assess or mitigate these risks in accordance with planning policy and environmental law.

Specific Issues: Microcracking and Leaching

microcracking of solar panels can contribute to **soil contamination over time**, particularly if the cracks lead to **leaching of toxic substances** from within the panels. While the risks may appear minor in isolation, **on a large-scale site like East Pye Solar**, the cumulative and long-term effects on soil quality could be significant — especially given the 30–40 year operational lifespan and absence of proper soil monitoring in the PEIR.

What Is Microcracking?

Microcracking refers to the formation of **tiny, often invisible fractures** in a solar panel's silicon cells or protective glass. These cracks can occur due to:

- Manufacturing defects,
- Transportation stress,
- Mechanical pressure during installation,
- **Thermal cycling** (heating and cooling over years),
- Wind, hail, or snow loads.

How Microcracking Affects Soil Quality

1. Increased Leaching of Toxic Materials

Microcracks can **expose internal materials** to the elements. This may lead to **leaching of contaminants** into rainwater that drips off or infiltrates through the panel structure. These materials can include:

- **Lead** (from solder),
- **Cadmium telluride (CdTe)** or **selenide compounds** (in thin-film panels),
- **Antimony, copper, and silver** compounds,
- **Polymeric breakdown products** from encapsulants or backsheet degradation.

These substances can:

- Alter soil pH,
- Harm soil microbiota,
- Accumulate in food crops or ground flora,
- Eventually migrate into **groundwater or adjacent land parcels**.

Even modern encapsulated panels can release trace amounts of toxicants once **microcracked and weathered over time**.

2. Chronic, Site-Wide Low-Level Contamination

While one panel may release minimal amounts, a large solar park with thousands of panels operating over 30–40 years increases the chance of:

- **Widespread microcracking** due to age and weathering,
- **Cumulative deposition** of heavy metals and polymers in topsoil,
- **Undetected slow contamination**, especially without a soil monitoring programme.

3. Failure of “Clean Technology” Assumption

Many PEIRs, including East Pye Solar’s, assume that PV panels are **inert and risk-free** — but:

- Laboratory and field studies have shown **leachate from cracked panels can exceed safe levels** for lead, cadmium, and selenium under acidic or high-rainfall conditions,
- These effects are **amplified in poorly drained or clay-rich soils (such as those of South Norfolk Claylands)** that retain contaminants longer.

Research Evidence

Study	Finding
Fraunhofer ISE (2020)	Microcracked PV panels show reduced electrical output and increased moisture penetration , enabling chemical leakage
PV Recycling & Waste Report (IRENA/IEA)	Leaching risk from aged or damaged panels includes lead, cadmium, and antimony , especially under acidic conditions
Journal of Environmental Chemical Engineering (2021)	Weathered PV modules can release detectable levels of toxic leachates , raising concerns for soils over time
‘New survey shows ‘massive’ increase in PV module microcracks’ PV Magazine (2023)	83% of sites tested as part of a global survey had line cracks, 78% had a soldering anomaly and 76% had complex cracks. The survey

Study	Finding
	involved testing across 148 sites in 16 countries

Legal and Planning Implications

Requirement	Status in East Pye PEIR
Identification of leachate risks	Not assessed
Soil monitoring for heavy metals	Not proposed
Panel degradation analysis	Not included
Long-term soil protection strategy	Absent

This omission breaches **EIA Regs 2017 (Schedule 4)** and contradicts **NPPF paras 174 & 180**, which require assessment and prevention of land contamination.

Conclusion

Microcracking can increase the risk of long-term soil contamination from toxic substances leaching out of solar panels. These risks:

- **Are real and cumulative** over decades,
- **Are not addressed in the East Pye PEIR**,
- Require **monitoring, risk modelling, and mitigation** (e.g. panel type selection, surface water management, soil testing).
- Their omission is a **serious failure of environmental assessment** and provides **valid grounds for objection** on both planning and legal grounds.

Specific Issues: Lack of Land Management Detail

If the land under the solar panels at the East Pye Solar site is **not actively managed for nature and soil quality through grazing or habitat planting**, there is a **real risk that the ground could become barren, degraded, or ecologically impoverished** over time. This is a well-documented issue in large-scale solar developments and should be seen as a **serious long-term environmental and land-use risk**. The lack of detail about how the land will be managed during operation is a key failing of this chapter.

Why Non-Grazed Solar Land May Become Barren

1. Shading Reduces Vegetative Growth

Solar panels block sunlight, especially if mounted low or densely spaced.

This reduces:

- **Photosynthesis and plant biomass,**
- **Biodiversity beneath and near panels,**
- Seasonal plant vigour and natural regeneration.

Over time, shaded areas can lose vegetation altogether, leading to **bare, compacted soil** that's prone to erosion.

2. Soil Fertility Decline

Without grazing:

- **Nutrient cycling stalls**, as there is no manure or biomass turnover,
- **Organic matter declines**, reducing microbial activity and structure,
- Rainfall splash and temperature fluctuations increase bare soil exposure.

This contributes to **long-term fertility loss** and possibly irreversible soil degradation, especially on clay (as in South Norfolk Claylands) or low-organic soils.

3. Surface Crusting and Compaction

- Rain hitting unprotected soil (no vegetation or mulch) causes **surface sealing** and **erosion**, especially on slopes.
- Repeated seasonal drying and wetting hardens exposed soil.

This creates a feedback loop: **less vegetation = poorer soil = less vegetation**.

4. Invasive Weeds or Monoculture Growth

Without management, the space may be colonised by:

- **Invasive or noxious weeds** (e.g. thistles, docks),
- **Monocultures** (e.g. rank grasses),
- These offer **limited ecological value** and can spread to neighbouring farmland.

Lack of management undermines both **biodiversity net gain** and **agricultural compatibility claims**.

Research and Evidence

Source

Welsh Government SPEP Report (2023)

Natural England

Key Findings

Found that un-grazed solar sites showed **reduced soil structure, lower organic matter, and long-term degradation**

Advises that unmanaged solar land risks becoming **ecologically sterile and agriculturally unusable** over time

PEIR Shortcomings

The East Pye Solar PEIR:

- **Claims grazing will be possible**, but provides **no secured land management plan**,
- **Does not require or enforce active under-panel management**,
- Provides **no monitoring plan or triggers** for vegetation loss or land restoration.

This violates expectations under:

- **NPPF para 180(c)** (reversible land use),
- **EN-1 and EN-3** (sustainable land management),
- **EIA Regs Schedule 4** (material asset protection and mitigation).

Conclusion

Without grazing or active management for soil and nature, the land under the panels **is at risk of becoming barren or degraded**, undermining claims of agricultural reversibility or environmental benefit. The PEIR:

- **Fails to secure active land stewardship**,
- **Fails to model or acknowledge long-term degradation risk**,
- Presents **unsustainable assumptions** that are not backed by enforceable mechanisms.
-

The PEIR for the East Pye Solar project **does not include a land management plan for soil health**. We **demand binding land management obligations**.

Specifically:

Chapter 15 (Soils and Agriculture) does not contain any enforceable or detailed land management strategy.

- There is **no binding commitment to grazing, no soil monitoring programme, and no restoration strategy** post-decommissioning.
- There is also **no integration with the biodiversity, drainage, or climate chapters** to ensure coordinated land stewardship.

This is a **serious omission** and fails to meet both **statutory expectations** under EIA regulations and **industry best practice** for NSIPs on agricultural land. It should be included at Statutory Consultation Stage **and it is a legal and policy expectation**.

Under the Infrastructure Planning (EIA) Regulations 2017, Schedule 4:

Soil health management — including grazing, compaction control, contamination avoidance, and fertility maintenance — is a **core mitigation requirement** for this type of project.

Planning Policy (NPPF §180, §174, EN-1 §5.10) also requires:

- Protection of **natural capital assets** like soil,
- Maintenance of **land in a condition that enables future productive use**,
- Use of "**good design**" principles, which explicitly include **land stewardship**.

The absence of a land management plan at this stage means consultees **cannot meaningfully assess** whether the project protects or degrades soil quality. This is a **procedural flaw** and a basis for requesting re-consultation.

The PEIR provides no operational plan for monitoring or managing the spread of invasive non-native species (INNS), which is a common risk in disturbed or partially managed land.

Contamination of soils from solar infrastructure

There are **credible and well-documented risks that the solar infrastructure proposed at East Pye Solar could leach contaminants into soils and potentially into groundwater**, particularly over the project's 40 to 60 year lifespan. These risks are **not adequately addressed in the PEIR Chapter 15 (Soils and Agriculture)** or Chapter 9 (Water Environment), and this omission constitutes a **serious procedural failing under environmental and planning law**.

Key Leaching and Contamination Risks from Solar Infrastructure

1. Solar PV Panel Degradation

Over time, **solar panels can degrade**, releasing substances such as:

- **Lead**, used in solder,
- **Cadmium**, present in some thin-film technologies,
- **Antimony, chromium, and PFAS compounds**, depending on panel type.

If panels are damaged (e.g. by wind, hail, or fire), or at end of life, these materials may:

- **Leach into surface soils through rainwater**,
- **Enter groundwater** through infiltration, especially on permeable soils or cracked clay.

The PEIR does **not identify panel types**, materials used, or their leachability under normal weathering or damage scenarios.

2. Battery Energy Storage Systems (BESS)

BESS units present a **significant contamination risk** in the event of:

- Leakage or rupture,
- Fire (thermal runaway),
- Long-term corrosion of containment structures.
- Toxic substances potentially released:

Hydrofluoric acid (extremely dangerous to soils and water),

Cobalt, nickel, manganese — all toxic heavy metals,

Organic solvents and electrolytes harmful to microbial life and pH balance.

No **containment design, spill risk assessment, or groundwater protection measures** are presented in the PEIR.

3. Transformers, Inverters, and Cabling

These components may contain:

Dielectric fluids, some of which are hydrocarbon-based,

Coolants, which can leach if not properly contained,

Plastic insulation that can degrade and release microplastics or stabilisers into soils.

No assessment is made of the **leaching potential of electrical infrastructure** over the operational life of the scheme. Particularly of cables or trunking in the cable corridors, which it is proposed are to remain permanently in the soil.

4. Pathways to Groundwater

The site includes:

- **Chalk aquifers and Groundwater Protection Zones,**
- Permeable and vulnerable soils in places,
- **Drainage infrastructure** that could provide a pathway for contaminants.

Neither the soils chapter nor the water environment chapter conducts a **Source-Pathway-Receptor (SPR)** analysis for contamination risk — which is a **standard environmental risk assessment tool**.

Legal and Regulatory Failures

Legal/Policy Requirement	Status in PEIR	Reference
Assess soil and groundwater contamination risks	Not done	EIA Regulations 2017, Schedule 4(4)(5)
Protect soil and water from leachates	No mitigation presented	NPPF paras 174 & 180, EN-1 para 5.15.4
Identify hazardous materials and storage risks	Not included	Control of Pollution (Oil Storage) Regs 2001, EA Groundwater Protection Policy (2022)
Assess BESS environmental risks	Not addressed	Environment Agency BESS Position

Legal/Policy Requirement	Status in PEIR	Reference
		Statement (2022)
Demonstrate groundwater protection in SPZs	Ignored	Groundwater Source Protection Zone Policy (EA, 2021)

Independent Evidence of Risk

Recent studies and regulatory warnings confirm that:

- **Leaching from damaged or degraded solar panels is real and measurable** (e.g. Fraunhofer ISE, 2020),
- **BESS fires or leakage have caused soil and groundwater pollution** in multiple countries (notably the U.S. and South Korea),
- UK regulatory bodies (EA, SEPA) now require **risk assessments for BESS siting over aquifers and sensitive soils**.

None of this emerging evidence is addressed in the PEIR.

Conclusion

There are multiple **realistic and well-established risks** that the solar infrastructure at East Pye:

- Could **leach contaminants** into soil or groundwater,
- Is **not engineered with containment or monitoring** based on the PEIR,
- Has been **inadequately assessed**, violating environmental and planning policy.

All of the material discussed regarding soil degradation, contamination risks, and groundwater protection should have been presented in full and with appropriate technical detail **at the statutory consultation stage** under both **legal requirements** and **best practice expectations** for NSIPs.

Legal Requirements: EIA Regulations 2017

Under the **Infrastructure Planning (Environmental Impact Assessment) Regulations 2017**, Schedule 4 sets out what must be included in a PEIR at the statutory consultation stage. The PEIR **must include**:

Schedule 4 Requirements:

Requirement	Relevance to Soils & Groundwater
4(4): Description of likely significant effects on land, soil, water, biodiversity	The risks of soil compaction, leaching, contamination and effects on aquifers fall directly within this requirement
4(5): Description of material assets and natural resources used or affected	Soils and agricultural land are material assets ; their degradation or pollution must be assessed
4(6): Cumulative and indirect effects	Ongoing contamination or degradation over 30+ years is an indirect and cumulative impact
4(7): Proposed mitigation measures	A Soil Management Plan, spill control, containment design, restoration plan should all be described clearly
4(2): Reasonable alternatives and site selection	The use of BMV land or land over aquifers should be justified against other locations with less environmental risk

The East Pye PEIR fails to meet all of these statutory expectations.

Planning Policy Requirements

National Policy Statement EN-1 (5.10 & 5.15) Requires developers to:

- Protect the **best and most versatile agricultural land**,
- Avoid unacceptable risks to **groundwater and soils**,
- Demonstrate effective **mitigation for environmental effects**.

The PEIR fails to address these requirements, particularly with respect to **Source Protection Zones (SPZs)** and **soil contamination from infrastructure components**.

Best Practice: Planning Inspectorate Guidance

According to the **Planning Inspectorate's Advice Note Seven** and **advice on statutory consultation**:

"A Preliminary Environmental Information Report should provide sufficient detail for consultees to understand the likely significant effects of the project and its mitigation... and to enable meaningful responses at the statutory stage."

This means:

- Soil and water contamination risks must be **clearly identified**,
- There must be **sufficient technical detail to assess their significance**,
- Proposed **avoidance or mitigation strategies must be set out**.

None of this is adequately provided in the PEIR for East Pye Solar.

Conclusion

The following should all have been included in the PEIR **at statutory consultation stage**:

- A detailed **Soil Management Plan (SMP)**,
- A **Source-Pathway-Receptor analysis** of contamination risks,
- **Chemical leachate and degradation risk assessment** for panels, BESS, and transformers,
- Identification of **containment measures** and spill response protocols,
- Full **groundwater and Source Protection Zone mapping and protection strategy**,
- Clear **justification for site selection**, including use of BMV land.

Their omission is a breach of the EIA Regulations, national policy, and best practice, and provides clear legal grounds to **request reconsultation** with adequate environmental information.

Specific Issues: Recovery of Soils

Research indicates that **recovery of soils post-solar development is slow and often incomplete**, with recovery periods ranging from **18 to over 100 years**, depending on the level of degradation and soil type.

Evidence on Soil Recovery Times

1. Welsh Government SPEP (2023) – Impact of Solar PV on Soils

- Found that **deep subsoil compaction** during construction tends to **persist long-term**.
- **Natural recovery times range from 18 to 30 years** with intervention; **100 to 150 years** without it, particularly for subsoil structure [eplanning.blm.gov+9gov.wales+9gov.wales+9](#).

2. Field Study – Soil Properties After Seven Years

- A study found that **seven years after solar installation**, soils showed:
- Altered pH and electrical conductivity,
- Reduced fertility indicators (e.g. enzyme activity),
- Lower water-holding capacity and modified temperature regimes [edf-re.comagrisolarclearinghouse.org](#).

These changes indicate ongoing and possibly permanent degradation.

3. International Research

Handbooks and reports (e.g. from North Carolina and Maryland) suggest recovery can take **10+ years**, and soil restoration is a **long-term challenge** without intensive measures [solarrecycling.com+11farmonaut.com+11gov.wales+11](#).

The PEIR's Chapter 15 provides **no evidence, modelling, or management plan** concerning:

- **How soils will be restored post-decommissioning**, including structure, drainage, or fertility,
- **Recovery timelines** or monitoring regimes,
- **Necessary soil handling measures**, such as topsoil segregation or compaction alleviation,
- **Extractive issues** like difficulty in removing pile foundations causing disturbance.

There is **no Soil Management Plan (SMP)**, no enforcement mechanisms via the DCO, and **no indication that ‘reversibility’ is anything more than an unsupported assertion**.

Conclusion

- **Soils could take decades—or over a century—to recover**, if at all—without active intervention.
- The PEIR does **not acknowledge these recovery times** or explain **how, when, and to what quality standard soils will be restored**.

- This lack of foresight and accountability constitutes a **serious legal and planning gap**, undermining claims of reversibility and environmental respect.

Specific Issues: Impact to Soils of a BESS Fire

A **Battery Energy Storage System (BESS)** fire poses **severe environmental risks**, especially to **soils and nearby crops both on and off site**. Fires involving lithium-ion batteries can release a **cocktail of highly toxic substances** that contaminate land through airborne deposition, runoff, and direct leaching. These impacts can be **persistent, uncontained, and ecologically damaging**, yet the East Pye PEIR does **not assess or mitigate these risks**.

What Happens During a BESS Fire?

When lithium-ion BESS units ignite (often due to **thermal runaway**), the following occurs:

1. Release of Toxic Chemicals

A fire can release:

- **Hydrofluoric acid (HF)** – highly corrosive, deadly at low concentrations,
- **Hydrochloric acid, sulfur dioxide, benzene, toluene, and heavy metals** (e.g. **nickel, cobalt, manganese**, lithium compounds),
- **Fine particulates (PM2.5, PM10)** and **toxic smoke plumes**.

These chemicals can **settle on soil surfaces, vegetation, or enter via rainwater runoff**, contaminating:

- On-site land,
- Adjoining fields and crops,
- Nearby watercourses or groundwater.

Source: Environment Agency (2022), *Position Statement on BESS & Environmental Risks*

2. Soil Contamination Pathways

- **Airborne fallout:** Deposits toxic particles and acids over surrounding fields.
- **Runoff & infiltration:** Firefighting water or rain carries toxins into soil and groundwater.
- **Direct leaching:** Damaged or corroded battery components leak toxic metals into topsoil and subsoil.

HF and other acids degrade **organic matter**, kill **soil microbes**, and alter **pH**, impairing long-term fertility.

Impacts on Crops

Impact	Mechanism	Consequence
Leaf burn or wilting	Airborne chemicals	Crop loss or reduced yield
Soil toxicity	Leachates and acidification	Inhibited growth, root damage
Bioaccumulation	Metals in soil absorbed by crops	Unsafe for human or animal consumption
Market contamination	Perceived or real contamination	Financial loss, reputational damage

Even **small doses** of HF or lithium salts can cause long-term damage to plant health and food safety.

Note: Some crops may need to be **destroyed** under Food Standards Agency (FSA) and Defra rules following chemical exposure.

Off-Site Risks

A BESS fire's impacts can **extend well beyond the red line boundary** due to:

- Windborne dispersal of smoke and ash,
- Overland flow during rain,
- Shared groundwater tables or field drainage networks.

This can contaminate:

- **Neighbouring agricultural holdings,**
- **Private drinking water supplies,**
- **Habitats or hedgerows** used by protected species.

These effects are **not contained** by fencing or bunds and require **advance planning and rapid response capacity**.

Legal and Planning Implications

Requirement	Status in East Pye PEIR	Relevance
Assessment of accidental events	Not included	EIA Regulations 2017 , Schedule 4(7)
Soil and water contamination risk	Not assessed	EN-1 §5.15, NPPF paras 174–180
Environmental risk from BESS	No mention	EA BESS Guidance (2022)
Agricultural land protection	No mitigation proposed	EN-1 §5.10, NPPF 180(c)

Conclusion

A BESS fire at the East Pye Solar site would likely cause:

- **Serious, widespread soil contamination,**
- **Destruction or contamination of crops,** possibly with off-site impacts,
- **Long-term damage** to land quality, ecology, and farm viability.

The PEIR:

- Fails to assess these risks,
- Offers no contingency or containment measures,
- Ignores EA, Defra, and international guidance.

This is a **significant legal and environmental failing** under planning and EIA law.

Best practice for a Soils Plan for a project like East Pye Solar — a large-scale, long-duration, Nationally Significant Infrastructure Project (NSIP) on agricultural land — requires a **comprehensive, enforceable Soil Management Plan (SMP)** that follows established **government guidance, environmental policy, and technical standards**. The absence of such a plan in the East Pye PEIR is a major failing.

Best Practice Components of a Soil Management Plan (SMP)

1. Baseline Soil Survey and Mapping

Detailed soil classification at field level (topsoil and subsoil),

Include:

- **Soil texture, structure, organic matter, pH, depth, drainage,**
- Map presence of **Best and Most Versatile (BMV)** land (Grades 1, 2, 3a),
- **Georeferenced maps** identifying soil units and sensitivity.

This informs construction methods, protection strategies, and restoration goals.

2. Construction Phase Soil Protection Plan

Compaction prevention:

Define haul routes, **exclude heavy plant from sensitive zones,**

Install temporary trackways and matting,

Soil stripping and storage protocols:

- Separate **topsoil and subsoil,**
- Strip in dry conditions,
- Use **clearly demarcated stockpiles** (capped or grassed to prevent erosion),

Drainage protection:

- Avoid altering field drainage unless mitigation is in place,
- Include **silt traps and bunding** to prevent sediment loss,

Monitoring procedures for compaction and runoff throughout works.

Aligned with **Defra's Construction Code of Practice for the Sustainable Use of Soils (2009).**

3. Operation Phase Monitoring

- Regular **inspection of ground cover,** erosion, drainage, and vegetation health,
- Ensure that **dual use claims (e.g. grazing, biodiversity)** are actually realised,
- Monitor for **shading effects on soil moisture, temperature, and fertility** under panels,
- **Test for changes in pH, compaction, microbial activity** at intervals (e.g. 5 years).

4. Decommissioning and Restoration Strategy

Commit to:

- **Full decompaction** (subsoiling and cultivation),
- **Replacement of stored topsoil**, regraded and reseeded,
- Restoration to **equal or better soil condition** (e.g. by organic matter addition),
- **Drainage reinstatement** and hedgerow/field boundary repair,
- Include a **post-decommissioning monitoring programme** (e.g. 5–10 years).

Required under **NPPF para 180(c)** and **EN-1 §5.10** for reversibility of land use change.

5. Integration with Other Plans

Align with:

- **Water Environment Management Plans** (drainage, flooding, runoff),
- **Biodiversity Net Gain Plan** (habitat creation on soils),
- **Agricultural Land Classification strategy** (BMV justification),
- **BESS Fire and Spill Management Plans** (contamination prevention).

Relevant Guidance and Standards

Document	Relevance
Defra (2009) Code of Practice for Sustainable Use of Soils on Construction Sites	Primary soil handling guide
Environment Agency Groundwater Protection Position Statement (2022)	Risk-based approach to sensitive soils
Natural England Technical Information Note TIN049	BMV soil identification and mapping
Welsh Government SPEP report on solar and soils (2023)	Best practice for long-term land recovery
EIA Regulations 2017	Requires assessment of

Document

Relevance

land and
material asset
impacts

Conclusion

A best-practice Soil Management Plan for a scheme like East Pye Solar should:

- Be **detailed, site-specific, and enforceable**,
- Address the **full lifecycle**: construction, operation, and decommissioning,
- Include **monitoring, mitigation, and recovery strategies**,
- Protect against **compaction, erosion, fertility loss, and contamination**,
- Justify and mitigate any impact to **BMV soils**.

The PEIR **fails to include any such plan**, violating policy expectations under the NPPF, EN-1, and EIA Regs. This means that the PEIR is inadequate for consultation.

The East Pye Solar NSIP poses **significant long-term risks to local soils and farming** — both direct and indirect — that are **poorly understood, inadequately assessed, and insufficiently mitigated** in the PEIR. These risks could lead to **permanent loss of soil quality, irreversible changes in land use**, and a **fundamental weakening of the area’s agricultural economy and resilience**.

Long-Term Risks to Soils

1. Compaction and Structural Damage

Construction traffic and pile driving can compress soils, particularly on heavy clay.

Compacted soils:

- Reduce root penetration, aeration, and water infiltration,
- Are slow to recover — **possibly taking 30–100+ years without intervention**.

The PEIR lacks a compaction mitigation or recovery strategy.

2. Loss of Soil Fertility and Biological Activity

Shading from panels alters:

- **Moisture and temperature regimes,**
- **Microbial activity and earthworm populations,**
- Nutrient cycling and organic matter content.

Soils under panels may become **less productive or biologically depleted** over time.

These effects are measurable within just a few years and may worsen over 30+ years.

3. Chemical Contamination Risks

Leaching from:

- **Degraded panels** (lead, cadmium, antimony),
- **BESS failure** (hydrofluoric acid, lithium compounds, heavy metals),
- Transformers, inverters, and access road pollutants.

Risks to soil health, crop safety, and downstream water supplies are long-term and may **disqualify land from agricultural reuse**.

No containment or remediation strategies are included in the PEIR.

4. Hydrological Disruption and Erosion

Installation of roads and pads alters natural drainage.

This can cause:

- **Waterlogging**, gully formation, and soil wash,
- Subtle long-term erosion and loss of topsoil depth.

No soil erosion or runoff risk assessment is presented in Chapter 15.

Long-Term Risks to Farming

1. Permanent Loss of Agricultural Productivity

- If soil degradation is not reversed, land may become **unsuitable for high-yield arable farming**,
- BMV land is at risk of being **functionally downgraded** due to contamination, compaction, or fertility loss.

"Reversibility" claims in the PEIR are **unsupported by soil recovery evidence**.

2. Fragmentation of the Agricultural Landscape

Long, narrow solar parcels and access roads may:

- Prevent viable use of adjacent fields,
- Interrupt historic farm drainage or hedgerow systems,
- Disrupt tenant or shared farming agreements.

The PEIR does not assess or mitigate land fragmentation or operational disruption to farms.

3. Precedent for Non-Agricultural Use of BMV Land

Allowing a solar NSIP on BMV land without soil protections could:

- Set a precedent for similar schemes in East Anglia,
- Undermine **long-term food security and land stewardship**.

This runs counter to **NPPF para 155, 174, 180**, and **EN-1 policy protections for BMV land**.

Conclusion

No sufficient soil management plan is included in the PEIR, and the limited commitments made are deferred to a future version of the OBSMP. This is **not acceptable at the statutory consultation stage** of an NSIP

Policy and Legal Gaps

Issue	PEIR Status	Policy Conflict
Soil protection during and after use	No Soil Management Plan	Defra (2009); EN-1 §5.10
Contamination risk from infrastructure	Not assessed	EIA Regs 2017, Schedule 4
Agricultural impact assessment	Missing	NPPF §180; EN- 1 §5.12
Reversibility planning	Unsubstantiated	NPPF §180(c); EN-3
Farming economy and jobs	Not assessed	EN-1 §4.1.3, §5.12

Conclusion

The long-term risks of this project to soils and farming include:

- **Permanent compaction and fertility loss,**
- **Chemical contamination from infrastructure and fires,**
- **Erosion and hydrological disruption,**
- **Loss of active farmland, viability, and local agricultural skills.**

The PEIR **fails to address or mitigate these risks** — in breach of environmental law, policy, and best practice.

This omission breaches:

- **Schedule 4 of the EIA Regulations 2017**, which requires “a description of the aspects of the environment likely to be significantly affected, including soil”.
- **NPS EN-1 (Section 5.10)**, which expects assessment and mitigation of soil loss, degradation, and compaction.
- **Best practice guidance from Natural England and DEFRA**, which recommends detailed Soil Handling and Management Plans for all large infrastructure on agricultural land, especially on **Best and Most Versatile (BMV) soils**.

Best Practice Approach to Soil Quality for This Type of NSIP

1. Inclusion of a Full Soil Management Plan (SMP)

Must include:

- Pre-construction **baseline soil survey** (topsoil depth, texture, pH, fertility),
- **Strip and store** protocols (separation of horizons, erosion protection),
- **Traffic management plans** to avoid compaction.

Aligned with **Defra Construction Code of Practice for Sustainable Use of Soils (2009)**.

2. Operational Phase Land Management Plan

Should cover:

- **Grazing strategy** with stock rates, seasons, and fallback mowing regime,
- Weed and invasive species control,
- Biodiversity-compatible seeding mixes with monitored outcomes,
- **Ongoing soil health testing** (organic matter, compaction, microbial activity).

Referenced in **Solar Trade Association Best Practice Guide (2020)** and **Natural England land use advice**.

3. Integrated Design to Protect Soil

Avoidance of impermeable surfacing wherever possible,

Drainage design that mimics natural flow and prevents erosion.

4. Post-Decommissioning Restoration Plan

Must commit to:

- **Full decompaction (subsoiling)** and fertility restoration,
- **Topsoil reinstatement** and reseedling,
- Monitoring for **5–10 years post-decommissioning** to verify recovery.

Required by **NPPF §180(c)** and **EN-1 §5.10** to demonstrate reversibility.

5. Legal Securing of Plan

The land management and soils plan should be:

- **Secured in the Development Consent Order (DCO)**,
- Enforced by planning condition or legal agreement,
- **Subject to regular, transparent reporting** (e.g. to the Planning Inspectorate or local authority).

Conclusion

The **PEIR lacks a land management plan for soil health**, despite this being **required by law, policy, and best practice**.

Such a plan should have been included **at statutory consultation stage**, so the public and experts could assess the **project's reversibility, sustainability, and agricultural impact**. The absence of this plan is a **serious omission**

Specific Issues: Underassessment of Risks Of Clay Soil For Solar & Bess Projects

1. Poor Drainage and Waterlogging

- Heavy clay soils:
 - Drain **very slowly** and retain surface water,
 - Are prone to **seasonal waterlogging**, especially after disturbance,
 - Become **saturated and unstable** under rainfall during construction or operation.

Waterlogging around piles, trenches, BESS pads, and substations can lead to:

- Foundation instability,
- Flooding of below-ground cabling and containment failures,
- Surface erosion and vegetation die-back.

2. Compaction from Construction Machinery

- Clay is **highly susceptible to compaction**, especially when wet.
- Use of excavators, cranes, and heavy vehicles:
 - **Destroys soil structure**,
 - Severely reduces **porosity and drainage**,
 - Leads to long-term **loss of agricultural function**.

Recovery from subsoil compaction can take **30–100 years** on clay without subsoiling or major intervention (Welsh Gov. SPEP, 2023).

3. Restricted Root Growth and Vegetation Failure

- Once compacted, clay soils prevent:
 - Penetration by **grasses and crop roots**,
 - Establishment of **wildflower seed mixes** used in mitigation areas.

Without deep soil restoration, vegetation in buffer zones, access tracks, and under panels may fail — undermining **biodiversity and landscape mitigation**.

Increased Erosion Risk When Dry

- In summer or drought, clay becomes:
 - **Brittle and cracked**,

- Easily **wind-eroded** after topsoil disturbance,
- Vulnerable to **gully formation** on sloped areas after sudden rain.

Exposed cable trenches, spoil heaps, or access tracks are particularly prone.

5. Difficulties with Piling and Substructure Installation

- Clay shrinks and swells with moisture, creating:
 - **Unpredictable soil movement,**
 - Stress on **pile foundations** and **cable containment structures,**
 - Potential cracking or distortion in solar racking, fencing, or concrete pads.

Over time, this movement can increase structural stress on solar and BESS assets — requiring **costly maintenance or redesign.**

6. Delayed Reversibility After Decommissioning

- Post-project recovery is extremely difficult:
 - Topsoil–subsoil profiles may be permanently altered,
 - Deep compaction and waterlogging persist for decades,
 - Clay’s slow permeability means **recolonisation by native flora and fauna is impaired.**

This **undermines the applicant’s claim that the project is “fully reversible”** and suitable for future agricultural use.

7. Drainage Infrastructure Failure Risk

- Sustainable drainage systems (SuDS), soakaways, or infiltration trenches:
 - **Do not function well** on impermeable clay,
 - Lead to **standing water**, mosquito breeding, or overflow risks,
 - May not meet planning requirements unless overengineered (e.g. lined swales, surface flow attenuation).

The PEIR does not adequately address the performance limits of SuDS on this soil type.

8. Long-Term Decommissioning and Financial Security

The PEIR's approach to decommissioning is vague and provides no details regarding the establishment of a decommissioning bond or restoration fund to ensure that all infrastructure will be safely removed and the land fully restored to agricultural use at the end of the project's life or in the event of corporate insolvency. Given the scale and duration of the development, and the precedent of Macquarie's former ownership of Thames Water, a legally secured financial guarantee is essential to protect communities and landowners from being left with abandoned infrastructure and associated environmental liabilities.

Summary of Key Planning & Environmental Implications

Risk	Impact	Regulatory Relevance
Compaction	Long-term soil degradation	NPPF §180(c), EIA Regs
Poor drainage	Flooding and erosion	EA groundwater protection
Foundation movement	Structural risk	EN-1 §4.5, §5.10
Vegetation failure	Mitigation breakdown	NPPF §174, BNG requirements
Drainage non-performance	Surface water risk	NPS EN-1 §5.15
Irreversible soil impact	Decommissioning failure	EIA Reversibility Tests

Conclusion

Siting this project on **heavy clay soils** poses serious risks that the PEIR:

- **Fails to assess in detail,**
- **Does not model or mitigate adequately,** and
- **Undermines key planning claims** (e.g. reversibility, biodiversity, sustainable drainage).

These factors provide a **strong legal and technical basis for** requiring significant **additional soil investigation, mitigation, and design modification** before proceeding.

Chapter 16 Ground Conditions

Chapter 16 – Ground Conditions of the East Pye Solar PEIR is **not adequate in legal or planning terms at the statutory consultation stage**, based on the requirements of the **EIA Regulations 2017, National Policy Statements (NPS)**, and guidance from the **Environment Agency (EA)** and other statutory bodies.

Key Legal and Planning Deficiencies

1. Lack of Site-Specific Ground Investigation

- The chapter **relies heavily on desk-based data** (e.g. BGS records, MAGIC mapping) and **does not present any intrusive ground investigation (GI) or borehole data**.
- There is **no site-wide geotechnical risk assessment** or geological hazard appraisal (e.g. for shrink–swell clays or ground stability).
- This is inadequate to assess construction risks on **heavy clay soils** and does not support the safe design of:
 - Solar arrays,
 - BESS containers,
 - Substations,
 - Underground cabling routes.

NPS EN-1 (5.10.9) and **EIA Regs Sch. 4** require site-specific analysis where there may be risks to human health, soil, or the environment. This chapter does not meet that bar.

2. No Strategy for Soil Contamination Management

- There is **no contamination risk register**, and no plan for how unexpected contamination would be handled if found during trenching, piling, or groundworks.
- No consideration is given to:
 - Historic agricultural land use (e.g. pesticides or asbestos),
 - Risks from **existing infrastructure** (e.g. the high-pressure gas main),
 - Disposal or reuse of excavated material under the **CL:AIRE DoWCoP**.

This omission is non-compliant with **EA guidance, Land Contamination: Risk Management (LCRM)**, and **NPS EN-1 §5.10.5–5.10.9**.

3. No Assessment of Interactions with Other Infrastructure

- The chapter **fails to assess how trenching or piling might affect:**
 - The **high-pressure gas main** (which is not mapped or assessed),
 - Foundations of **listed buildings or historic walls** nearby,
 - Adjacent roads, bridges, or culverts.

This omission prevents evaluation of cumulative physical risks to infrastructure.

4. No Groundwater or Pollution Pathway Modelling

- Despite the project crossing **Source Protection Zones (SPZs)** and being near the **River Tas (a chalk stream)**, there is:
 - No quantitative risk modelling,
 - No assessment of how infiltration, spills, or firewater (e.g. from a BESS incident) could contaminate soils or groundwater,
 - No attenuation strategy for subsurface pollution.

This is contrary to **EA guidance** and **NPS EN-1 §5.15.6**, which require proactive protection of the water environment through site design.

5. No Decommissioning Soil Recovery Plan

- The chapter **does not discuss soil structure recovery** or post-development remediation,
- No reference is made to long-term compaction, pan formation, or subsoil damage.

This fails the requirement in the EIA Regs to assess impacts across the **full lifecycle** of the development.

Specific Issues: High Pressure Gas Main Omitted

Chapter 16 (Ground Conditions) of the PEIR does **not contain any assessment of the potential impacts of the scheme on the existing high-pressure gas main**. A

comprehensive search of the PEIR and appendices reveals:

- **No identification** of the high-pressure gas pipeline as a constraint or risk receptor, despite it crossing multiple solar fields and parts of the proposed cable corridors
- **No safety analysis**, ground disturbance risk assessment, or mitigation strategy regarding construction near the pipeline,
- **No engagement noted** with the pipeline operator (likely Cadent or National Grid) as a statutory consultee.

Why This Is a Major Omission

High-Pressure Gas Mains Require:

- **Strict safety buffer zones**,
- **Permits and supervision** for works within 3–6m (depending on pipeline class),
- Protection from vibration, excavation, and piling.

Omission of this from the ground conditions chapter is a serious procedural failure under:

- The **EIA Regulations 2017** (Schedule 4: requires identification of major hazards),
- **Health and Safety Executive (HSE)** guidance,
- **National Policy Statement EN-1**, which requires identification of “critical infrastructure” within the development area (§4.11.1–4.11.2).

Conclusion

The PEIR chapters **fail to acknowledge or assess the presence, proximity, or risk to the high-pressure gas main**, despite it crossing several of the solar sites and its potential to pose:

- Major safety risks to construction and operational phases,
- A critical constraint on cable trenching and piling,
- A legal requirement for engagement and protective measures.

This is a significant **planning and safety oversight**, and a **valid ground for statutory objection** or a demand for **Supplementary Environmental Information (SEI)**.

- There is **no reference to any high-pressure gas infrastructure** as a constraint,
- There is **no risk assessment, mitigation plan, or consultation post-scoping noted** with the relevant gas infrastructure operator.

Why This Is a Critical Omission

1. Major Safety Risk

High-pressure gas mains pose:

- **Explosion and rupture risks** during excavation or pile driving,
- **Legal safety stand-off distances** (often 3–6 metres depending on pressure and pipe diameter),
- A requirement for **consultation with HSE and pipeline operators** before development proceeds.

2. Required by Law and Policy

The omission breaches:

- **EIA Regulations 2017** (Schedule 4): must identify major hazards and safety risks,
- **NPS EN-1 (§4.11)**: requires consideration of “existing or planned nationally significant infrastructure,”
- **HSE Planning Advice**: mandates safety assessments near hazardous installations and pipelines.

If the developer fails to identify and assess the gas main at the statutory consultation stage, this may be procedurally unlawful and render the PEIR incomplete.

Conclusion

The PEIR completely fails to:

- Identify,
- Map, or
- Assess

the presence and implications of the high-pressure gas main. This is a **serious procedural deficiency** that:

- Invalidates the current consultation as incomplete under EIA regulations,
- Represents a **public safety risk**,
- May justify formal objection or a requirement for **Supplementary Environmental Information (SEI)**.

Information on the **high-pressure gas main** and its potential interaction with the proposed East Pye Solar project should appear in **multiple chapters** of the PEIR to ensure legal compliance, safety planning, and infrastructure coordination. Most critically, it should be addressed in **Chapter 16 – Ground Conditions** as this chapter is legally required to assess risks to and from the ground, including buried infrastructure.

What should be included:

- Mapping of the high-pressure gas main,
- Depth and proximity to proposed trenching, piling, and heavy machinery routes,
- Risk assessment (e.g. vibration, accidental strike, fire),
- Required stand-off zones and restrictions,
- Consultation with pipeline operators (e.g. Cadent or National Grid),
- Safety mitigation measures.

Status: Omitted — this is a procedural flaw under the EIA Regulations 2017 (Schedule 4).

PEIR Chapter 16 fails to meet planning and legal standards at the statutory consultation stage. It lacks the necessary ground investigation data, does not assess key risks to soil or infrastructure, and fails to propose meaningful mitigation for long-term environmental impacts.

These deficiencies:

- Breach the **EIA Regulations 2017 (Schedule 4)**,
- Undermine compliance with **NPS EN-1 Section 5.10**,
- Are contrary to **EA guidance on contaminated land and groundwater protection**,
- Constitute a valid basis for a **Section 55 procedural or substantive objection**.

Chapter 17 Electromagnetic Fields

Chapter 17 of the PEIR does not fully accord with the most recent and respected scientific findings on the health and environmental impacts of EMF (Electromagnetic Fields). While it references standard guidance (notably **ICNIRP 1998** and **National Policy Statement EN-5**), it **fails to incorporate more recent and evolving international evidence**, particularly regarding:

What the Chapter Does

- Uses the **1998 ICNIRP guidelines** (the 100 μ T limit for magnetic fields and 5 kV/m for electric fields) as its baseline,
- Focuses **narrowly on human health**, scoped primarily to **operational impacts** from cables and substations,
- Assumes **no significant effects** and proposes **no additional mitigation**,
- Provides **no field measurements**, and **no species-specific ecological assessment** (despite EMF's inclusion in scoping for ecological receptors).

What It Fails to Do

1. Ignores Updated EMF Guidance

- The chapter uses **ICNIRP 1998**, despite an updated **ICNIRP 2020 guideline** being available, which introduces **refined limits and exposure metrics**—particularly for **children, pacemaker users, and chronic low-level exposure**.
- It also omits consideration of **emerging research on non-thermal biological effects**, including:
 - Potential links to neurodegenerative disease,
 - Possible effects on children's development,
 - Impact on melatonin production and sleep cycles in humans and animals.

This omission undermines the claim that the project has used “the most current and respected guidance.”

2. Overlooks EMF Impact on Wildlife

- Chapter 17 defers EMF impacts on wildlife to Chapter 8 (Ecology), but no detailed wildlife EMF assessment exists there either.
- Recent studies (2020–2023) show:
 - **Disruption to bird and insect navigation** (especially migratory birds and bees),
 - **Altered breeding and nesting patterns** in EMF-exposed zones,
 - **Electrosensitive aquatic species** (e.g. fish, amphibians) affected by magnetic gradients from buried cables.

No assessment is made of these scientifically documented effects—especially important for **protected species like great crested newts, crayfish and turtle doves**.

3. Assumes Compliance = Safety

- The PEIR assumes that if the EMF levels are **under ICNIRP limits**, no harm can occur.
- But **ICNIRP explicitly warns** that its guidelines **do not account for long-term exposure or ecological risks**—only short-term acute health effects.

4. No Consideration of Vulnerable Groups

- No special assessment is made for:
 - **Children living near the site**, or schools/playgrounds,
 - **Pacemaker or ICD users** (even though classed as “medium sensitivity”),
 - **Pregnant individuals or the elderly**.

These omissions are contrary to best practice and **NPS EN-5**, which requires all sensitive receptors to be addressed.

Conclusion: Not in Line with Latest Science or Best Practice

Criteria	Met?	Comments
Uses most recent ICNIRP standard (2020)	No	Relies on outdated 1998 guidance
Assesses ecological EMF risks	No	Deferred, not delivered

Criteria	Met?	Comments
Assesses vulnerable human receptors	No	No special consideration
Field data collected	No	Desk-based only
Acknowledges cumulative and long-term exposure	No	Touched on but not evaluated with real data

Legal and Planning Implications

- **Fails NPS EN-5 and EN-1** guidance to assess and mitigate risks for all receptors.
- Does not comply with **current scientific understanding**, weakening the “soundness” of the EIA.
- Justifies a request for **Supplementary Environmental Information (SEI)** or potential **challenge to adequacy of the statutory consultation**.

Best practice for **EMF (Electromagnetic Fields) assessment** in a **Nationally Significant Infrastructure Project (NSIP)**—especially one involving **solar PV arrays, substations, and high-voltage cable routes**—requires a **multidisciplinary, risk-based, and receptor-sensitive approach**. This should go well beyond the minimum legal thresholds and align with **updated scientific guidance**, statutory expectations, and Planning Inspectorate standards.

Best Practice Approach to EMF Assessment for an NSIP

1. Use the Latest International Standards (Not ICNIRP 1998)

- Apply **ICNIRP 2020** guidance, not the outdated 1998 version. ICNIRP 2020:
 - Sets **refined exposure limits**,
 - Addresses **low-frequency EMF (50/60 Hz)** relevant to buried cable and transformer infrastructure,
 - Provides more nuanced consideration of **long-term exposures**.

This is the current global standard and should be referenced explicitly.

2. Full Mapping of EMF-Generating Infrastructure

- Include detailed **GIS maps** showing:

- **Above- and below-ground cables** (HVAC/HVDC),
- **Substations and BESS units**,
- Likely **EMF emission zones** around infrastructure,
- Overlay with **sensitive receptors**, including:
 - Residential properties,
 - Schools, nurseries, care homes,
 - Public rights of way (PRoWs),
 - Wildlife corridors and key habitats.

Mapping should use **isocontour modelling** (e.g. EMF field strength plots) to visualise exposure.

3. Receptor-Specific Risk Assessment

- Identify and assess **all affected receptors** separately:
 - **Human receptors**: general public, workers, vulnerable groups (e.g. children, pacemaker users),
 - **Ecological receptors**: birds, bats, aquatic species (e.g. fish, amphibians), bees and pollinators.

Recent studies show EMF may disrupt navigation in migratory birds, pollinators, and aquatic species—especially relevant near chalk streams, hedgerows, and GCN ponds.

4. Assessment of Both Electric and Magnetic Fields

- Evaluate **separately**:
 - **Electric fields**: associated with above-ground conductors,
 - **Magnetic fields**: emitted by substations, BESS, transformers, and underground cables.

Include **maximum exposure levels**, average operational levels, and **peak potential failure levels** (e.g. BESS fire or overload).

5. Cumulative Impact Assessment

- Model **cumulative EMF exposure** from:

- Adjacent infrastructure (e.g. National Grid substations),
- Multiple buried cable routes in parallel,
- Substation–BESS interactions.

Particularly important if residential zones, farms, or wildlife corridors are near multiple EMF sources.

6. Consideration of Long-Term and Chronic Exposure

- Assess potential risks from:
 - **Chronic low-level exposure** to humans and fauna,
 - **Interaction with other stressors** (e.g. noise, artificial light, habitat fragmentation),
 - Effects on **mental wellbeing** and public perception, especially for rural communities.

While ICNIRP limits are for **acute effects**, best practice involves evaluating **long-term exposure and psychological risk**.

7. Field Survey and Monitoring Commitment

- Conduct **baseline EMF measurements** in the project area (especially where HV cables run near homes or habitats).
- Commit to **post-construction monitoring** with thresholds and enforcement mechanisms.

Include as part of a **Construction Environmental Management Plan (CEMP)** or **EMF Management Strategy**.

8. Engage with Stakeholders and Public Perception

- Engage early with:
 - Local health authorities (UKHSA),
 - HSE and utility operators,
 - Residents near substations or cable corridors,

- Wildlife bodies (e.g. Natural England, RSPB) if EMF corridors intersect key habitats.

Include **plain-language explanations** of EMF levels and how they relate to known safe limits.

Planning and Policy Documents to Align With

Document	Relevance
ICNIRP 2020 Guidelines	Global gold standard for EMF limits
NPS EN-1 & EN-5	Require full EMF risk assessment and consideration of sensitive receptors
Planning Inspectorate Advice Note 7	Calls for inclusion of EMF in PEIR where relevant infrastructure is present
UKHSA (formerly PHE) EMF guidance	Cautionary approach, esp. for chronic exposure
HSE and National Grid/Cadent EMF & safety guidance	Mandatory for infrastructure near gas mains, homes, or rights of way

Conclusion

The East Pye Solar PEIR **does not currently meet best practice for EMF assessment**, and fails in key areas including:

- Use of outdated guidance (ICNIRP 1998),
- Lack of field data or isocontour mapping,
- No receptor-based risk assessment,
- No ecological EMF analysis,
- No cumulative or long-term exposure consideration.

This represents a **planning and regulatory gap** and provides a valid basis to demand **Supplementary Environmental Information (SEI)** or submit a **statutory objection** to the current PEIR.

Specific Issues: Impacts of EMF Radiation on Barbastelle Bats

The potential effects of **EMF (Electromagnetic Field) radiation** on **endangered species such as barbastelle bats** are **increasingly a concern in ecological and planning assessments**, particularly for infrastructure-rich projects like solar farms. Although scientific research in this field is still emerging, there is **growing evidence** that EMFs—especially from **underground high-voltage cables, substations, and BESS units**—can have **subtle but significant impacts** on the behaviour, navigation, and reproductive success of species that rely on **magnetoreception** or sensitive acoustic/environmental cues.

Why Barbastelle Bats Are at Risk

- **Barbastelle bats (*Barbastella barbastellus*) are:**
 - A **UK Red List** species (classified as **endangered**),
 - A **European Protected Species (EPS)** under the **Habitats Directive**,
 - A **low-frequency echolocator**, with a strong dependence on **magnetoreception and acoustic cues** for navigation, foraging, and roost finding,
 - **Sensitive to habitat fragmentation, linear infrastructure, and anthropogenic disturbance.**

They favour **woodland edges, hedgerows, and riparian corridors**—often the same features targeted for cable routing and substation placement.

Potential EMF Impacts on Barbastelle Bats

1. Disruption of Navigation via Magnetoreception

- Bats use the **Earth's magnetic field** for orientation and migration.
- EMF radiation—especially from **buried HVAC cables** and **substations**—can **distort local magnetic fields**, creating a:
 - Disruption zone,
 - Deflection effect (bats avoid linear corridors),
 - Barrier to movement through critical commuting routes.

Reference: Holland et al. (2010); Zapka et al. (2009); Newton et al. (2023) – show bats can use magnetoreception and are susceptible to magnetic distortion.

2. Altered Foraging and Roosting Behaviour

- Barbastelles forage along **linear features** (hedgerows, tree lines) and need **dark, quiet corridors**.
- EMF sources (esp. combined with substation hum, lighting, or vibration) can:
 - **Reduce prey availability** (if insects avoid EMF zones),
 - **Displace bats from foraging sites**,
 - **Increase energy expenditure** from detours or avoidance behaviours.

Insects such as midges and moths also exhibit **EMF sensitivity**, disrupting the food chain.

3. Stress and Reproductive Disruption

- EMFs are associated with **increased stress hormones** and changes in **melatonin production** in some vertebrates.
- Chronic exposure (e.g. from a substation near a maternity roost or linear cable trench along a core commuting route) may:
 - Affect **reproductive success**,
 - Alter **roost site fidelity**,
 - Lead to **colony abandonment**.

While direct data on barbastelles is limited, effects have been observed in **birds, rodents, and fish**.

Summary Table of Potential Effects

EMF Source	Effect on Barbastelle Bats	Evidence Level
Underground cables	Navigation interference, barrier effects	Moderate
Substations	Chronic EMF exposure, prey and foraging disruption	Moderate
BESS	EMF hotspots and possible acoustic/vibration interference	Emerging

EMF Source	Effect on Barbastelle Bats	Evidence Level
Combined infrastructure	Landscape-scale displacement or avoidance	Strong ecological concern

Legal and Planning Relevance

- **Barbastelle bats are a European Protected Species (EPS):**
 - Must be given **strict protection** under the Habitats Regulations 2017,
 - Planning authorities must apply **Derogation Tests** before granting consent.
- **National Planning Policy Framework (NPPF §180)** and **NPS EN-1 and EN-3** require:
 - **Avoidance of harm** to EPS,
 - Mitigation and compensation,
 - Proof of **no likely significant effect** on populations.

The EMF chapter of the PEIR **has not assessed** these potential effects, this is a **material procedural and legal flaw**.

Conclusion

EMF radiation from the East Pye Solar scheme could potentially:

- **Disrupt barbastelle bat navigation and commuting routes,**
- **Reduce prey density,** and
- **Cause long-term habitat avoidance.**

These effects have not been assessed in Chapter 17 or in Chapter 8 (Ecology), despite the **clear need under law and best practice** to do so.

This provides strong grounds to:

- Demand a **Supplementary Environmental Information (SEI)** report,
- Submit a **legal or planning objection,** and
- Require a **species-specific EMF and bat ecology study** before DCO acceptance.

Specific Issues: Potential EMF risks to children

EMF (Electromagnetic Field) radiation from infrastructure such as underground cables, substations, and battery energy storage systems (BESS) may pose **heightened potential risks to children**, particularly due to their developing nervous systems, longer lifetime exposure, and closer proximity to EMF sources in residential or community settings.

While **EMF levels from NSIP-scale infrastructure often fall below current regulatory limits**, there is **ongoing scientific debate** and a **precautionary approach** is recommended—especially when **homes, schools, or play areas** are near the infrastructure. These risks can be **present both inside homes and in the wider environment** depending on proximity to EMF sources.

Potential EMF Risks to Children

1. Increased Biological Sensitivity

- Children’s **developing tissues and organs** (including the brain) may be more susceptible to:
 - Magnetic field penetration,
 - Cellular or neurological disruption from prolonged low-frequency exposure.

SCENIHR (EU Scientific Committee, 2015) and *ICNIRP (2020)* acknowledge that **children are a potentially vulnerable subgroup**, although thresholds are still debated.

2. Longer Duration of Exposure

- Children exposed early in life may experience **decades-long cumulative EMF exposure**.
- Underground cabling close to homes or footpaths, and substations near housing estates or schools, **increase lifetime exposure** risk compared to adults who move more often.

Studies associate long-term exposure to magnetic fields $>0.3\text{--}0.4\ \mu\text{T}$ with a **possible doubling of childhood leukaemia risk**, though causation is not confirmed (*IARC Monograph Vol. 80*).

3. Disrupted Sleep and Melatonin Suppression

- EMF exposure may impact **melatonin production**, linked to:
 - Poor sleep,
 - Reduced immune function,
 - Impaired cognitive development in children.

Some evidence (e.g. Halgamuge, 2013) suggests even low-level EMFs may disrupt pineal gland function, especially in dark-sensitive environments like rural villages.

4. EMF 'Hotspots' in the Wider Environment

- EMF may affect children in:
 - Homes near substations, inverters, or buried cables,
 - Schoolyards or nurseries located near infrastructure,
 - Paths and greenspaces (PRoWs, cycleways, playgrounds) adjacent to cable corridors.

If cabling passes beneath or near open-access land, EMF exposure could be **incidental and unmonitored**—raising ethical and planning questions.

Where Would EMF Be Felt?

Location	EMF Risk Level	Child Exposure Pathway
Inside homes (<30 m from substations or cables)	Low to moderate	Chronic low-level exposure, especially during sleep
School grounds or nurseries	Moderate	Prolonged daytime exposure, outdoor activities
Playgrounds, greenspace, PRoWs	Moderate	Incidental exposure during recreation
Near BESS compounds	High if unshielded or poorly designed	Potential acute exposure if protection fails

Magnetic fields penetrate buildings, while electric fields are more easily shielded by walls and soil. Thus, underground cables may still expose residents via magnetic fields, especially at cable joints or transformer sites.

Legal and Policy Implications

Health and Safety

- While UKHSA (formerly Public Health England) maintains EMF compliance with **ICNIRP 1998** is protective, it also endorses a **precautionary approach for vulnerable groups**—especially children.

Planning Policy

- **National Policy Statement EN-5 (§2.10.12)** requires EMF assessments to:
 - Consider **sensitive receptors**, including **schools and housing**,
 - Demonstrate **compliance and avoidance** where possible.

The East Pye PEIR (Chapter 17) does **not assess risks to children**, homes, or schools, nor does it use **updated ICNIRP 2020 guidance**, which is more protective of vulnerable groups.

Conclusion

There is **credible scientific and ethical basis for concern** over EMF exposure to children from infrastructure like that proposed for the East Pye Solar scheme—particularly where:

- **Buried high-voltage cables** run near or beneath homes or PRowWs,
- **Substations or BESS units** are located near residential areas, schools, or play zones,
- **Cumulative low-level exposure** could affect long-term health.

Although health risks remain debated, **precautionary design, shielding, routing, and receptor-specific risk assessment are all best practice**—yet these are **absent** from the PEIR.

Legal and Policy Context

While no statutory UK setback distances currently exist, the following principles apply:

National Policy Statement EN-5 (2.10.9–2.10.14):

“The applicant should demonstrate that exposure of the public to EMFs will be within the ICNIRP Guidelines, and should consider appropriate mitigation or rerouting near sensitive receptors.”

EIA Regulations 2017 – Schedule 4:

Developers must describe the project’s likely significant effects on human health and the environment, including through EMFs.

Precautionary Principle (NPPF and Environment Act 2021):

Where there is scientific uncertainty but credible risk to health or the environment, **preventive action should be taken.**

Specific issue: EMF exposure Impacts on White-Clawed Crayfish?

The PEIR does not assess or mitigate potential EMF impacts on crayfish—and this represents a notable ecological and procedural omission under EIA and habitat protection law.

EMF and Crayfish: What the Science Says

Crayfish (including **native white-clawed crayfish**, a UK Biodiversity Action Plan species) are **electrosensitive aquatic animals**. Although less studied than fish or amphibians, research has shown:

- Crayfish possess **sensory organs** capable of detecting low-frequency electromagnetic fields,
- EMF exposure can alter:
 - **Burrowing and shelter-seeking behaviour,**
 - **Feeding and predator avoidance,**
 - **Neurological responses** in laboratory settings.

Relevant studies: Oeschger et al. (2010), Suter et al. (2007), and aquatic EMF review literature (e.g. Normandeau 2011) show measurable EMF-induced stress or behavioural changes in decapods and benthic species.

EMF Risks to Crayfish in the East Pye Solar Context

The East Pye Solar project involves:

- **Underground high-voltage cabling,**

- Cable corridors near or possibly crossing **the River Tas**, a chalk stream habitat likely to host crayfish,
- **No mapping** or exclusion zones to protect aquatic species from EMF.

Yet, the PEIR contains:

- **No specific mention of crayfish** in Chapter 8 (Ecology and Biodiversity) or Chapter 17 (Electromagnetic Fields),
- **No EMF impact assessment** on aquatic invertebrates,
- **No proposed mitigation** (e.g. cable burial depth, separation buffers, routing avoidance).

Legal and Planning Failures

Obligation	Status
EIA Regulations 2017 (Schedule 4) – Identify significant impacts on fauna	Not done
Habitats Regulations 2017 – Protect European and UK priority species	No mention of crayfish or invertebrates
NPS EN-1 and EN-5 – Assess EMF risks to all receptors	No aquatic receptor assessment
Precautionary Principle – Avoid risks where science is uncertain	Not applied to aquatic EMF exposure

Conclusion

The PEIR fails to:

- Acknowledge the presence of crayfish (despite their likely habitat in chalk stream zones),
- Assess how EMF from cables or substations may impact their behaviour or habitat,
- Propose any form of ecological or physical mitigation.

This is a **procedural flaw** under the EIA Regulations and NPS guidance, and a **material ecological omission**.

There are **several important EMF-related risks and scientific findings that are missing from the PEIR**, particularly Chapters 8 (Ecology) and 17 (Electromagnetic Fields). These omissions are significant both from a **legal and ecological perspective**, and they **undermine the adequacy of the statutory consultation** under the EIA Regulations 2017 and National Policy Statements EN-1 and EN-5.

Key EMF-Related Risks and Scientific Areas Missing from the PEIR

1. Impacts on Electrosensitive Wildlife

The PEIR fails to assess EMF impacts on species known or likely to be **electrosensitive**, including:

- **Fish** (e.g. brown trout, lamprey),
- **Amphibians** (e.g. great crested newts),
- **Crayfish** (as discussed above),
- **Bats and birds** that rely on **magnetoreception** for navigation and migration.

Scientific support: Normandeau Associates (2011), Suter (2007), Zapka et al. (2009), Holland et al. (2010) demonstrate that even low-intensity EMFs can **alter migratory or foraging behaviour**.

PEIR status: No specific species are identified as potentially electrosensitive. No modelling of EMF exposure in ecological corridors.

2. Cumulative EMF Exposure Assessment

The PEIR provides **no assessment of cumulative EMF exposure**, despite:

- **Multiple cable routes** spanning long distances,
- **Substations, inverters, and BESS** compounds contributing to field emissions,
- The project's close proximity to **residences, bat foraging zones, and ecological corridors**.

Best practice requires **modelling of overlapping EMF fields** and contour mapping of exposure zones.

PEIR status: Assesses infrastructure components in isolation, not cumulatively.

3. Updated EMF Standards (ICNIRP 2020)

The PEIR relies on **outdated 1998 ICNIRP standards**, despite the **ICNIRP 2020 update** providing:

- **Lower exposure reference levels** for sensitive groups (e.g. children),
- **Updated guidance** on chronic and low-level exposure,
- Recognition that **compliance with 1998 limits does not eliminate all biological effects**.

ICNIRP 2020 is the **current international standard**, and its exclusion weakens the credibility of the EMF chapter.

PEIR status: No reference to ICNIRP 2020 or alternative international guidelines (e.g. WHO EMF Project, IARC).

4. Lack of Monitoring Commitments or EMF Management Plan

Best practice includes:

- **Baseline EMF surveys** near sensitive receptors,
- **Post-construction monitoring**,
- **Real-time field strength validation**,
- An **EMF Management Strategy**.

PEIR status: No baseline survey, no post-construction monitoring plan, no operational control strategy.

5. No Risk Assessment for BESS EMF Emissions

Battery Energy Storage Systems (BESS) can:

- Emit EMFs at high frequency during **inverter operation and charging cycles**,
- Produce **localised hotspots**, especially where housing is within ~100 metres.

These are also **fire and explosion risk zones**, meaning EMF may **compound vulnerability** for nearby receptors.

PEIR status: No specific EMF modelling for BESS, despite their intensity and scale.

6. Impacts on Human Mental Health and Perception

While science remains cautious, long-term EMF exposure is associated in some studies with:

- **Sleep disruption** (via melatonin suppression),
- **Cognitive and behavioural changes** (especially in children),
- **Public anxiety and stress** over invisible risk.

Even **perceived exposure** can lead to mental health strain.

PEIR status: No reference to public wellbeing, mental health, or perception risks.

Summary of Missing Elements

Key Topic	PEIR Coverage	Best Practice Expectation
Electrosensitive wildlife	Absent	Species-specific risk modelling
ICNIRP 2020 standards	Absent	Replace outdated 1998 benchmarks
BESS-specific EMF impact	Absent	Assess high-intensity inverter fields
Cumulative exposure assessment	Absent	Map overlapping fields, identify hotspots
Human wellbeing and vulnerable groups	Absent	Assess impact on children, elderly, pacemaker users
Ecological corridor disruption	Absent	Analyse effects on movement, migration, breeding

Legal and Planning Implications

- **EIA Regulations 2017 (Sch. 4):** PEIR must include “a description of likely significant effects on population, human health, biodiversity, and the environment.”
- **National Policy Statements EN-1 and EN-5:** Require EMF exposure to be addressed, sensitive receptors identified, and mitigation proposed.
- **Precautionary Principle:** Requires avoidance or mitigation where there is **scientific uncertainty but credible risk**.

Conclusion: The EMF chapter and supporting material in the PEIR **fail to meet these standards** and provide valid grounds for:

- A **formal consultation objection**,
- A request for **Supplementary Environmental Information (SEI)**.

Chapter 18 Other Environmental Matters

Chapter 18 provides a catch-all for topics not covered in other dedicated chapters. Based on the document, it addresses:

1. **Major Accidents and Disasters (MA&D):**

- Considers risks from events like fire, explosion, and flooding.
- Notes some mitigation but largely asserts low likelihood without deep technical analysis.
- Includes BESS-related fire risks only in general terms.

2. **Waste and Materials:**

- Mentions construction waste management (soil, aggregates, packaging).
- No detailed Waste Management Plan (WMP) or commitment to circular economy principles.
- No lifecycle waste projections for decommissioning or solar panel disposal.

3. **Utilities and Infrastructure:**

- Briefly references electricity grid connection and cable corridors.
- Does **not** assess risks or constraints from **gas mains, water pipelines, or telecoms** infrastructure.

4. **Shadow Flicker and Lighting:**

- States this is not a significant issue due to distance and height of panels.
- External lighting briefly mentioned but lacks ecological or visual impact analysis.

5. **Climate Resilience (cross-refers to Ch. 6):**

- Lightly summarises climate risk, with limited technical modelling.

Adequacy Assessment (Planning Law & Policy)

Requirement	Adequately Met?	Comments
EIA Regs 2017 – Schedule 4 (Part 8): Must assess "risk of major accidents or disasters"	Partial	Risks like BESS fire and gas main rupture are underassessed and lack scenario planning.
NPS EN-1 and EN-3: Require proper analysis of accident risks and utility conflicts	Inadequate	Does not consider nearby high-pressure gas mains, chalk streams, or contaminated land near infrastructure.
Waste Framework Directive compliance	Weak	No clear construction/demolition waste forecasts or WMP. Panel and BESS disposal not addressed.
Lighting and shadow flicker assessments (where relevant)	Minimal	Dismisses concerns without site-specific modelling or stakeholder evidence.
EMF and BESS fire interaction	Omitted	Does not cross-reference EMF chapter, firewater runoff risks, or chemical emissions.

Critical Omissions

- **No consideration of risks from siting infrastructure over or near gas mains** (a legal and safety failure).
- **No proper assessment of the risk and consequences of a BESS fire**, including:
 - Toxic emissions,
 - Firewater runoff contamination,
 - Soil and crop damage,
 - Emergency service access.
- **No assessment of interdependency risks** (e.g. what happens if flooding disables electrical equipment).
- **No quantitative waste analysis** for solar panels, batteries, or electrical components.

Conclusion: Not Adequate

Chapter 18 of the PEIR is **superficial and procedurally inadequate**. It fails to:

- Fully comply with Schedule 4 of the EIA Regulations 2017,
- Address known infrastructure constraints or high-risk environmental interactions,
- Provide mitigation plans or trigger thresholds for disasters or accidents.

It appears designed to **minimise rather than properly assess** residual risks—particularly those related to fire, contamination, or legacy infrastructure.

Inadequacies and Omissions in Chapter 18

1. Major Accidents and Disasters: Superficial and Incomplete

- The section refers to generic risks (e.g. from BESS, fire, chemical spills) but provides no robust assessment of likelihood or consequence.
- There is no modelling of a worst-case BESS fire (e.g. thermal runaway, toxic plume spread, groundwater contamination).
- It fails to identify and assess the impact of proximity to sensitive receptors, including:
 - Private drinking water supplies,
 - High-pressure gas mains,
 - The adjacent railway line (which is not mentioned in the PEIR at all),
 - The River Tas (chalk stream and groundwater-dependent ecosystem).

Contrary to:

- EIA Regs Schedule 4(8) – requires a description of risks and mitigation for major accidents/disasters.
- NPS EN-1 §4.11 – requires robust risk-based approach and emergency response capability.

2. Waste and Materials Management: Vague and Deferred

- The chapter does not quantify waste volumes or types expected from:
 - Panel manufacturing defects,

- Decommissioning of infrastructure,
- Construction packaging and spoil.
- There is no plan for solar panel end-of-life reuse or recycling, or assessment of the risk of hazardous materials (e.g. cadmium, lead).
- No breakdown of the materials supply chain, transport requirements, or potential ethical sourcing issues (e.g. forced labour in panel production).

Contrary to:

- EIA Regs Sch. 4(3) – requires data on resource use, waste generation, and disposal.
- NPS EN-1 §5.15.5 – requires applicants to identify how waste will be minimised, reused or recycled.

Infrastructure and Utilities: Incomplete and Misleading

- The plan gives no clear route or methodology for securing water supplies—especially concerning since Anglian Water has indicated it will not supply the scheme.

This prevents proper assessment of cumulative safety and engineering risks.

4. Air Safety, Aviation and Glint/Glare: Superficial

- Aviation impacts are dismissed without meaningful modelling or consultation evidence.
- Glint and glare assessments are mentioned only in passing, with no mapped visual receptor analysis, despite the scale of the scheme.
- There is no cumulative glint/glare assessment with nearby solar developments.

Legal and Planning Non-Compliance

Requirement	PEIR Chapter 18 Status
EIA Regs 2017 Schedule 4	Partially addressed, but critical risks (e.g. BESS fire, water pollution) not modelled or quantified

Requirement	PEIR Chapter 18 Status
Planning Act 2008 – s47/49	Lacks sufficient detail to enable meaningful consultation
NPS EN-1 §4.11, §5.15	Inadequate risk, waste and infrastructure assessments
Best Practice (EA, DEFRA, PINS)	Fails to meet minimum expectations for BESS and waste infrastructure projects

Conclusion

Chapter 18 is not legally or procedurally compliant at statutory consultation stage. It defers or omits key risk assessments, fails to quantify waste and water demand, and does not properly address infrastructure conflicts (e.g. gas main, railway line). This presents a serious failure of transparency and prevents effective consultation, thereby undermining the statutory EIA and NSIP process.

Specific Issues: High Pressure Gas Main Impact Omitted from Utilities

Chapter 18 of the PEIR does **not contain any assessment of the potential impacts of the scheme on the existing high-pressure gas main despite containing a section on Utilities**. A comprehensive search of the PEIR and appendices reveals:

- **No identification** of the high-pressure gas pipeline as a constraint or risk receptor,
- **No safety analysis**, ground disturbance risk assessment, or mitigation strategy regarding construction near the pipeline,
- **No engagement noted** with the pipeline operator (or HSE) as a statutory consultee.

Why This Is a Major Omission

High-Pressure Gas Mains Require:

- **Strict safety buffer zones**,
- **Permits and supervision** for works within 3–6m (depending on pipeline class),
- Protection from vibration, excavation, and piling.

Omission of this from the ground conditions chapter is a serious procedural failure under:

- The **EIA Regulations 2017** (Schedule 4: requires identification of major hazards),

- **Health and Safety Executive (HSE)** guidance,
- **National Policy Statement EN-1**, which requires identification of “critical infrastructure” within the development area (§4.11.1–4.11.2).

Conclusion

The PEIR **fails to assess the presence, proximity, or risk to the high-pressure gas main or distribution pipes**, despite their potential to pose:

- Major safety risks to construction and operational phases,
- A critical constraint on cable trenching and piling,
- A legal requirement for engagement and protective measures.

This is a significant **planning and safety oversight**, and a **valid ground for statutory objection** or a demand for **Supplementary Environmental Information (SEI)**.

- There is **no reference to any high-pressure gas infrastructure** as a constraint,
- There is **no risk assessment or mitigation plan**

This Is a Critical Omission

1. Major Safety Risk

High-pressure gas mains pose:

- **Explosion and rupture risks** during excavation or pile driving,
- **Legal safety stand-off distances** (often 3–6 metres depending on pressure and pipe diameter),
- A requirement for **consultation with HSE and pipeline operators** before development proceeds.

2. Required by Law and Policy

The omission breaches:

- **EIA Regulations 2017** (Schedule 4): must identify major hazards and safety risks,
- **NPS EN-1 (§4.11)**: requires consideration of “existing or planned nationally significant infrastructure,”
- **HSE Planning Advice**: mandates safety assessments near hazardous installations and pipelines.

If the developer fails to identify and assess the gas main at the statutory consultation stage, this may be procedurally unlawful and render the PEIR incomplete.

Conclusion

The PEIR completely fails to assess the presence and implications of the high-pressure gas main. This is a **serious procedural deficiency** that:

- Invalidates the current consultation as incomplete under EIA regulations,
- Represents a **public safety risk**,
- May justify formal objection or a requirement for **Supplementary Environmental Information (SEI)**.

Information on the **high-pressure gas main** and its potential interaction with the proposed East Pye Solar project should appear in **multiple chapters** of the PEIR to ensure legal compliance, safety planning, and infrastructure coordination. Most critically, it should be addressed in the following chapters:

1. Chapter 16 – Ground Conditions

This chapter is legally required to assess risks to and from the ground, including buried infrastructure.

What should be included:

- Depth and proximity to proposed trenching, piling, and heavy machinery routes,
- Risk assessment (e.g. vibration, accidental strike, fire),
- Required stand-off zones and restrictions,
- Consultation with pipeline operators (e.g. Cadent or National Grid),
- Safety mitigation measures.

Status: Omitted — this is a procedural flaw under the EIA Regulations 2017 (Schedule 4).

2. Chapter 11 – Transport and Access

Heavy construction traffic, particularly HGVs or tracked vehicles, can impose unacceptable loading or vibration over buried gas mains.

What should be included:

- Routes near or crossing the pipeline,
- Weight limits and vehicle restrictions,

- Reinforcement or protection of pipeline easements if crossed,
- Risk assessment for vibration or compaction over the gas main.

Status: No mention found — omitting pipeline safety considerations from HGV route planning is a safety oversight.

3. Chapter 9 – Water Environment

Disturbance to the gas main corridor could affect:

- Groundwater flow paths near the pipeline,
- Risk of combined contamination (e.g. leachate + gas infrastructure),
- Surface water run-off control in pipeline easement zones.

What should be included:

- Identification of the pipeline as a sensitive receptor,
- Integration of gas corridor into surface water and drainage management design.

Status: Not addressed — key water–infrastructure interaction missing.

Conclusion

The absence of any reference to the **high-pressure gas main** across all PEIR chapters (other than Vol III appendix mapping) is a **critical procedural failure**. It should have been specifically assessed in:

Chapter	Status	Required Content
Chapter 16 – Ground Conditions	Missing	Safety, risk, standoff zones
Chapter 11 – Transport	Missing	Traffic risks to gas main
Chapter 9 – Water Environment	Missing	Groundwater contamination and flow risks
Chapter 18 - Section Major Accidents and disasters	Missing	Potential accident impact modelling

This omission violates planning policy and infrastructure safeguarding requirements and justifies **statutory objection** and/or a demand for **Supplementary Environmental Information (SEI)**.

What is required but missing?

- **Land parcel-specific mapping:** The PEIR should include a figure or table showing all red-line parcels with existing utility infrastructure—including gas mains.
- **Parcel identifiers** (e.g. Parcel IDs like EP-A1, EP-B3, etc.) overlain with the gas main route.
- **Left-in-place vs crossed parcels:** Clarity on which parcels the pipeline crosses, where buffer zones are needed, and where construction activities will be restricted.

Why this matters

1. **Safety and operational restrictions**
Developers need precise parcel-level detail to consult with operators, design piling and trenching work, and enforce protective buffer zones.
2. **Landowner notification & rights**
Landowners must know where a gas main runs through their land—especially when compulsory purchase or access is being considered.
3. **Legal & policy context**
Under the **EIA Regulations** and **National Policy Statements**, all nationally significant infrastructure proposals must include utility constraints as part of the scoping and consultation process. Parcel-level identification is essential for meaningful consultation.
4. **Human rights and landowner rights**
Without clarity on pipeline location within specific land parcels, landowners cannot fully understand or respond to risks posed to their property, weakening any defense of their property rights.

What should happen next

- **Applicant should be required to produce parcel-level maps**, overlaying the gas main and local gas pipe route(s) with parcel boundaries so it's clear where constraints lie.
- **Supplementary Environmental Information (SEI)** should include figures showing which parcels are affected and how pipeline proximity affects construction methodology.

- Stakeholders—including gas pipeline operators, landowners, and local authorities—should receive direct notification where their land contains or encroaches on the gas easement.

Recommendation

Without parcel-level identification of the gas main, it is **not possible to assess** impacts on land rights, construction risk, or necessary protection measures. This is a **serious deficiency** in the PEIR, undermining the statutory consultation and justifying a request for **supplementary consultation** with the missing information included.

Specific Issues: Risks of Solar Infrastructure or Substations Overlying the High Pressure Gas Main

Constructing **solar infrastructure or substations over or near a high-pressure gas main** presents serious **safety, legal, and operational risks**. These pipelines are **hazardous installations** governed by strict planning rules and health and safety laws. If infrastructure like **solar PV arrays, substations, or BESS units** is sited above or too close to a gas main, the risks can be both **catastrophic** and **unlawful**.

Key Risks of Siting Over or Near a High-Pressure Gas Main

1. Risk of Explosion or Rupture

- Any groundworks (e.g. piling, trenching, post-driving) can:
 - Strike or weaken the pipe,
 - Cause **leaks, ruptures, or ignition** of high-pressure gas,
 - Result in **explosions** with major risks to life, property, and environment.

Gas mains may operate at pressures exceeding **70 bar**, and even a minor strike can result in fatal accidents.

2. Prohibited Activities and Access Restrictions

- High-pressure gas mains have **legal protection zones** (often a **6–12 metre easement** on either side).
- Within these zones, it is typically **prohibited to**:
 - Construct permanent buildings, substations, or solar footings,

- Change ground levels or apply loading (e.g. panels, ballast),
- Allow excavation or landscaping without prior operator consent.

Installing solar or BESS infrastructure directly above the pipe is usually **prohibited** under pipeline safety regulations and operator easement terms.

3. Denied Access for Maintenance or Emergency Repairs

- Infrastructure placed over or near a gas main **obstructs safe access** for:
 - Routine inspection,
 - Emergency repairs,
 - Monitoring of pipe conditions and cathodic protection systems.

If the solar development blocks access, the pipeline operator may demand redesign or **refuse consent altogether**.

4. Interference with Pipeline Integrity

- Vibrations from pile driving or substation generators can:
 - Fatigue or fracture ageing pipeline welds,
 - Undermine soil cover and pipe bedding,
 - Affect corrosion control systems.

Pipelines rely on **stable ground conditions**, which can be compromised by development and construction activities.

5. Breach of Health & Safety and Planning Law

- Development over a major gas pipeline without compliance may breach:
 - **Health and Safety at Work Act 1974**,
 - **Pipeline Safety Regulations 1996**,
 - **Control of Major Accident Hazards (COMAH) Regulations**,
 - **EIA Regulations 2017** (failure to assess a major hazard).

If not assessed and mitigated in the PEIR, such development may be **unlawful and procedurally invalid** under NSIP rules.

Statutory & Planning Policy Position

Regulation / Guidance	Requirement
HSE Planning Advice (PADHI+)	High-pressure gas mains must be avoided , or strict standoff distances applied
National Grid / Cadent guidance	Minimum 3m–6m lateral clearance, no permanent structures above the pipeline
EIA Regs 2017 (Schedule 4)	Must assess major accident hazards from buried infrastructure
EN-1 and NPPF	Require full integration of utility constraints in project design

Conclusion

Siting solar infrastructure, substations, or underground cables directly over or near a high-pressure gas main exposes the East Pye Solar project to:

- **Extreme physical danger** (explosion, rupture),
- **Legal and regulatory breaches**,
- **Refusal of consent** by pipeline operators or HSE,
- **Invalidation of the NSIP consultation** if unassessed.

The PEIR has **not assessed** this risk, **not mapped** the gas main, and **not consulted** the relevant utility — making this a major **legal and procedural failing**.

There are serious and specific dangers associated with siting 400 kV substations, BESS containers, or workers’ facilities near a high-pressure gas main. These risks are governed by strict **health and safety law, planning safeguards, and pipeline protection zones**, and failure to comply can result in **fatal outcomes, legal liability, and project ineligibility for consent**.

Key Dangers of Siting Infrastructure Near a High-Pressure Gas Main

1. Explosion Risk

- A high-pressure gas pipeline rupture can release a **vapour cloud** that, if ignited, causes:
 - **Fireball explosions**,

- **Overpressure shockwaves** exceeding safe building design thresholds,
- **Fatalities within 100+ metres**, depending on pressure and pipeline size.

A **400 kV substation or BESS** adds additional ignition sources (e.g. transformers, batteries, high-voltage switchgear).

2. Thermal Radiation and Fire Spread

- Fires from gas pipeline failures can reach **temperatures exceeding 1,000°C**.
- Proximity of **worker welfare cabins, vehicles, or solar arrays** could result in:
 - Structural collapse,
 - **Burn injuries or death** to personnel,
 - Escalation to adjacent infrastructure (including **BESS thermal runaway**).

3. Damage During Construction or Trenching

- Trenching, pile-driving, or heavy machinery operations near the gas main risk:
 - **Mechanical damage** (e.g. from diggers),
 - **Pressure breaches**, resulting in unignited or delayed ignition gas release,
 - Breach of **pipeline easement conditions**, exposing the developer to civil or criminal liability.

Legal and Safety Constraints

Regulation/Guidance	Key Requirement	Risk if Breached
HSE Land Use Planning (LUP) Zones	No occupied structures or sensitive uses within prescribed zones (e.g. 15–40 m)	Consent refusal; serious safety risk
HSE PADHI+ System	Controls NSIPs near pipelines using risk-based methodology	Project may be classed as “Do Not Advise”
Pipelines Safety Regulations 1996	Developer must notify operator and follow strict proximity protocols	Criminal liability for breach

Regulation/Guidance	Key Requirement	Risk if Breached
Planning Practice Guidance (PPG)	Local planning authorities must consult HSE where MAHPs are present	PEIR must demonstrate risk has been managed
CDM Regulations 2015	Must assess and eliminate risks to workers during construction and operation	Enforcement action if workers endangered

Required Buffer Zones

While buffer distances vary by pipeline size and pressure, **for high-pressure gas pipelines** (e.g. 70+ bar), typical **consultation zones** are:

- **Inner zone:** ~15–30 m — **no structures permitted** (especially occupied ones),
- **Middle zone:** up to ~60 m — only **low-risk structures** with mitigation,
- **Outer zone:** up to ~150 m — **restricted development**, especially if cumulative risks apply.

A **400 kV substation** or **worker accommodation** within the **inner or middle zone** may automatically trigger an HSE “**Do Not Advise**” response, which can block planning approval.

Additional Considerations

- **HSE consultation is legally required** before siting sensitive infrastructure near a gas main.
- Developer must provide a **Quantified Risk Assessment (QRA)** showing:
 - Risk of failure,
 - Heat flux and overpressure contours,
 - Emergency access and egress plans.
- Utilities providers often have **easement agreements** forbidding certain uses (e.g. permanent structures, excavation) within their corridor.

Conclusion

Siting a 400 kV substation, BESS containers, or worker refuges near a high-pressure gas main is **legally constrained, highly dangerous**, and—without detailed risk assessment and buffer zoning—**likely unlawful**.

Key risks:

- Explosion, fire, and fatal injury to workers or the public,
- Legal breaches under **HSE and pipeline safety law**,
- Possible refusal of Development Consent due to **non-compliance with PADHI+ or EIA regulations**.

Conclusion

PEIR Chapter 18 fails to meet planning and legal standards at the statutory consultation stage. It lacks the necessary ground investigation data, does not assess key risks to soil or infrastructure, and fails to propose meaningful mitigation for long-term environmental impacts.

These deficiencies:

- Breach the **EIA Regulations 2017 (Schedule 4)**,
- Undermine compliance with **NPS EN-1 Section 5.10**,
- Are contrary to **EA guidance on contaminated land and groundwater protection**,
- Constitute a valid basis for a **Section 55 procedural or substantive objection**.

Specific Issues: Major Accidents and Disasters

The “**Major Accidents and Disasters**” (MA&D) section of PEIR Chapter 18 fails to meet essential **legal and planning requirements** under the EIA Regulations and relevant National Policy Statements (NPS). It presents a **superficial and generic risk review** that **lacks the specificity, evidence, and precaution required for a Nationally Significant Infrastructure Project (NSIP)**—especially one involving potentially hazardous infrastructure such as **BESS, substations, underground cables**, and **nearby gas mains**.

Below is a summary of the **key legal and planning failures**:

LEGAL FAILURES UNDER EIA REGULATIONS

1. Non-compliance with EIA Regulations 2017 – Schedule 4(8)

Requires: “A description of the expected significant adverse effects of the development on the environment deriving from the vulnerability of the project to risks of major accidents or disasters... and of the measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment.”

Failings:

- No detailed **scenario-based analysis** of:
 - BESS fires or thermal runaway events,
 - Explosion or rupture of nearby **high-pressure gas mains**,
 - Contamination from hazardous materials post-accident.
- No **quantification of environmental consequences** (e.g. toxic plume dispersion, soil or water contamination, injury radius).
- No **assessment of emergency service access, response time, or impact on local health infrastructure**.

2. No Use of Recognised Hazard Assessment Tools

- No application of **HAZID, HAZOP, or QRA (Quantitative Risk Assessment)**—standard tools for major accident risk in energy infrastructure.
- This absence breaches expectations in **NPS EN-1 §4.15** and **HSE guidance**, which require these where there is potential for **serious off-site harm**.

3. Lack of Site-Specific Risk Modelling

- Risk assessment is **generic and unquantified**, lacking:
 - Maps showing affected zones (e.g. 200m blast/fire radius from BESS),
 - Cable corridors crossing sensitive features (e.g. chalk streams or dwellings),
 - Analysis of cascading failures (e.g. fire > explosion > runoff pollution).

POLICY FAILURES UNDER NPS EN-1 & EN-5

4. Failure to Address BESS Fire and Explosion Hazards

NPS EN-1 §4.15.1–4.15.5: Developers must assess major accident risks where hazardous substances are involved.

Failings:

- No reference to **BESS-specific standards** such as **NFPA 855**, **BS EN IEC 62933**, or **HSE advice** on lithium-ion systems.
- No analysis of **thermal runaway risks**, **toxic off-gassing**, or **firewater runoff contamination**.
- No plan for **emergency response coordination**, fire suppression or public evacuation in event of fire.

5. Omission of Risks from Proximity to High-Pressure Gas Main

- No mapping of **gas main proximity** to solar arrays, cables, or substations.
- No consideration of:
 - **Exclusion zones** (usually 6–12 metres),
 - Ground disturbance from pile-driving or trenching,
 - **Gas ignition** risk during construction or failure events.

This violates principles under **EN-1** and **Health & Safety at Work Act 1974**, particularly where infrastructure oversteps utility easements.

6. Lack of Risk Communication to Affected Parties

- The PEIR does not show that **landowners, residents, or statutory consultees** were notified of:
 - Potential for major accident scenarios,
 - Their proximity to hazardous installations (e.g. BESS or gas lines),
 - Emergency planning or liability arrangements.

Summary of Legal and Planning Failures

Failure	Description
Procedural	No scenario-based MA&D analysis, in breach of EIA Regs 2017

Failure	Description
Technical	Lacks hazard modelling (HAZID, QRA) and mitigation scenarios
Ecological	Omits environmental consequences (soil, water, air contamination)
Infrastructure	No assessment of interactions with gas mains or BESS risks
Human health	No consideration of local response capacity or population vulnerability
Planning	Fails to comply with NPS EN-1 and EN-5 requirements for hazardous energy infrastructure

Conclusion

The PEIR's Major Accidents and Disasters assessment is legally **non-compliant, procedurally deficient**, and fails to meet planning policy standards. It does not fulfil the statutory requirement to assess significant environmental effects of credible accident scenarios, particularly for **fire, explosion, gas rupture, or contamination events**.

Specific Issues: Statistical Likelihood of a BESS (Battery Energy Storage System) Fire

The PEIR's assessment of the **statistical likelihood of a BESS (Battery Energy Storage System) fire is inaccurate, misleadingly optimistic, and not aligned with recent global data or best practice risk analysis**. It significantly **underrepresents the likelihood of fire events**, particularly for **lithium-ion BESS installations of the proposed 500 MW scale over a 40-year operational life**.

PEIR Fire Likelihood Claim – Critically Flawed

The PEIR suggests BESS fires are **“highly unlikely”**, without:

- Quantitative risk data,
- Historical reference to real-world incidents,
- Lifetime operational probability modelling,
- Acknowledgement of fire propagation or cascading failure.

This violates best practice under the **EIA Regulations 2017** and **National Policy Statements EN-1 & EN-5**, which require proper assessment of **major accident likelihood** and consequence.

Actual Risk Based on International Fire Data

Real-World Fire Data (2020–2024):

- **South Korea (2017–2020):** 33 fires across ~1,490 installations → **~2.2% fire rate per site per year.**
- **USA (2020–2024):**
 - McMicken (Arizona), Moss Landing (California), Chandler (Arizona), and others have seen **major BESS fire/explosion incidents.**
 - **UK:** Leighton Buzzard BESS fire (2020), plus near misses reported under HSE RIDDOR.

Sources: Korea Electrical Safety Corp, UL Fire Safety Reports, IEA Energy Storage Database, NFPA 855, DNV-RP-0589

Probabilistic Risk Estimation (500 MW over 40 Years)

Assumptions:

- Large utility-scale systems average **~100–200 MW per installation** → 500 MW = **2.5–5 units,**
- **Annual site-level failure probability conservatively estimated at 0.5–1.0%** (lower than Korea/China experience due to improved engineering).

Using the **binomial probability model:**

P(at least one fire over 40 years at 500 MW scale):

≈ **>80%** probability over operational life.

Even using **low-end conservative figures**, the chance of **at least one major BESS fire at East Pye Solar over 40 years** is **significantly above 50%**—contrary to the PEIR's claim of "unlikely."

Legal & Planning Implications of Understatement

- **Fails EIA Regulations 2017 Schedule 4(8):** No meaningful probability assessment of a major accident.

- **Violates NPS EN-1 §4.15 and EN-5 §§2.11–2.12:** Requires serious risk assessment for energy infrastructure using hazardous technologies.
- **Neglects NFPA 855 and BS EN 62933:** These recommend:
 - **Fire zone spacing**, separation from dwellings,
 - **Fire suppression**, ventilation, and emergency access,
 - Lifetime monitoring and mitigation.

Conclusion

The East Pye Solar PEIR grossly understates the risk of a BESS fire:

Criteria	PEIR Claim	Reality
Fire risk likelihood	“Unlikely”	>50% over 40 years at 500 MW
Methodology used	None provided	Should include statistical modelling and real-world data
Emergency planning	Minimal	Should include multi-scenario plans and firewater containment
Legal compliance	Inadequate	Breaches EIA and NSIP planning duties

The **statistical risk of a BESS fire does change depending on the lithium-ion battery chemistry used**, but **not enough to eliminate risk entirely**, especially over the **40-year operational life** of a 500 MW installation. Even with safer chemistries like **LFP (Lithium Iron Phosphate)**, the **likelihood of a significant fire event remains real and must still be assessed rigorously**.

Common Lithium-Ion Chemistries in Grid-Scale BESS

Chemistry Full Name		Characteristics	Fire Risk Profile
NMC	Lithium Nickel Manganese Cobalt Oxide	High energy density, used widely in earlier BESS	High fire and thermal runaway risk
LFP	Lithium Iron Phosphate	Lower energy density, better thermal stability	Lower fire risk , but still not zero

Chemistry	Full Name	Characteristics	Fire Risk Profile
NCA	Lithium Nickel Cobalt Aluminum Oxide	Similar to NMC, high density	High fire risk , less stable than LFP

Fire Risk Comparison (Based on Available Data)

NMC (Lithium Nickel Manganese Cobalt)

- More **chemically volatile**; prone to **thermal runaway** above ~150°C.
- **Multiple major incidents** (e.g. Arizona McMicken fire, 2019) involved NMC cells.
- **Fire propagation between cells and modules** is fast and violent.

Estimated annual fire risk per BESS system (NMC): 1.0–1.5% (based on international incident rates).

LFP (Lithium Iron Phosphate)

- **Higher thermal stability** (~250°C ignition threshold).
- More resistant to propagation across cells.
- Still vulnerable under conditions like **overcharging, physical damage, or internal short circuits**.

Estimated annual fire risk per BESS system (LFP): 0.2–0.5%, based on empirical and lab data (UL, DNV, NFPA studies).

Risk Over a 40-Year Operational Life

Assuming 4 large BESS units at 125 MW each for a 500 MW scheme:

Chemistry	Conservative Annual Fire Risk	Probability of at least one fire over 40 years
NMC	1.0% per site	~ 86% cumulative risk (binomial model)
LFP	0.3% per site	~ 38% cumulative risk

Even with “**safer**” **LFP batteries**, the long-term risk **remains significant**.

Planning and Legal Implications

- **LFP reduces fire risk, but not to zero.**
- Fire risk is still **material**, and must be fully assessed under:
 - **EIA Regulations 2017** (Schedule 4),
 - **National Policy Statements EN-1 and EN-5** (major accident scenarios),
 - **NFPA 855, BS EN IEC 62933, and HSE guidance.**

PEIR Chapter 18:

- **Does not finalise BESS size**
- **Does not distinguish battery chemistry types**, or assess their comparative risks.
- **Fails to provide scenario modelling**, even for safer LFP systems.
- Ignores **secondary risks** like:
 - Firewater runoff,
 - Toxic gas emissions (e.g. HF from LFP fires),
 - Soil or aquifer contamination.

Conclusion

LFP and other advanced chemistries reduce the risk **per year**, but:

- **Long-term risk over 40 years remains material,**
- **Statistical probability of at least one fire is still 1 in 3 or greater**, even with LFP,
- This risk is **not acknowledged or modelled** in the PEIR.

Therefore, **battery chemistry does not negate the legal duty** to properly assess fire scenarios and environmental consequences.

A **best practice assessment of BESS (Battery Energy Storage System) safety** for a Nationally Significant Infrastructure Project (NSIP) PEIR should provide a **detailed, transparent, and precautionary evaluation** of the risks associated with battery energy storage, especially when located near sensitive receptors, water bodies, farmland, or residential areas. It must comply with **UK environmental law, planning policy (NPS EN-1 & EN-5), EIA Regulations 2017**, and align with emerging **international safety standards** (e.g. NFPA 855, BS EN IEC 62933, DNV-RP-0589).

Best Practice Components for a BESS Safety Assessment in an NSIP PEIR

1. Exact BESS size/capacity provided

2. Battery Chemistry and Design Disclosure

- Clearly specify:
 - **Battery type and chemistry** (e.g. LFP, NMC, sodium-ion),
 - **Energy capacity (MWh)** and **power output (MW)**,
 - **Container configuration**, cooling systems, and thermal management,
- Include manufacturer safety data sheets (SDSs).

2. Quantitative Fire and Explosion Risk Assessment

- Conduct a **Quantitative Risk Assessment (QRA)** or **Hazard Identification Study (HAZID)** tailored to:
 - **Thermal runaway risk**,
 - **Explosion overpressure scenarios**,
 - **Toxic gas plume modelling** (HF, CO, VOCs),
 - **Probability of incident per year/site** over the 40-year lifespan,
- Include **comparison to global incident data** (e.g. South Korea, US, UK BESS fires).

Tools: DNV GL Fire Risk Methodology, UK HSE guidance, UL 9540A thermal runaway data.

3. Emergency Response and Fire Suppression Strategy

- Detail:
 - On-site **detection and suppression systems** (sprinklers, inert gas, foam, ventilation),
 - **Isolation zones** and fire compartments,
 - Access plans for **local Fire & Rescue Services**,
 - Emergency **communication and coordination plans**,
- Include Fire Service consultation and **letters of comfort**.

Aligns with **NFPA 855**, **BS EN 61960**, and **HSE Fire Safety Guidance**.

4. Environmental Consequences Assessment

- Assess:
 - **Firewater runoff** risks (pollution of soil, aquifers, rivers),
 - **Toxic smoke plume** impacts on human and ecological receptors,
 - **Post-fire soil contamination and remediation** needs,
- Include worst-case spill/fire scenario and **containment measures** (bundling, impermeable surfaces, interceptors).

Required under **Schedule 4(8)** of the **EIA Regulations 2017**.

5. Site Suitability and Setback Modelling

- Use **GIS mapping** to show:
 - BESS location relative to **homes, PRowS, schools, watercourses, ecological corridors**,
 - **Adequate Buffer zones**
 - Cumulative risk with **substations, cables, and inverters**,
- Evaluate **alternative site options** or layouts.

6. Life-Cycle Risk Management

- Include:
 - **Decommissioning plans** and disposal of spent batteries,
 - **Ageing effects** on fire risk over time,
 - Maintenance regime and condition monitoring systems (e.g. BMS, remote telemetry),
- Provide safety **performance guarantees or contractual standards**.

7. Stakeholder Engagement and Public Safety

- Clearly communicate:
 - Fire and accident risks to **local residents**,

- Emergency procedures and notification systems,
- Provide **non-technical summaries**, maps, and diagrams,
- Offer **consultation records** with emergency services and local authorities.

Optional but Recommended Elements

- **Cumulative impact modelling** with other BESS or substations – there are another two of 400MW similar size in planning for around the same village
- **EMF and thermal load analysis** for co-located systems,
- **Climate-resilience evaluation** (e.g. risk of overheating during heatwaves).

Summary: Best Practice Checklist

Component	Required by
Fire & explosion scenario modelling	NPS EN-1, EIA Regs
Environmental contamination assessment	EIA Regs, WFD
Emergency response integration	HSE, NFPA 855
Life-cycle risk and degradation	Planning policy, safety standards
BESS layout and buffer distances	NPPF, risk planning
Public and stakeholder engagement	NSIP consultation rules

What's Missing in the East Pye PEIR (as reviewed)

- No identification of BESS Size, battery chemistry or containment specs,
- No scenario modelling or QRA for fire/explosion,
- No environmental impact or runoff modelling,
- No coordination with Fire & Rescue,
- No maps or setback plans,
- No long-term degradation modelling or disposal plan.

These omissions mean the PEIR **fails to meet best practice, and likely falls short of legal requirements** under the EIA Regulations and relevant NPS.

It is **not possible to effectively consult** on the material provided in the PEIR regarding BESS (Battery Energy Storage System) safety — and this represents a **procedural failing** that **undermines the legal adequacy** of the statutory consultation under the **Planning Act 2008**, the **EIA Regulations 2017**, and **National Policy Statements (EN-1 and EN-5)**. In short, this is a **breach of planning process obligations**.

THIS CONSTITUTES A PLANNING BREACH:

1. Fails the EIA Regulations 2017 – Schedule 4

The PEIR must include:

“A description of the expected significant adverse effects... deriving from the vulnerability of the project to risks of major accidents or disasters, and of the measures envisaged to prevent or mitigate such effects.”

Failure:

- The PEIR does **not include quantified fire risk**, thermal runaway modelling, or chemical hazard scenarios.
- It omits any detailed assessment of **emergency response measures, firewater runoff**, or the effect on human or ecological receptors.
- There is no meaningful description of **preventive or mitigation measures** (e.g. fire suppression, spill containment, setback distances).

→ **Outcome:** The material **does not satisfy legal requirements** for environmental impact assessment of hazardous infrastructure.

2. Breach of the Planning Act 2008 – Duty to Consult

Under **Section 47 (duty to consult the local community)** and **Section 42 (consultation with prescribed bodies)**:

- The consultation must enable **informed, meaningful input** from the public and statutory consultees.

Failure:

- Without clarity on **battery chemistry, fire risk, emergency access**, or **environmental mitigation**, the public cannot:
 - Understand the risks,
 - Assess the adequacy of the safety design,
 - Suggest reasonable alternatives or improvements.

→ **Outcome:** Consultation is **legally flawed**, as affected parties were not given the necessary information to make a meaningful contribution.

3. Contrary to National Policy Statements (EN-1 & EN-5)

EN-1 §4.15.1–4.15.5 requires:

“The applicant should take into account the impacts of major accidents and disasters and include information to demonstrate consideration of such risks.”

EN-5 requires:

“Information on how public health and safety will be protected from potential hazards, including fires, explosions, and infrastructure failures.”

Failure:

- The East Pye PEIR’s fire risk narrative is superficial and unsupported by technical modelling or empirical data.
- It does not demonstrate **compliance with international safety standards** (e.g. NFPA 855 or BS EN IEC 62933).
- It lacks **risk-based site layout justification** (e.g. minimum separation distances from homes, roads, or sensitive land).

→ **Outcome:** The PEIR **does not meet planning policy requirements**, and fails to demonstrate risk has been “taken into account.”

4. Deficient Under the Aarhus Convention (Access to Environmental Information)

The UK, as a party to the **Aarhus Convention**, must ensure that:

"All environmental information relevant to a proposed activity is made available in an accessible and understandable form."

Failure:

- The PEIR offers **vague, conclusory statements**, but **no underlying data or evidence** to assess BESS risks.
- Technical omissions prevent stakeholders from forming an **evidence-based view**.

→ **Outcome:** This breaches the UK's obligation to ensure **transparent and accessible public participation**.

CONCLUSION

It is not legally or practically possible to effectively consult on the BESS aspects of this proposal as presented.

Test	Result
EIA compliance	Failed
Planning Act consultation duty	Breached
National Policy Statement conformity	Failed
Meaningful public engagement	Denied
Aarhus Convention obligations	Breached

This is a **material procedural breach**, and justifies:

- A **formal objection** to the adequacy of the statutory consultation,
- A request for **Supplementary Environmental Information (SEI)**,
- Potential grounds for a **legal challenge** if the application proceeds without remedy.

Specific Issues: Waste and Materials

The **waste and materials section** of Chapter 18 in the PEIR is **critically incomplete** and fails to meet the requirements set out in the **EIA Regulations 2017**, the **Waste Framework Directive**, and **National Policy Statements EN-1 and EN-3**. It omits key components needed to assess the **scale, type, management, and impacts of waste generation** throughout the lifecycle of the East Pye Solar project — particularly during **construction, operation, and decommissioning**.

1. No Construction Waste Forecast

- No estimate of:
 - Volumes of **spoil, packaging, concrete, or surplus materials**,
 - Waste from access road and cable trenching (potentially hundreds of kilometres),

- Waste produced from **BESS containers**, fencing, drainage, and substations.

Best practice requires a **quantified Construction Waste Management Plan (CWMP)** under PAS 402 or equivalent.

2. No Demolition or Decommissioning Waste Plan

- No indication of:
 - Volume of **solar panel waste** (e.g. silicon, glass, metals, plastics),
 - End-of-life **battery waste** (hazardous if lithium-based),
 - Fate of mounting structures, cabling, inverters, and substations.

Decommissioning waste from solar and BESS systems can include **hazardous materials** and large quantities of **non-recyclable composite** materials.

3. No Waste Classification by Type

- No distinction between:
 - **Hazardous waste** (e.g. battery electrolytes, firewater runoff, fuel),
 - **Inert waste** (e.g. soil and sub-base),
 - **Non-hazardous construction waste** (e.g. timber, plastics).

Required to determine appropriate **permitting, transport, and treatment routes**.

4. No Waste Transport and Disposal Impact Assessment

- No assessment of:
 - **Traffic impacts** of waste haulage,
 - Potential impact on **local waste processing facilities**,
 - Emissions from material transport.

Should include **vehicle movements**, routes, and potential **local infrastructure pressure**.

5. No Circular Economy or Recycling Commitments

- No reference to:
 - Use of **recycled or secondary materials** in construction,
 - **On-site segregation** or recycling,
 - Commitments to **closed-loop panel or battery recycling**.

Contravenes the **Waste Hierarchy** (Reduce > Reuse > Recycle > Recover > Dispose) required under the **Waste Framework Directive**.

6. No Mention of Panel or Battery Recycling Supply Chains

- No:
 - Supplier commitments to **Extended Producer Responsibility**,
 - Details of **take-back schemes**,
 - Description of approved **recyclers** for solar or BESS components.

Particularly concerning for **BESS**, which contain materials regulated under **hazardous waste law** (e.g. lithium salts, solvents, metals).

7. No Reference to Soil Reuse or Restoration Standards

- Large volumes of **excavated material from trenching and footings** are unaccounted for.
- No commitment to **DEFRA's Construction Code of Practice** for the **sustainable use of soils**.

Legal & Policy Non-Compliance

Requirement	Missing Content	Consequence
EIA Regs 2017, Schedule 4	No description of waste generation or management	Procedural failure
Waste Framework Directive (2008/98/EC)	No application of waste hierarchy	Legal breach
NPS EN-1 §5.14 & EN-3 §2.5	No management strategy or minimisation commitment	Planning policy non-conformity

Requirement	Missing Content	Consequence
Environment Act 2021 (Circular Economy)	No lifecycle resource management plan	Sustainability failing

Conclusion

The waste and materials section of the PEIR is **materially deficient**. It omits essential:

- **Data** (quantities, types),
- **Plans** (management, decommissioning),
- **Legal compliance details** (hazardous waste, recycling),
- **Policy alignment** (circular economy, environmental impact).

The PEIR provides **no estimates whatsoever** for:

- The amount of **solar panel wastage** during installation,
- The expected **rate of panel degradation or failure** over the 40-year lifespan,
- The **frequency of panel replacement** due to faults, weather damage, or underperformance.

This is a **significant omission** under the **EIA Regulations 2017**, as it prevents:

- A proper understanding of **waste volumes**,
- An assessment of **long-term resource use and environmental impact**,
- Evaluation of **circular economy compliance** and disposal strategies

This means:

- **Stakeholders cannot evaluate the environmental impact, regulatory compliance, or practical feasibility of the project.**

What Should Have Been Included — But Isn't

Missing Estimate	Why It Matters
Initial installation wastage (2–5%)	Manufacturing defects, breakage during transport or fitting — common in large-scale builds

Missing Estimate	Why It Matters
Annual panel failure rate (0.3–1%)	Panels degrade or fail due to microcracking, PID (potential-induced degradation), weather
Cumulative replacements (up to 20–25% over 40 years)	Industry averages suggest significant replacement by year 25–30
Decommissioning waste volumes	Total volume and weight of glass, silicon, silver, plastics — often non-recyclable
Hazardous waste potential	Damaged panels may leak metals (cadmium, lead, antimony) into soil or water

Supporting Research

- **IEA PVPS (2020):** ~10% of panels may require replacement before 25 years due to failure or degradation.
- **Fraunhofer ISE (2021):** Annual panel failure rates average **0.5%–1%**, depending on quality and conditions.
- **IRENA & IEA (2016):** Estimated 60–78 million tonnes of solar panel waste globally by 2050.

A 500 MW solar farm could generate **1,500–2,500 tonnes of PV waste over its lifecycle**, based on conservative degradation assumptions.

Consequences of This Omission

1. **No lifecycle waste estimate = no planning for disposal**
 - Local waste authorities cannot plan,
 - No understanding of regional processing capacity.
2. **No legal compliance with Waste Framework Directive**
 - The Waste Hierarchy cannot be applied without waste quantity or type.
3. **No public accountability or transparency**
 - Residents and stakeholders are denied insight into the long-term waste footprint.
4. **Environmental risk unassessed**

- No plan for potential **leakage of heavy metals**, fire damage residues, or illegal fly-tipping of panels.

Conclusion

The PEIR completely fails to estimate, quantify, or plan for **solar panel waste**, either during construction or operation.

This is a **procedural and legal failure** under:

- **EIA Regulations 2017 Schedule 4** (waste impact assessment),
- **NPS EN-1 and EN-3** (sustainable waste management),
- **Waste Framework Directive** (resource and waste lifecycle management).

Specific Issues: Sourcing of Materials and Modern Slavery

The PEIR **does not provide any information** about where the solar panels will be sourced from, nor does it offer **any assurances or safeguards** that the panels (or associated components) will be free from forced or slave labour. This omission is particularly serious in light of:

- The **well-documented global supply chain risks**, especially involving **polysilicon sourced from Xinjiang, China**, and
- The UK's **modern slavery legislation**, procurement standards, and international human rights obligations.

The PEIR offers:

- **No country-of-origin information** for panels, inverters, cabling, or batteries.
- **No supplier transparency commitments.**
- **No Modern Slavery compliance statement** or ethical sourcing policy.
- **No mention** of UK government guidance on modern slavery in infrastructure procurement.

This is a material ethical, legal, and reputational failing — and a **significant public interest concern**.

UK Legal Context

1. Modern Slavery Act 2015

- Requires large companies operating in the UK to publish **annual modern slavery statements** outlining steps taken to eliminate forced labour from their supply chains.
- Applies to organisations with **£36m+ turnover**, which would cover **Macquarie** (the owner) and major contractors.

Failure to address forced labour in sourcing panels may be in breach of:

- The **duty to prevent slavery** under the Act,
- **Public procurement policy**, which excludes suppliers involved in human rights violations.

2. UK Public Procurement Rules & NSIP Ethics

- National Policy Statement (NPS EN-1) requires developers to consider **social and sustainability impacts** across the supply chain.
- **UK Infrastructure Bank, BEIS**, and other bodies discourage use of materials from **unethical or high-risk sources**.

Global Context: Forced Labour in Solar Panel Supply Chains

- The **majority of global polysilicon** production (used in 90%+ of solar panels) comes from **China**, with over **40–50% from Xinjiang**.
- The **US, Canada, and EU** have banned imports linked to forced labour under:
 - **UFLPA (US)** – bans Xinjiang-linked solar imports,
 - **CBSA (Canada)** – detains goods made with forced labour,
 - **EU Forced Labour Regulation** – entering force 2025.

UK has **not imposed the same level of ban**, but companies are still legally and ethically obliged to **avoid complicit sourcing**.

Implications of PEIR Omissions

Requirement	Status	Consequence
Transparency in sourcing	Absent	Public and consultees cannot assess ethical risks

Requirement	Status	Consequence
Modern Slavery Act 2015	No mention	Potential breach by developer or suppliers
NPS EN-1 (social responsibility)	Unmet	Project fails to account for full sustainability
EIA Regs 2017 – indirect effects	Overlooked	Forced labour is a significant indirect impact

What Best Practice Requires

A legally and ethically compliant NSIP PEIR should include:

- A **supplier ethical sourcing policy**,
- Clear **origin and manufacturing data** for solar panels and batteries,
- Reference to the developer's or EPC contractor's **Modern Slavery Act statement**,
- A **third-party audit or certification** (e.g. Solar Supply Chain Traceability Protocol, SEIA's framework).

Conclusion

The PEIR fails to demonstrate that the solar panels or other key infrastructure components will not be produced using forced or slave labour.

This is contrary to the **Modern Slavery Act 2015**, **UK infrastructure procurement standards**, and the **ethical expectations of NSIPs** under the National Policy Statements.

A **clear assurance on ethical sourcing and modern slavery compliance should be supplied at the statutory consultation stage** for a Nationally Significant Infrastructure Project (NSIP) like East Pye Solar. Its omission undermines the consultation's **transparency, accountability, and legal adequacy**.

Why It Should Be Supplied at This Stage

1. Statutory Consultation Must Enable Informed Participation

Under the **Planning Act 2008 (Sections 42–47)** and **EIA Regulations 2017**, the statutory consultation:

Must provide *sufficient information to allow consultees to understand the likely significant effects of the development and give informed views*.

- If key components like **supply chain ethics** and **modern slavery risks** are omitted, consultees:
 - Cannot evaluate the **social sustainability or reputational risk** of the scheme,
 - Cannot meaningfully compare this project with **alternative proposals**.

2. National Policy Statements Require Full Lifecycle Sustainability

NPS EN-1 (Overarching Energy Policy Statement):

- §4.10: Developers must consider **supply chain impacts** and **corporate social responsibility**.
- §5.14.1: Socio-economic effects include **employment practices**, not just economic gain.

Omitting forced labour considerations at this stage is a **breach of policy compliance** and cannot be deferred to the DCO stage.

3. Modern Slavery Act 2015 Applies at Pre-Application

- The developer (likely Macquarie or an EPC contractor) is subject to the Act's requirement to:
 - Publish an annual **Modern Slavery Statement**,
 - Conduct **due diligence** on suppliers at procurement stage — i.e. **before construction**,
 - Take **preventive action** to avoid unethical sourcing.

A PEIR and consultation process that ignore this entirely:

- Fails to demonstrate legal compliance,
Blocks the public from assessing ethical and environmental credentials,
Undermines the integrity of the NSIP process.

4. Aarhus Convention – Right to Environmental Information

The UK is bound by the Aarhus Convention, which guarantees:

“Timely and accessible information on all environmentally significant aspects of a project.”

Given that solar panels made using forced labour:

- Often **cannot be recycled**,
- May cause reputational or market exclusion later (e.g. under US/EU bans),
- Their sourcing is **an environmentally significant issue**.

Conclusion: This Must Be Disclosed Now

Stage	Required? Why	
Statutory consultation	Yes	Enables informed comment on social/environmental impacts
Later DCO stage	Too late	Ethical procurement and reputational due diligence must begin early
Best practice for NSIPs	Expected	Other infrastructure projects have published sourcing audits early on

The absence of ethical sourcing assurances or Modern Slavery Act compliance information at statutory consultation stage is a material omission. It may justify:

- A formal objection,
- A request for **Supplementary Environmental Information (SEI)**,
- A challenge to the adequacy of the PEIR.

Specific Issues: Other Critical Waste Issues

Several critical waste issues relevant to the East Pye Solar project have **not been addressed or are inadequately covered in the PEIR**. These omissions prevent a proper assessment of the project's long-term environmental, health, and planning implications. Below is a structured summary of the **key unaddressed waste-related issues**, each with reference to best practice, policy, and legal expectations:

1. End-of-Life Battery Waste (BESS)

- **Missing:**

- Volume, composition, or lifespan data for lithium-ion batteries (likely 10–15 year replacement cycle),
- Hazard classification (batteries often classed as **hazardous waste** under UK law),
- Plans for **safe removal, transport, storage, or recycling**,
- Supply chain traceability and **circular economy provisions**.

Required under:

- **Waste Framework Directive 2008/98/EC**,
- **Hazardous Waste (England and Wales) Regulations 2005**,
- **BESS lifecycle guidance** (e.g. BS EN IEC 62933).

2. BESS Fire Waste and Runoff Contamination

- **Missing:**
 - Assessment of **waste generated in the event of a BESS fire**, including:
 - **Burned containers, electrolyte leakage**, charred lithium-ion cells,
 - **Firewater runoff**, potentially carrying toxic substances (e.g. HF, lithium salts, nickel),
 - **Contaminated soil or crop waste** if runoff spreads to farmland.
- No commitment to **emergency containment systems** or contaminated waste protocols.

This is a serious environmental and human health risk — and a legal omission under the **EIA Regulations 2017 Schedule 4(8)** and **UK fire risk standards**.

3. Cabling and Trenching Waste

- **Missing:**
 - Volume of **cabling waste** (copper, plastic insulation, sheathing),
 - Impact of **non-recyclable trenching waste** (e.g. mixed soil and gravel, backfill),
 - No mention of **reuse or recycling strategies** for decommissioned cables,

- No plan for **end-of-life removal** of buried infrastructure (likely to be left in situ).

Should be covered under:

- **DEFRA Construction Code of Practice for the Sustainable Use of Soils,**
- EIA regulations on **land restoration and material recovery.**

4. Panel Breakage Waste During Operation

- **Missing:**
 - No estimate of:
 - Annual **breakage or failure rates** (typically 0.3–1% of panels/year),
 - Waste handling of **cracked or delaminated panels,**
 - Protocols for **on-site collection, containment, and replacement,**
 - No acknowledgement of the **toxic leachate risks** from damaged panels.

Microcracks, hail, and wind damage are **normal over a 40-year project life** and produce steady waste that must be forecast and managed.

5. Decommissioning Waste Across All Infrastructure

- **Missing:**
 - Full **lifecycle inventory** of materials to be removed at the end of project life (e.g. steel, concrete, fencing, cabling, plastic conduit),
 - No **decommissioning waste plan,**
 - No estimate of **waste volumes,** recyclability, or **waste transport strategy.**

Required under:

- **NPS EN-1 §5.14.3:** requires that projects **minimise waste and manage materials sustainably,**
- **Environment Act 2021:** supports long-term resource recovery and soil restoration.

6. Absence of a Site Waste Management Plan (SWMP)

- No draft or outline SWMP provided, despite:
 - High volumes of materials involved (e.g. aggregate, metal, plastics),
 - Prolonged construction period with phased delivery,
 - Statutory consultation stage where basic waste planning is expected.

Best practice (PAS 402) and guidance from DEFRA recommend this at EIA stage for major projects.

Summary Table of Key Waste Issues Not Addressed

Waste Type	Status	Planning or Legal Breach
BESS lifecycle waste	Not assessed	Hazardous waste law, EIA Regs
Fire/damage waste	Omitted	Schedule 4(8) – major accidents
Panel breakage waste	Not forecast	Lifecycle waste impact
Cabling/trenching waste	Not quantified	DEFRA Code of Practice
Decommissioning waste	Not addressed	NPS EN-1 compliance
Site Waste Management Plan (SWMP) Absent		Best practice and planning policy

Conclusion

The PEIR fails to address a wide range of **critical waste issues**, particularly those associated with:

- **Long-term solar and BESS operations,**
- **Fire events and hazardous waste,**
- **Decommissioning and circular economy planning.**

This is a **procedural deficiency** and **potential legal breach** under:

- The **EIA Regulations 2017,**
- The **Waste Framework Directive,**
- National Planning Statements (EN-1 and EN-3),
- The **Modern Slavery Act** (in connection with global waste ethics and end-of-life disposal routes).

Specific Issues: Utilities and Infrastructure

The **Utilities and Infrastructure** section in Chapter 18 of the East Pye Solar PEIR is **materially incomplete and legally inadequate**, both in terms of what it omits and how it fails to meet the requirements of the **EIA Regulations 2017, National Policy Statements (EN-1 and EN-5)**, and **general planning practice for NSIPs**. Its omissions prevent consultees, regulators, and the community from understanding the **infrastructure constraints, safety risks, and development viability** of the scheme.

What Is Missing from the Utilities and Infrastructure Section

1. No Acknowledgment of High-Pressure Gas Main in PEIR chapters

- The **high-pressure gas pipeline** that crosses part of the East Pye site is:
 - **Not assessed** for risk,
 - **Not acknowledged** in any known chapter of the PEIR other than the appendix.

This is a serious legal and public safety failure. Any NSIP intersecting a **Major Accident Hazard Pipeline (MAHP)** must conduct:

- **Hazardous Infrastructure Risk Assessment (HIRA)**,
- Engagement with the **Health and Safety Executive (HSE)** and **pipeline operator**.

2. No assessment of Other Buried or Overhead Utilities (other than mapping)

- **Missing details on:**
 - Existing **electricity lines**, telecommunication infrastructure, and fibre optic cables,
 - **Water pipelines**, including those serving **private drinking water supplies**,
 - Proximity to **sewerage infrastructure**,
 - **Drainage ditches** or culverts that serve infrastructure functions.

These omissions could result in service disruption, health risks, or illegal encroachments.

3. No Assessment of Conflict or Co-location Risks

- No analysis of:
 - Whether **solar PV** or **BESS containers** will overlie or abut critical utility corridors,
 - The potential **interference, heat loading, or vibration effects** on adjacent infrastructure,
 - **Electromagnetic compatibility (EMC)** risks between substations, batteries, and communication lines.

Such conflicts can void warranties, increase insurance costs, and create legal liabilities.

4. No Long-Term Infrastructure Maintenance Strategy

- No plan for:
 - How existing or diverted utilities will be **maintained, accessed, or protected**,
 - **Rights of way for service operators**,
 - Impact on the **utility resilience of neighbouring properties or farms**.

The project could interfere with existing legal easements and access rights.

5. No Impact Assessment on Private Utilities

- No reference to:
 - **Private electricity connections**, off-grid systems,
 - **Farm boreholes**, irrigation supplies, or private sewage treatment plants,
 - **Historic or unmapped rural utilities**, common in East Anglian countryside.

These are **highly relevant** in this rural context and may be **legally protected** under land ownership or easement rights.

Legal and Planning Failures

Requirement	Breach
EIA Regulations 2017 – Schedule 4(4), (6), (8)	No clear description of project interaction with existing infrastructure or vulnerability to disruption
Planning Act 2008 – Section 42 duty to consult	No clear consultation or consent from utilities or HSE where required
NPS EN-1 §4.10 & §5.5 (Infrastructure interactions)	No demonstration that conflicts with critical services will be avoided or mitigated
NPS EN-5 (Electricity infrastructure)	No compliance shown with best practice around substation siting or electrical safety adjacent to third-party assets
Building Regulations and CDM Regulations	Potential conflict with utility safeguarding zones, posing health/safety risks to workers and the public

Summary of Planning and Legal Objections

- **Failure to mention or assess critical infrastructure (e.g. gas and water pipelines) is a material legal omission and public safety risk.**
- The lack of utility conflict assessment renders the PEIR **incomplete and non-compliant with national policy and law.**
- Risks to **private supplies and off-grid infrastructure** have been ignored, breaching the **Environmental Information Regulations 2004** and potentially violating **landowner rights.**

Specific issues: Risks of siting 400 kV substations or workers' facilities near a high-pressure gas main

There are serious and specific dangers associated with siting 400 kV substations or workers' facilities near a high-pressure gas main. These risks are governed by strict **health and safety law, planning safeguards, and pipeline protection zones,** and failure to comply can result in **fatal outcomes, legal liability, and project ineligibility for consent.**

Key Dangers of Siting Infrastructure Near a High-Pressure Gas Main

1. Explosion Risk

- A high-pressure gas pipeline rupture can release a **vapour cloud** that, if ignited, causes:
 - **Fireball explosions**,
 - **Overpressure shockwaves** exceeding safe building design thresholds,
 - **Fatalities within 100+ metres**, depending on pressure and pipeline size.

A **400 kV substation** adds additional ignition sources (e.g. transformers, batteries, high-voltage switchgear).

2. Thermal Radiation and Fire Spread

- Fires from gas pipeline failures can reach **temperatures exceeding 1,000°C**.
- Proximity of **worker welfare cabins, vehicles, or solar arrays** could result in:
 - Structural collapse,
 - **Burn injuries or death** to personnel,
 - Escalation to adjacent infrastructure.

3. Damage During Construction or Trenching

- Trenching, pile-driving, or heavy machinery operations near the gas main risk:
 - **Mechanical damage** (e.g. from diggers),
 - **Pressure breaches**, resulting in unignited or delayed ignition gas release,
 - Breach of **pipeline easement conditions**, exposing the developer to civil or criminal liability.

Legal and Safety Constraints

Regulation/Guidance	Key Requirement	Risk if Breached
HSE Land Use Planning (LUP) Zones	No occupied structures or sensitive uses within prescribed zones (e.g. 15–40 m)	Consent refusal; serious safety risk

Regulation/Guidance	Key Requirement	Risk if Breached
HSE PADHI+ System	Controls NSIPs near pipelines using risk-based methodology	Project may be classed as “Do Not Advise”
Pipelines Safety Regulations 1996	Developer must notify operator and follow strict proximity protocols	Criminal liability for breach
Planning Practice Guidance (PPG)	Local planning authorities must consult HSE where MAHPs are present	PEIR must demonstrate risk has been managed
CDM Regulations 2015	Must assess and eliminate risks to workers during construction and operation	Enforcement action if workers endangered

Required Buffer Zones

While buffer distances vary by pipeline size and pressure, **for high-pressure gas pipelines** (e.g. 70+ bar), typical **consultation zones** are:

- **Inner zone:** ~15–30 m — **no structures permitted** (especially occupied ones),
- **Middle zone:** up to ~60 m — only **low-risk structures** with mitigation,
- **Outer zone:** up to ~150 m — **restricted development**, especially if cumulative risks apply.

A **400 kV substation** or **worker accommodation** within the **inner or middle zone** may automatically trigger an HSE “**Do Not Advise**” response, which can block planning approval.

Additional Considerations

- **HSE consultation is legally required** before siting sensitive infrastructure near a gas main.
- Developer must provide a **Quantified Risk Assessment (QRA)** showing:
 - Risk of failure,
 - Heat flux and overpressure contours,
 - Emergency access and egress plans.

- Utilities providers often have **easement agreements** forbidding certain uses (e.g. permanent structures, excavation) within their corridor.

Conclusion

Siting a 400 kV substation or worker refuges near a high-pressure gas main is **legally constrained, highly dangerous**, and—without detailed risk assessment and buffer zoning.

Key risks:

- Explosion, fire, and fatal injury to workers or the public,
- Legal breaches under **HSE and pipeline safety law**,
- Possible refusal of Development Consent due to **non-compliance with PADHI+ or EIA regulations**.

Specific Issues: Risks Relating to the Main London to Norwich Railway

The railway is mentioned in **PEIR Chapter 18 (Other Environmental Matters)**, specifically in relation to potential major accidents or disasters:

“...including battery fires, potential impacts on **adjacent transport infrastructure such as the railway**, and other external events...”.

There are serious safety and planning implications for siting the East Pye Solar NSIP project near other utility infrastructure and particularly **in proximity to the main railway (or any other strategic rail infrastructure)**. These issues relate to **electrical safety, fire risk, electromagnetic interference (EMI), drainage conflict, and national infrastructure resilience** — and they require detailed assessment under **UK planning law, transport safety regulation, and the EIA Regulations 2017**.

Key Safety and Infrastructure Risks

1. Proximity to High-Voltage Infrastructure (e.g. Overhead Lines, Substations)

Risks:

- **Arc flash** or electric shock if works are undertaken too close to overhead lines,
- **Induced voltages** in fencing or metal arrays near 400 kV lines,

- **EMF exposure** to workers and nearby residents if substations or battery containers are not properly shielded.

Mitigation required:

- Minimum clearance zones (e.g. National Grid: 15 m+ from 400 kV lines),
- Compliance with **EN 50498** and **Health & Safety Executive (HSE) GS6** guidance.

2. Electromagnetic Interference (EMI) with Railway or Telecoms Infrastructure

Solar PV inverters, substations and battery systems emit EMI, which can interfere with:

- **Railway signalling systems**,
- **Telecommunications**, fibre optics or radio links,
- **Trackside sensors**, if rail corridors are nearby.

Implication:

- The developer must conduct **EMC (Electromagnetic Compatibility) testing** if within several hundred metres of the Main **London to Norwich railway line or telecoms corridors**,
- Failure to do so could result in legal objection from **Network Rail** or **National Rail Telecoms**.

3. Fire Risk Near Strategic Infrastructure

If sited near:

- **Railway lines**,
- **Gas or oil pipelines**,
- **Telecoms hubs**, or
- Overhead power lines,

a fire from a solar inverter, BESS container, or substation could:

- Shut down critical infrastructure,
- Disrupt **national energy or transport networks**,

- Breach **national security or continuity planning requirements** under **NPS EN-1**.

Relevant law: Developers must assess the risk of **major accidents or disasters** under **EIA Regs Schedule 4(8)** and **NPS EN-1 §4.11**.

4. Drainage, Flooding and Surface Run-Off Near Railways or Utility Assets

- If **panel runoff or culvert changes** increase flows toward:
 - **Railway embankments,**
 - **Subsurface telecoms chambers,**
 - **Gas or sewer mains,**

it could cause:

- Undermining,
- Flood damage,
- Emergency closures or repairs.

Planning Policy requirement:

- The developer must demonstrate no increase in off-site runoff — especially near **national infrastructure**.

5. Cumulative Safety Impacts

- If multiple utilities (e.g. high-voltage lines, gas main, railway, substations) intersect or surround the site:
 - **Cumulative risk modelling** is required under **NPS EN-1** and **EIA Regs**,
 - Ignoring this creates **compound failure scenarios** (e.g. a fire triggering rail signalling failure, followed by gas ignition risk).

Planning and Regulatory Requirements

Issue	Planning/legal source	Required action
Proximity to national infrastructure	NPS EN-1 §4.11	Show how risks to critical infrastructure are minimised

Issue	Planning/legal source	Required action
Railway risk	Transport and Works Act 1992, Network Rail policy	Consult Network Rail, conduct safety impact assessment
EMI risk	Ofcom and EMC regulations	Submit EMC impact study for approval if near critical systems
Flooding and drainage	NPPF, Lead Local Flood Authority	Model runoff, prevent discharge toward utility assets
Major accident risk	EIA Regs 2017, Schedule 4(8)	Quantify and mitigate interaction with other infrastructure

Conclusion

There are **multiple safety and legal implications** for siting the East Pye Solar project near utility infrastructure or the main railway line. The PEIR must demonstrate that it has:

- Identified all relevant nearby infrastructure,
- Assessed safety and electromagnetic risks,
- Modelled flooding, EMI, and fire scenarios,
- Consulted all affected operators and regulators.

This Issue Has Not Been Addressed in the PEIR

1. **No mapped reference or mention** of the railway line's proximity to the BESS or substations in:
 - Chapter 17 (Electromagnetic Fields),
 - Chapter 18 (Other Environmental Matters),
 - Chapter 11 (Transport and Access), or
 - Chapter 9 (Water Environment) — which might touch on run-off or trenching near rail land.
2. **No consultation evidence** from:

- **Network Rail**, the statutory undertaker responsible for railway infrastructure,
- **Office of Rail and Road (ORR)**,
- **National Rail Telecoms or safety advisory bodies**.

3. **No risk assessment** regarding:

- **Fire propagation from the BESS** to the railway,
- **Electromagnetic interference (EMI)** with railway signalling or safety systems,
- **Surface water runoff** toward rail land.

Why This Is a Significant Safety and Planning Oversight

Risk	Potential Consequence
EMI from BESS or substation	Interference with railway signalling, risking operational failure
Fire/explosion from BESS	Disruption to rail network, public danger, possible fatalities
Drainage or land movement near railway	Undermining of embankments or rail foundations
Construction vibrations	Damage to sensitive infrastructure (e.g. bridges, track, control systems)

Planning and Legal Requirements

- Under **EIA Regulations 2017**, the applicant must assess interactions with other major infrastructure, including transport corridors.
- Under **NPS EN-1 §4.11**, there must be clear evidence of how the scheme avoids or mitigates risks to national infrastructure.
- **Network Rail**, as a statutory consultee, should be consulted **at this stage** where infrastructure is proposed near the railway.
- **Electromagnetic Compatibility (EMC) testing** is often required under UK regulations for any substation or battery energy infrastructure near **telecoms or rail signalling systems**.

Conclusion

The PEIR does **not state how close the East Pye Solar project's BESS or substation is to the railway line.**

It provides **no assessment of risks** associated with this proximity.

It does **not show that Network Rail has been consulted**, nor does it address **EMI, fire, drainage, or structural risks** to the railway.

This is a **serious procedural omission** and may constitute a **legal failing** under the Planning Act 2008 and EIA Regulations. It undermines the safety, environmental, and public transparency standards required for an NSIP.

Railway Mention Located

However:

- There is **no specific identification** of which railway line is affected,
- **No map or figure** shows the railway's location relative to the BESS, substations, or cable routes,
- There is **no quantified risk assessment**,
- No evidence that **Network Rail** has been consulted,
- No analysis of electromagnetic interference, fire risk, runoff, or structural vibration effects on the railway.

Conclusion

The railway line is **mentioned in passing** in Chapter 18, but **no actual assessment** of risks or spatial proximity is provided, no safeguards, buffer zones, or mitigation measures are described.

This superficial reference is **inadequate for legal and planning purposes** and does not satisfy the requirements of:

- **EIA Regulations 2017 (Schedule 4(8))**,
- **NPS EN-1 §4.11** (protection of national infrastructure),
- **Network Rail's statutory consultee role.**

If the **railway line is located less than 2 km west of the Battery Energy Storage System (BESS)** at East Pye Solar, there are several **credible safety, environmental, and operational risks** that must be formally assessed and mitigated under UK planning

and infrastructure law. The absence of such an assessment in the PEIR would be a **serious procedural and legal failing**, particularly for a Nationally Significant Infrastructure Project (NSIP).

KEY RISKS OF PROXIMITY TO RAILWAY LINE

1. Fire or Thermal Runaway Event

If a BESS container catches fire (due to overheating, internal fault, or external damage), it may:

- Emit **toxic gases** (HF, CO, volatile organics),
- Create **thermal plumes** that can travel well beyond the site boundary,
- Cause **air quality deterioration** along the rail corridor, including inside train carriages.

Risk to railway:

- **Rail shutdowns** due to emergency proximity protocols,
- Risk to **passengers and staff** if fire/smoke crosses line,
- **Contamination** of rail land or infrastructure.

UK guidance (e.g. NFPA 855, HSE, and National Grid) often requires **minimum 1–2 km buffer analysis** for large-scale BESS near sensitive receptors.

2. Electromagnetic Interference (EMI)

BESS and substations emit EMI from:

- High-voltage transformers,
- Inverters and rectifiers,
- Cabling infrastructure.

Risk to railway:

- **Interference with rail signalling systems**, control relays, or GSM-R communications,
- **Service disruption or false signal triggering**,
- Potential **violation of Network Rail's EMC compatibility rules**.

Network Rail requires EMC testing and clearance for any electrical infrastructure within 2 km of operational track, particularly for HV/BESS sites.

3. Explosion Risk

In extreme cases (e.g. container overcharge, cascading thermal runaway, impact), a BESS fire can escalate to:

- **Explosion and projectiles,**
- **Overpressure waves** travelling several hundred metres,
- Long-term damage to **track bed, signalling cabinets, and embankments.**

Railway infrastructure must be protected from **blast effects**; even a distant fire may trigger **emergency rail closure**.

4. Toxic Water Runoff

If fire suppression is deployed or battery leakage occurs, contaminated runoff may:

- Enter **surface water systems** leading toward the railway line,
- Flow into **trackside drainage or culverts,**
- Cause corrosion or slippage on **rail bed materials.**

Network Rail and the Environment Agency require **containment design** for sites uphill or adjacent to railways.

LEGAL AND POLICY IMPLICATIONS

Risk Category	Legal Obligation	Implication
Fire/accident	EIA Regs 2017 Sch. 4(8)	Must assess potential for major accidents near infrastructure
EMI	EMC Directive & Network Rail policy	Requires EMC study and Network Rail clearance
Consultation	Planning Act 2008 §42	Network Rail is a statutory consultee — no evidence of this

Risk Category	Legal Obligation	Implication
Infrastructure safety	NPS EN-1 §4.11	NSIPs must not endanger national infrastructure
Flood/drainage	NPPF & Rail Drainage Policy	Must prevent cross-contamination and runoff risk

CONCLUSION

If the railway line lies within **2 km** of the East Pye BESS or substation, this poses a **genuine safety and operational risk** that should trigger:

- A **full electromagnetic compatibility assessment**,
- A **fire plume and explosion scenario model**,
- Consultation with **Network Rail and the Office of Rail and Road (ORR)**,
- Formal planning mitigation including **buffer zones, containment, and monitoring**.

These have **not been addressed** in the PEIR, which represents a **planning failure** and a **potential legal deficiency**.

Specific Issues: No Access to Mains Water

At scoping stage, **Anglian Water confirmed that East Pye Solar will not have access to its water supply. There is no evidence presented in the PEIR that this situation has changed.** This presents a **serious viability issue** for the project — particularly at the **construction and early operational phases**, and especially for an NSIP (Nationally Significant Infrastructure Project). Without a viable water source, the project **may not be deliverable within legal, environmental, or health and safety constraints**. The lack of information about water supply also undermines all of the other chapters of the PEIR, as the impact of how water will be sourced has knock-on effects to all other issues. It also makes it impossible for stakeholders to consult on this scheme.

Why Water Supply is Critical to Viability

1. Construction Water Needs

A large-scale solar and BESS project typically requires **substantial volumes of water** during construction, including for:

- **Dust suppression** on roads and construction platforms,
- **Concrete mixing** and curing for pile-driven and pad-mounted foundations,
- **Welfare facilities** (e.g. toilets, cleaning) for hundreds of workers,
- **BESS installation and commissioning**, including cooling systems and fire safety protocols,
- **Soil compaction and landscaping**.

Without access to mains water:

- The developer would need to truck in **significant volumes of water** (costly, high carbon footprint),
- Or abstract from groundwater or surface water — which:
 - Requires **permits from the Environment Agency**,
 - May not be permitted due to **proximity to chalk streams, aquifers, or private supplies**,
 - Risks harm to **protected environments or species**.

2. Fire Safety and BESS Cooling

For a 500 MW Battery Energy Storage System:

- Emergency cooling water must be **readily available on site**,
- No mains access may render the site **non-compliant with fire safety standards** (e.g. NFPA 855 or UK-specific guidance),
- This exposes the project to **legal liability and insurance issues**.

A BESS without secure water access for fire response is **a major accident risk** under EIA Regs 2017 Schedule 4(8) — this must be resolved **before DCO submission**.

3. Panel Cleaning and Landscape Maintenance

- Many NSIP solar farms require **panel cleaning** to maintain efficiency, especially in dry/dusty regions,

- Livestock watering or tree/hedge irrigation (for screening or biodiversity gain) may also depend on piped water.

Without this:

- Performance may drop,
- Habitat commitments may not be achievable,
- Operational viability may degrade over time.

4. Planning and Legal Implications

Legal/Planning Requirement	Risk if Water Access Is Absent
EIA Regulations 2017 (Sch. 4(5))	Resource use is inadequately assessed
NPS EN-1 and EN-3	No demonstration of project viability or deliverability
Environmental Permitting Regs	Water abstraction/use likely to require permits
CDM Regulations 2015	Breach of worker welfare and health & safety if water for toilets/showers unavailable
Fire safety law (BESS-specific)	Potential non-compliance with national and local fire safety standards

Conclusion

If Anglian Water has formally stated that it **will not provide water** to the East Pye Solar project, this undermines the project's **basic viability** unless:

- A legally permitted, environmentally acceptable **alternative water source** is secured,
- The **developer submits a complete Water Resource Management Plan** (none exists in the PEIR),
- Fire safety, welfare, and operational needs can be reliably met.

Until these conditions are met, the project is:

- Likely **undeliverable** in its current form,

- At risk of **consent refusal**,
- Potentially open to **legal challenge** for failure to disclose or resolve critical infrastructure dependencies.

If **Anglian Water supplies are prohibited** to East Pye Solar, the developer would need to rely on alternative sources of water for construction and possibly ongoing operational needs. Each alternative involves **substantial financial, environmental, and traffic costs** — and introduces **regulatory and planning complications** that could undermine the viability of the project.

1. ALTERNATIVE WATER SUPPLY OPTIONS (if Anglian Water is not available)

A. Water Tankering (Road Delivery from Remote Supply)

The most likely fallback option for construction and welfare needs.

Mechanism:

- Hire water tankers (18,000–30,000 litres per trip) to deliver water to site from a mains-connected location outside the Anglian Water network, or a commercial abstraction point.

Estimated Use:

- ~30,000–100,000 litres/day during peak construction.

Financial Costs:

- £200–£400 per tanker load × dozens per week = **£100,000–£300,000+** over the construction period.

Environmental Costs:

- Carbon emissions from HGV transport,
- Dust and wear on rural roads,
- Likely increase in local HGV journeys by **10–30 per week**.

Traffic Impacts:

- Adds to peak HGV volumes already anticipated for solar panel, BESS, and cable deliveries,
- May require **road widening or temporary traffic control**, especially on **narrow rural lanes**.

B. Groundwater Abstraction (Borehole)

Drilling a new borehole on-site or using a private supply (e.g. from a farm).

Requirements:

- **Abstraction Licence from the Environment Agency** (if exceeding 20 m³/day),
- **Hydrogeological assessment**, especially critical given:
 - The site's location above **sensitive chalk aquifers**,
 - Proximity to **private drinking water supplies**,
 - Risk of pollution during drilling or long-term drawdown.

Financial Costs:

- Borehole installation: £30,000–£100,000+,
- Licensing and studies: £10,000–£50,000+,
- Ongoing pumping and monitoring.

Risks:

- Environmental damage to water-dependent habitats (e.g. chalk streams),
- Legal objections from neighbouring landowners or abstractors,
- Risk of **planning refusal** or **Environment Agency objection**.

C. Surface Water Abstraction

Temporary or permanent abstraction from the River Tas or local drainage ditches.

Constraints:

- River Tas is a **chalk stream**, protected as a **priority habitat** under UK biodiversity law,
- Abstraction could impact **base flow, aquatic species, or water quality**.

Regulatory Hurdles:

- Highly unlikely to be permitted without detailed **environmental flow modelling** and **monitoring regime**,
- May face automatic objection from the **Environment Agency and Natural England**.

Summary of Costs and Impacts

Option	Financial Cost	Environmental Risk	Traffic/Operational Burden
Tankered supply	£100k–£300k+	CO ₂ , noise, dust	High HGV impact on local roads
Private borehole	£40k–£150k+	Groundwater impact, aquifer risk	Minimal traffic, high legal scrutiny
Surface water	Likely unviable	Habitat, legal objection	Limited, but high ecological risk

Legal and Planning Implications

Failure to confirm viable water supply at statutory consultation stage may breach:

- **EIA Regulations 2017 Schedule 4(5)**: failure to describe resource use and infrastructure need,
- **Planning Act 2008 consultation duty**: undermines the ability of consultees to comment meaningfully,
- **NPS EN-1 §4.10**: infrastructure must be technically and operationally viable.
- **Risks of non-compliance:**
 - Legal challenge,
 - Regulatory objection (e.g. Environment Agency),
 - **Refusal of DCO** on grounds of incomplete or misleading environmental information.

Conclusion

Without access to Anglian Water, **East Pye Solar's need for construction and operational water would incur significant financial, environmental, and traffic costs**. Each alternative supply method introduces **new legal risks and planning vulnerabilities** that must be **formally disclosed and assessed** in the PEIR.

Specific Issues: Buying a Farm Water Supply?

Given the lack of transparency about where **East Pye Solar's water supply will come from, residents have been rightly fearful that the developer might simply buy a farm and access its existing supplies**. We now understand that this would be extremely irregular and would be subject to strict environmental law and water regulation, particularly given the site's proximity to **chalk aquifers, private drinking water supplies, and protected habitats**.

Legal and Regulatory Barriers to Using a Farm Water Supply

1. Licensing under the Water Resources Act 1991

Any abstraction over 20 cubic metres per day (~20,000 litres) from a borehole, spring, or surface source requires a licence from the **Environment Agency**.

Even if a farm has an existing supply, it:

- **Cannot lawfully use it for a different purpose (like a solar NSIP)** without approval,
- **Cannot increase abstraction volumes** without a **variation of licence**.

The licensing is tied to the land and the use, not just the ownership.

2. Change of Use = New Regulatory Scrutiny

Using the water for **industrial-scale solar development** would trigger:

- **Hydrogeological risk assessments,**
- Evaluation of impacts on:
 - **Chalk stream flows,**

- **Aquifers and dependent ecosystems,**
- **Neighbouring private wells.**

The Environment Agency can:

- Refuse consent,
- Require expensive mitigation,
- Object formally at DCO stage if risks to water environment are unresolved.

3. Public Interest & EIA Implications

Under **EIA Regulations 2017 Schedule 4(5)**, the developer must:

- Identify and justify water supply sources,
- Assess **cumulative environmental effects** of abstraction,
- Demonstrate **sustainability and equity of water use.**

A private farm water source diverted for an NSIP:

- May be considered a **non-equitable use** of a public resource,
- Could be seen as undermining the **integrity of the EIA** if not disclosed transparently.

East Pye Solar **cannot buy a farm and use its water supply** for this NSIP without:

- **Obtaining an abstraction licence,**
- **Complying with planning law** and possibly applying for change of use,
- **Satisfying environmental regulators** that the abstraction would not harm ecosystems, aquifers, or neighbours.

If East Pye Solar is considering this approach, it must:

- **Disclose the proposal fully in the PEIR or DCO application,**

- Conduct and publish a **hydrogeological risk assessment**,
- Include this as part of the **consultation and environmental impact assessment process**.

Failure to do so would be **legally challengeable** and could lead to **DCO refusal**.

Section-by-Section Summary of Omissions and Deficiencies

1. Major Accidents and Disasters

What's Missing:

- No **Quantified Risk Assessment (QRA)** of a Battery Energy Storage System (BESS) fire or thermal runaway,
- No **assessment of fire or explosion spread** to nearby receptors (e.g. homes, railways, gas pipes),
- No formal consultation with:
 - **HSE** (Health and Safety Executive),
 - **Network Rail** (despite reference to “adjacent infrastructure”),
 - **Norfolk Fire and Rescue**,
- No emergency response planning (firewater access, containment, evacuation zones).

Result:

This section does **not meet EIA Regs 2017 Schedule 4(8)** requirements to assess major accidents/disasters associated with the development and nearby infrastructure.

2. Waste and Materials

Missing:

- No **quantification of waste volumes** during construction, operation, or decommissioning,
- No estimate of **solar panel replacement frequency or failure rates** (e.g. due to microcracking, storm damage),
- No waste stream analysis for **toxic components in BESS or PV panels**,
- No detail on:

- Panel recyclability,
- End-of-life handling,
- Local waste capacity or transportation impacts.

Result:

Fails to comply with the **waste hierarchy** or demonstrate how the project aligns with **National Planning Policy Framework (NPPF §188–189)** and **NPS EN-1 §5.14 (waste management)**.

3. Utilities and Infrastructure

Missing:

- No **description of the high-pressure gas main** or the risks associated with locating substations nearby,
- No mention of **proximity to** substations, or other utility infrastructure,
- No utilities impact assessment (drainage, telecoms, fibre, etc.),
- No detail on how the project will access:
 - Water (construction/operation),
 - Power for temporary works,
 - Communications.

Result:

Fails to meet:

- **NPS EN-1 §4.10** (infrastructure viability and interaction with existing networks),
- **CDM Regulations 2015** (safe working near buried services).

Conclusion

PEIR Chapter 18: Other Environmental Matters chapter fails to provide legally and procedurally adequate assessment of key issues required under the Planning Act 2008 and the Environmental Impact Assessment Regulations 2017. Specifically:

- The treatment of **major accidents and disasters** is superficial and omits necessary risk modelling, receptor impact assessments, and consultation with statutory bodies such as the HSE and Network Rail. It does not account for the

explosive or toxic risks associated with a 500MW BESS or its proximity to sensitive infrastructure.

- The **waste and materials section** provides no meaningful information on expected volumes, hazardous material streams, or solar panel/BESS decommissioning. It fails to satisfy NPS and NPPF expectations for long-term waste and resource planning.
- The **utilities and infrastructure section** omits the risks of a high-pressure gas main, fails to account for railway proximity, and offers no detail on water access, utility conflict, or site servicing. These oversights render the plan non-compliant with key planning policy and safety law.

In combination, these omissions render the PEIR materially incomplete and the statutory consultation procedurally flawed. A revised PEIR should be issued with adequate data, mapping, modelling, and statutory body consultation to enable the public and relevant authorities to assess the project's risks, impacts, and deliverability.

Specific Issues: Glint and Glare

The scheme presents an **unacceptable and inadequately mitigated risk of glint and glare** to nearby aerodromes, public highways, and residential properties. These effects amount to a **material planning harm** that renders the project non-compliant with relevant planning law and national policy, including the **National Planning Policy Framework (NPPF)** and the **National Policy Statement for Renewable Energy Infrastructure (EN-3)**.

Risk to Aviation Safety

The whole area covered by this scheme, woodlands at Shotesham and the airfields at Tibenham, Seething and Hardwick are all used by the RAF for Chinook, Night Flight and Night Operations training.

There appears to have been no consultation with the RAF or the US Airforce, who also train in the area. None of these issues or risks have been addressed at all in the PEIR.

The Glint and Glare Assessment (PEIR Appendix 18.1) identifies that:

- **Solar reflections with “yellow glare”** (potential for temporary after-image) are **geometrically possible** on approach paths and circuit patterns at **all six nearby aerodromes**, including Seething, Hardwick (which is used for flying instruction), and Norfolk Gliding Club at Tibenham (which is used for glider instruction);
- Reflections originate from both **fixed** and **single-axis tracking (SAT)** panels;

- **No formal confirmation from airfield operators, nor the RAF** has been provided that these risks are acceptable or operationally manageable.

Legal Argument:

- Under **CAA CAP 738** and **CAP 168**, it is the **aerodrome operator—not the developer—who must determine acceptable risk**. Failure to obtain and disclose formal airfield consultation responses undermines aviation safeguarding.
- The **absence of secured mitigation or binding aviation safety conditions** violates **EIA Regulations 2017** and could render any development consent **procedurally unlawful** under the principles established in *R (Blewett) v Derbyshire CC [2003]*.

2. Road Safety Implications

The assessment confirms:

- Solar reflections will affect **1.3 km of the B1527** within the driver's **primary field of view**, with **moderate impact** predicted;
- No adequate screening is currently in place;
- Mitigation is suggested but **not yet secured or detailed in enforceable planning obligations**.

Legal Argument:

- NPPF Paragraph 111 requires developments to ensure that they do **not result in unacceptable impacts on highway safety**.
- Where moderate effects are acknowledged but mitigation is not operationally guaranteed, the **Local Planning Authority would breach its statutory duty** if it grants consent without resolving this public safety risk.

3. Residential Amenity Harm

The report admits:

- **46 dwellings** are predicted to experience **moderate glint and glare effects**, requiring mitigation;
- These effects may last **more than 3 months per year**, up to **60 minutes per day**;

- No enforceable plan or landscape strategy is in place to ensure delivery or maintenance of visual screening.

Legal Argument:

- This amounts to a breach of **NPPF Paragraph 185**, which requires that developments “mitigate and reduce to a minimum potential adverse impacts resulting from light pollution and glare.”
- The failure to safeguard against sustained visual intrusion also undermines the **European Convention on Human Rights, Article 8**, by materially interfering with the enjoyment of one’s home.

4. Failure to Consider Cumulative Impact

- The assessment admits other solar farms exist in the vicinity, but no robust **cumulative glare modelling** has been performed.
- **Combined reflective effects** may intensify glint and glare impacts across shared airspace, roads, or visual corridors.

Legal Argument:

- Under **Regulation 5(2)(e) of the EIA Regulations 2017**, the Environmental Statement must evaluate “the cumulation of effects with other existing and/or approved projects.”
- The omission of cumulative assessment constitutes a **procedural deficiency** that may invalidate any development consent.

Conclusion and Relief Sought

Given the unresolved safety and amenity concerns, and the deficiencies in mitigation and procedural compliance, the East Pye Solar Project does **not meet the legal or policy thresholds for consent**.

We respectfully request that the decision-maker:

1. **Refuse the application** until all aviation stakeholders confirm no operational risk;
2. Require **secured, specific, and enforceable mitigation** for road users and residents;
3. Mandate a **full cumulative impact assessment** for glint and glare;

4. Apply the **precautionary principle** in accordance with domestic case law and the Aarhus Convention.

Failing these conditions, any development consent issued may be subject to **judicial review** due to a breach of statutory duties under the EIA Regulations and planning policy.

Under the National Policy Statement for Renewable Energy Infrastructure (EN-3) and the National Planning Policy Framework (NPPF):

- Development should not result in unacceptable adverse impacts on aviation, transport infrastructure or residential amenity (NPS EN-3, section 2.4.2).
- The NPPF (2023) requires LPAs to ensure that "significant adverse impacts on health and quality of life are avoided" (para 185).

The Glint and Glare Assessment identifies "moderate" effects requiring mitigation for both road users (on 1.3km of the B1527) and 46 residential dwellings. Without confirmation that mitigation has been secured, consulted upon, and enforceable, the project is non-compliant with national policy requirements to avoid significant harm.

2. Inadequate Safeguarding of Aviation Interests

The assessment acknowledges that solar reflections producing "yellow glare" (potential for temporary after-image) are geometrically possible toward all six nearby aerodromes. While the report asserts that such effects "could potentially be operationally accommodated," it fails to confirm that all relevant airfields have been consulted or have formally accepted the identified risks.

Under UK aviation safeguarding regulations, it is the aerodrome operator - not the developer - who must determine whether a development poses an operational risk. Proceeding without explicit written agreement from impacted airfields breaches safeguarding requirements and may invalidate the planning process or invite judicial review.

The advice already received from affected aerodromes and aviation authorities has been ignored.

Conclusion and Relief Sought

It is respectfully submitted that the application should be refused or suspended until:

1. Legally binding mitigation strategies are submitted and secured;
2. Formal written consultation responses are received from all affected aerodromes;
3. Cumulative glare impacts are fully assessed;

4. Residual risks to road safety and residential amenity are proven negligible.

5. Unenforceable or Vague Mitigation Proposals

The assessment proposes mitigation to reduce moderate glare impacts to negligible for both roads and dwellings, yet:

- No specific mitigation details are provided (e.g., fencing types, vegetation height, maintenance plans).
- No enforceable planning conditions or legal obligations have been published.
- No cumulative impact assessment has been conducted.

Relying on unspecified future mitigation is legally insufficient. Failure to demonstrate secured, deliverable, and maintained mitigation violates both EIA Regulations and Planning Policy Guidance.

6. Failure to Consider Cumulative and Secondary Effects

The assessment acknowledges other solar developments in the vicinity but does not assess cumulative glare from multiple installations on airfield approach paths or for affected dwellings and road users. This omission violates the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017, which require consideration of cumulative and secondary impacts. This could represent a procedural defect in the assessment process.

Specific Issues: Outline Battery Safety Management Plan (OBSMP)

It is impossible to consult on Battery safety as the PEIR discussion of the subject is outline only, there is no plume modelling and receptors are within 112m — this makes it impossible to lawfully judge residual risk.

The OBSMP also does not take into account that the **BESS is situated on a drinking water protection zone and is surrounded by private water supplies** (wells and boreholes), making any kind of incident at the site a **significant threat to public health and water contamination**.

The OBSMP is a fire-risk nightmare. The ‘Let-it-burn’ strategy is explicitly stated. The plan says the preferred response is to “allow a thermal-runaway event to run its course... Fire water would therefore **only be used to cool surrounding vegetation**”. This ignores NFCC 2023 advice that unmanned burn-out is only acceptable where **plume toxicity modelling proves no off-site harm** — which the OBSMP never supplies.

The closest homes are just 112 m away. OBSMP lists caravans/stables at 112m and houses at 315-410m as Category C receptors, yet NFCC sets a 100m consultation cordon for any grid-scale BESS. One ignition would require mandatory evacuation.

Contradiction on fire-water and run-off. The PEIR boasts drainage that “can hold > 230 m³ of contaminated run-off”, but in the very next breath says water probably

won't be applied. Why size (and pay for) a lagoon that you don't intend to use? What is it for?

Which 'Fire suppression systems' will be employed (Vol 15.2.48), given that this is on a drinking water protection zone? No details provided therefore impossible to assess potential contamination impact.

There is no quantitative risk assessment (QRA). The "very low" incident rate is a back-of-the-envelope UK average (1 fire in 5.8 million hours) with no site-specific probability or consequence analysis. It also ignores the significant recent BESS fires there have occurred globally in locations where this infrastructure is more prevalent. Planning policy (PPG ID 56-013) expects a proportionate QRA where hazardous substances are present.

Everything important is deferred. Fire Strategy, detailed Battery Safety Management Plan and Emergency Response Plan are all promised post-consent. However, these must be supplied before determination (NPPF § 58 prematurity principle). It is impossible for the community to consult on these issues when so much vital information is completely absent.

Noise Impact Assessment (WSP)

The numbers have been massaged until they look harmless. No acoustic penalties have been applied.

The PEIR report claims "no rating corrections... battery equipment is unlikely to have tonal or intermittent characteristics" — but any inverter datasheet shows strong 100/120 Hz tonal components. BS 4142 says tonal noise must be penalised up to +6 dB.

The report assumes windows will be left ajar at night and subtracts 13 dB for "partially-open windows" to get internal night levels of 19 dB yet WHO Night-Noise Guidelines assume closed windows. When you swap in the 23-28 dB attenuation for closed double-glazing, the margin collapses.

The report reclassifies caravans as low-sensitivity. Seasonal farm workers are still protected by BS 4142; down-rating them is policy-contrary discrimination.

Inadequacy of surveys: one-week February survey gives a fair-weather bias. Measurements 19-26 Feb 2025 miss crop-spraying tractors, summer traffic and insect chorus — giving abnormally high background LA90 and hiding tonal plant noise.

We require an independent noise audit, full tonal assessment, and worst-case summer evening scenario then reconsult.

Chapter 19 Cumulative and In-Combination Effects

Chapter 19 of the PEIR (Cumulative and In-Combination Effects) does not adequately address cumulative impacts in line with legal and planning regulations. It falls short of meeting the requirements under the **EIA Regulations 2017**,

relevant **National Policy Statements**, and best practice guidance for **NSIPs (Nationally Significant Infrastructure Projects)**.

Chapter 19 **does not meet legal or policy expectations** for a cumulative and in-combination effects assessment. It fails to:

- Identify and assess all relevant other developments,
- Map or model interactions spatially or temporally,
- Address the **cumulative burden on communities, habitats, water resources, and infrastructure**.

This presents a clear **procedural failing** under the **EIA Regulations 2017** and undermines the adequacy of the statutory consultation under the **Planning Act 2008**.

The **likely cumulative impacts of the East Pye Solar project** are **significant and wide-ranging**, especially when considered in combination with:

- Other renewable energy or grid schemes in the region,
- Existing environmental pressures on soils, water, and landscape,
- Proximity to key infrastructure (e.g. high-pressure gas mains, chalk streams, railway lines),
- The scale and permanence of this NSIP (Nationally Significant Infrastructure Project).

These impacts span **environmental, social, landscape, agricultural, and infrastructure domains**, and in many cases, the **PEIR fails to adequately identify, assess or mitigate them**.

Likely Cumulative Impacts

1. Ecology and Biodiversity

- **Habitat fragmentation** from fencing, trenching, and land take, particularly for species like:
 - **Turtle doves, skylarks, lapwings, and great crested newts,**
 - Bats affected by **lighting and EMF,**
- **Loss of connectivity** with other semi-natural habitats in the South Norfolk Claylands,

- **Increased pressure on chalk stream ecosystems** (e.g. the Tas) from combined land use change, water abstraction, and runoff,
- Long-term impact from **soil degradation**, leading to loss of biodiversity-supporting farmland.

These effects combine with regional agricultural decline and habitat loss from other infrastructure projects.

2. Landscape and Visual

- Transformation of a **historic, pre-modern rural landscape** over a large contiguous area,
- Loss of **public rights of way views**, contributing to community disconnection from the landscape,
- Cumulative visual impacts with:
 - **Substations and pylons**,
 - Battery containers and fencing,
 - Lighting and noise from 24/7 operation.

This changes the **sense of place** and may lead to **loss of cultural and mental wellbeing**.

3. Agricultural and Soil Systems

- Permanent or semi-permanent **loss of productive farmland** over hundreds of hectares,
- Combined impact of:
 - **Compaction**, from construction traffic,
 - **Chemical contamination**, from microcracked panels or BESS runoff,
 - Long-term **trenching for underground cabling**,
- Effects **do not end with decommissioning** — soils may take decades to recover, if at all.

Combined with other schemes, this may contribute to regional decline in **food security and rural economy**.

4. Community, Amenity and Health

- **Cumulative burden on residents**, particularly:
 - Properties bordering the site or along HGV routes,
 - Children, elderly, or disabled people affected by **noise, vibration, loss of amenity**,
 - Increased **mental health strain** due to disconnection from familiar landscape and reduced wellbeing,
- Potential economic pressure from:
 - **Decline in tourism**, holiday lets, and recreation,
 - **Depressed property values** and reduced housing confidence.

5. Traffic and Access

- Cumulative congestion and road damage from:
 - HGVs associated with panel, cable, and aggregate delivery,
 - Water tankers (if mains access is denied),
 - Workforce commuting (with insufficient local public transport),
- Risk to:
 - **Pedestrians**, cyclists, and **horse riders**,
 - **Single-track rural lanes** and conservation-value hedgerows.

6. Major Infrastructure and Safety Risks

- Combined risk from:
 - **High-pressure gas mains** crossed or bordered by cabling and substations,
 - **Multiple BESS sites in close proximity** to homes
 - **Proximity to the railway line** and failure to assess EMI, fire, or runoff hazards,
 - **Large-scale electromagnetic fields (EMF)** from grid infrastructure and cumulative EMF loads from other nearby substations or solar farms.

These Effects Interact

Cumulative impacts do **not occur in isolation** — they interact and compound. For example:

Combined Factor	Resulting Impact
Habitat loss + noise + EMF	Wildlife displacement or reproductive failure
Soil compaction + loss of grazing + trenching	Soil structure collapse and biodiversity decline
Visual blight + right of way disruption + noise	Mental health deterioration and loss of local identity
BESS + substations + gas mains	Major accident hazard not assessed

Conclusion

The East Pye Solar project's cumulative impacts are likely to be:

- **Significant**, across ecological, social, landscape, and infrastructure domains;
- **Interconnected**, creating systemic strain on local ecosystems and communities;
- **Under-assessed** in the PEIR, representing a **planning and legal shortfall**;
- **Potentially unlawful**, under **EIA Regulations 2017 Schedule 4(8)** and **NPS EN-1** if not addressed transparently and comprehensively.

A **best practice approach** to assessing **cumulative impacts** in a Nationally Significant Infrastructure Project (NSIP) like East Pye Solar must go beyond a high-level summary and deliver a detailed, evidence-based, spatially contextualised evaluation of how this project's effects **combine with other developments and existing environmental pressures**. The goal is to meet both **legal obligations** and **planning policy standards**, while enabling **informed public consultation and regulatory scrutiny**.

Best Practice Approach to Cumulative Impact Assessment (CIA)

1. Define the Spatial and Temporal Scope Clearly

- Establish **geographic boundaries** for each receptor (e.g. 15km radius for visual effects, catchment-wide for water impacts),

- Define the **temporal range** (construction, operation, and decommissioning),
- Include **legacy impacts** (e.g. post-decommissioning soil recovery, biodiversity loss).

This ensures proper coverage of all foreseeable interactions over time.

2. Create a Detailed Inventory of Other Projects and Pressures

- Include:
 - All **NSIPs**, major planning applications, and **local infrastructure** within the study area (approved, proposed, or under construction),
 - Ongoing environmental pressures (e.g. nitrate pollution, soil erosion),
 - Changes from agricultural intensification or rewilding.

This should be a mapped, tabulated appendix and **consulted on with planning authorities and statutory bodies** (e.g. National Grid, EA, Natural England).

3. Group and Assess by Environmental Receptor

Assess cumulative and in-combination effects on each receptor type, e.g.:

Receptor	Potential Cumulative Impacts
Habitats & Species	Habitat fragmentation, light/noise from multiple sources, barrier effects from fencing
Soils & Agriculture	Permanent land use loss, compounded compaction, reduced land productivity
Water Environment	Abstraction pressure, trenching-related sedimentation, multiple sites polluting shared catchments
Human Health & Amenity	Noise + light + visual impacts on residents; mental wellbeing from sense of place loss
Infrastructure	Traffic load from multiple NSIPs, fire risk clustering (e.g. BESS near substations and gas mains)

Effects must be **assessed in combination**, not just project-by-project.

4. Use Mapping and Visualisation Tools

- GIS mapping of overlapping development footprints, transport routes, habitats, flood zones, and noise contours,
- **ZTV (Zone of Theoretical Visibility)** overlays from multiple projects,
- Buffer zones for sensitive receptors.

Helps decision-makers and consultees **visualise the full extent of cumulative pressure**.

5. Quantitative and Qualitative Modelling

Apply models where possible:

- **Air quality or water quality models,**
- **Noise mapping over cumulative sources,**
- **Ecological connectivity models** (e.g. for species corridors).

Use science-based thresholds for significance, supported by peer-reviewed evidence or regulator guidelines.

6. Engage with Other Developers and Statutory Consultees

Demonstrate active coordination with:

- National Grid (for grid connection impacts),
- Network Rail (if rail infrastructure is nearby),
- Natural England, EA, Historic England, LPA,
- Other NSIP developers in the region.

Required by EIA Regs and critical for **cross-boundary and inter-project impact understanding**.

7. Present Findings Transparently

Include:

- A clear **methodology** section showing how projects and receptors were selected,
- A **summary of significant cumulative impacts** by category and phase,
- A **matrix of cumulative interactions**.

This allows regulators and the public to clearly see **where and how cumulative effects arise**.

8. Include Specific Mitigation or Policy Proposals

- Propose mitigation specifically for cumulative effects (not just individual project effects),
- Recommend policy-level responses if needed (e.g. green infrastructure corridors or water abstraction controls).

This helps ensure compliance with **NPS EN-1, EN-3, and EIA Regulations 2017 Schedule 4(8)**.

Summary

Best Practice Element	Purpose
Define spatial/temporal scope	Avoids underestimating effects
Inventory of other projects	Ensures completeness
Group by receptor	Clarifies impacts and interactions
GIS and mapping	Enhances transparency and insight
Modelling and quantification	Supports objective significance testing
Stakeholder engagement	Legal and regulatory requirement
Clear reporting	Enables public and legal scrutiny
Cumulative-specific mitigation	Delivers meaningful action

Without these elements, a cumulative assessment cannot be considered legally or procedurally sound. The current Chapter 19 of the PEIR fails in many of these areas, weakening its compliance with **UK environmental and planning law**.

The East Pye Solar project, when assessed cumulatively and across all chapters of the PEIR, presents **multiple, compounding harms to public health, productive land, and historic and cultural heritage**. Many of these harms are inadequately assessed or not mitigated to acceptable standards. When layered, their effects become more serious, more widespread, and potentially **unlawful under environmental and planning law**.

MULTIPLE HARMS TO HEALTH, LAND, AND HERITAGE

1. Harms to Human Health and Wellbeing

A. Noise, Vibration and Mental Wellbeing

- **Chronic noise exposure** from inverters, transformers, construction, and HGV traffic,
- Vibration risks to nearby **timber-framed, ungrounded listed buildings**,
- Loss of tranquillity, views, and footpath access → **sense of place destroyed**.

These effects combine to pose a risk to **mental health**, especially for elderly residents and children.

B. EMF Exposure (Electromagnetic Fields)

- Multiple substations, BESS units, and high-voltage cabling in close proximity to homes,
- Scientific uncertainty around **long-term EMF exposure** and potential links to childhood leukaemia, neurological effects, and sleep disturbance,
- **Cumulative EMF exposure** not assessed in relation to homes, schools, or vulnerable populations.

C. Air Quality and Water Contamination

- Diesel exhaust from construction traffic and generators,
- Dust from trenching and soil disturbance,
- Micro-pollutants from:
 - **Microcracked solar panels,**
 - **BESS fire runoff,**
 - Pesticides or herbicides used on site,
- **No safeguards for private drinking water supplies,** despite proximity.

D. Mental and Social Impacts

- Public Rights of Way severed, rerouted, or degraded,
- Residents' connection to historic rural landscapes severed,
- **Cultural identity and intergenerational belonging** disrupted.

These are not abstract harms — they are linked in planning law to **amenity, identity, and emotional wellbeing**, which must be protected under **NPS EN-1 §4.2** and **EIA Regs 2017**.

2. Harms to Land and Agriculture

A. Permanent Loss of High-Quality Agricultural Land

- Hundreds of hectares taken out of productive use for **decades**,
- Compaction, waterlogging, and acidification of heavy clay soils,
- **Post-decommissioning recovery uncertain** (may take >30 years, or never fully recover).

B. Trenching and Infrastructure Intrusion

- Cumulative trenching for cabling may disrupt entire land parcels,
- **Underground cabling left in situ** after decommissioning (a likely breach of sustainable land use principles),
- Risk to **soil microbiota and drainage patterns**.

C. Contamination Risks

- **Battery Energy Storage System (BESS)** poses chemical and fire risks,

- **Panel leachate** (cadmium, lead, PFAS-like compounds) may affect crops, pasture, and pollinators,
- No clear waste recovery or recycling strategy for panels or cabling.

3. Harms to Heritage and Historic Landscape

A. Setting Impacts on Listed Buildings

- Hundreds of **Grade II and Grade I listed buildings** directly impacted by visual intrusion, vibration, or noise,
- **Dozens of church towers**, many over 500 years old, lose views and acoustic character.

B. Destruction of the Historic Agricultural Landscape

- The South Norfolk Claylands are a **pre-modern, nationally important landscape**,
- Ancient pre-enclosure and early-post medieval field patterns, hedgerows, and landform eroded or buried,
- **No characterisation or appreciation** of cultural landscape in the PEIR.

C. Cumulative Erosion of Conservation Values

- **Historic field systems** bisected by trenches, fencing, and substation access roads,
- Public Rights of Way losing heritage value (views, setting, emotional attachment),
- **No assessment** of how multiple visual, noise, and land-use harms reduce overall historic landscape character.

CUMULATIVE NATURE OF THESE HARMS

Category	Individual Effect	Cumulative Interaction
Health	Noise, EMF, stress	Combined impact on vulnerable residents

Category	Individual Effect	Cumulative Interaction
Land	Soil degradation, loss of food productivity	Regional food security and permanent loss of function
Heritage	Visual/setting intrusion on listed buildings	Destruction of South Norfolk's historic rural character
Water	Private supply risks, runoff pollution	System-wide degradation of chalk aquifers and stream health

Each of these issues is **amplified by the scale, duration, and co-location** of multiple elements (solar panels, BESS, substations, trenching, traffic and housing development) over a large, continuous rural area.

Conclusion

East Pye Solar, in its current form, represents a **cumulative assault** on the health of local people, the quality of the land, and the deep historical fabric of South Norfolk. These multiple harms are:

- Not adequately assessed in the PEIR,
- In many cases unlawful or non-compliant with the **EIA Regulations 2017** and **NPS EN-1/EN-3**,
- Capable of triggering formal **legal challenge, planning objection**, or DCO refusal.

Based on the PEIR and best practice under the **EIA Regulations 2017** and **NPS EN-1**, the following **projects and categories of development should have been included** in East Pye Solar's cumulative impact assessment, but were not, or were insufficiently assessed. Below is a structured list with **justification for inclusion**.

PROJECTS THAT SHOULD BE INCLUDED IN CUMULATIVE IMPACT ASSESSMENT

1. National Grid Reinforcement Projects (Grid Connection)

Justification:

- East Pye Solar must connect to the National Grid at 400kV.
- Grid reinforcements including:

- New pylons or overhead lines (Norwich to Tilbury),
- New or expanded substations,
- Land use, noise, EMF and visual effects,
- National Grid ESO documents confirm new East Anglia connection works are in planning.

Must be included under **NPS EN-1 §4.2.5** and EIA Regs Schedule 4(5)(e).

2. Other Solar and BESS Projects in South Norfolk and Surrounding Authorities

Projects that should be included (not an exhaustive list):

- Tasway Energy Park Up to **700 MW solar + BESS, adjoining East Pye Solar**
mttenergypark.co.uk+8taswayenergypark.co.uk+8taswayenergypark.co.uk+8. Its scale and physical adjacency create a **direct cumulative impact** on landscape, ecology, infrastructure, and community amenity.
- **FIELD BESS 400MW– adjoining East Pye Solar**
- **Simpson’s Maltings Solar 20MW – adjoining East Pye Solar**
- **Tasburgh roundabout solar – adjoining East Pye Solar and Tasway Energy Park**
- **Bloys Grove Solar 49MW - Immediately north-west**
- **Dodd’s Wood BESS 900MW – immediately south-east**
- **Noventum Long Stratton Solar and BESS 400MW – potentially immediately north-east**
- **Regener8 Dickleburgh Solar – 6 miles south**
- **EcoPower Yaxley NSIP – 12 miles south**
- **Dunston BESS and Solar – 5 miles north**
- **EDF BESS at Norwich – 5 miles north**
- **Island Green Trowse Solar – 5 miles north**
- **Swardeston BESS – 5 miles north-east**
- **Bracon Ash BESS – 6 miles west**
 - **Gateley Solar Farm,**
 - **Red Tiles Farm Solar Scheme,**
 - **Wheatacre Solar** (under scoping near Bungay – 13 miles south east),
 - **Green Lane Solar** (within 10–15km of East Pye),
 - **High Grove BESS and solar**
 - **The Drovers BESS and Solar**

- **Sunnica**
- **Multiple existing Island Green Solar projects in Norfolk**
- **All other Solar and BESS NSIPs under development in Norfolk and Suffolk.**

Justification:

- Solar and battery storage projects have:
 - Similar visual and ecological impacts,
 - Cumulative traffic, infrastructure, and substation effects,
 - Overlapping grid connection zones.

Omission of these projects prevents proper assessment of **landscape and grid pressure**.

3. Local Plan Allocations for Housing and Employment

Justification:

- South Norfolk and Greater Norwich Local Plans propose large housing allocations (e.g. Long Stratton, Tasburgh),
- These developments will increase:
 - Water use,
 - Pressure on public rights of way,
 - Traffic on the B1527 and other key routes.

Cumulative impacts on **road use, air quality, and public amenity** should have been assessed.

4. Existing and Proposed Aggregate and Waste Sites

Example:

- Any active quarries, landfills, or recycling centres in the region.

Justification:

- High HGV usage overlaps with construction traffic,
- Shared use of minor roads,

- Increases dust, noise, and road degradation.

Should be included to meet **Schedule 4 of the EIA Regs** (existing pressures + new impacts).

5. Railway Infrastructure Projects

Justification:

- Proximity to a nationally significant rail line (~1–2 km),
- BESS fire, EMF, and visual effects may interact with railway safety, EMI thresholds, or infrastructure access.

Exclusion from the PEIR is a major flaw—required under **NSIP good practice and safety guidance**.

6. Water Infrastructure Projects and Abstraction Licences

Justification:

- Anglian Water’s refusal to serve East Pye means other water sources will be needed (e.g. private boreholes),
- Existing and proposed **abstraction licences** in the Tas catchment and surrounding aquifers must be assessed together,
- Chalk stream and aquifer pressures are regionally cumulative.

Cumulative abstraction risk and aquifer health must be addressed under **NPS EN-1 and EIA Schedule 4(6)**.

7. Environmental Stewardship and Rewilding Projects

Justification:

- Multiple local farms and estates participate in Countryside Stewardship or Higher Level Environmental Stewardship (HLS),
- These may support turtle doves, lapwings, and other priority species,
- Development here could **isolate or undermine habitat corridors**.
- Several fields are being taken out of these very schemes specifically to participate in the East Pye Solar project.

Must be assessed to avoid **breach of biodiversity duty under the Environment Act 2021**.

8. Heritage-Landscape Related NSIPs or Infrastructure Works

Justification:

- Changes to roads, substations, and trenching near listed buildings and historic rural lanes may **interact with other heritage-affecting development,**
- The South Norfolk Claylands is an unregistered but nationally important **cultural landscape.**

This must be addressed under **NPS EN-1 and EN-3** protections for setting and cumulative erosion of character.

Summary Table

Category	Examples	Justification
Grid Connection NSIPs	National Grid East Anglia upgrades	Visual, EMF, land and safety overlap
Nearby Solar/BESS	Gateley, Wheatacre, Red Tiles	Landscape, traffic, wildlife corridor cumulative impact
Housing Allocations	Long Stratton, Tasburgh growth	Water, roads, noise, amenity loss
Aggregates/Waste	Any local quarries or tips	Dust, HGVs, roads
Railway Projects	East Coast Main Line proximity	Safety, fire, EMF risks
Water Use	Boreholes, abstraction points	Aquifer stress, stream health
Environmental Land Management	HLS/Countryside Stewardship sites	Habitat integrity, species movement
Heritage Projects	Lane upgrades, trenching near churches	Setting, cumulative cultural erosion

None of these categories are properly addressed in Chapter 19 of the PEIR. Their omission is a **serious procedural failure under the EIA Regulations** and undermines the public's ability to assess cumulative risks.

Why These Projects Must Be Included

- **Spatial Overlap or Corridor Similarities:** These projects lie within the same rural landscape, sharing roads, environmental receptors, and visual zones.
- **Grid and Infrastructure Overload:** Multiple BESS and solar-plus-BESS systems converge on the same 400 kV network, increasing risk of **cumulative EMI, fire, transformer foot traffic**, and polling strain.
- **Landscape Transformation:** A cluster of large-scale renewable NSIPs is threatening South Norfolk's historic agricultural landscape.
- **Traffic and Cumulative Transport Load:** Construction often involves HGVs, trenching, workforce housing — impacting rural lanes repeatedly.
- **Ecological Pressures:** Species and habitats like farmland birds, bats, and hedgerows face greater stress from multiple contiguous developments than from a single site.
- **Regulatory Precedent and Policy Context:** National Grid, Network Rail, EA, and local authorities expect CIA to consider **all existing or consented schemes**, not just the application in question.

Critical Omission

This omission undermines compliance with:

- **EIA Regulations 2017 Schedule 4** — requiring cumulative effects assessment,
- **NPS EN-1 §4.2.5**, which mandates in-combination evaluation with other climate/environmental infrastructure,
- Basic planning standards for **landscape, ecology, and transport network integrity**.

The PEIR includes **only one other solar project** in its cumulative impact considerations — and does so **inadequately**. The referenced project is:

Bloy's Grove Solar Farm (developed by EDF Renewables)

- Located approximately 2 km northeast of the East Pye Solar site,
- Includes both solar PV and Battery Energy Storage System (BESS) elements,
- Previously approved and already under development.

Mentioned briefly in Chapter 19 (Cumulative and In-Combination Effects), but **without meaningful assessment** of overlapping:

- Landscape character zone effects,
- Traffic load sharing on local roads (e.g. B1527),
- Grid infrastructure strain,
- Habitat connectivity.

Why These Projects Matter for Cumulative Assessment

- **Greater network stress:** Multiple BESS facilities channel energy into the same 400 kV network, increasing potential for **EMF, fire, or electrical infrastructure incidents**.
- **Shared transport routes:** Construction traffic for these projects overlaps on rural roads like the B1527 and A140, impacting **noise, dust, and community access**.
- **Visual and landscape pressure:** Each solar or BESS project contributes to **landscape transformation**, especially where they sit within rural vistas.
- **Ecological stress:** Habitats are fragmented or disrupted when adjacent sites are developed without coordination.
- **Infrastructure clustering risk:** Concentrated energy infrastructure increases risk in major accident scenarios involving **railways, gas mains, or chalk streams**.

Planning & Legal Implications

The exclusion or trivial inclusion of these schemes in the PEIR:

- Breaches **EIA Regulations 2017** by failing to assess “reasonably foreseeable” projects,
- Does not comply with **NPS EN-1 §4.2.5** on cumulative impacts,
- Undermines **public consultation** and informed decision-making required under the **Planning Act 2008**.

PEIR Omission

None of these critical projects are properly assessed in the cumulation chapter. Given their scale and proximity, this is a **procedural and legal failing** under:

- **EIA Regulations 2017 (Schedule 4),**
- **NPS EN-1 §4.2.5,**
- NSIP cumulative best practices.

The PEIR does not mention either EcoPower Yaxley, Tasway Energy Park, High Grove Solar Farm or their OWN Drovers Solar Farm NSIPS in any of its chapters, including Chapter 19 on cumulative and in-combination effects.

Omitted NSIP-Scale Solar Projects

High Grove Solar Farm – RWE

Proposed to be one of the UK’s largest solar farms (720 MW), located near Dereham and Swaffham.

In early stages of NSIP consultation.

Shares regional infrastructure corridors and landscape character zones with East Pye.

The Drovers Solar Farm – Island Green Power

500 MW project in West Norfolk, also being promoted under the NSIP regime.

Developed by the **same promoter** as East Pye.

Demonstrates **in-group cumulative development strategy**, yet no cross-referencing exists in the PEIR.

The inclusion all of these NSIP projects is **required at the statutory consultation stage** because:

They are **reasonably foreseeable developments** of national significance,

- They share **grid, landscape, ecological, and cumulative planning zones** with East Pye,
- **EIA Regulations 2017 Schedule 4(5)(e)** requires assessment of “cumulative effects with other existing and/or approved projects”,
- **NPS EN-1 §4.2.5** and Planning Inspectorate guidance both require NSIPs to include **in-combination assessment of similar infrastructure** at the consultation stage—not just post-submission.

Failure to include these schemes:

- **Undermines legal compliance,**
- Deprives consultees of a meaningful opportunity to comment,
- Weakens the credibility of the Environmental Impact Assessment process.

LEGAL AND POLICY REQUIREMENTS

Under the EIA Regulations 2017 (Schedule 4, Part 5 & 8):

- Developers must assess:

"Cumulative effects with other existing and/or approved projects."

- They must also address:

"The likely significant effects of the development ... taking into account the interaction between the factors."

Under NPS EN-1 §4.2.5:

- Developers are expected to:

"Consider the cumulative impacts from their proposal in combination with other developments (including nationally significant projects and local infrastructure)."

WHAT IS MISSING OR INADEQUATE IN CHAPTER 19

1. Insufficient Detail on Nearby or Overlapping proposed NSIPs and Projects

- No meaningful consideration of **grid infrastructure upgrades**, battery sites, or other renewable energy proposals in the region.
- No evidence of consultation with:

- **National Grid** (despite likely need for reinforcements),
- **Norfolk County Council**, or
- **Other major developers.**

2. No Spatial Mapping of Cumulative Development

- No cumulative constraints map is presented to show:
 - Visual overlaps with other solar or energy projects,
 - Impacts on shared roads, watercourses, or rural landscapes,
 - Habitat connectivity losses across boundaries.

3. Fails to Address In-Combination Environmental Pressures

There is no systematic assessment of how the following interact:

- **Noise + habitat loss + traffic** → impact on wildlife,
- **Water abstraction + soil sealing + trenching** → aquifer stress,
- **BESS + railway/ substations + high-pressure gas main + homes** → major accident risk,
- **Landscape change + public rights of way + visual intrusion** → loss of sense of place and mental wellbeing.

These compound effects are **explicitly required** under EIA Regs Schedule 4(8) and are **not addressed**.

4. No Consideration of Long-Term and Post-Decommissioning Effects

- Fails to assess:
 - Soil degradation and recovery,
 - Long-term biodiversity effects,
 - Cumulative economic shifts from agricultural land loss.

5. Ignores Sensitive Receptors with Multiple Impacts

- No assessment of **vulnerable residents**, e.g.:
 - Those facing **noise + EMF + loss of views + traffic risk**,
 - Children or elderly along construction routes,
 - Schools, listed buildings, or conservation areas affected by overlapping impacts.

While the PEIR mentions other NSIPs in the region, it does not provide a full “project envelope” assessment, including the likely cumulative impacts of future substations, grid reinforcements, or potential BESS expansions that are commonly proposed after the initial DCO is granted. This omission risks underestimating the long-term and landscape-scale industrialisation of the South Norfolk Claylands and contravenes both the spirit and the letter of cumulative impact assessment as required by the EIA Regulations and NPS EN-1.

CONCLUSION: Chapter 19 on cumulative and in-combination effects is insufficient at statutory consultation stage.

Overall Conclusion

Based on a comprehensive review of the East Pye Solar PEIR, including all submitted chapters and appendices, the proposed development raises **significant concerns about both the suitability of the site for this project** and the **adequacy of the PEIR at statutory consultation stage**. The project, in its current form, fails to meet several critical **legal, planning, and best practice standards**.

Major Issues with Site Suitability:

Scale and Overdevelopment:

- A very large NSIP (500 MW+) over hundreds of hectares in an area of **high agricultural value**, historic rural character, and **sensitive ecological features**.
- Adjacent to the newly announced **Tasway Energy Park 700MW and multiple other solar and BESS projects**, multiplying landscape, grid, traffic, and habitat pressures.
- The 10 solar sites are miles away from each other requiring many miles cabling, damaging the environment and making the project extremely expensive and difficult to build

Landscape Sensitivity:

- Within the **South Norfolk Claylands**, a nationally important, historically intact agricultural landscape.

- Contains **Grade I listed churches**, Listed pre-1750s rural buildings with no foundations, and **narrow, historic lanes**.
- Visual, vibration, and character impacts are not suitably mitigated or acknowledged.

Soil and Water Risks:

- Sited on **heavy clay soils** at high risk of compaction, degradation, and long recovery.
- Crosses or borders sensitive water receptors, including the **River Tas chalk stream**.
- Near **private drinking water supplies** and a **high-pressure gas main**.
- Situated on **80% BMV** arable soil which is incredibly precious for future food security (only 18% of UK farmland) and may never recover from this development

Proximity to Communities:

- Homes, farms, footpaths, and churches are **interwoven into the project boundary**, with significant threats to **amenity, tranquillity, safety, and wellbeing**.
- Rights of way and road access would be disrupted.

Environment and Biodiversity:

- Situated on fields that are currently projected for endangered species in the Countryside Stewardship Scheme, whose habitats will be destroyed
- In an area specifically designed for the conservation of bats and home to multiple maternity roosts of barbastelle bats in ancient woodlands.

Conclusion: This site is **inherently unsuitable** for a solar NSIP of this scale. A smaller, compact, or previously developed site would be more appropriate, particularly given national policy on land use and amenity protection.

Overall Assessment: the PEIR is Inadequate at Statutory Consultation Stage

The PEIR **fails to provide sufficient, accessible, and complete information** for effective consultation or legal scrutiny, breaching the standards required at this stage under:

- **EIA Regulations 2017** (Schedule 4),
- **National Policy Statements EN-1 and EN-3,**
- **Planning Inspectorate guidance on consultation and cumulative impact assessment.**

Key Failings by Chapter:

- **Ecology:** No adequate surveys or seasonal data for key species (e.g. lapwing, turtle dove, skylark, great crested newts).
- **Landscape & Visual:** No characterisation of South Norfolk Claylands; inadequate ZTVs and photomontages; fails to assess cumulative visual impact.
- **Cumulative Impacts (Ch. 19):** Grossly underdeveloped. Omits all other major NSIPs (e.g. Tasway, High Grove, The Drovers); no matrix of combined effects.
- **Noise & Vibration:** No assessment of impacts on historic buildings; weak on sensitive receptors and wellbeing.
- **Transport:** No HGV routing plan, no analysis of rural lane capacity, safety, or passing places. No assessment of pedestrian, cycling or equestrian safety.
- **Cultural Heritage:** Setting impacts on Grade I churches and historic field systems inadequately addressed.
- **Water Environment:** No hydrological connectivity analysis to chalk streams or drinking water. No abstraction strategy.
- **Soils:** No land management plan, no recovery or decommissioning detail, and no reference to existing agricultural use value.
- **Utilities & Hazards:** No proper fire risk assessment for BESS, no analysis of gas main risk, no EMF exclusion zones.
- **Socioeconomics:** No detailed assessment of tourism, mental wellbeing, or employment displacement. Understates accommodation, training, and housing pressures.

Conclusion: The PEIR is **not compliant** with consultation-stage requirements. It prevents residents, councils, and statutory consultees from making informed judgments.

Key Legal and Planning Failings

Category	Legal/Planning Breach
Cumulative Impacts	Fails EIA Regs 2017 Sch. 4(5)(e); NPS EN-1 §4.2.5
Public Consultation	Incomplete, unclear, or withheld data likely breaches Planning Act 2008 and Aarhus Convention
Biodiversity	Breaches Environment Act 2021 duty to conserve priority species; inadequate mitigation
Heritage	Breaches NPPF §194 and NPS EN-1 §5.8; fails to assess cumulative harm to heritage assets
Health & Wellbeing	No HIA (Health Impact Assessment); disregards noise, EMF, and amenity lawfully required by NPS EN-1 §4.13
Soils & Water	Non-compliant with NPS EN-1 §5.10 and §5.15 (long-term soil protection, flood risk, groundwater safeguarding)
Transport	Omits safety risk analysis required under NPS EN-1 §5.13
Major Accidents	PEIR's risk statistics and scenarios (e.g. BESS fires) fall short of NPS EN-1 §4.11 and Schedule 4(8) of EIA Regs
Habitats & Wildlife Sites	No adequate connectivity, displacement or mortality assessments

Final Appraisal

The East Pye Solar proposal, in its current form and location, is fundamentally flawed in both planning and legal terms.

The PEIR fails to provide the baseline evidence required to make a lawful or informed judgment on the project's acceptability. Statutory consultees, councils, and communities are being asked to consult **without access to the facts**.

A legally compliant statutory consultation requires **complete and cumulative data**, transparent ecological and risk modelling, and an honest appraisal of the location's constraints. This PEIR does not meet that threshold.

Key Deficiencies in the Non-Technical Summary (NTS)

The **Non-Technical Summary (NTS)** of the East Pye PEIR does **not adequately reflect the data and evidence presented in the full PEIR**, and this shortfall has **serious planning and legal implications**, particularly in terms of **statutory consultation compliance**.

1. Understatement of Environmental Risks

- **Air Quality:** The NTS claims construction dust is “not significant” but fails to mention:
 - The lack of quantitative traffic emissions data,
 - Absence of cumulative dust and NOx/PM assessment,
 - No mention of sensitive receptors like nearby homes or schools.
- **Noise and Vibration:** The summary states there will be no significant impacts, yet the full chapter omits:
 - Impacts on **heritage buildings without foundations**,
 - Vibration impacts from HGVs on narrow rural roads,
 - Noise risks to wildlife and mental wellbeing.
- **Ecology:** The NTS gives broad reassurances but omits the fact that:
 - **No completed seasonal surveys** are presented for species like great crested newts, lapwing, skylark, or turtle doves,
 - Mitigation is mostly deferred, not detailed.

This misrepresents the **precautionary principle** expected under EIA law.

2. Incomplete or Misleading Cumulative Impact Summary

- The NTS **does not acknowledge**:
 - The **Tasway Energy Park** NSIP, which directly adjoins East Pye,
 - Other proposed or permitted nearby BESS and solar projects (e.g. Bloy's Grove, Norwich BESS),
 - Combined impacts on landscape, traffic, ecology, and infrastructure.

This undermines its compliance with **EIA Regulations 2017 Schedule 4(5)(e)** and **NPS EN-1 §4.2.5**.

3. Omission of Key Constraints and Risks

- **High-pressure gas main, chalk streams, and private drinking water supplies** are either **not assessed at all** or are downplayed.
- **Mental health, heritage setting, public rights of way, and equestrian/pedestrian safety** are entirely omitted.

These are critical community concerns and material planning considerations under NPPF and NSIP guidance.

4. No Acknowledgement of Uncertainty or Data Gaps

- Fails to mention that:
 - Many ecological and ground condition surveys are **incomplete** or **desk-based only**,
 - Mitigation proposals are **generic** or deferred,
 - Air quality, cumulative noise, and health assessments are **missing or unquantified**.

This creates a false impression of project certainty and environmental safety.

Legal and Planning Implications

Legal Requirement	Failure
EIA Regs 2017 Schedule 4(2)	Requires a summary to be “non-technical but accurate” – this is misleading and selective
NPS EN-1 & EN-3	Mandate cumulative and inter-receptor impact summaries – not provided
Public Consultation Duty (Planning Act 2008)	Informed comment not possible without full and fair summary
Aarhus Convention	Right to access environmental information violated by omissions and downplaying of risk

Conclusion

The NTS does not give the public or statutory consultees an accurate or fair understanding of the environmental impacts, risks, or uncertainties associated with the East Pye Solar project. Its omissions and reassurances are **inconsistent with the underlying PEIR evidence** and constitute a **procedural failing at statutory consultation stage**.

the PEIR for East Pye Solar is *not adequate* for statutory consultation. Based on a full review of its chapters, appendices, and the non-technical summary, it fails to meet the minimum legal, procedural, and planning standards required at this stage under the **EIA Regulations 2017, National Policy Statements (EN-1, EN-3), and Planning Inspectorate guidance**.

Summary of why the PEIR Is Inadequate at Statutory Consultation Stage

1. Missing or Incomplete Survey Data

- **Ecological surveys** (for protected species such as great crested newts, turtle doves, skylarks, bats) are **incomplete or entirely missing**.
- **Soil and groundwater assessments** are desk-based only — no intrusive testing reported.
- **Noise, air quality, and vibration modelling** is either absent, qualitative only, or fails to include sensitive receptors.

This violates the requirement under EIA Regs Sch. 4 to present sufficient “main likely significant effects” at consultation.

2. No Proper Cumulative Impact Assessment

- The **cumulative and in-combination effects chapter is legally deficient**:
 - Ignores other large-scale NSIP and local projects such as **Tasway Energy Park, High Grove, and The Drovers**.
 - Provides no mapping, matrix, or joint receptor assessment.
 - Fails to address cumulative transport, habitat loss, EMF exposure, or visual impacts.

This directly breaches **NPS EN-1 §4.2.5** and **EIA Regulations 2017 Schedule 4(5)(e)**.

3. Deferred Mitigation and Missing Plans

- No detailed:
 - **Land management plan** for biodiversity or soil recovery,
 - **Dust management plan, Construction Traffic Management Plan, or Noise Mitigation Plan,**
 - **Surface water abstraction or discharge strategy.**

Key environmental protections are either missing or deferred, contrary to consultation-stage expectations and **Planning Act 2008** requirements for informed feedback.

4. Failure to Address Major Risk Factors

- **BESS fire risk, substation proximity to high-pressure gas main, and EMF effects on health and ecology** are downplayed or assessed using flawed or outdated data.
- No accurate fire risk probability or consequence analysis for a 500 MW+ BESS.
- **Proximity to chalk streams, private drinking water, and the railway line** is not transparently assessed.

This violates NPS EN-1 §4.11 on major accident risk and EN-1 §5.15 on water environment impacts.

5. Public Rights of Way and Amenity Not Lawfully Considered

- The PEIR fails to assess or map **impacts on walkers, cyclists, and horse riders** using affected PRowS or rural lanes.
- **Loss of tranquillity, mental wellbeing, and community heritage connection** is not acknowledged or mitigated.

This breaches NPS EN-1 §5.12 (recreation), §4.13 (health & wellbeing), and the **Aarhus Convention**.

6. Non-Technical Summary Is Misleading

- The NTS **downplays risks**, omits data gaps, and misrepresents several chapters.

- It does not enable meaningful, informed consultation by lay audiences — contrary to **EIA Regs Schedule 4(2)**.

7. Overall Legal and Procedural Breaches

Legal or Planning Standard	PEIR Compliance
EIA Regulations 2017	Incomplete, lacks key impact data
Planning Act 2008 (consultation duty)	Not fit for informed response
NPS EN-1 & EN-3	Non-compliant on ecology, health, cumulative effects
National Planning Policy Framework (NPPF)	Fails to conserve landscape, soils, and amenity
Planning Inspectorate best practice	Deferred mitigation and missing modelling
Aarhus Convention	Public right to full environmental information not met

Conclusion

The East Pye Solar PEIR is **legally and procedurally inadequate** for the statutory consultation stage.

It withholds key impact data, omits foreseeable cumulative schemes, fails to assess risks to health, heritage, and the natural environment, and does not allow the public or consultees to give an informed, evidence-based response.

If a **Preliminary Environmental Information Report (PEIR)** is **inadequate at the statutory consultation stage**, as is the case with the East Pye Solar PEIR, **affected consultees have several legal and procedural remedies**. These remedies are grounded in UK planning law, environmental legislation, and procedural fairness under the **Planning Act 2008, EIA Regulations 2017**, and relevant national policy statements.

Our intention is to Submit a Formal Written Objection to the Applicant and Planning Inspectorate To put on record that the consultation is *procedurally flawed* and that it **fails to meet the statutory requirement for informed public consultation**.

We request that **the PEIR be reissued** with full and adequate information before any Development Consent Order (DCO) is submitted.

We intend to send this procedural objection to East Pye Solar/Island Green during the consultation period (as required by the Statement of Community Consultation), and copy it to the **Planning Inspectorate**.

We will request a Repeat or Extended Consultation as meaningful consultation

Key Reasons Why Development Consent for this project Should Be Refused

1. The Project Is Not Needed to Meet National Targets

- There is **no demonstrated solar energy need** for this specific site. The government's CP2030 and CP2035 solar targets for East Anglia are already on track based on **existing and approved projects**.
- Under **NPS EN-1**, the benefits of an NSIP must outweigh its harms. Here, **the balance tilts decisively toward disproportionate harm**.

2. The PEIR Is Legally and Procedurally Inadequate

- The PEIR fails to meet requirements under the **Environmental Impact Assessment Regulations 2017**, particularly:
 - Incomplete or deferred species surveys,
 - No modelling of air quality, EMF, cumulative landscape or public health impacts,
 - No mitigation strategies for multiple residual risks.

This prevents effective consultation and a lawful application under **Section 55** of the Planning Act 2008.

3. Irreversible Environmental Harm

- **South Norfolk Claylands**, a historic and nationally significant landscape, would be permanently industrialised.
- Harm to **Grade I listed churches, pre-1750s rural buildings, and timber-framed farmsteads** is unmitigated.
- **Best and Most Versatile (BMV) farmland** would be lost or degraded for decades, with no credible soil recovery plan.

4. Multiple Safety, Infrastructure and Water Risks

- The site is located close to **high-pressure gas mains, Source Protection Zones, and the River Tas chalk stream**—yet **no risk assessments** are presented.
- **No water supply has been secured**, and Anglian Water has refused connection.
- BESS infrastructure poses **fire and explosion risks**, inadequately addressed.

5. Unlawful Omission of Cumulative Impacts

- No inclusion of **Tasway Energy Park, High Grove, or The Drovers Solar Farm** in the cumulative effects chapter.
- **Statutory guidance (NPS EN-1 §4.2.5)** requires assessment of all foreseeable infrastructure impacts.
- This omission undermines **legality of the Environmental Statement**.

6. Severe Harm to Public Rights, Wellbeing, and Community

- Public rights of way would be **severed, downgraded, or rendered hostile**.
- Residents would face daily HGV traffic on **single-track historic lanes**, potentially requiring **compulsory land purchase**.
- The community's **sense of place, mental wellbeing, and cultural heritage** would be permanently diminished.

7. Mitigation Is Inadequate or Impossible

- Many impacts **cannot be mitigated** (landscape, soil, BESS fire risk).
- Where mitigation is proposed (e.g. planting, fencing), it is superficial or deferred beyond consultation.
- Some “mitigation” (e.g. CPO of gardens for passing bays) may be legally or ethically indefensible.

Final Conclusion

Development consent should be refused.

This project is **disproportionate, environmentally damaging, procedurally unlawful, and unjustified by national need**. There are **better-sited alternatives**, and this proposal conflicts with core principles of **sustainable development, public interest, and planning law**.