Written Representations submitted in response to East Pye Solar
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Volume 2: Chapters 8– 10

Submitted by BEPS (Block East Pye Solar [redacted])

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Chapter 8: Ecology and Biodiversity

Introduction

East Pye Solar is not proposed on ecologically ordinary farmland containing isolated features. It would industrialise a single, functionally connected ecological landscape of national importance for bats, multiple barbastelle maternity-colony networks, ancient woodland, veteran trees, priority hedgerows and field margins, chalk streams, protected aquatic species, farmland-bird habitat and unsurveyed botanical assemblages. Because those functions cannot reliably be recreated or compensated for, avoidance is the only policy-compliant response.

8.1 Executive summary and principal conclusions

East Pye Solar is not proposed on ecologically ordinary farmland containing a small number of discrete features that can be protected through standard buffers and construction controls. The Order Limits extend across a receptor-dense and functionally connected South Norfolk Claylands landscape comprising ancient and veteran trees, species-rich hedgerows, arable field margins, ponds, woodland edges, County Wildlife Sites, Roadside Nature Reserves, SSSI woodlands, lowland fen, grazing marsh, chalk-stream tributaries and extensive surface-water and groundwater networks. These features operate together as ecological infrastructure. The Scheme would introduce panels, substations, BESS infrastructure, fencing, access tracks, haul routes, compounds, cable trenches, watercourse crossings, lighting and road widening throughout that network. Its ecological effects therefore cannot properly be assessed as a series of small, isolated habitat losses.

The Applicant's own bat evidence fundamentally changes the proper characterisation of the Scheme area. The Bat Activity Survey Report assesses the bat assemblage across the Order Limits as being of national importance. Barbastelle, a nationally rare Annex II species and European Protected Species, was the third most frequently recorded bat species and was detected at every static survey location. The Applicant also records multiple barbastelle maternity colonies around the Scheme and accepts that the Order Limits fall within overlapping Core Sustenance Zones supporting those colonies. The Applicant's evidence therefore establishes that the Scheme is not merely close to isolated bat roosts: it occupies a landscape used at scale for roosting, commuting and foraging by a nationally important bat assemblage and by multiple barbastelle maternity populations.

That conclusion is inseparable from the existing woodland, hedgerow and watercourse network. The Forestry Commission identifies ancient woodland as irreplaceable habitat and has warned that woodland isolation and fragmentation are major threats, particularly where small woods become surrounded by development. Its advice emphasises that buffers must form part of wider ecological networks rather than operate as narrow separation distances. The South Norfolk Tree Warden Network similarly identifies trees and hedgerows as functional ecological infrastructure, notes 621 trees with potential to support roosting bats, and warns that repeated hedgerow gaps, access

works, haul-road disturbance and later reinstatement have not been assessed adequately in terms of cumulative functional connectivity.

The ecological baseline remains materially incomplete. Most seriously, the Applicant has undertaken no proper full-season botanical survey despite pre-application evidence from a Level 6 botanist familiar with the South Norfolk Claylands that rare and important plant assemblages occur in the area and that seasonal botanical survey was required. The omission is especially serious because the least-surveyed habitats—roadside verges, field margins, ancient hedges, ditch edges and semi-natural strips—are among those most threatened by highway widening, visibility splays, new accesses, haul routes, cable works and construction compounds. The Applicant's own extended habitat work expressly disclaims being a full botanical survey. It cannot demonstrate avoidance of botanical harm without first identifying the resource at risk.

The aquatic baseline is also incomplete. The Applicant's appraisal was habitat-led, was undertaken during unusually dry conditions and acknowledges that ephemeral headwaters and field ditches may have been under-represented. The ExA has already requested further information because concerns raised by South Norfolk Council, Norfolk Wildlife Trust and BEPS about white-clawed crayfish could not be resolved on the existing survey material. Independent evidence identifies an isolated River Tas population close to the Scheme, while the Environment Agency's earlier records and scoping advice confirmed that white-clawed crayfish required consideration. The connected River Tas, Hempnall Beck, Starston Brook, Broome Beck and associated ditch systems provide plausible pathways for sediment, pollution, disease, altered flows and hydrological disturbance.

The Environment Agency's Relevant Representation confirms that significant ecological and water-environment matters remain unresolved. It requires further consideration of effects on fish, European eel, aquatic macroinvertebrates, groundwater-dependent ecosystems and water quality; questions the assessment of electromagnetic effects on eel; identifies the potential for solar panels to affect macroinvertebrate lifecycles; and states that BNG and riparian recommendations require proper securing. It also identifies unresolved risks from piling, underground cabling, groundwater pathways and contaminated land. These are not incidental drafting matters. They demonstrate that the pathways linking construction, hydrology and ecological receptors have not yet been fully assessed or controlled.

Norfolk Wildlife Trust reaches the same broad conclusion from a landscape-scale perspective. It states that further information and design refinement are required before the Scheme can be regarded as ecologically acceptable; raises concerns about County Wildlife Sites, Roadside Nature Reserves, ancient woodland, lowland fen, non-designated verges and barbastelle habitat; and warns that HDD locations, compounds, lighting, vehicle movements and buffer distances remain unresolved. Local residents at Wood Green likewise identify ecological connectivity between Wood Green CWS, Crow Green, Tyrrell's Wood, Fritton Common, roadside reserves and hedgerows, together with breeding bats, great crested newts, water vole, turtle dove, other breeding birds and an important winter starling murmuration. Their evidence confirms that the effects feared by

professional and statutory consultees are observable landscape-scale effects, not theoretical concerns.

South Norfolk Council's consultation response also demonstrates that the mitigation case was not settled. It sought specific protection for veteran trees, important bat flight lines and dark corridors; requested clarity about which ecological enhancements would survive decommissioning; required updated ecological and arboricultural information to inform later plans; and emphasised the need for commitments concerning watercourses, ponds, bat routes and long-term habitat retention. The Norfolk Barbastelle Study Group has separately called for further work to establish the full distribution and habitat use of maternity colonies, including radio-tracking and further woodland assessment. The current baseline therefore does not provide the certainty needed to assess effects on the very species that make the area nationally important.

The four principal defects are accordingly clear.

- First, the ecological baseline is incomplete. There is no full botanical survey; the aquatic work was limited and dry-condition biased; white-clawed crayfish evidence was not adequately incorporated; and important questions remain concerning birds, bats, trees, aquatic invertebrates and other protected species.
- Second, ecological function and connectivity have been underestimated. The Applicant assesses individual habitats and crossings but does not adequately assess the Scheme-wide consequences of repeated hedgerow severance, woodland enclosure, lighting, fencing, road widening, construction disturbance and alteration of hydrological pathways across a nationally important bat and chalk-stream landscape.
- Third, mitigation is generic, deferred and insufficiently secured. The ecology case relies heavily on the Outline LEMP, future CEMPs and OEMPs, later surveys, later protected-species licensing, later lighting design, later method statements and metric-based BNG assumptions. Those documents do not presently fix the locations, standards, performance criteria and remedial mechanisms necessary to demonstrate that ecological function will be maintained. A positive BNG metric cannot answer the distinct questions posed by European Protected Species, ancient woodland, veteran trees, rare botanical assemblages, hydrological deterioration or species-population viability.
- Fourth, the Scheme has not avoided impacts that cannot reliably be mitigated or compensated. EN-1, EN-3, EN-5 and the NPPF place avoidance at the top of the mitigation hierarchy. Instead of avoiding this sensitive ecological landscape, the Applicant has selected it for industrial-scale development and then relied on buffers, habitat creation and future management to justify that choice. That reverses the proper hierarchy. Mature hedgerow networks, ancient woodland relationships, established barbastelle maternity support habitat, chalk-stream ecological function, rare plant assemblages and long-established stewardship habitat cannot be assumed to be recreated through later planting or accounted for through habitat units.

The representations of the Environment Agency, Forestry Commission, Norfolk Wildlife Trust, South Norfolk Council, local residents, the South Norfolk Tree Warden Network, the Norfolk Barbastelle Study Group and BEPS approach the Scheme from different statutory, technical and local perspectives. They nevertheless converge on the same underlying concerns: an incomplete baseline; a highly connected and unusually sensitive ecological landscape; unresolved impacts on protected species, watercourses, ancient woodland and hedgerows; and excessive dependence on later design and management. The available evidence does not establish that those effects can be avoided, effectively mitigated or lawfully compensated.

BEPS therefore submits that the ecological case for East Pye Solar has not been made. The Scheme conflicts with the mitigation hierarchy, places protected species and irreplaceable habitats at unresolved risk, and relies on incomplete evidence and deferred mitigation to support conclusions of no significant effect. Development consent should be refused on ecology and biodiversity grounds.

8.2 Legal and policy framework

The relevant legal and policy framework is not confined to a general presumption in favour of renewable energy. National energy policy expressly requires ecological harm to be identified, avoided and, only where avoidance is not possible, reduced and mitigated through measures that are effective and properly secured. Separate statutory regimes apply to European sites, European Protected Species, SSSIs, irreplaceable habitats and biodiversity net gain. Those protections are not displaced by the general need for low-carbon infrastructure or by a positive biodiversity metric.

8.2.1 EN-1, EN-3 and EN-5

EN-1 requires applicants to apply the mitigation hierarchy. Adverse effects should first be avoided, including through site selection, layout and design. Effects that cannot be avoided must then be reduced or mitigated; restoration and compensation arise only after the earlier stages of the hierarchy have genuinely been exhausted. The hierarchy is therefore sequential. An applicant cannot select an ecologically damaging location, proceed directly to habitat creation or biodiversity accounting, and treat the resulting metric uplift as equivalent to avoidance.

This is particularly important where the affected receptors are difficult or impossible to recreate. Ancient woodland, ancient and veteran trees, established protected-species networks, mature hedgerows, chalk-stream systems and long-developed botanical assemblages cannot be treated as interchangeable with newly planted habitat. EN-1 requires the direct and indirect effects on ancient woodland, ancient and veteran trees and other irreplaceable habitats to be addressed during construction and operation. The Applicant's own policy material recognises the mitigation hierarchy and the protection afforded to irreplaceable habitats, yet its ecology case relies extensively on buffers, later habitat creation and management measures rather than demonstrating that the principal harms have been avoided.

Mitigation relied upon to reduce an effect or to support a conclusion of no significant effect must also be sufficiently defined, effective and secured. It is not enough to identify broad aspirations for woodland planting, hedgerow enhancement, dark corridors, watercourse buffers or species

protection while leaving their precise location, specification, timing, monitoring and remedial mechanisms to later plans. Where mitigation is necessary to establish that the Scheme is environmentally acceptable, the Examination must be able to understand what will be delivered, how it will operate, by what legal mechanism it will be secured and what will occur if it fails.

EN-3 applies those principles to renewable energy infrastructure. Policy support for solar generation does not remove the need to select environmentally appropriate land, assess the ecological consequences of the particular proposal and follow the mitigation hierarchy. The location, scale and layout of a solar scheme remain material. National need cannot convert an avoidable impact on protected species or irreplaceable habitat into an acceptable one.

EN-5 is relevant because East Pye includes extensive linear grid and cable infrastructure. It recognises that electricity-network development can provide opportunities to reconnect habitats through green corridors, stepping stones and restored hedgerows. That policy objective is the opposite of permitting linear works to sever existing networks without a full assessment of functional connectivity. Cable corridors, access roads, highway works and grid infrastructure must therefore be assessed not merely by the area of habitat physically removed, but by their effects on continuity, permeability and the functioning of the wider ecological network.

EN-1, EN-3 and EN-5 also require consideration of indirect, secondary and cumulative effects. For East Pye, this includes not only direct habitat loss but:

- repeated hedgerow severance and woodland-edge disturbance;
- lighting, noise and vibration affecting bat roosting, foraging and commuting;
- fragmentation caused by fencing, roads and infrastructure;
- sediment, pollution and hydrological effects transmitted through connected watercourses;
- cumulative disturbance from multiple compounds, crossings and development parcels;
- and effects in combination with other solar, BESS, grid, transport and housing proposals.

A parcel-by-parcel assessment which retains individual features but fails to assess whether the landscape continues to function ecologically does not satisfy that policy framework.

8.2.2 National Planning Policy Framework

The National Planning Policy Framework was replaced on 17 August 2026. The Energy NPSs remain the primary policy framework for this NSIP, but the current NPPF materially reinforces the mitigation-hierarchy and ecological-network issues raised in this chapter.

Policy N2 requires significant biodiversity harm first to be avoided through locating development on an alternative site with less harmful impacts where such harm cannot otherwise be avoided, before moving through mitigation and, as a last resort, compensation. It also requires ecological networks extending beyond the site to be protected and strengthened and requires agricultural land quality and grade to be taken into account, with poorer-quality agricultural land used where possible. Those provisions do not mean that every ecological constraint automatically requires refusal or relocation. They do mean that avoidance must genuinely precede reliance on buffers, habitat creation and compensation where the affected ecological function cannot readily be recreated.

The NPPF affords additional protection to SSSIs. Development on land within or outside an SSSI which is likely to have an adverse effect on it should not normally be permitted. The relevant issue is therefore not limited to direct development within the designated boundary. Indirect effects—including hydrological change, fragmentation, isolation, lighting, noise, dust, pollution and disturbance—must also be considered. This is material to East Pye because several SSSI woodlands lie immediately adjacent or very close to proposed development and form part of the ecological network used by protected species.

Development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, should be refused unless there are wholly exceptional reasons and a suitable compensation strategy exists. 'Deterioration' is wider than direct felling. It includes degradation of ecological condition or function through isolation, root damage, altered hydrology, edge effects, lighting, disturbance and surrounding development. The Forestry Commission's concern that small ancient woods may become isolated or enclosed is therefore directly relevant to the policy test.

Compensation does not remove the need to demonstrate wholly exceptional reasons, nor does new planting recreate ancient woodland. Newly planted woodland, hedges or scrub may provide future value, but they cannot be treated as functionally equivalent to habitats whose ecological characteristics have developed over centuries. The Applicant's own documents recognise 31 Ancient Woodland Inventory sites and lowland fen parcels within the surrounding landscape, together with SSSI woodland adjoining parts of the Scheme.

8.2.3 Habitats Regulations and European Protected Species

Two distinct legal regimes must be kept separate.

First, the Conservation of Habitats and Species Regulations 2017 govern effects on European sites. Where a plan or project is likely to have a significant effect on a European site, either alone or in combination, and is not directly connected with its management, the competent authority must undertake an Appropriate Assessment. At screening stage, likely significant effects may be excluded only on the basis of objective information. Where a credible impact pathway remains and the evidence is incomplete, uncertainty cannot be treated as evidence of no effect. The precautionary approach requires the matter to proceed to Appropriate Assessment.

At the Appropriate Assessment stage, consent may be given only where the competent authority has ascertained that the project will not adversely affect the integrity of the European site. That conclusion must be reached without reasonable scientific doubt. In the present case, the potential pathways include hydrological connectivity through the Tas, Yare, Waveney and associated groundwater and ditch networks, together with any properly evidenced relationship between European-site qualifying interests and functionally linked land.

Secondly, all bats, including barbastelle, are subject to strict species protection. It is an offence, subject to the statutory provisions, deliberately to capture, kill or disturb protected bats, to

damage or destroy a breeding site or resting place, or to obstruct access to such places. These protections apply whether or not the relevant roost lies within a European site.

Where the Scheme would otherwise risk an offence, a European Protected Species licence may be required from Natural England. A licence can be granted only where the statutory derogation tests are met, including:

- the activity is undertaken for a permitted statutory purpose;
- there is no satisfactory alternative; and
- the action will not be detrimental to maintaining the population of the species concerned at favourable conservation status in its natural range.

The DCO decision-maker does not determine the EPS licence itself, but it must have regard to the protected-species position and should not proceed on an evidential assumption that a later licence will resolve material impacts where the information presently available leaves the licensing position materially uncertain. The availability of a future contractor-led application is not evidence that the tests can be met.

That issue is especially acute where the Applicant's own evidence identifies a nationally important bat assemblage, widespread barbastelle activity, multiple maternity colonies and overlapping Core Sustenance Zones. The 'no satisfactory alternative' test is relevant to any later EPS licence application and requires the available alternatives to be considered in that licensing context. The EIA and planning assessment should therefore provide sufficient evidence about the affected population, functional habitat and design alternatives to enable that later statutory process to be approached on a properly informed basis. The favourable-conservation-status test requires evidence about the population, roost network, foraging habitat and commuting function likely to be affected. Where the Norfolk Barbastelle Study Group has called for further survey and radio-tracking, and where the Scheme-wide functional use of the landscape remains incompletely understood, the grantability of any licence cannot simply be presumed.

The precautionary principle is therefore relevant under both regimes, although in different ways. Under HRA, unresolved scientific doubt prevents the competent authority from screening out likely significant effects or concluding no adverse effect on integrity. Under EPS licensing, an incomplete population and functional-habitat baseline undermines confidence that the statutory licensing tests, particularly no satisfactory alternative and maintenance of favourable conservation status, can be met.

8.2.4 Environment Act 2021, NERC Act 2006 and the BNG hierarchy

The Environment Act 2021 strengthens the statutory framework for biodiversity recovery and establishes biodiversity net gain requirements. It does not replace the mitigation hierarchy. BNG is additional to the requirement to avoid and mitigate ecological harm. It is not a permission to cause avoidable damage wherever a numerical uplift can subsequently be calculated.

South Norfolk Council has correctly noted that the statutory Biodiversity Gain Hierarchy is distinct from, although related to, the wider ecological mitigation hierarchy. BEPS therefore does not treat the two as interchangeable. The significance of BNG here is that habitat-unit accounting cannot

displace the separate requirements to avoid and mitigate harm to protected species, designated sites and irreplaceable habitats before biodiversity gains are relied upon.

The statutory biodiversity metric is principally a habitat-accounting tool. It does not determine:

- whether an offence against a European Protected Species will occur;
- whether the Habitats Regulations tests are met;
- whether an SSSI will be adversely affected;
- whether deterioration of ancient woodland or veteran trees is acceptable;
- whether Water Framework Directive deterioration will occur;
- whether a maternity-colony support landscape will remain functional;
- or whether rare botanical or species assemblages can be recreated.

Habitat units therefore cannot override species protection, European-site duties or policy concerning irreplaceable habitats. A positive BNG result may coexist with unacceptable or unlawful harm to a protected species or an irreplaceable ecological function. This limitation is particularly material at East Pye because the Applicant relies on habitat creation and enhancement while the principal concerns involve landscape-scale barbastelle function, ancient woodland connectivity, chalk-stream ecology, white-clawed crayfish, established stewardship habitat and unsurveyed botanical assemblages. The BEPS RR already identifies that the Applicant's metric-based claims do not answer those functional and legal constraints.

Section 40 of the Natural Environment and Rural Communities Act 2006, as strengthened by the Environment Act, requires public authorities exercising their functions to have regard to what they can properly do to further the general biodiversity objective, including the conservation, restoration and enhancement of populations and habitats. Section 41 identifies habitats and species of principal importance for conserving biodiversity. These duties require more than preventing complete habitat loss. They direct attention to ecological recovery, functioning networks and the condition and resilience of priority habitats and species.

The Secretary of State must therefore consider whether granting consent would further or frustrate biodiversity conservation and enhancement. That judgment cannot be reduced to the Applicant's headline BNG percentage. It must account for the quality, location, connectivity, durability and species function of what exists, what would be harmed and what is actually secured for the lifetime of the Scheme.

Central policy submission

On the Applicant's own cited legal and policy framework, ecological harm must first be avoided. Compensation, biodiversity enhancement and metric gains arise only after genuine avoidance and minimisation have been demonstrated. East Pye Solar instead selects a highly sensitive landscape containing nationally important bat habitat, overlapping barbastelle maternity-colony networks, SSSI and ancient woodlands, veteran trees, chalk streams, protected aquatic species and potentially important botanical assemblages, and then seeks to compensate for its industrialisation through buffers, outline management plans, future planting and BNG.

That approach reverses the mitigation hierarchy. It does not demonstrate compliance with EN-1, EN-3, EN-5, the NPPF, the Habitats Regulations, protected-species legislation or the statutory biodiversity duties. Where the affected ecological functions cannot reliably be recreated, mitigated or compensated for, the lawful and policy-compliant response is avoidance.

8.3 The proper ecological characterisation of the Scheme area

A fundamental flaw running throughout Chapter 8 of the Environmental Statement is the Applicant's characterisation of the Order Limits as predominantly agricultural land of generally moderate ecological value containing a series of discrete habitats capable of being retained, buffered or recreated through mitigation. That is not supported by the Applicant's own evidence, by the wider ecological evidence available for the South Norfolk Claylands, or by the representations of statutory and specialist consultees.

The correct starting point is that East Pye Solar occupies a highly connected historic landscape whose ecological importance derives not simply from individual designated sites or priority habitats, but from the interaction between ancient landscape structure, woodland, hedgerows, field margins, ponds, chalk-stream catchments, veteran trees and extensive habitat corridors. The ecological function of this landscape depends upon connectivity across the whole network rather than upon the survival of isolated habitat fragments.

This distinction is critical. A scheme may avoid direct loss of many individual habitat parcels while nevertheless causing significant ecological harm through fragmentation, disturbance, lighting, hydrological change and the cumulative erosion of ecological connectivity.

8.3.1 A connected South Norfolk Claylands ecological system

The Applicant's own Figures 8.2, 8.3 and 8.5 demonstrate that the Order Limits overlay an extensive ecological network rather than isolated ecological receptors. These figures show a landscape containing numerous priority habitats, interconnected hedgerows, woodland blocks, ponds, watercourses and designated sites extending across the entire Scheme rather than occurring as occasional isolated features.

This reflects the historic character of the South Norfolk Claylands.

As explained by Professor Tom Williamson in Restoring the Claylands, the Claylands developed over many centuries as an intricate landscape of small fields, ancient hedgerows, numerous hedgerow trees, ponds, commons, woodland, roadside grasslands and interconnected habitats. Although agricultural intensification removed many features during the twentieth century, important fragments remain and continue to provide the framework for biodiversity across the landscape. Importantly, Professor Williamson explains that historical land management unintentionally created not merely individual habitats but ‘a wealth of connections between them’, and that restoration should work with this historic ecological framework rather than impose generic habitat creation that ignores local landscape character.

This historic ecological framework is directly relevant to East Pye Solar. Across the Order Limits there remain:

- ancient species-rich hedgerows forming continuous commuting corridors;
- mature hedgerow trees and veteran trees;
- woodland blocks and woodland edge habitats;
- ponds, ghost ponds and wet features;
- field margins managed for biodiversity;
- ditch systems, tributaries and chalk-stream headwaters;
- areas of grassland, fen and grazing marsh;
- County Wildlife Sites;
- Roadside Nature Reserves;
- ancient woodland;
- adjacent Sites of Special Scientific Interest.

These features do not operate independently. Ancient hedgerows connect woodland to woodland. Woodland edges connect to ponds and ditches. Field margins connect to roadside verges. Roadside Nature Reserves connect to County Wildlife Sites.

Watercourses connect through both surface water and groundwater into the wider River Tas and River Waveney catchments.

The Applicant's own bat surveys demonstrate that barbastelles and numerous other bat species use this connected landscape at a scheme-wide scale rather than restricting activity to isolated habitat patches. Likewise, the aquatic ecology evidence demonstrates that ecological pathways extend beyond individual watercourses through hydrologically connected catchments.

The historic landscape guidance prepared for Norfolk Wildlife Trust reinforces precisely this point. It explains that ecological restoration should seek to maintain and reinforce the historic web of biological connectivity created by hedges, trees, ponds, commons, field margins and woodland, because those connections are themselves fundamental ecological assets. It specifically identifies hedgerows as wildlife corridors, ponds as functioning parts of wider ditch and stream networks, and grassland strips, roadside verges and field margins as historically interconnected habitats rather than isolated parcels.

The Applicant's assessment largely considers the retention or enhancement of individual habitat parcels. It does not adequately assess whether the ecological network itself will continue to function after sixty years of industrial development.

8.3.2 Priority habitats throughout the Order Limits

The Environmental Statement identifies numerous Priority Habitats distributed throughout the Scheme. The significance of these habitats lies not simply in their individual presence but in the ecological relationships between them. Species-rich hedgerows provide commuting and foraging corridors for bats, nesting habitat for farmland birds, refuge for mammals and invertebrates, and

botanical diversity developed over centuries.Woodland blocks and woodland edges support roosting bats, breeding birds, veteran trees, fungi and deadwood communities while acting as ecological stepping stones across the wider landscape. Ponds, ghost ponds, ditches and tributaries provide breeding habitat for amphibians and aquatic invertebrates while remaining hydrologically linked to wider chalk-stream systems. Field margins support botanical assemblages, pollinating insects, seed-producing plants and farmland birds including skylark, lapwing and turtle dove. Grassland, fen and grazing marsh contribute additional habitat diversity and provide ecological continuity between otherwise discrete features.

The Applicant's assessment frequently treats these habitats individually. However, the principal impact pathways arise from fragmentation of the network that links them.

Throughout the Scheme, construction requires:

- road widening;
- visibility splays;
- new accesses;
- haul roads;
- cable corridors;
- compounds;
- trenching;
- HDD compounds;
- permanent access tracks;
- substations;
- BESS infrastructure;
- extensive security fencing.

Each intervention may appear individually limited. However, collectively they create repeated interruptions to the ecological network across almost the entire Order Limits.

The Forestry Commission has warned that fragmentation represents one of the greatest threats to ancient woodland, particularly where smaller woodland blocks become increasingly isolated within surrounding development. The South Norfolk Tree Warden Network similarly concludes that repeated hedgerow crossings, access works and disturbance must be assessed cumulatively because ecological infrastructure depends upon connectivity rather than the survival of isolated fragments.

The Applicant's reliance upon retaining individual habitat parcels therefore does not demonstrate that ecological function has been maintained. A retained woodland surrounded by development is not ecologically equivalent to one remaining embedded within an intact landscape. A retained hedgerow interrupted by repeated crossings does not perform the same function as an uninterrupted commuting corridor. A retained pond whose hydrological connections have altered is not functionally identical to its existing condition.

Ecological connectivity, rather than simple habitat area, is therefore the appropriate measure of likely significant effect.

8.3.3 Existing publicly funded conservation management

The ecological importance of the landscape is further demonstrated by the extensive public investment already made in habitat restoration. Large areas within the Order Limits have been managed under Countryside Stewardship agreements since 2013, with current agreements extending until 2028. The Site 5 objection identifies two alive Countryside Stewardship agreements covering Sites 5A and 5B—CSFREF1375492 and CSFREF829633—as shown on MAGIC on 5 July 2026. The ES does not assess what those agreements presently deliver or the consequences of terminating or displacing them. There are also live Stewardship agreements covering the western end of site 7.

These agreements have funded the creation and long-term management of habitats specifically intended to recover biodiversity within the South Norfolk Claylands. The Applicant's own surveys record the biodiversity value that has resulted from this management, including habitat supporting nationally important bat assemblages, farmland birds, botanical interest and wider ecological connectivity.

The timing is therefore highly significant. Construction of East Pye Solar is proposed immediately after the expiry of many stewardship agreements. Accordingly, habitat that has been established and maintained over many years through public funding would be removed, fragmented or substantially altered immediately after those agreements conclude. This creates an obvious contradiction.

The Applicant relies upon Biodiversity Net Gain calculations which credit the creation of future habitat while simultaneously proposing development that would remove or degrade habitat created through previous publicly funded biodiversity enhancement.

The purpose of Countryside Stewardship is to increase biodiversity across working farmland.It cannot represent good environmental planning to destroy functioning conservation habitat immediately after its successful establishment and then claim biodiversity gains by recreating different habitat elsewhere within the same development. This approach does not reflect genuine ecological enhancement. Rather, it substitutes existing functioning ecological networks with new habitat whose future condition, maturity and ecological function remain uncertain for many years.

8.4 Incomplete and unreliable ecological baseline

The reliability of every later conclusion in Chapter 8 depends upon the adequacy of the ecological baseline. Assessments of receptor value, magnitude of effect, significance, mitigation, residual effects, Biodiversity Net Gain, Habitats Regulations compliance and protected-species licensing can only be sound where the habitats, species populations, ecological functions and impact pathways have first been identified with sufficient completeness and accuracy.

That requirement is particularly important for East Pye because the Applicant's own evidence establishes an unusually sensitive ecological context. The Order Limits support a nationally important bat assemblage, fall within the functional landscape of multiple barbastelle maternity colonies, intersect a connected network of priority habitats and watercourses, and lie adjacent to ancient woodland, SSSIs, County Wildlife Sites and Roadside Nature Reserves. In that context, omissions cannot properly be treated as minor matters capable of correction by pre-construction surveys. They affect the identification and valuation of receptors, the design of the Scheme, the choice between avoidance and mitigation, and the ability of the Examining Authority to understand the likely significant effects before consent is granted.

The baseline is deficient in four principal respects:

- no full botanical survey has been undertaken despite specialist evidence that rare and important assemblages may occur in the areas most exposed to construction;
- important species and functional relationships remain incompletely surveyed or are deferred to later stages;
- the aquatic assessment is habitat-led, spatially restricted and affected by dry survey conditions that may understate seasonal connectivity and ecological importance; and
- relevant local, specialist and professionally verified evidence was not consistently identified, incorporated or reconciled with the Applicant's conclusions.

These are cumulative defects. Together, they undermine the confidence that can be placed in the Applicant's assessment of significance and in its assertion that ecological effects can be avoided or adequately mitigated.

8.4.1 Absence of a full botanical survey

The most conspicuous baseline omission is the absence of a proper full-season botanical survey.

The Applicant's extended habitat assessment expressly states that it is not a full botanical survey. Its principal purpose was broad habitat classification and preliminary ecological appraisal. Incidental recording of dominant or notable plants during UK Habitat Classification work is not equivalent to a systematic botanical survey designed to identify rare species, locally important assemblages, ancient-grassland indicators, species-rich verge communities or variations across the growing season.

That limitation is critical in the South Norfolk Claylands. The ecological interest of this landscape is frequently concentrated within narrow or linear features that may appear modest when mapped at a broad habitat level but support disproportionately important botanical communities. These include:

1. old roadside verges;
2. ancient lanes;
3. species-rich hedgebanks;
4. ditch banks and wet margins;

5. unploughed field margins;
6. former common edges;
7. Roadside Nature Reserves;
8. lowland meadow remnants;
9. woodland rides and edges;
10. pond margins and seasonally wet ground.

The historic-landscape evidence confirms that these features are surviving components of a much older and formerly more extensive network of grassland, commons, broad verges, field 'borders', ditches, ponds and ancient hedges. Professor Tom Williamson's Restoring the Claylands explains that roadside grasslands, field margins, hedgerows, ponds and minor watercourses historically formed continuous habitat networks, and that surviving fragments retain both ecological and historic significance. It also explains that older Claylands hedges commonly contain multiple woody species and that narrow grassland strips and roadside verges can provide important connectivity even where surrounded by arable farming.

Before the application was submitted, a Level 6 botanist familiar with this part of the South Norfolk Claylands advised that a full-season botanical survey was required because of the presence, or credible likelihood, of important and rare plant assemblages across the Scheme area. That evidence was supplied during the pre-application process. It was not answered by commissioning a comprehensive seasonal survey.

The omission is particularly serious because the greatest threat to botanical receptors does not necessarily arise beneath the solar panels themselves. It arises in the linear habitats selected for engineering and transport works. The Scheme proposes or allows:

- widening of narrow rural lanes;
- excavation or stripping of roadside verges;
- visibility splays;
- new and widened accesses;
- haul roads;
- construction compounds;
- temporary working areas;
- cable trenches and joint bays;
- HDD compounds;
- drainage works;
- hedgerow gaps;
- soil storage;
- vehicle overrunning and compaction.

These activities are concentrated in the very field margins, verges, hedgebanks, ditch edges and semi-natural strips where botanical interest is most likely to have survived.

The concern is reinforced by the representation concerning Parker's Lane and the designated Roadside Nature Reserve, where local evidence identifies lowland meadow interest and calls for a

full botanical and hedgerow survey before widening or crossing works are authorised. The historic loss of lowland meadow in the Claylands makes the remaining fragments particularly important. Broad habitat labels or desk-based priority-habitat mapping cannot determine the precise composition, quality or rarity of these communities.

- The absence of survey has several consequences.
- First, botanical receptors may be omitted entirely from the ES. A species or assemblage that was not searched for cannot be properly valued or assessed.
- Secondly, the Applicant cannot demonstrate that the design has followed the mitigation hierarchy. Avoidance requires the ecological resource to be identified before the location of roads, accesses, compounds, visibility splays and cable works is fixed.
- Thirdly, the BNG baseline may undervalue habitats that have been categorised at a broad level without understanding their botanical distinctiveness or condition.
- Fourthly, later discovery may leave no realistic avoidance option. By the time pre-construction surveys are carried out, the principle and broad parameters of development, compulsory-acquisition powers and access arrangements may already have been authorised.

The Applicant cannot claim that botanical harm will be avoided or mitigated when it has not established the botanical baseline in the places most likely to be damaged.

ISH1 has now resulted in a specific action requiring the Applicant to engage with local botanical evidence concerning rare plant records and the effects of proposed road widening and access works. That action materially reinforces the point made here: roadside verges, field margins and access routes cannot safely be treated as low-value construction margins before their botanical interest has been established through appropriate survey.

8.4.2 Incomplete species and functional evidence

The baseline deficiency extends beyond botany. The application contains a substantial quantity of ecological survey material, but volume does not itself establish completeness. Important species, population functions and impact pathways remain unresolved, while some essential matters are deferred to future surveys, licensing processes or contractor-led plans.

Breeding and wintering birds

The Scheme affects extensive arable land, field margins, hedgerows, grassland and stewardship habitat used by ground-nesting and farmland birds. Available evidence identifies species including skylark, lapwing, turtle dove, yellowhammer, linnet, reed bunting, bullfinch, song thrush and other red- and amber-listed birds. Local evidence also identifies a substantial winter starling murmuration and concern that major construction activity may disrupt its continued use of the area.

The baseline does not yet demonstrate that the different ecological requirements of these species have been fully assessed at the scale of the Scheme. Skylark, lapwing and turtle dove cannot be treated as one generic 'farmland bird' receptor:

- skylark require suitable open nesting and foraging conditions;
- lapwing require extensive open ground, appropriate vegetation structure and broad sightlines;
- turtle dove depend upon a different combination of nesting scrub, hedgerows, seed-rich foraging habitat and accessible water.

The earlier design history is also relevant. Areas previously presented as open habitat for nesting birds were subsequently reduced or altered without an equivalent updated assessment of the effect on lapwing or other ground-nesting species. BEPS' procedural evidence records that land within Site 7 identified as a stewardship priority for lapwing was reduced in later design iterations without a corresponding updated ecological assessment.

Where breeding-bird and badger appendices were not available for scrutiny at earlier stages, affected communities and consultees were unable to test the raw evidence, methodologies and conclusions. Any remaining gaps must be resolved through disclosed application-stage evidence rather than reliance upon later pre-construction checks.

Barbastelle roost networks and functional habitat

The Applicant's bat activity surveys are extensive and establish national importance, but that conclusion makes the remaining gaps more significant, not less.

Acoustic activity data demonstrate widespread use but do not, by themselves, fully identify:

- the individuals or colonies using each part of the Scheme;
- the hierarchy of commuting routes;
- seasonal switching between roosts;
- the relationship between maternity colonies and satellite day or night roosts;
- the location and use of winter roosts or hibernacula;
- the consequences of severing individual routes within an overlapping colony landscape.

The Norfolk Barbastelle Study Group has called for further survey and radio-tracking to establish the distribution and habitat use of maternity colonies more fully. Its evidence identifies known, newly confirmed and predicted colony locations and warns that additional woods remain insufficiently assessed. The Applicant's own activity report accepts that static detections within species emergence windows may indicate roosting resources close to survey locations and that bats are mobile animals whose full movement patterns cannot be captured through acoustic survey alone.

That is a material limitation where the Scheme would introduce repeated hedgerow gaps, fencing, lighting, road works, substations and construction activity across the whole functional landscape.

The evidence establishes widespread barbastelle presence, but does not yet map with sufficient certainty the colony-specific routes and resources that must be preserved to maintain ecological function and favourable conservation status.

Trees and roosting potential

The arboricultural and tree evidence also remains insufficiently integrated with the bat assessment. The South Norfolk Tree Warden Network identifies hundreds of trees with potential roost features and warns that a preliminary arboricultural assessment does not establish the effects of final access arrangements, construction traffic, root-zone incursions, soil compaction, trenching and altered hydrology.

Tree damage may not be immediately visible. Root severance, compression, waterlogging, drying or gradual decline may manifest years after construction. For bats, this matters because a tree shown as 'retained' in a plan may still lose roost suitability or become isolated from the dark, connected habitat upon which its ecological function depends.

The ecological baseline must therefore assess trees not merely as retained or removed landscape features, but as potential elements of a wider roost and commuting network.

Great crested newt, water vole, otter, badger and other species

The network of ponds, ghost ponds, ditches, streams, hedgerows and field margins provides potential habitat for great crested newt, water vole, otter, reptiles, badger, brown hare, hedgehog and terrestrial invertebrates. Earlier BEPS objections identified incomplete or deferred survey work for great crested newt and other species, including concern that some work was not conducted at the advised seasonal stage.

The issue is not that every species must be present at every location. It is that the Applicant has selected an extensive and connected habitat network and then relied in part on future pre-construction surveys and method statements. Those later checks cannot substitute for the information required now to determine:

- whether the chosen layout is acceptable;
- whether avoidance remains possible;
- whether protected-species licensing is likely;
- whether the residual-effect conclusions are robust;
- whether cumulative effects have been properly assessed.

Pre-construction surveys have a legitimate role in updating a valid baseline and identifying recent change. They should not be used to establish for the first time whether a receptor exists or whether the authorised design is capable of avoiding significant harm.

8.4.3 Aquatic assessment limitations and dry-condition bias

The aquatic baseline remains materially limited for a development extending across two connected catchment systems and involving numerous watercourse crossings, cable works, drainage alterations and potential pollutant pathways.

The Applicant's aquatic work was principally habitat-led. It relied upon walkover observations, desk-study data and inference from habitat condition and known records at connected locations. It was not a comprehensive programme of targeted species and community sampling throughout the affected aquatic network. That distinction is now expressly acknowledged in the Applicant's September 2026 Position Statement on White-Clawed Crayfish, which confirms that the aquatic surveys were habitat-suitability assessments rather than targeted presence/absence surveys using methods such as manual searching, hand-netting, night searching, trapping or eDNA. EN0110014-000572-8.5 Applicant'...

That does not make the surveys without value. Habitat-suitability assessment can provide relevant information about substrate, bank structure, refugia, hydrological permanence and potential impact pathways. The difficulty is that the limitations of that evidence must be recognised when conclusions are reached about the ecological value and connectivity of the wider network.

Survey conditions

The Applicant now expressly accepts that its original aquatic surveys were undertaken during unusually dry conditions and that the wetted extent, depth and in-channel habitat availability observed may therefore have under-represented typical conditions, particularly in ephemeral headwaters and field ditches. EN0110014-000572-8.5 Applicant'...

The Applicant argues that this does not materially undermine its habitat-suitability conclusions for white-clawed crayfish because important physical habitat features, including coarse substrate, stable refugia, root systems and persistent undercut banks, would remain identifiable notwithstanding low water levels. It also relies upon fine sediment, limited structural complexity, poor hydrological permanence and terrestrial succession as evidence that much of the ditch network is of low suitability. EN0110014-000572-8.5 Applicant'...

BEPS does not suggest that dry conditions automatically invalidate every habitat observation. The narrower concern is that dry-weather survey may underestimate the ecological and hydrological function of features whose importance is seasonal.

In the South Norfolk Claylands, ditches, tributaries, headwaters and ponds may form a more connected network during wetter periods. A feature recorded as dry or only weakly flowing during survey may nevertheless:

- convey sediment and pollutants during rainfall;
- provide seasonal aquatic or amphibian habitat;
- connect ponds, ditches and streams;
- support aquatic or semi-aquatic invertebrates adapted to variable flows;
- form part of groundwater recharge or discharge pathways;

- operate as a temporary headwater or refuge;
- and transmit construction effects downstream during wet conditions.

The survey limitation is therefore relevant not only to whether a particular dry ditch provides permanent crayfish habitat, but to whether the Scheme's ecological and pollution pathways have been characterised adequately under representative conditions.

The Applicant's revised position on white-clawed crayfish

The Applicant's September 2026 position materially changes the basis of the white-clawed-crayfish assessment.

The submitted ES originally relied in part upon the absence of records within the desk-study search area and referred to a single record approximately six kilometres downstream. The Applicant has now considered the information identified by BEPS concerning records from the River Tas at Saxlingham Thorpe and expressly states that it no longer relies upon the absence of records identified through the original desk study as evidence that white-clawed crayfish are absent from the wider River Tas catchment. EN0110014-000572-8.5 Applicant'...

Instead, the Applicant now assumes potential presence within the River Tas and other hydrologically connected suitable habitat on a precautionary basis. Its case is therefore no longer that the species has been demonstrated to be absent. Its case is that significant effects are not anticipated because the relevant pathways of harm are avoided or controlled through the Scheme design and secured mitigation. EN0110014-000572-8.5 Applicant'...

That is an important clarification and narrows the dispute.

BEPS does not contend that targeted presence/absence survey must invariably be undertaken where an applicant has genuinely assumed presence and assessed the relevant effects precautionarily. A precautionary assessment may in principle be sufficient if:

- the relevant receptors and connected habitats have been identified;
- every credible pathway of effect has been assessed;
- avoidance and mitigation measures are sufficiently defined;
- those measures are effective for the full authorised envelope;
- and the controls are legally secured before consent is granted.

The examination issue is therefore whether East Pye satisfies those conditions.

Reliance upon avoidance and embedded mitigation

The Applicant identifies the River Tas and Hempnall Beck as the principal sensitive aquatic receptors and states that both are designated as Avoidance Areas. It relies upon trenchless crossing methods, minimum stand-offs, launch and reception pits outside sensitive watercourse corridors, pollution prevention, sediment control and biosecurity measures, together with the Outline CEMP, OEMP, DEMP and Protected Species Mitigation Strategy. EN0110014-000572-8.5 Applicant'...

Those measures are relevant and potentially important.

However, protection of the riverbed and banks at an individual crossing does not by itself demonstrate that all indirect pathways from the authorised development have been controlled.

The Scheme extends across a much wider hydrological network. Potential pathways include:

- exposed soil and sediment mobilisation;
- runoff from access roads, haul routes and compounds;
- concrete and cementitious materials;
- fuels, oils and other chemicals;
- trenching and cable installation;
- preferential flow along cable trenches;
- groundwater interception and dewatering;
- altered drainage patterns;
- HDD drilling-fluid loss or other crossing failure;
- watercourse and ditch works;
- contaminated firewater;
- accidental pollution incidents;
- and biosecurity failures capable of transmitting crayfish plague or invasive species.

The relevant ecological question is therefore not confined to whether the Applicant directly excavates the bed of the River Tas or Hempnall Beck. It is whether construction and operation elsewhere within the connected catchment could generate effects capable of reaching those receptors or associated habitat.

The Applicant's precautionary assumption of presence increases the importance of that pathway assessment. Once potential presence is assumed, the conclusion of no significant effect depends upon demonstrating that the pathways capable of affecting that population are either absent or effectively controlled.

Reliance on inference and hydrological connectivity

The Applicant's aquatic assessment uses existing Environment Agency and other data from connected watercourses to infer likely ecological conditions where direct survey data are limited. That can be a reasonable precautionary approach. However, the same hydrological connectivity relied upon to infer ecological conditions must also be reflected when assessing effects.

It would be inconsistent to rely upon connection within the River Tas system when identifying the possible ecological community, but then assess sediment, pollution, altered flow or disease pathways only within a narrow survey reach or crossing location.

The relevant Zone of Influence follows the credible pathway of effect. For East Pye, that may extend through ditches, tributaries, groundwater pathways and downstream watercourses beyond the immediate footprint of individual works.

Absence of direct aquatic-community sampling

There remains no comprehensive programme of direct aquatic macroinvertebrate or other community sampling across the affected network. That limits the ability to establish:

- existing community composition;
- pollution-sensitive taxa;
- seasonal differences in ecological condition;
- baseline variation between connected reaches;
- aquatic prey availability for bats and birds;
- and the extent to which future change could be distinguished from natural variability.

This is relevant beyond white-clawed crayfish. The Environment Agency has raised wider aquatic-ecology issues, including fish, European eel, macroinvertebrates, water quality and the potential interaction between solar panels and aquatic insect lifecycles. The adequacy of the aquatic baseline must therefore be considered across the full receptor network rather than reduced to the question of whether white-clawed crayfish are physically present within a particular ditch.

Without a sufficiently robust baseline, post-construction monitoring may also have limited value because it may be difficult to determine whether observed ecological changes arise from the Scheme or from pre-existing natural variation.

Further survey and the 2026 drought

The Applicant confirms that no further targeted white-clawed-crayfish surveys were undertaken in 2026 and that none is presently proposed. It explains that the continuing drought would have produced conditions even less representative than those recorded during the original surveys and considers that further presence/absence work would not materially alter its assessment because potential presence is already assumed and the relevant impact pathways are said to be avoided or controlled.

BEPS accepts that additional survey undertaken in exceptionally dry conditions would not necessarily provide a more representative aquatic baseline. However, Norfolk Rivers Trust has since surveyed the Tas in September 2026 and again found white-clawed crayfish within 2km of the order limits.

Where the species is assumed present and representative seasonal survey by the applicant is not available, the assessment should demonstrate with particular clarity that:

- all connected receptors have been identified;
- all credible construction and operational pathways have been considered;
- the proposed avoidance areas are sufficiently extensive;
- indirect effects outside the immediate crossing locations are controlled;
- biosecurity measures are specific and enforceable;
- and the DCO controls prevent detailed design from introducing new pathways after consent.

Catchment-scale assessment remains necessary

The River Tas, Hempnall Beck, Broome Beck, Starston Brook and their associated ditch systems are not isolated receptors. They form connected surface-water and groundwater networks through which effects may propagate.

The Applicant's September 2026 position narrows the white-clawed-crayfish dispute but does not remove the need for catchment-scale assessment. The Applicant accepts potential presence in the wider River Tas system but concludes that significant effects are not anticipated because the principal receptors are avoided and indirect pathways will be controlled.

The central question for the Examination is therefore whether that conclusion has been demonstrated across the whole authorised Scheme.

In particular, the assessment must establish whether the combined effects of trenching, access works, drainage changes, temporary compounds, soil disturbance, HDD, dewatering, runoff, sediment generation and accidental pollution could create pathways extending beyond the immediate watercourse crossings.

The same issue applies cumulatively. A series of individually minor works distributed through a connected catchment may produce a materially different ecological risk from a single isolated crossing.

Conclusion

The Applicant has now appropriately moved away from relying upon an absence of desk-study records as evidence that white-clawed crayfish are absent from the wider River Tas catchment and instead assumes potential presence on a precautionary basis. That is a material improvement in the assessment position. It does not, however, resolve the wider aquatic-baseline issue.

The original survey was undertaken during unusually dry conditions; direct species and aquatic-community sampling remains limited; seasonal connectivity may have been under-represented; and the Scheme introduces numerous potential sediment, pollution, drainage, groundwater and biosecurity pathways throughout a connected catchment.

The appropriate examination question is therefore no longer simply whether a further crayfish presence/absence survey should be undertaken. It is whether the precautionary assessment is sufficiently complete to demonstrate that all credible pathways to assumed sensitive receptors have been identified and effectively controlled.

On the evidence presently available, BEPS submits that this has not yet been demonstrated with sufficient robustness. The Applicant's conclusion of no significant aquatic effect now depends materially upon the completeness of the catchment-scale pathway assessment and the certainty, effectiveness and enforceability of the avoidance and mitigation measures relied upon. Those matters should be resolved before the ExA reaches its conclusions on aquatic ecology and the water environment.

8.4.4 Failure to identify and incorporate local and specialist evidence

An Environmental Statement must present an accurate and sufficiently complete account of the baseline. The Applicant is not entitled to disregard relevant ecological information merely because it lies outside a selected search radius, has been supplied by local experts or was not initially returned by a commercial record search.

Local and specialist evidence is especially important for species that are under-recorded, difficult to survey or geographically restricted. The Applicant's own bat report acknowledges that absence of records does not demonstrate absence and may reflect under-recording. The same principle applies to botany, crayfish, wintering birds, roost trees and seasonal aquatic habitats.

White-clawed crayfish in the River Tas

The clearest example is the River Tas white-clawed crayfish evidence.

The Applicant's aquatic appendix stated that the data search did not return records of white-clawed crayfish within the two-kilometre search area. However, the evidence now before the Examination records:

- Environment Agency confirmation of a white-clawed crayfish found in 2020;
- a Norfolk Rivers Trust survey in October 2020 finding two juveniles, confirming breeding;
- a 2021 hand and eDNA survey finding three white-clawed crayfish;
- a further Norfolk Rivers Trust survey in 2022 reconfirming presence;
- a further Norfolk Rivers Trust survey in September 2026 reconfirming presence;
- habitat-enhancement work near the known population;
- records of river lamprey and native brown trout from the same system;
- evidence that the information was available from public and specialist sources and was supplied to the Applicant before submission.

The evidence summary states that the breeding population lies within two kilometres of part of the Scheme and that the Applicant's statement conflicts with information available from the Environment Agency, Norfolk Rivers Trust (Appendix C), Norfolk Crayfish Group and local documented evidence (Appendix D).

This is not simply a dispute over the appropriate interpretation of a record. It is a material baseline inconsistency involving a protected and priority species in a hydrologically connected chalk-stream system. The presence of juveniles is particularly significant because it establishes breeding rather than a single transient observation. Repeated confirmation in 2020, 2021, 2022 and 2026 indicates continuing use of the River Tas. The record also bears directly on:

- receptor value;
- survey scope;
- water-quality sensitivity;
- biosecurity and crayfish-plague risk;

- sediment and pollution pathways;
- the Zone of Influence;
- mitigation and monitoring requirements.

The failure to identify or incorporate that evidence undermines confidence in the wider desktop study. It also undermines the community's trust in East Pye Solar's genuine concern for local ecology.

Botanical evidence
The same concern arises in relation to the Level 6 botanist's advice. Specialist evidence was provided that the area supports important botanical assemblages and that full-season survey was required. The Applicant's broad habitat survey did not resolve that concern.

Local botanical evidence should not be dismissed merely because particular species are absent from the Applicant's desk-study return. Local survey results are in the possession of ecologists and have not been uploaded to NBIS, meaning that the online record is only a fraction of the local knowledge available. That is the reason targeted seasonal survey was requested by the local specialist botanist.

Barbastelle specialist evidence
The Norfolk Barbastelle Study Group has supplied specialist knowledge derived from long-term local survey, colony identification and radio-tracking. That work identifies known and potential maternity colonies and demonstrates the importance of connected woodland, hedgerows and agricultural mosaics.

Norfolk Barbastelle Study Group evidence and need for further colony and habitat-use surveys

The report Barbastelle Maternity Colonies in the East Pye Solar Scheme Area at December 2025 was prepared by Jane Harris on the basis of work by the Norfolk Barbastelle Study Group, a specialist group within the Norfolk and Norwich Bat Group. It provides new field evidence concerning maternity colonies and woodland use within and around the East Pye Order Limits.

The report describes the South Norfolk Claylands as an arable but structurally diverse landscape containing scattered woodlands, high hedges, pollarded trees, open fields and commons. Those features collectively provide roosting habitat, feeding resources and landscape connectivity sufficient to support a barbastelle metapopulation. The ecological receptor is therefore not confined to individual woodland roosts. It includes the connected woodland, hedgerow and open-land mosaic used by maternity colonies.

The report applies a six-kilometre Core Sustenance Zone around each maternity colony. It records that the CSZs of six colonies lie within or abut the East Pye Scheme area. Two colonies are beside the proposed cable route, and one of those would also be surrounded by solar arrays. It further

notes that other woodlands along the Scheme, particularly towards its eastern end, had not yet been surveyed for barbastelle maternity colonies.

The Study Group's 2025 work examined Spring Wood at Hempnall Green, Little Wood near Shotesham, the eastern and western sections of Brooke Wood, Lower Spring Wood and Round Wood. The selected woodlands lay immediately beside or approximately 100–400 metres from the Scheme. They included County Wildlife Sites, a component of the Shotesham–Woodton Hornbeam Woods SSSI and conifer plantations containing mature broadleaved compartments.

The investigation combined:

- winter assessment of potential roost features;
- acoustic monitoring during the pre-parturition or maternity period;
- trapping and radiotracking where access and woodland structure allowed; and
- emergence counts to estimate colony size.

The roost-potential assessment looked specifically for features associated with barbastelle, including loose or lifted bark, bark collars and slabs, splits, cracks and fissures, together with damaged, dying or dead trees. All surveyed woodlands contained suitable roost features. Little Wood was assessed as having high barbastelle roost potential, while Spring Wood, both sections of Brooke Wood, Lower Spring Wood and Round Wood were assessed as moderate.

The acoustic results produced evidence requiring further investigation. At Little Wood, barbastelle activity repeatedly exceeded the threshold used by the Study Group to predict a maternity colony. At Brooke Wood East, the maternity-colony threshold was reached on four nights, with a peak of 15 passes in the hour after sunset. At Lower Spring Wood, the threshold was exceeded on two nights. Barbastelles were also recorded in Spring Wood, although the evidence there was less conclusive, and in Round Wood at lower levels.

The prediction for Little Wood was subsequently confirmed through radiotracking under a Natural England project licence. Three female barbastelles were captured during a pre-parturition trapping session, two of which were assessed as pregnant and fitted with transmitters. Both used a roost in a tall, living but leaning ash whose twisted trunk had produced split and lifted bark. Emergence counts reached 36 before parturition. The report estimates that the post-parturition colony could comprise approximately 55 bats, which it describes as large in the context of known Norfolk maternity colonies.

This finding has wider implications for the Applicant's woodland assessment. The confirmed maternity roost was not dependent on a conventional hole or cavity in a visually intact veteran oak. It occurred beneath split and lifted bark in an ageing ash. The report explains that ash dieback is generating roost features in South Norfolk woodland and that the importance of ash woods as a barbastelle roost resource may therefore increase. Ash woodland should not be discounted because of poor tree condition or the prospect of future decline.

The surveys also show that small stands of mature broadleaved trees embedded within predominantly coniferous plantations may support maternity colonies. The mature oak belt in Brooke Wood generated acoustic evidence predicting a colony, notwithstanding the wider

plantation context. The Study Group expressly cautions that conifer plantations should not be dismissed without detailed assessment where mature broadleaved compartments and suitable bark or fissure features remain.

For Spring Wood at Hempnall Green, the report does not claim confirmation of a maternity colony. Trapping was constrained by the absence of suitable rides near the mature oak belt and by limited access. However, the timing of recorded calls, the capture results and previous acoustic evidence were considered sufficient to confirm that barbastelles roost and feed within the woodland. The precise roost status remains unresolved. This is a survey limitation requiring further work, not evidence of absence.

The Study Group's evidence therefore materially changes the assessment context. It confirms a previously unverified maternity colony, predicts further colonies and shows that apparently secondary woodland compartments may form part of the maternity-roost resource. The East Pye assessment cannot safely assume that only previously known or conventionally high-value ancient woodland blocks require maternity-colony investigation.

Required further barbastelle surveys

The report expressly calls for further radiotracking to confirm whether maternity colonies are present in:

- Brooke Wood;
- Lower Spring Wood; and
- Spring Wood at Hempnall Green.

It also states that other woodlands within or close to the Scheme should be assessed regardless of size. The candidate sites identified by the Study Group include:

- Hempnall Little Wood;
- Winters Grove;
- Ringers Grove;
- Tindall Wood;
- Sexton Wood;
- Hedenham Wood;
- Park Plantation; and
- the numerous smaller scattered woods to the east and west of Hempnall.

Saxlingham Grove is identified as already supporting a maternity colony. Ringers Grove is singled out because it is an ash wood of a similar age to Lower Spring Wood, while Tindall Wood, Sexton Wood, Hedenham Wood and Park Plantation are located towards the eastern end of the Scheme, where survey coverage remained incomplete.

The further work should not end once maternity roost trees have been located. The Study Group concludes that the effects of East Pye cannot be assessed properly without a full understanding of barbastelle distribution and habitat use within the Scheme area. In EIA terms, that requires survey evidence capable of establishing:

- the complete distribution of confirmed and probable maternity colonies;
- the woodland compartments and tree types used for roosting;
- the relationship between alternative roosts used by each colony;
- principal foraging areas;
- commuting routes between woods and feeding habitats;
- the use of hedgerows, tree lines, ponds, watercourses and woodland edges;
- the areas of overlap between the Scheme and the six-kilometre CSZs;
- and the effects of cable routes, access works, panel arrays, substations, fencing and lighting upon that functional network.

Radiotracking is particularly important because static acoustic detectors can establish activity and support a prediction of nearby roosting, but cannot by themselves identify the full movement network, the particular maternity colony using a route or the relative importance of different fields and linear features. Acoustic monitoring remains useful for screening additional woods, but probable colonies identified acoustically should then be tested through appropriately licensed trapping and radiotracking.

The survey programme should also be designed around the limitations encountered in 2025. Lack of rides or convenient trapping locations should not be treated as proof that a colony is absent. Alternative detector positioning, longer deployment, additional access arrangements and suitable licensed methods should be considered where woodland structure makes conventional trapping difficult.

These surveys are necessary before the Applicant can establish the reasonable worst-case effect of:

- repeated hedgerow severance;
- lighting of otherwise dark routes;
- noise and vibration near maternity woods;
- panel development surrounding a colony-support area;
- cable and haul-road works beside colonies;
- and cumulative loss or compression of foraging habitat within overlapping CSZs.

Later pre-construction checks would not provide an adequate substitute. By that point, the principal development areas, access routes and cable alignments may have been authorised. The purpose of the further work must be to inform avoidance and design, including removal or relocation of development from the most important maternity-colony support landscapes.

The Study Group's evidence therefore supports a clear conclusion: the known maternity-colony baseline has expanded, additional colonies are predicted, several candidate woodlands remain unassessed and the functional habitat use of overlapping colonies has not yet been mapped comprehensively. Until that work is complete, the Applicant cannot demonstrate that the proposed mitigation will maintain the integrity and connectivity of the South Norfolk barbastelle metapopulation.

The Applicant did use some NBSG information in its desk study, but the Study Group's call for further work remains material. Where the specialist body concludes that the maternity-colony landscape is not yet fully understood, the Applicant cannot rely solely on its acoustic survey to assert that generic buffers and retained hedges will preserve function.

8.4.5 Consequences for the Environmental Statement

These baseline defects affect the whole of the ecology case.

They undermine:

- the valuation of receptors;
- the assessment of magnitude and significance;
- the delineation of the Zone of Influence;
- the alternatives and design process;
- the ability to demonstrate avoidance;
- the formulation of species-specific mitigation;
- the BNG baseline and claimed gains;
- the HRA screening conclusions;
- the assessment of EPS licensing prospects;
- the cumulative-effects assessment;
- the enforceability and effectiveness of the OLEMP and protected-species strategies.

The Applicant may argue that later surveys can inform detailed design or licensing. That does not answer the present objection. Later surveys can update a sufficiently complete baseline; they cannot lawfully cure a situation in which the Examining Authority is being asked to approve the principle, parameters and compulsory powers of the development without knowing the full ecological resource or whether avoidance is possible. Several of the outstanding ecological matters are not questions of detailed design but questions of environmental knowledge. The Applicant still lacks, or has only recently begun to obtain or supplement, important information concerning botany, aquatic ecology and the functional use of the landscape by protected species. Those matters are capable of determining where development can safely occur, what avoidance is required, what mitigation is feasible and whether the authorised development can remain within the effects assessed. They therefore go to the environmental acceptability of the authorised envelope itself, not merely to its later implementation.

The appropriate sequence is:

- identify the receptors and ecological functions;
- establish their value and sensitivity;
- define the full Zone of Influence;
- redesign to avoid harm;
- assess the residual effects;
- specify and secure mitigation;

- consider compensation only as a last resort.

East Pye Solar has not completed that sequence. In several important respects, it has fixed the development envelope and deferred the information required to determine whether that envelope is ecologically acceptable.

BEPS therefore submits that the ecological baseline is not sufficiently complete, accurate or reliable to support the Applicant's conclusions of limited residual effect. Until the botanical, species, aquatic and functional gaps are remedied and all relevant specialist evidence is incorporated into a revised assessment, the Examining Authority cannot safely conclude that likely significant ecological effects have been identified, avoided or adequately mitigated.

Strategic Ecological Network Conflict
The Norfolk Green Infrastructure Map (NBIS, 2017) and the South Norfolk Ecological Network identify the application area as forming part of a connected landscape of Strategic GI Corridors, woodland core areas, wetland cores (including the River Tas chalk stream system), and grassland/heath cores. The East Pye Solar red line boundary and Cable Route Corridor intersect and fragment these corridors at multiple points.

The scheme is not located in an ecologically degraded or isolated landscape; it sits within an identified strategic connectivity network intended to maintain habitat permeability across South Norfolk. Industrialisation of this landscape through panel arrays, fencing, security lighting, internal roads, substations and cable corridors would:

- Sever functional habitat linkages between woodland blocks (including known barbastelle maternity areas);
- Disrupt hydrological connectivity between agricultural land and chalk stream corridors;
- Fragment grassland and farmland bird territories;
- Introduce hard barriers across mapped GI corridors contrary to the ecological network approach embedded in national and local policy.

The ES does not assess fragmentation of the Strategic GI network as a discrete impact. There is no landscape-scale connectivity analysis, no permeability modelling, and no assessment of cumulative corridor compression with other NSIP solar and grid infrastructure in the area.

In these circumstances, the scheme conflicts with the established South Norfolk ecological network framework and fails to demonstrate compliance with NPS EN-1 (2023) requirements to avoid significant harm to biodiversity and maintain ecological coherence.

8.4.6 Barbastelle Bats

Where a proposed NSIP is located wholly within overlapping Core Sustenance Zones for barbastelle bats and directly adjacent to multiple ancient woodlands supporting maternity

colonies, the impacts of construction disturbance, habitat fragmentation, lighting, noise and long-term landscape disruption are **intrinsic to the scheme** and **cannot be reduced to a level that avoids adverse effects on the local barbastelle population's favourable conservation status**.

As such, the effects are **not capable of mitigation**, and the scheme is fundamentally incompatible with the Habitats Regulations.

8.5 Nationally important bat assemblage and barbastelle maternity-colony landscape

The Applicant's bat evidence is one of the most consequential parts of the Environmental Statement. It does not describe a landscape of merely moderate value in which bats make occasional use of retained boundaries. It identifies a diverse bat assemblage of national importance, widespread and unusually high activity across the Order Limits, and scheme-wide use by barbastelle, one of the rarest and most conservation-sensitive British bats.

That finding must govern the assessment of the Scheme. It is not consistent to assign national importance to the bat assemblage and then assess the effects of industrialising the same landscape principally by reference to the retention of individual hedgerows, woodland buffers and future habitat enhancement. The issue is whether the Scheme would preserve the functional relationships between maternity roosts, satellite roosts, woodland, wetland, hedgerows, field margins and dark commuting routes across the whole landscape.

The evidence does not presently establish that it would.

8.5.1 The Applicant's finding of national importance

The Bat Activity Survey Report evaluated the bat assemblage using the geographic framework in the UK Bat Mitigation Guidelines. The Applicant recorded eleven bat species during the combined survey programme, together with calls identified to broader species groups. Those records included common and soprano pipistrelle, brown long-eared bat, noctule, Natterer's bat, Daubenton's bat, serotine, Leisler's bat, Nathusius' pipistrelle, whiskered bat and barbastelle.

The Applicant calculated an assemblage score of 22 against a maximum possible regional score of 28. That represents 78% of the maximum and exceeds the 70% threshold used by the Applicant to identify an assemblage of national importance. It accordingly concluded that the Order Limits support habitats of up to national-level importance for commuting and foraging bats.

This is a significant admission. The national value does not arise from one woodland, one roost tree or one unusually active detector. The Applicant records between seven and ten species at each detector location, with activity distributed across the Scheme. The conclusion therefore concerns the landscape as a whole.

The Applicant also states that the recorded activity was greater than would ordinarily be expected from habitats it had classified as being of only moderate quality. That apparent tension should not be resolved by downgrading the bats. It shows that broad habitat classification has failed to

capture the functional value of the South Norfolk Claylands network. Arable fields considered individually may appear commonplace, but their value changes where they are interwoven with mature hedges, woodland edges, ponds, streams, wet corridors and multiple maternity colonies.

The proper conclusion is therefore that the ecological value of the Order Limits is expressed through landscape function rather than habitat labels alone. The very features affected by the Scheme—field boundaries, dark lanes, woodland edges, margins and watercourses—combine to support a nationally important assemblage.

8.5.2 Barbastelle abundance, distribution and significance

Barbastelle is central to that national-importance conclusion. It is a rare, woodland-associated, light-averse bat protected as a European Protected Species and listed in Annex II of the Habitats Directive. It depends upon a network of roosts and extensive, connected foraging habitat rather than a single fixed roost feature.

The Applicant's static detectors recorded 11,699 barbastelle passes during the combined survey period. Barbastelle was the third most frequently recorded species, after common and soprano pipistrelle, with a reported mean Bat Activity Index of 23.12 passes per hour. The Applicant itself describes this as indicating high use of the Order Limits.

The percentage of all calls attributable to barbastelle should not be misunderstood. Common pipistrelles are among the most abundant bats in Britain, whereas barbastelles are rare and more restricted. The Applicant expressly acknowledges that activity figures must be interpreted in the context of species rarity and that lower absolute numbers for barbastelle may carry much greater ecological significance than similar numbers for common species.

Most importantly, barbastelle was recorded at every static detector location across the Order Limits. The detections extended across all principal development areas, including the BESS and substation landscape, Sites 1 to 10 and the intervening field-boundary network. Barbastelle was also encountered on thirteen of the sixteen night-time walkover routes across the combined annual survey period.

This distribution is not consistent with a small number of isolated bats occasionally crossing the Scheme. It demonstrates landscape-scale use.

The activity data include several locations with very substantial numbers of barbastelle passes, including:

- approximately 1,395 passes at the detector in Sub-Site 2B;
- approximately 1,362 passes at Site 3;
- approximately 1,170 passes around 7F/7G;
- approximately 1,119 passes at 10B;
- approximately 806 passes at 7C;
- and hundreds of further passes at numerous other locations.

The precise figures require care because an acoustic pass does not represent a unique individual. However, that limitation does not reduce the importance of the distribution. Repeated detections over several months and across the full extent of the Order Limits establish sustained and widespread habitat use.

The Applicant also recorded barbastelles within the expected emergence window at several locations, including areas associated with 7H, Site 3 and 7C. It acknowledges that these records may indicate roosting features within or immediately adjacent to the affected landscape. That raises the possibility of additional day, night or satellite roosts supporting the known maternity populations.

The Applicant's own conclusion is therefore unavoidable: barbastelle activity throughout the Order Limits is high, ubiquitous and ecologically significant.

8.5.3 Multiple maternity colonies and overlapping Core Sustenance Zones

The Scheme lies within an exceptional concentration of barbastelle maternity-colony habitat.

The Applicant's desk study records information from the Norfolk Barbastelle Study Group concerning multiple maternity colonies whose Core Sustenance Zones overlap the Order Limits. Known colonies identified in the Applicant's material include:

- Saxlingham Grove;
- Spring Wood;
- Little Wood;
- Brooke Wood;
- Tyrrells Wood;
- Smockmill Common;
- Gawdy Hall Woods;
- Tacolneston;
- and Earsham Woods.

The Applicant states that the Order Limits lie within the published six-kilometre Core Sustenance Zones of nine known colonies and that the combined zones associated with several of the closest colonies cover the entire Scheme. The colony network therefore extends far beyond the formal boundary of any single woodland.

The Norfolk Barbastelle Study Group's evidence makes the position still more important. Its work identified a newly confirmed maternity colony at Little Wood near Shotesham and indicated that further maternity colonies were likely at Brooke Wood and Lower Spring Wood. Updated radiotracking in 2025 confirmed the Little Wood colony, with a pre-parturition emergence count of approximately 36 bats and an estimated larger post-parturition population. The Study Group's mapping shows that the six-kilometre Core Sustenance Zones of at least six known maternity colonies lie within or abut the Scheme area.

Core Sustenance Zones are not exclusion zones in themselves, but they identify the landscape within which maternity colonies are expected to obtain the resources necessary to persist. Within

that landscape, the importance of any individual field cannot be understood solely by the number of calls recorded there on a limited number of nights. Maternity colonies use networks of woodland roosts, switch between trees, travel along hedges and streams and exploit changing concentrations of insect prey across the season.

The Applicant's own review of Norfolk barbastelle ecology states that tracked maternity-colony bats travel an average of approximately 3.5 kilometres from their woodland roosts and that the most intensively studied individuals did not travel beyond approximately 5.5 kilometres. It describes woodland as both roosting and foraging habitat and identifies surrounding arable mosaics, particularly those containing linear features, as important foraging landscapes. These figures explain why the whole East Pye landscape, rather than simply the woodland containing each roost tree, must be assessed as functional habitat.

The effect of multiple overlapping zones is also cumulative. A hedge, stream corridor or woodland edge may be used by bats from more than one colony. Damage to such a feature may therefore affect connectivity within a wider metapopulation network rather than a single local roost.

No colony-by-colony functional analysis has been supplied showing:

- which colonies use each part of the Order Limits;
- the principal and secondary flight routes;
- seasonal differences in habitat use;
- the proportion of each colony's core habitat affected;
- whether bats can divert around lit or obstructed routes;
- or the cumulative consequences of repeated disturbance across overlapping zones.

In the absence of that work, the Applicant cannot demonstrate that retaining selected hedgerows and applying standard woodland buffers will maintain the ecological function of the maternity-colony landscape.

8.5.4 The Norfolk Barbastelle Study Group's call for further survey

The Norfolk Barbastelle Study Group's evidence is especially important because it is based upon long-term local expertise, colony identification, trapping and radiotracking rather than acoustic activity alone.

The Study Group concluded that the impacts of East Pye Solar cannot properly be assessed without a fuller understanding of barbastelle distribution and habitat use within the Scheme area. It identified further woodlands requiring investigation and predicted additional maternity colonies on the basis of acoustic evidence and the known structure of the local population.

Further work is needed to establish:

- the complete distribution of maternity roosts;
- use of satellite and alternative tree roosts;
- the functional relationship between the known colonies;
- principal commuting and foraging routes;

- the role of individual hedges, lanes, woodland edges and watercourses;
- seasonal and weather-related variations in use;
- and the relationship between the solar sites, cable corridors and colony home ranges.

Acoustic detectors are valuable for confirming species presence and relative activity. They cannot reliably identify the colony of origin, distinguish the number of individuals responsible for repeated passes or map the complete nightly movement of bats through a complex landscape. Radiotracking is therefore particularly important where the legal and ecological question concerns the maintenance of maternity-colony function.

The Applicant should not be permitted to treat the Study Group's work merely as contextual desk-study information while declining to undertake the functional analysis that the evidence indicates is required. The Applicant's own report accepts that bats are highly mobile, may leave survey areas quickly and cannot have all their flight paths captured through the chosen surveys.

The baseline is therefore simultaneously sufficient to establish very high sensitivity but insufficient to demonstrate that the Scheme's effects can be avoided.

That distinction is important. Incompleteness cannot be used to downgrade the receptor. The known evidence establishes national importance and widespread barbastelle use. The remaining uncertainty concerns the full scale of the impact and the adequacy of mitigation. In accordance with the precautionary approach, that uncertainty weighs against authorising development rather than in its favour.

8.5.5 SSSI and ancient-woodland maternity-roost landscape

Many of the woods supporting known or likely barbastelle colonies form part of nationally designated or irreplaceable habitat networks.

The relevant woodland landscape includes, among others:

- Saxlingham Grove within the Shotesham–Woodton Hornbeam Woods SSSI complex;
- Little Wood close to the Site 7 and Site 8 landscape;
- Spring Wood adjacent to Site 3;
- Hempnall Little Wood;
- Hedenham Wood SSSI close to Site 10;
- Brooke Wood;
- Tyrrells Wood;
- and other ancient and semi-natural woodland blocks connected by hedges, streams and lanes.

The Applicant records the Saxlingham Grove maternity colony very close to the Order Limits. Historic records include peak emergence counts of up to 30 bats from roosts in ash and oak trees, further counts from a dead oak, and the discovery of a lactating female. The woodland shares boundaries with parts of the proposed development landscape.

The fact that bats may not be named in every SSSI citation does not make their use of those woods irrelevant. A SSSI citation records the notified interest features for which the site was designated; it does not exhaust the site's ecological value. Where nationally important protected-species populations use the woodland and depend upon its surrounding habitat network, effects on that use remain material to the ecological assessment, the planning balance and protected-species law.

The Forestry Commission identifies six ancient woodlands directly adjacent to the Scheme:

- Saxlingham Grove;
- Doyly's Grove;
- Popes Wood;
- Spring Wood;
- Little Wood;
- and Ringers Grove.

It warns that fragmentation is one of the greatest threats to ancient woodland and expresses particular concern about the isolation of Doyly's Grove and the near-enclosure of Ringers Grove. That concern is directly relevant to bats. Woodland does not provide equivalent ecological function where it is retained as an island inside a fenced, lit and operational energy development but separated from its former dark, permeable surroundings.

The relevant indirect effects include:

- loss or interruption of dark flight routes;
- artificial lighting at woodland edges;
- construction noise and vibration;
- increased vehicle movements;
- dust and changes to air quality;
- altered drainage and groundwater conditions;
- loss of insect-rich margins;
- security fencing and access infrastructure;
- and the cumulative enclosure of woodland by panel arrays.

Standard buffer distances do not demonstrate that these processes will be avoided. A buffer may protect roots or prevent direct excavation, but it does not by itself preserve the broader ecological setting, colony connectivity or the darkness and prey resources required by barbastelles.

Natural England's own Relevant Representation identifies protected-species licensing as an unresolved amber matter and advises that the need for licences should be clarified at the earliest opportunity. It also identifies several SSSIs and ancient woodlands that are hydrologically linked to the Order Limits and states that the measures relied upon to protect designated sites must be secured.

Although Natural England is presently broadly satisfied with the Applicant's designated-site conclusions, that position is expressly conditional upon mitigation being followed and secured. It

does not answer the separate scheme-wide question of whether the barbastelle maternity-colony network, including supporting habitat outside designated boundaries, will remain functional.

8.5.6 Hibernacula, satellite roosts and year-round habitat function

The ecological assessment should not be confined to summer maternity activity.

Barbastelles use numerous tree roosts and may switch roost frequently. The Applicant's report acknowledges that woodland populations use a network of roost sites and that barns may also be important outside the maternity period. It records evidence that Norfolk barbastelles remain active in winter and frequently use woodland rather than relying principally upon conventional underground hibernation sites.

The wider Scheme landscape also contains purpose-built bat hibernacula in former Second World War structures adjoining Spring Wood and the Site 3 landscape. The former airfield bomb shelters or bunkers were adapted by the Norfolk Bat Group for bat use and are reported to support a range of bat species. The known presence of these structures adds a further year-round function to the local bat network.

Even where the Scheme does not directly destroy a maternity roost or hibernaculum, it may affect its functionality by altering the habitats through which bats reach it and the food resources available after emergence. The legal protection afforded to breeding sites and resting places cannot be reduced to preservation of the physical cavity alone. A retained roost may nevertheless be disturbed, obstructed or rendered less viable if:

- its emergence route is lit;
- nearby vegetation is removed;
- access to commuting corridors is severed;
- construction noise or vibration causes disturbance;
- surrounding foraging habitat is degraded;
- or repeated vehicle and human activity alters use of the site.

The Applicant has not supplied an integrated year-round assessment drawing together:

- maternity-colony use;
- satellite roosts;
- potential roost trees;
- autumn activity;
- winter activity;
- known hibernacula;
- construction noise and vibration;
- and dark-corridor connectivity.

This is especially concerning because pile driving remains within the construction envelope and is identified in the Scheme's own material as a principal source of construction noise and vibration. There is no adequate species-specific analysis of whether prolonged percussive piling, HDD, heavy

traffic and compound activity could disturb roosting or hibernating bats within the surrounding woodland and built structures.

The effect cannot safely be deferred to an Ecological Clerk of Works or a pre-construction check. Those measures may reduce the risk of immediate harm to an occupied feature, but they cannot determine whether the authorised construction methodology is compatible with the continued function of the wider roost network.

8.5.7 Natural England's favourable conservation status guidance

Natural England published its *Definition of Favourable Conservation Status for barbastelle bat* (RP2974) in March 2024. It is directly relevant to the assessment of East Pye because it identifies, at national level, the ecological conditions required for *Barbastella barbastellus* to thrive sustainably and the principal pressures preventing that outcome.

Natural England defines favourable conservation status ("FCS") as the minimum threshold at which there can be confidence that a species is thriving in England and is expected to continue to thrive sustainably in the future. It assesses three interdependent parameters: natural range and distribution; population; and the extent and quality of habitat supporting that population.

The central fact is that Natural England does **not** consider barbastelle presently to be at favourable conservation status. Its assessment records a current estimated English population of approximately 21,000–42,000 individuals but defines the favourable population as 73,000–147,000 individuals. It estimates approximately 10,435 km^2 of supporting habitat within the species' predicted English range and defines the favourable supporting-habitat requirement as approximately 11,700 km^2. Favourable status therefore requires not merely maintenance of the present position but a substantial increase in population, expansion of supporting habitat and restoration into parts of the species' historic range.

This distinction is fundamental to East Pye. The appropriate conservation context is not one in which there is ecological headroom to absorb incremental deterioration of otherwise unimportant habitat. Natural England's national objective is recovery: more barbastelles, more suitable habitat, greater connectivity and expansion of the species' range.

8.5.7.1 The ecological requirements identified by Natural England

Natural England describes barbastelle as closely associated with broadleaved woodland containing substantial numbers of veteran, dead and dying trees. The species predominantly roosts beneath loose bark and within narrow splits and cavities. It switches roosts frequently and therefore requires a large resource of alternative suitable trees rather than protection of a single identified roost tree. A colony may use as many as 50 different roosts during one summer, with roosts typically distributed over approximately 100–200 hectares and, in some recorded cases, considerably more. Females show fidelity to maternity-roost areas between years.

This has an important consequence for the assessment of East Pye. The relevant breeding resource is not simply the particular tree occupied on the night of a survey. The ecological unit is a wider

roost network containing sufficient existing and future roost features to allow repeated switching throughout the breeding season and between years.

Natural England also emphasises the scale of the species' foraging requirements. Barbastelles are specialist moth predators. They favour woodland and riparian habitats with high structural diversity, but in agricultural landscapes they also depend substantially upon woodland edges, treelines, hedgerows, field boundaries, meadows and riparian vegetation. Bats repeatedly forage along the interface between dense vegetation and open ground. Most foraging occurs within approximately 7 km of roosts, but movements exceeding 20 km have been recorded. Female home ranges are generally very large, commonly approximately 400–1,500 hectares, with much larger individual ranges also documented.

Particularly important for East Pye is Natural England's evidence that individual breeding females may use largely private foraging areas and exhibit fidelity to those areas between years. Habitat cannot therefore safely be treated as interchangeable merely because another field or new grassland exists elsewhere within a six-kilometre radius. The ecological significance of particular feeding areas and connecting routes depends upon how the colony actually uses the landscape.

Natural England further identifies barbastelle as strongly light-averse. Its national modelling found light pollution to be an important predictor of both broad-scale distribution and maternity-colony habitat suitability. Genomic evidence is cited showing that artificial lighting negatively affects connectivity between barbastelle colonies, whereas broadleaved woodland and riparian habitats facilitate gene flow. Natural England identifies increasing rural light pollution as a significant future threat because of both habitat fragmentation and effects upon the moth prey on which barbastelles depend.

The FCS definition also identifies disturbance as a relevant pressure. Barbastelles generally select roost sites away from human disturbance, and Natural England records evidence of maternity roosts being abandoned following human approach, while appropriately acknowledging that sensitivity is site-specific and that some colonies can habituate to existing activity. It nevertheless concludes that increased anthropogenic disturbance at roost sites is likely to affect populations adversely, particularly during the summer breeding period when females are rearing young.

Natural England's definition therefore describes a species dependent upon a combination of:

- numerous mature and deteriorating roost trees within extensive woodland roost networks;
- structurally diverse woodland and riparian feeding habitat;
- mature hedgerows and treelines in agricultural landscapes;
- abundant moth prey;
- extensive home ranges;
- established and connected foraging areas;
- dark landscapes;
- and low disturbance around sensitive roosting areas.

Those characteristics closely correspond with the ecological features repeatedly identified within the East Pye landscape.

8.5.7.2 Natural England identifies habitat fragmentation and artificial lighting as constraints on recovery

The FCS report is particularly significant because Natural England does not simply describe suitable habitat. It identifies what must change if barbastelles are to recover.

Natural England states that low population density and slow population growth make barbastelles particularly vulnerable to loss and fragmentation of preferred woodland habitat. It identifies the availability of suitable woodland roosting habitat as likely to be the principal factor limiting population size and distribution. It further identifies lack of broadleaved woodland and the incursion of artificial lighting which prevents landscape connectivity as limiting factors on expansion.

Its prescribed ecological direction is therefore clear. Existing and potential roost sites should be protected from disturbance and development; old-growth woodland loss should be reversed; veteran, standing dead and decaying trees should increase; broadleaved woodland should increase; wetland and woodland habitat capable of supporting high moth biomass should be restored; hedgerows and treelines should be maintained and improved; and landscape connectivity should remain free from artificial-light barriers. Natural England also states that conditions should be provided which maintain gene flow between populations.

Natural England additionally stresses the importance of finding currently undiscovered maternity colonies. It concludes that locating new colonies should be a priority because substantial areas have received insufficient advanced survey effort and because reliable information on colony distribution is necessary to understand population structure.

That is directly relevant to the Norfolk Barbastelle Study Group's evidence for East Pye. Independent survey has already identified additional maternity-colony activity beyond the baseline initially understood by the Applicant, while further woodlands remain unresolved and further radiotracking has been recommended. The national FCS guidance therefore supports, rather than diminishes, the case for completing that work before conclusions are reached about the capacity of this landscape to accommodate the Scheme.

8.5.7.3 Replacement habitat is not equivalent in the short or medium term

One of the most important passages in Natural England's FCS definition concerns the assumption that habitat loss can be offset by future woodland or roost creation.

Natural England states that new woodland is unlikely to provide sufficient natural roosting opportunities for a barbastelle colony for **perhaps 50 years or more**. Even within established woodland whose management has reduced roost opportunities, it may take **at least 30 years** of favourable management before barbastelle use increases significantly. Natural England consequently concludes that there is currently **no known proven mitigation or compensation for the loss of barbastelle woodland roosting habitat over the short to medium term**.

That evidence is directly relevant to the Applicant's reliance upon new woodland, hedgerow reinforcement, habitat creation and BNG.

A habitat metric may attribute future units to newly created woodland or hedges. That does not make those habitats functionally equivalent for barbastelles when the effect occurs. A newly planted woodland cannot supply an established network of loose bark, damaged limbs, fissures, cavities, standing deadwood and alternative tree roosts. A replanted hedgerow cannot immediately reproduce the height, density, moth biomass, shelter and route familiarity of a mature boundary used by a maternity colony.

The distinction is particularly important over the reproductive timescale of an animal. A colony cannot wait 30 or 50 years for replacement habitat to acquire the features required to replace habitat lost or functionally degraded today.

8.5.7.4 East Pye Solar against Natural England's FCS requirements

When Natural England's requirements are set against the actual East Pye development, there is a marked tension between the ecological conditions necessary for national recovery and the effects which the Scheme is capable of producing.

The Applicant itself identified at scoping stage that, in the absence of mitigation and enhancement, construction, operation and decommissioning could cause:

- habitat loss, disturbance and fragmentation;
- disturbance, displacement or mortality of wildlife;
- disturbance, damage or loss of protected-species breeding sites, hibernation sites or resting places;
- noise and visual disturbance;
- dust and other pollution;
- indirect disturbance from noise, vibration and surface-water runoff;
- and disturbance associated with plant, vehicles and workers.

The Applicant expressly identified those pathways as potentially significant ecological effects. It also acknowledged that some operational effects could remain for the lifetime of the Scheme.

That is important because those pathways correspond closely with the pressures identified by Natural England as threatening barbastelle recovery.

1. Landscape-scale construction disturbance

Construction is not confined to a single compact compound. The Scheme comprises multiple solar sites, cable corridors, access routes, substations, BESS and grid infrastructure distributed through the same wider landscape used by barbastelles.

The Applicant envisaged an approximately 24-month construction programme with the possibility of multiple crews operating concurrently on larger sub-sites. Construction compounds include hardstanding, vehicle parking, secure storage, fencing and temporary lighting. Construction may also extend beyond normal daytime working for abnormal-load deliveries, concrete pours, highway cable works and HDD. Hedgerow removal is expressly contemplated where avoidance is not practicable.

The cable corridor alone was expected to involve multiple working fronts or sequential progression through the landscape, with open trenching used for much of the route and trenchless techniques at selected locations. The Applicant's scoping assumptions also contemplated substantial construction staffing and vehicle activity distributed across the Scheme.

Against Natural England's evidence, the relevant question is therefore not whether any single work site occupies a small fraction of a six-kilometre Core Sustenance Zone. It is whether multiple simultaneous or successive disturbances affect the network of roosts, feeding areas and flight paths upon which one or more maternity colonies depend.

2. Disturbance close to maternity woodlands

Norfolk Wildlife Trust has specifically advised that cabling should be kept away from woods, particularly those containing bat maternity colonies. It identifies noise and vibration as a risk to maternity colonies and recommends avoidance of working close to such woods during the maternity period from mid-June to the end of July. Importantly, it says that this restriction should apply not only during initial construction but also during large-scale maintenance and ultimate removal of the panels.

That advice corresponds closely with Natural England's warning that disturbance at maternity roosts is a particular concern during the period in which females are rearing pups.

The application must therefore demonstrate, woodland by woodland, that piling, HDD, trenching, vegetation removal, HGV movements and other high-disturbance operations will not adversely affect maternity-colony function. A generic CEMP commitment to minimise noise is not a substitute for colony-specific assessment.

3. Hedgerow severance and alteration of commuting habitat

Natural England expressly includes woody linear features—hedgerows and treelines—within the supporting habitat required by barbastelles. Its FCS modelling incorporates such features because they contribute to foraging and connectivity in agricultural landscapes. It also identifies maintaining and improving hedgerows and treelines as part of the habitat response necessary to achieve favourable status.

East Pye, however, requires cable, access and highway crossings through a landscape in which hedgerows form much of the remaining semi-natural network. The Applicant stated from the outset that some hedgerow removal would be required where avoidance was not practicable.

The ecological effect cannot be assessed merely by totalling kilometres of hedgerow retained or restored. A comparatively short gap may affect an important flight line between a maternity woodland and a feeding area, while a much greater length elsewhere may be irrelevant to that particular colony. Natural England's evidence about foraging-site fidelity makes this especially important: individual females may return repeatedly to established feeding areas and routes between years. Accordingly, the Applicant must establish the importance of the particular hedge being crossed before concluding that its removal and later reinstatement are insignificant.

4. Artificial lighting within a presently dark landscape

There is an especially direct conflict between Natural England's FCS evidence and the introduction of artificial lighting.

Natural England identifies artificial lighting as a factor reducing habitat suitability and connectivity. Its genomic evidence indicates that lighting negatively affects connectivity between colonies, and it regards increasing rural light pollution as a considerable threat to barbastelles over coming decades.

East Pye introduces both temporary and operational lighting into the same landscape. The Applicant has accepted the need for temporary construction lighting during periods of darkness, including circumstances in which works may take place outside normal hours. The wider project proposals also include lighting associated with substations, ancillary electrical infrastructure and the BESS. Earlier consultation material specifically identified motion-sensing security lighting at such infrastructure.Norfolk Wildlife Trust accordingly requests no construction or operational lighting in core areas, particularly near woodland.

For a species whose national recovery requires landscape connectivity **not impacted by artificial lighting**, it is not sufficient to say that lights will be "sensitive", directed away from hedges or switched off when unnecessary. The Applicant must demonstrate spatially, by quantitative lighting design and lux modelling, that the network used by the maternity colonies will remain dark and functional throughout construction, operation, maintenance and replacement.

5. Foraging habitat and prey resource

Natural England describes barbastelle as a moth specialist and expressly links favourable status to the availability of high-moth-biomass woodland, wetland, riparian vegetation, hedges and treelines. It identifies declines in moth populations as a serious concern and states that agricultural practices which reduce moth abundance can have considerable adverse effects upon barbastelle populations.

The potential effect of East Pye therefore extends beyond the retention or removal of trees. The Scheme changes a very large agricultural landscape through arrays, fencing, new grassland regimes, drainage alterations, new woodland and hedgerow planting, access tracks, substations and long-term vegetation management.

Some of those changes may improve prey resources; cessation of intensive agricultural inputs and new species-rich grassland could benefit moths and other insects. Those potential benefits should be acknowledged. But they do not establish that the Scheme will improve the particular foraging resource used by the existing maternity colonies.

Natural England's evidence that females display strong fidelity to individual foraging areas means that the appropriate assessment is not whether the Scheme creates more generic "biodiversity" somewhere within the Order Limits. It is whether the known colonies retain sufficient productive feeding habitat, in the locations and configurations they actually use, throughout the period before

any new habitat becomes ecologically mature. That question requires radiotracking and colony-specific habitat-use evidence.

6. Woodland-edge effects and roost-tree resource

The Applicant's original baseline recognised that hedgerows, lines of trees, woodland and ditches throughout the Scheme provide bat foraging and commuting habitat and acknowledged barbastelle maternity roosts in the surrounding landscape. It also identified trees with potential roost features for further investigation.

Natural England's FCS evidence demonstrates why protecting only a known occupied tree would be inadequate. Barbastelles may use dozens of roost trees during a season, and the high turnover of loose-bark and similar features requires a continuing supply of damaged, dying and veteran trees. Any assessment of East Pye must consequently address not only direct felling but also:

- root damage and compaction;
- altered drainage;
- lighting of woodland edges;
- pruning for accesses and visibility;
- noise and vibration;
- loss of adjacent feeding habitat;
- and long-term management that could remove dying or damaged trees for safety or operational reasons.

Natural England's FCS objective is to **increase** the availability of veteran, dead and decaying trees and protect existing and potential roost sites from development and disturbance.

That objective should be used as the benchmark against which the Applicant's proposals for every maternity woodland and associated tree network are tested.

7. Operational duration and repeated disturbance

East Pye is proposed to operate for up to 60 years. The Applicant expressly defines the operational period as including maintenance and equipment replacement. Its own ecological scoping assessment recognised potential disturbance, damage or loss of protected-species breeding or resting sites during panel replacement and acknowledged that some operational effects could remain for the lifetime of the Scheme.

This has particular significance for barbastelle because 60 years is longer than the period Natural England considers may be required for newly established woodland to begin providing sufficient natural roost opportunities.

The Scheme therefore cannot be assessed as a single two-year disturbance followed by six decades of ecological inactivity. Over that period there may be:

- repeated panel replacement;
- BESS replacement;

- transformer and inverter maintenance;
- cable repair;
- vegetation management;
- access by heavy vehicles;
- lighting for maintenance and emergencies;
- and eventual decommissioning.

Those activities must be incorporated into the assessment of each colony's long-term ability to occupy its roost network and feeding landscape.

The central conflict

Natural England's national recovery requirements and East Pye's potential effects can be stated simply.

Natural England says favourable status requires	East Pye introduces or permits
Increasing the barbastelle population substantially above its current estimate	Development through a landscape supporting multiple maternity colonies
More suitable supporting habitat	Conversion and long-term alteration of extensive colony-support landscapes
Protection of existing and potential roost sites from development and disturbance	Construction, access, cable and operational activities close to woodland and potential roost trees
More veteran, dead and decaying trees	Long-term operational interfaces in which tree safety, access and infrastructure clearance must be managed
Maintenance and improvement of hedgerows and treelines	Repeated crossings and some removal/reinstatement of hedgerows
High-quality woodland and riparian foraging habitat with abundant moth prey	Construction and operational alteration of woodland-edge, field-boundary and riparian landscapes
Landscape connectivity free from artificial-light barriers	Temporary construction lighting and permanent/occasional lighting at major infrastructure nodes
Protection of maternity colonies from disturbance	Noise, vibration, vehicles, HDD, piling and other construction or maintenance activities within the wider maternity landscape
Identification of presently undiscovered colonies	Independent evidence showing additional colonies/probable colonies and calling for further radiotracking
Expansion and recovery rather than continued fragmentation	A dispersed 60-year infrastructure project extending across the same connected landscape

The comparison does not establish that every East Pye activity will necessarily cause a population decline. Nor does Natural England's FCS document amount to a project-specific objection to East Pye. It does something different and important: it defines the ecological conditions required for the

species to recover and thrive. Against that benchmark, the burden upon the Applicant is substantial.

The Applicant cannot establish compatibility simply by showing that most woodland trees remain standing, that most hedgerow length is retained or that its BNG metric is positive. Natural England's own evidence demonstrates that favourable conservation status depends upon the **function** of a connected landscape: multiple interchangeable roosts, established feeding areas, high prey biomass, mature linear features, darkness, limited disturbance and gene flow between colonies.

Implications for East Pye's mitigation case

The Applicant's proposed habitat creation may have ecological value, but Natural England's FCS evidence demonstrates why it cannot automatically be regarded as equivalent mitigation for existing barbastelle habitat.

For woodland roosting habitat in particular, Natural England states that there is currently no proven short- to medium-term mitigation or compensation for its loss. New woodland may require 50 years or more to provide sufficient natural roost opportunities, while even favourable management of established woodland may require at least 30 years before barbastelle use increases significantly.

The same temporal problem applies, albeit less absolutely, to hedgerow and foraging-habitat replacement. The question is not whether the metric awards future habitat units but whether maternity colonies continue to have the resources they require during every intervening breeding season.

The appropriate application of the mitigation hierarchy is therefore avoidance first. Existing maternity woods, alternative roost networks, principal commuting routes, dark corridors and important foraging areas should be identified and development removed from them. New planting should enhance that retained network, not be relied upon to repair fragmentation caused by the Scheme.

Required examination evidence

BEPS submits that the Applicant should be required to demonstrate compatibility with Natural England's FCS evidence through a specific barbastelle assessment which:

1. maps every confirmed and probable maternity colony and the alternative roost network associated with it;
2. completes the further radiotracking required to establish principal flight paths, foraging areas and colony-specific habitat use;
3. overlays the complete construction and operational footprint, including compounds, access routes, cable works, substations, BESS, fencing, lighting and highway works;
4. identifies every interruption or alteration of mature hedgerows and treelines within the relevant colony landscapes;

5. provides a quantitative dark-corridor plan demonstrating that important routes and habitat remain free from artificial-light barriers;
6. assesses piling, HDD, noise and vibration against each maternity woodland and sensitive breeding period;
7. demonstrates that each affected colony retains sufficient roost-resource continuity, foraging habitat and dark connectivity throughout construction, the 60-year operational phase, replacement cycles and decommissioning;
8. separates immediate habitat functionality from future BNG habitat that may take decades to mature;
9. tests the Scheme against the cumulative effects of other development affecting the same colonies and landscape network; and
10. explains, by reference to Natural England's FCS parameters, how the Scheme would avoid impeding the recovery of a species which Natural England presently considers not to be at favourable conservation status.

Conclusion

Natural England's 2024 FCS definition sets the context in which East Pye's barbastelle effects should be judged. Barbastelle is not a species presently considered secure at a favourable level. Natural England's objective is a major increase in population, supporting habitat and connectivity. Its evidence identifies old-growth woodland, numerous veteran and deteriorating roost trees, mature hedgerows, riparian habitat, moth-rich foraging areas, darkness and landscape connectivity as central to that recovery, while identifying habitat fragmentation, disturbance and artificial lighting as important threats.

East Pye is proposed across a landscape in which those same features support multiple maternity colonies. Its own development envelope entails habitat disturbance and fragmentation, hedgerow crossings, construction compounds, plant and vehicle movements, noise, vibration and lighting, together with repeated operational maintenance and replacement over up to 60 years. Norfolk Wildlife Trust specifically identifies the need to protect connectivity, keep cabling away from maternity woods, avoid maternity-period noise and vibration and prevent operational and construction lighting in core areas. They have also called for site 3 to be removed from the scheme.

The issue is therefore not whether some habitat will remain or whether a positive BNG percentage can be generated. The relevant question is whether this nationally important colony landscape will retain the roost resource, feeding capacity, darkness and connectivity necessary for the existing colonies to persist and for the species to recover towards the favourable status Natural England says has not yet been achieved. On the evidence presently available, that has not been demonstrated. This raises the question of whether European Protected Species Licences can be obtained to construct, operate or decommission this project.

8.5.8 Peer-reviewed evidence concerning solar development and bats

The need for precaution is reinforced by Tinsley et al. (2023), published in the Journal of Applied Ecology. That study examined bat activity at nineteen paired ground-mounted solar developments and control sites in south-west England.

It found significantly lower bat activity at solar sites for six of the eight taxa analysed. The effects were not confined to activity over the open panel fields. Reduced activity was also identified along field boundaries for some taxa, including Myotis species and serotine. Reduced open-field activity was identified for soprano pipistrelle and Plecotus species, among others.

This evidence is directly relevant to the Applicant's assumption that the retention of boundary hedgerows, supplemented by buffers and habitat creation, is sufficient to maintain bat use. The study indicates that solar development may affect activity even at retained field boundaries. Possible mechanisms considered include changes in habitat structure, prey availability, microclimate, acoustic conditions and the way bats perceive and navigate through panel landscapes.

The study does not establish that every solar development will produce the same effect or that all taxa will respond identically. Its significance lies in demonstrating that ground-mounted solar cannot safely be assumed to be ecologically neutral for bats merely because hedges are retained and pesticide use is reduced.

That distinction is particularly important for East Pye. The Tinsley study considered ordinary paired solar and control sites. East Pye is proposed within a landscape that the Applicant itself has assessed as nationally important for bats and that contains overlapping barbastelle maternity-colony zones. The potential consequence of any displacement or reduction in activity is therefore greater.

The authors recommend that bat effects should be properly screened and assessed through EIA and that alternative siting may be more appropriate where important bat habitat is present. That aligns with the mitigation hierarchy: the presence of an unusually important bat resource should influence site selection before mitigation and compensation are considered.

8.5.9 Functional effects of the Scheme on the bat landscape

The principal effects on bats do not arise solely from direct removal of roosts. They arise from the interaction of multiple development components across the functional landscape.

Those components include:

- thousands of hectares of panel arrays and associated field infrastructure;
- repeated breaks in hedgerows;
- widened lanes and new visibility splays;
- access tracks and haul roads;
- extensive fencing;
- substations and BESS infrastructure;
- temporary and permanent lighting;
- construction compounds;
- trenching and HDD;
- pile driving;
- vegetation clearance;
- increased vehicle movements;

- and sixty years of inspection, maintenance and equipment replacement.

Each element may affect a different part of the same ecological system. A hedge may be physically retained but crossed by a lit access road. A woodland may be buffered but enclosed on several sides by panels and fencing. A stream corridor may remain but be subjected to crossings, compound activity and altered drainage. A roost tree may survive while its dark approach route and surrounding feeding habitat are degraded.

The ES does not supply a landscape-scale permeability assessment showing how bats will continue to move among the relevant colonies, woods, watercourses and foraging areas. Nor does it identify a hierarchy of flight routes against which every construction and operational crossing has been tested.

The absence of demonstrated direct roost loss cannot therefore support a conclusion of no significant effect. For a woodland bat using multiple roosts and extensive feeding grounds, loss of functional connectivity may be as consequential as the loss of an individual feature.

8.5.10 Protected-species licensing implications

Barbastelles and all other bats are European Protected Species. Where works risk deliberate disturbance, damage or destruction of a breeding site or resting place, obstruction of access, or another prohibited act, an EPS licence may be required from Natural England.

Natural England's Relevant Representation identifies protected-species licensing as an outstanding amber matter. It notes that licences may be required for roosting bats and strongly advises that the issue be addressed at the earliest opportunity. The Planning Inspectorate's scoping material likewise advised that, where a licence may be needed, the Applicant should engage with Natural England's pre-submission service and seek a Letter of No Impediment to provide confidence that a future licence is realistically obtainable.

The present application does not demonstrate a settled licence route for the barbastelle impacts now identified.

A licence can only be granted where the relevant statutory tests are met, including the absence of a satisfactory alternative and the maintenance of the affected population at favourable conservation status in its natural range. For East Pye, those tests require evidence addressing:

- the number and distribution of affected colonies;
- the status of the local and wider population;
- the functional importance of the affected habitat;
- the proportion of colony resources affected;
- the effectiveness and certainty of mitigation;
- cumulative effects from other projects;
- and whether a less damaging site or layout is available.

The Scheme's location within a nationally important bat landscape is directly relevant to both tests. Solar development is comparatively flexible in location, while the maternity-colony network

and ancient woodland resource are not. The existence of less ecologically constrained land elsewhere is therefore relevant to whether there is a satisfactory alternative.

Similarly, favourable conservation status cannot be assumed to be maintained where the full colony network, principal routes and satellite roost use remain incompletely understood and where Natural England's own conservation guidance identifies no proven short- to medium-term replacement for lost woodland-roosting function.

The Examination should not treat a future contractor-led licence application as a substitute for the ecological evidence needed now to understand the affected population, functional habitat and likely impact of the authorised development.

8.5.11 Conclusion on bats and barbastelles

The Applicant's own evidence establishes that:

- the bat assemblage is of national importance;
- eleven species are present;
- activity is widespread across the whole Order Limits;
- barbastelle is the third most frequently recorded species;
- barbastelle occurs at every static detector location;
- multiple maternity colonies surround the Scheme;
- overlapping Core Sustenance Zones cover the development landscape;
- known and likely colonies remain incompletely mapped;
- and the Order Limits provide supporting commuting and foraging habitat above what would ordinarily be expected from the broad habitat classifications used.

The Norfolk Barbastelle Study Group concludes that further work is required to understand colony distribution and habitat use. Natural England's favourable-conservation-status guidance demonstrates that barbastelles require extensive, dark, connected landscapes and that woodland-roosting habitat cannot reliably be replaced in the timescale relevant to this development. The Tinsley research provides empirical evidence that ground-mounted solar can reduce bat activity, including at retained field boundaries.

Against that evidence, the Applicant's reliance on buffers, retained hedges, future planting, outline lighting controls and metric-based BNG does not establish that the nationally important bat landscape will remain functional.

The appropriate mitigation-hierarchy response is avoidance. In this context, avoidance means more than preserving individual trees or adjusting isolated panel edges. It requires avoiding industrial development across the maternity-colony support landscape where the effects of fragmentation, lighting, disturbance and reduced habitat use cannot reliably be prevented or compensated.

BEPS submits that the Applicant has not yet demonstrated that the nationally important bat landscape will retain the roost resource, connectivity, darkness and foraging function necessary to

support the affected barbastelle colonies throughout construction and operation. Nor has it demonstrated, on the present evidence, that any necessary EPS licensing issues can be resolved without further survey, avoidance or redesign. Those uncertainties weigh strongly against reliance on the present conclusion of no significant residual effect.

8.6 SSSI Woodland Context and Barbastelle Protection

A number of the woodlands supporting barbastelle activity within and adjacent to the Order Limits are not only ecologically important but are designated **Sites of Special Scientific Interest (SSSIs)**. These include:

- **Shotesham Little Wood (Parcel 8b)**
- **Hempnall Little Wood (Parcel 7h)**
- **Saxlingham Grove complex (Parcels 7e, 7f, 7g)**
- **Hedenham Wood (Parcel 10b)**

These designations are of direct legal and ecological significance. SSSIs represent the highest level of national site protection for nature conservation in England and are notified specifically for their habitats, species assemblages and ecological integrity. In this case, these woodland sites form part of a wider, connected landscape that supports **barbastelle maternity colonies and associated foraging and commuting networks**.

The presence of European Protected Species within or functionally dependent upon SSSI-designated land materially elevates the level of protection. Barbastelle bats are highly sensitive to disturbance, fragmentation and changes in landscape connectivity. Their reliance on woodland roosts combined with extensive use of surrounding farmland means that impacts to adjacent land—such as those proposed under this Scheme—can directly affect the integrity and functionality of the SSSI itself, even where development lies outside the formal boundary.

This has two critical implications.

First, the assessment of effects must consider not only direct impacts on SSSI habitats but also **indirect and functional impacts**, including:

- disruption of commuting routes between SSSI woodlands;
- degradation of foraging habitat within Core Sustenance Zones;
- increased lighting, noise and activity in otherwise dark and undisturbed landscapes;
- fragmentation of the wider ecological network upon which SSSI interest features depend.

Failure to assess these pathways would be inconsistent with both EIA requirements and Natural England guidance on impact pathways affecting designated sites.

Second, the combination of **SSSI designation and EPS presence significantly constrains licence grantability**. Under the Habitats Regulations, a licence affecting barbastelle bats can only be granted where favourable conservation status is maintained. Where those populations are associated with SSSI woodlands, any adverse effect is not only a species issue but a designated site issue. Natural England, as the statutory nature conservation body, is under a duty to protect SSSIs and may object to development that would damage their notified features or the ecological processes that sustain them.

In practical terms, this means that:

- Impacts on barbastelle populations linked to SSSI woodlands are likely to be afforded **heightened scrutiny and precaution**;
- Mitigation relying on habitat replacement or off-site measures is unlikely to be considered adequate where it cannot replicate the complexity and continuity of established woodland systems;
- The threshold for demonstrating no adverse effect on favourable conservation status is materially higher;
- There is a **real prospect of objection from Natural England** where the Scheme would compromise the ecological function of SSSI-associated bat populations.

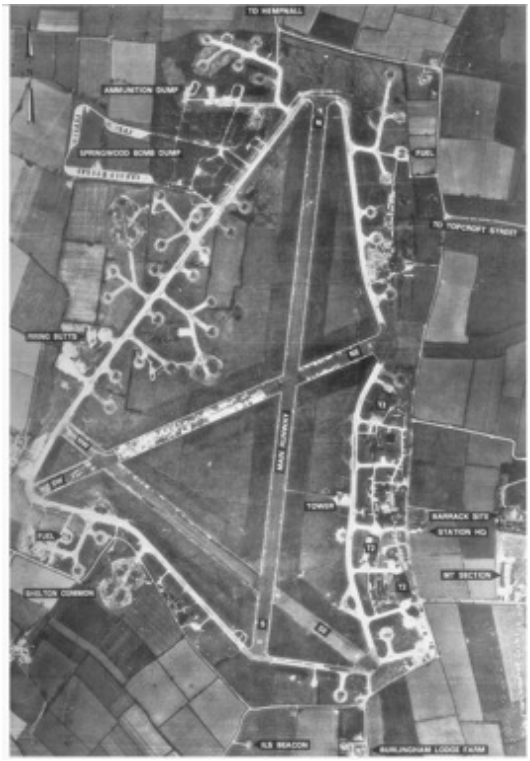
Taken together, the presence of multiple SSSI woodlands within the barbastelle metapopulation network reinforces that this is not a typical ecological constraint but a **highly sensitive, legally protected landscape system**. The Scheme would introduce industrial-scale disturbance into this system, with clear potential to undermine both the integrity of designated sites and the conservation status of a strictly protected species. This substantially reduces the likelihood that necessary consents, including any EPS licence, could lawfully be granted.

Spring Wood and the converted Second World War bomb shelters

Spring Wood and the adjoining former Hardwick Airfield structures require separate treatment because this area appears to support a combined maternity, hibernation, commuting and foraging resource for bats. The former Second World War bomb shelters bordering Sites 3A and 3B were deliberately converted by Norfolk Bat Group into bat hibernacula and are reported to support a wide range of bat taxa including Daudenton, Natterer ad other Myosotis bats. Those structures sit on the same ecological edge as Spring Wood, where the Applicant identifies a known barbastelle roost and foraging area and records barbastelle activity within the relevant emergence period. The area should therefore not be assessed merely as arable land beside woodland. It forms part of a year-round functional bat landscape in which woodland roosts, converted hibernation structures, mature trees, field boundaries and surrounding feeding habitat operate together.



Image: WWII Bunker at Spring Wood converted to a bat hibernaculum by Norfolk Bat Group.



Hardwick Airfield 16 April 1946 showing bomb loading locations (associated bunkers beneath) along the north-western edge of Spring Wood.



Image: Proposed siting of solar infrastructure on site 3, immediately adjacent to bat hibernacula.

The importance of the converted shelters is not answered by the absence of direct works to the structures themselves. A hibernaculum or resting place may remain physically intact while its ecological function is impaired by disturbance, obstruction, lighting, severance of approach routes or degradation of surrounding feeding habitat. Construction in the adjoining fields would introduce pile driving or other installation noise, HGV movements, trenching, compounds, fencing, human activity and potentially artificial lighting immediately beside a deliberately created bat refuge. The noise assessment quantifies construction noise at Lundy Green (immediately north-west of Spring Wood) as Major Adverse. The Applicant has not provided a hibernacula-specific assessment of these pathways, has not mapped the routes used by bats moving between the shelters, Spring Wood and the surrounding hedgerow network, and has not demonstrated that construction noise and vibration would remain below thresholds capable of avoiding disturbance. The general assertion that most hedgerows and woodland buffers will be retained does not answer those site-specific risks.

The scientific evidence concerning solar development makes the omission more serious. Tinsley et al. found reduced activity at solar sites for six of the eight bat taxa analysed, including reduced activity along field boundaries for Myotis species and serotine, and reduced activity over open fields for soprano pipistrelle and Plecotus species. The East Pye survey records those same taxa or guilds within the Order Limits: Myotis species, serotine, soprano pipistrelle and brown long-eared bat, the latter representing Plecotus. The Hardwick hibernacula are reported to support a broad bat assemblage rather than barbastelle alone. The taxa using this local roosting and hibernation resource therefore include, or are likely to include, the very groups for which the published solar

evidence identifies reduced activity. The Tinsley risk is consequently not generic or remote; it is directly relevant to the bat community associated with Spring Wood and the converted shelters.

This is also an area in which Norfolk Wildlife Trust has expressly sought avoidance through site selection. During consultation, NWT recommended removal of the Site 3 land because it surrounds Spring Wood County Wildlife Site and adjacent priority deciduous woodland and because of the likely effects on woodland, bats and ecological connectivity. NWT's later representation records that Site 3 had previously been recommended for removal from the Scheme and that concern remained even after design changes, particularly in relation to development immediately west of the ancient woodland and the need for wider buffers and ecotones.

The Applicant has not followed that advice in full. Only part of the affected land has been removed, leaving approximately half of the original parcel within the Scheme. Partial reduction does not amount to avoidance where the retained development remains beside the same maternity roost, hibernacula and commuting network. Nor has the Applicant demonstrated that the half retained is ecologically less important than the half removed. In the absence of colony-specific tracking, hibernation survey evidence and mapped flight routes, there is no evidential basis for concluding that an arbitrary reduction in area preserves the function of the whole bat landscape.

The planning consequence is therefore clear. Spring Wood and the Hardwick bomb shelters constitute a known and deliberately enhanced bat resource beside a nationally important bat landscape. The Applicant's own evidence identifies the area as a barbastelle roosting and foraging location; local evidence identifies converted hibernacula supporting multiple bat taxa; peer-reviewed research identifies adverse solar associations for the same taxa; and Norfolk Wildlife Trust has expressly sought removal of the relevant development parcel. Retaining half of the parcel does not meet the mitigation hierarchy because the principal conflict remains.

BEPS submits that the remaining Site 3 development adjoining Spring Wood and the converted bomb shelters should be removed from the Scheme in full. At minimum, no conclusion of ecological acceptability can be reached without dedicated hibernation surveys, radio-tracking and route mapping, a species-specific construction noise and vibration assessment, fixed dark-corridor protection and evidence demonstrating that the retained development would not disturb or reduce the functionality of the combined maternity, hibernation and foraging resource.

8.6.1 Hedgerow severance and loss of functional connectivity

The principal ecological impact of East Pye Solar is not the direct loss of individual habitats but the fragmentation of the ecological network that connects them. Throughout the Environmental Statement, the Applicant assesses hedgerows, woodland blocks, ponds and other habitats largely as discrete receptors capable of being retained, buffered or compensated. That approach fundamentally misunderstands the ecological function of the South Norfolk Claylands landscape and, in particular, the ecology of the nationally important bat assemblage that the Applicant itself has identified.

The Applicant's own surveys demonstrate that the Order Limits are not used by bats as isolated habitat patches. Barbastelle activity was recorded across the entire Scheme, at every static detector, with the Order Limits lying within the overlapping Core Sustenance Zones of multiple maternity colonies. The significance of those findings is that the landscape functions as an interconnected network of woodland, hedgerows, mature trees, field margins, ponds, streams and dark rural lanes. These linear features enable bats to move safely between roosts and feeding areas while maintaining protection from predators and exposure to artificial light. It is this functional network that supports the nationally important assemblage identified by the Applicant.

The Environmental Statement repeatedly refers to the retention of existing hedgerows as mitigation. However, retaining sections of hedgerow does not necessarily retain ecological connectivity. Connectivity depends upon whether those hedgerows continue to function as continuous, dark and undisturbed commuting routes. The Scheme introduces numerous physical and functional interruptions to those corridors through:

- new site accesses;
- widening of narrow rural lanes;
- visibility splays;
- haul roads;
- cable corridors;
- temporary construction compounds;
- permanent access tracks;
- substations;
- BESS infrastructure;
- security fencing;
- trenching and horizontal directional drilling compounds;
- construction working areas;
- and repeated crossings by construction and maintenance traffic.

Each individual crossing may appear relatively minor in isolation. However, ecological function must be assessed across the whole Scheme rather than at individual locations. A bat commuting from a maternity colony does not experience a single hedgerow crossing. It experiences a landscape containing repeated interruptions, lighting sources, vehicle movements, altered vegetation structure and barriers distributed throughout its home range. The cumulative consequence is a progressive reduction in landscape permeability.

This concern is reinforced by the historic character of the South Norfolk Claylands. Professor Tom Williamson's Restoring the Claylands explains that the biodiversity value of this landscape lies not simply in individual habitats but in the intricate pattern of connections between them. Ancient hedgerows, roadside verges, ponds, commons, woodland blocks, field margins and watercourses developed over centuries as an integrated ecological network. Restoration within the Claylands should therefore strengthen these historic connections rather than fragment them through piecemeal development. The Applicant's proposals would instead superimpose industrial infrastructure across this surviving network. That is fundamentally different from development on large, open landscapes where habitat connectivity is less dependent upon historic field patterns.

The South Norfolk Tree Warden Network reaches the same conclusion from an arboricultural perspective. Its representation explains that mature hedgerows and trees should be regarded as

ecological infrastructure rather than simply landscape features. It identifies approximately 621 trees with potential bat roost features and warns that repeated hedgerow gaps, access points, root disturbance and construction activity have not been assessed in terms of their cumulative impact upon habitat connectivity. The Tree Wardens also emphasise that ecological effects cannot be measured solely by direct tree loss. Trees retained within altered landscapes may lose ecological function through soil compaction, root damage, hydrological change, increased exposure or isolation from the surrounding habitat network.

The Forestry Commission similarly identifies fragmentation as one of the greatest threats to ancient woodland. Its representation specifically raises concern regarding Doyly's Grove and Ringers Grove, noting that smaller ancient woodland blocks become increasingly vulnerable when enclosed by development and separated from surrounding habitat. It recommends larger woodland buffers, woodland expansion and strengthened habitat connections rather than simple retention of woodland boundaries. These concerns are directly applicable to bats. Woodland retained as an isolated island within solar infrastructure cannot provide the same ecological function as woodland remaining connected to surrounding hedgerows, field margins and feeding habitat.

The Applicant has not undertaken a landscape permeability assessment demonstrating how bats will continue to move between the known maternity colonies, satellite roosts, woodland blocks and feeding areas following construction of the Scheme. Nor has it identified a hierarchy of primary and secondary commuting corridors against which every crossing, access, cable route and infrastructure element has been tested.

This omission is particularly important because the Norfolk Barbastelle Study Group has shown that the Order Limits lie within overlapping Core Sustenance Zones associated with multiple maternity colonies. Individual hedgerows and woodland edges are therefore likely to be used simultaneously by bats from different colonies. The loss or degradation of one corridor may consequently affect several maternity populations rather than a single local roost. The Applicant has not attempted to assess this cumulative landscape function.

The importance of maintaining uninterrupted commuting corridors is reinforced by Natural England's Definition of Favourable Conservation Status for Barbastelle. That guidance identifies continuous woodland networks, hedgerows, riparian corridors and dark landscape connections as fundamental components of favourable conservation status. It recognises that barbastelles are highly dependent upon structurally connected landscapes and that fragmentation of those connections may affect population viability even where individual roost trees remain physically intact. The Applicant's mitigation strategy, based largely upon retaining hedgerows in situ while introducing repeated crossings and infrastructure, has not demonstrated compliance with that guidance.

The peer-reviewed evidence also points in the same direction. Tinsley et al. (2023) found reduced bat activity associated with ground-mounted solar developments, including reduced activity along retained field boundaries for several taxa. Although the study was not specific to barbastelle, it demonstrates that retention of hedgerows does not necessarily preserve their ecological function. Changes in habitat structure, prey availability, lighting, microclimate and movement behaviour may reduce use even where the physical hedge remains. This is highly relevant to East Pye because the Applicant's principal mitigation relies precisely upon retaining existing hedgerows.

The issue extends beyond bats. The same connected network supports breeding birds, dormice where present, hedgehogs, brown hare, pollinating insects, reptiles and numerous invertebrate communities. Field margins connect to roadside verges; verges connect to hedgerows; hedgerows connect to woodland edges; woodland edges connect to ponds and streams. Fragmentation of one component therefore propagates through the wider ecological system. The Applicant's assessment largely considers these receptors separately rather than examining how repeated disruption to the connecting network affects the resilience of the landscape as a whole.

The impacts are also cumulative in time. Construction would occur over several years, involving repeated disturbance, vegetation clearance, traffic movements and engineering works. Operational impacts would continue for approximately sixty years, during which the network would remain interrupted by fencing, roads, substations, maintenance activity and periodic replacement of infrastructure. Decommissioning would introduce a further major phase of disturbance. The Environmental Statement does not evaluate the consequences of repeated interruption over the entire life cycle of the Scheme.

Nor is there sufficient evidence that proposed replacement planting would restore ecological connectivity within a meaningful timescale. Newly planted hedgerows and woodland strips require many years before they develop the structure, height, continuity, insect assemblages and microclimate associated with mature Claylands boundaries. During that period, the functional loss remains. For species such as barbastelle, whose conservation depends upon established mature landscape features, replacement planting cannot be regarded as functionally equivalent.

This illustrates the wider failure to apply the mitigation hierarchy correctly. Rather than first avoiding fragmentation of the most sensitive ecological corridors, the Applicant has selected a development footprint that extends across the functional landscape of multiple barbastelle maternity colonies and then proposes to mitigate fragmentation through retained hedgerows, replacement planting and outline ecological management. That reverses the hierarchy required by EN-1 and the NPPF. Avoidance should have informed site selection and layout before mitigation was considered.

The evidence before the Examination demonstrates that ecological connectivity is one of the defining characteristics of the South Norfolk Claylands and one of the principal reasons why the Applicant's own surveys conclude that the bat assemblage is of national importance. The Scheme would introduce repeated severance and degradation of that connectivity across the Order Limits, yet no comprehensive assessment has been undertaken of landscape permeability, colony-specific commuting routes or cumulative corridor loss. The Applicant has therefore failed to demonstrate that the functional integrity of this nationally important ecological network will be maintained.

BEPS submits that the effects of hedgerow severance and habitat fragmentation have been materially underestimated. The reliance on retaining individual hedgerow fragments does not establish that ecological connectivity will survive. In the absence of a robust functional connectivity assessment demonstrating that the network supporting multiple barbastelle maternity colonies and other protected species will remain intact throughout construction, operation, replacement and decommissioning, the Applicant has not shown that these impacts

can be avoided or adequately mitigated. This conflict with the mitigation hierarchy weighs strongly in favour of refusal.

8.6.2 Artificial lighting and fragmentation of dark landscapes

Artificial lighting is one of the most significant but consistently underestimated ecological impacts of the Scheme. Throughout the Environmental Statement, lighting is largely treated as an engineering issue capable of being controlled through future design, directional luminaires and operational management. That approach fails to recognise that darkness is itself an ecological resource. Within the South Norfolk Claylands, the maintenance of extensive, continuous dark landscapes is fundamental to the functioning of the nationally important bat assemblage identified by the Applicant.

The issue is not simply whether individual lights can be shielded from adjacent woodland. It is whether the introduction of numerous permanent and temporary light sources across a landscape supporting multiple barbastelle maternity colonies fundamentally alters the behaviour, connectivity and ecological function of that landscape.

The Applicant's own bat surveys demonstrate that East Pye Solar lies within a landscape of national importance for bats, with barbastelles recorded throughout the Order Limits and multiple maternity colonies occupying the surrounding woodlands. Barbastelles are widely recognised as one of Europe's most light-sensitive bat species. Unlike more urban-adapted bats such as pipistrelles, barbastelles characteristically avoid illuminated habitats and preferentially commute along continuous dark corridors. Their dependence upon darkness is therefore not incidental but forms an essential part of their ecological requirements.

Natural England's Definition of Favourable Conservation Status for Barbastelle reflects this ecology. It identifies the maintenance of dark, well-connected woodland, hedgerow and riparian networks as an important component of favourable conservation status. The guidance recognises that artificial lighting may alter commuting behaviour, fragment habitat, reduce access to feeding areas and isolate woodland roosts even where no direct habitat loss occurs. The relevant ecological effect is therefore behavioural fragmentation rather than physical habitat destruction.

This distinction is critical for East Pye Solar.

The Applicant relies extensively upon retaining hedgerows, woodland edges and buffer strips. However, a retained hedgerow which becomes illuminated by construction compounds, security lighting, maintenance vehicles or substation infrastructure no longer functions as the same commuting corridor. From the perspective of a light-averse species, the corridor may effectively cease to exist.

The Scheme introduces multiple potential lighting sources throughout the sixty-year operational life of the development.

These include:

- BESS compounds;

- substations;
- customer substations;
- National Grid infrastructure;
- security lighting;
- CCTV activation lighting;
- maintenance activities;
- emergency lighting;
- temporary construction compounds;
- construction welfare facilities;
- site accesses;
- vehicle headlights;
- abnormal indivisible load movements;
- temporary highway works;
- cable installation compounds;
- and possible night-time construction where operationally necessary.

Although the Applicant states that lighting will be minimised wherever practicable, the Environmental Statement largely defers the detailed assessment to an Outline Lighting Strategy and subsequent detailed design.

That is insufficient.

Lighting cannot be regarded as a minor engineering detail to be resolved after consent where the receptor concerned is the very nationally important bat assemblage identified by the Applicant.

The Planning Inspectorate's Scoping Opinion recognised this issue from the outset. It specifically required the Environmental Statement to assess ecological effects arising from construction lighting and operational lighting. Nevertheless, the Applicant's Scoping Report originally proposed that lighting effects on ecology could be scoped out because lighting would supposedly be designed sensitively. That approach was not accepted by the Inspectorate, which required lighting impacts to be considered because they could affect ecological receptors.

The Environmental Statement has still not undertaken the level of assessment that this receptor demands.

Rather than modelling landscape-wide changes in darkness, the Applicant principally relies upon qualitative statements that lighting will be:

- directional;
- shielded;
- motion activated;
- minimised;
- and designed to avoid woodland wherever possible.

Those commitments remain largely generic.

There is no comprehensive landscape lighting model demonstrating:

- cumulative illuminance across the Order Limits;
- spill along hedgerows;
- spill across woodland edges;
- spill onto ponds and streams;
- interaction between multiple lighting sources;
- seasonal variation;
- maintenance activities;
- emergency operation;
- cumulative effects with surrounding infrastructure;
- or changes to landscape permeability for bats.

Nor has the Applicant identified which commuting corridors must remain entirely dark in order to preserve connectivity between the known maternity colonies.

This omission is especially significant because the Norfolk Barbastelle Study Group has demonstrated that the Order Limits lie within overlapping Core Sustenance Zones associated with multiple colonies. Any individual hedgerow or woodland edge may therefore be important to several colonies simultaneously. Without mapping colony-specific movement patterns, it is impossible to determine which corridors can tolerate lighting and which cannot.

The concern is reinforced by the particular characteristics of the South Norfolk Claylands.

This is an exceptionally dark rural landscape.

Wood Green residents, local ecological recorders and parish representations all identify dark skies as one of the defining characteristics of the area. The Wood Green representation explains that darkness benefits both wildlife and people, that visitors are attracted to the area specifically because of its dark skies, and that construction lighting would fundamentally alter that character. Although this point was raised primarily in relation to residential amenity, it has direct ecological significance because the same darkness supports bat movement across the landscape.

Darkness functions as ecological infrastructure in exactly the same way as hedgerows or woodland edges.

The loss of darkness fragments habitat.

This is particularly important around Spring Wood and the converted Second World War bat hibernacula.

As discussed in Section 8.5, these structures provide year-round bat habitat immediately adjacent to retained Site 3 development. Construction compounds, vehicle movements, temporary lighting and operational infrastructure would all occur close to this sensitive bat resource.

The Applicant has not undertaken a hibernacula-specific lighting assessment.

Nor has it demonstrated that illumination associated with:

- compounds;
- construction traffic;
- welfare facilities;
- security requirements;
- maintenance activities;
- or emergency access

would avoid disturbance to bats using the woodland edge and converted shelters.

The omission is compounded by the findings of Tinsley et al. (2023).

The study demonstrated reduced bat activity associated with ground-mounted solar developments, including reduced activity along retained field boundaries. Although lighting was not identified as the sole causal mechanism, the research concluded that solar development changes the ecological functioning of field boundaries beyond simple habitat retention.

At East Pye, lighting represents one of several interacting mechanisms capable of producing precisely those behavioural changes.

Artificial lighting also interacts with the wider ecological network.

Many aquatic insects are attracted to artificial light.

The Environment Agency has separately highlighted concerns regarding the interaction between aquatic insects and solar infrastructure, recognising that alterations to aquatic invertebrate behaviour may affect wider food webs.

Where lighting attracts insects away from rivers, ponds or woodland edges, it may simultaneously alter prey availability for bats while concentrating insects around operational infrastructure where predation risk differs.

These interactions have not been assessed.

Likewise, the Applicant has not evaluated how lighting may alter:

- predator-prey relationships;
- nocturnal bird behaviour;
- moth communities;
- pollinator activity;
- or ecological function along watercourses.

Instead, lighting is considered primarily in engineering terms.

This compartmentalised approach fails to recognise that the nationally important bat assemblage depends upon the continued ecological integrity of the wider nocturnal landscape.

The Forestry Commission's representation provides additional support for this concern.

It expressly welcomes the intention to avoid illuminating ancient woodland but does so because lighting is recognised as capable of causing indirect deterioration of irreplaceable habitats.

That acknowledgement illustrates the wider point.

If lighting is sufficiently harmful to require protection of woodland, it must also be assessed in relation to the woodland-dependent species using those habitats.

The Applicant's assessment does not bridge that gap.

Norfolk Wildlife Trust similarly identified lighting as one of the principal remaining ecological concerns, particularly where development approaches woodland edges, County Wildlife Sites and important bat habitat.

Its request that parts of Site 3 be removed from the Scheme reflected concern not merely about physical habitat loss but about the wider disturbance regime associated with infrastructure immediately adjoining Spring Wood.

The Applicant only partially accepted that recommendation.

Approximately half of the land parcel remains within the Scheme despite the ecological rationale for avoidance remaining unchanged.

This demonstrates a broader failure to apply the mitigation hierarchy.

The appropriate response to a nationally important light-sensitive bat landscape is first to avoid introducing permanent illumination into the most sensitive areas.

Instead, the Applicant has selected development locations adjoining key woodland habitat and then proposes to control lighting through future design.

That reverses the hierarchy established by EN-1.

The Environmental Statement also relies heavily upon the Outline Landscape and Ecological Management Plan and future lighting strategy to provide reassurance.

Those documents do not currently specify:

- maximum illuminance levels;
- lux thresholds along commuting corridors;
- mapped dark corridors;
- measurable performance standards;
- monitoring requirements;
- adaptive management triggers;
- remedial action where bat behaviour changes;
- or long-term governance arrangements throughout the sixty-year operational life.

Consequently, the effectiveness of the mitigation cannot presently be tested.

The Applicant has therefore not demonstrated that lighting impacts will be avoided, nor that the proposed controls will preserve the ecological functionality of the nationally important bat landscape.

Taken together, the Applicant's own bat surveys, Natural England's favourable conservation status guidance, the Norfolk Barbastelle Study Group's evidence, the Forestry Commission's concerns regarding woodland protection, Norfolk Wildlife Trust's recommendation to remove development adjacent to Spring Wood, the Wood Green evidence concerning dark skies and the findings of Tinsley et al. all point in the same direction.

Darkness is an essential ecological characteristic of this landscape.

The Scheme would replace a largely continuous dark rural environment with numerous temporary and permanent light sources distributed throughout the functional range of multiple barbastelle maternity colonies.

The Applicant has not demonstrated that those changes can be prevented through the outline mitigation proposed.

BEPS therefore submits that the ecological effects of artificial lighting have been materially underestimated. The reliance upon future lighting design, outline management plans and generic commitments to minimise illumination does not satisfy the requirements of EN-1 for effective, secured mitigation. Nor does it demonstrate that favourable conservation status of the nationally important bat assemblage will be maintained. The appropriate application of the mitigation hierarchy would have been to avoid locating major infrastructure within this highly sensitive nocturnal landscape rather than attempting to compensate for its industrialisation through post-consent lighting controls.

8.6.3 Construction disturbance: piling, vibration, traffic and noise

The Environmental Statement materially underestimates the ecological consequences of construction disturbance. While the assessment recognises that construction activities will generate noise, vibration, lighting and increased traffic, these effects are largely considered in isolation, are assessed primarily in relation to human receptors, or are deferred to outline management plans. There is no integrated assessment of how prolonged industrial construction activity would affect a landscape that the Applicant itself has identified as supporting a nationally important bat assemblage and multiple barbastelle maternity colonies.

This omission is particularly significant because the principal ecological receptors are not species that occupy isolated habitat patches. Barbastelles and many other woodland bats depend upon stable, undisturbed woodland landscapes connected by mature hedgerows and dark corridors. Construction activity therefore has the potential to affect ecological function across a much wider area than the footprint of the engineering works themselves.

The Applicant's construction programme includes extensive activities capable of generating sustained disturbance, including:

- pile installation for solar arrays and fencing;
- piling associated with substations and infrastructure where required;
- horizontal directional drilling;
- cable trenching;
- excavation and earthworks;
- road widening;
- construction compounds;
- haul roads;
- heavy goods vehicle movements;
- abnormal indivisible load deliveries;
- cranes and heavy plant;
- vegetation clearance;
- and prolonged human presence across multiple sites simultaneously.

These activities would occur over several years across a dispersed construction footprint extending throughout the Order Limits.

The Environmental Statement acknowledges that construction noise and vibration will occur but does not evaluate their consequences for the nationally important bat assemblage. Instead, ecological mitigation largely assumes that retained woodland, retained hedgerows and pre-construction checks will be sufficient to avoid significant effects.

That assumption is not supported by the evidence.

Failure to assess species-specific responses to construction disturbance

Barbastelles are recognised as one of Britain's most disturbance-sensitive bat species. Their ecology is characterised by repeated switching between tree roosts, strong reliance upon woodland structure, avoidance of illuminated environments and use of extensive commuting networks linking multiple roosts and feeding areas.

Despite this, the Environmental Statement contains no species-specific assessment of the consequences of:

- prolonged construction noise;
- repeated vibration;
- pile installation;
- heavy vehicle movements;
- road widening adjacent to woodland;
- construction compounds close to known commuting routes;
- or simultaneous disturbance occurring across multiple colony home ranges.

The Applicant instead relies upon generic construction controls applicable to many development types.

That approach might be appropriate where ecological receptors comprise widespread generalist species occupying relatively robust habitats.

It is not appropriate where the Applicant's own surveys establish a nationally important bat assemblage containing widespread barbastelle activity within overlapping maternity colony landscapes.

The issue is not whether construction noise exceeds a particular decibel threshold.

The issue is whether repeated disturbance alters bat behaviour sufficiently to reduce use of established commuting routes, feeding areas, maternity support habitat or hibernation sites.

The Environmental Statement contains no assessment capable of answering that question.

Spring Wood and the converted WWII bat hibernacula

The failure is particularly evident around Spring Wood.

As discussed in Section 8.5, the woodland lies adjacent to former Second World War bomb shelters that were deliberately converted into bat hibernacula. Those structures support multiple bat species and form part of a wider woodland network used by barbastelles and other woodland bats.

The Applicant has not assessed construction disturbance in relation to those hibernacula.

There is no assessment of:

- vibration transmission through the surrounding geology;
- disturbance during hibernation;
- repeated heavy vehicle movements immediately adjacent to the woodland;
- effects of construction compounds;
- interactions between lighting, vibration and traffic;
- or cumulative impacts arising from prolonged activity beside a known bat refuge.

The significance of this omission is reinforced by the findings of Tinsley et al. (2023).

The peer-reviewed study found that several of the bat taxa associated with the Spring Wood landscape—including Myotis species, brown long-eared bats (Plecotus), serotine and soprano pipistrelle—showed reduced activity at ground-mounted solar developments.

The Spring Wood landscape therefore contains precisely those taxa for which the published evidence already indicates sensitivity to solar development.

Rather than responding to that evidence through avoidance, the Applicant proposes prolonged construction immediately adjoining this important bat resource.

Pile driving and vibration

Construction vibration has received remarkably little ecological consideration despite its obvious relevance.

The Environmental Statement continues to allow pile installation within the construction envelope. Although alternative installation methods may be used in some locations, the application does not remove percussive piling from the authorised development.

The ecological implications have not been properly assessed.

Percussive piling can generate repeated impulsive vibration transmitted through the ground, with the extent of propagation depending upon the installation method, ground conditions, distance and receptor characteristics. Unlike continuous background noise, impulsive vibration has the potential to disturb roosting animals repeatedly throughout the construction period.

The Applicant provides no analysis of:

- vibration reaching woodland roosts;
- disturbance of maternity colonies;
- disturbance of hibernacula;
- repeated vibration affecting tree-roost occupancy;
- behavioural avoidance;
- or cumulative vibration arising from simultaneous construction activities.

This omission is particularly important given the geology of the area. Large parts of the Scheme overlie chalk and permeable superficial deposits through which both groundwater and vibration may propagate differently from heavier clay soils.

No site-specific modelling has been presented to demonstrate that vibration associated with piling would not affect nearby woodland habitats or underground bat refuges. South Norfolk Council has itself recognised this issue. Its consultation response specifically recommends that percussive piling should not be used and that screw piles should be adopted wherever practicable because of the environmental effects associated with conventional piling. The Council's concern is not limited to human amenity. It reflects the wider ecological sensitivity of the landscape.

Despite that advice, the Applicant has not removed pile driving from the Scheme nor demonstrated that any remaining use would avoid significant ecological disturbance.

Construction traffic and repeated disturbance

The ecological assessment also underestimates the effects of construction traffic. The transport assessment focuses primarily upon highway capacity and residential amenity. It does not evaluate construction traffic as a sustained ecological disturbance occurring across a connected landscape.

Heavy goods vehicles, abnormal indivisible loads and construction traffic would repeatedly use:

- ancient lanes;
- woodland-edge roads;
- hedgerow corridors;
- rural crossings;
- access tracks;
- and temporary haul routes.

The ecological consequences include:

- repeated noise;
- repeated headlight illumination;
- vibration;
- dust;
- air turbulence;
- increased human presence;
- and interruption of nocturnal movement.

These effects occur not once but thousands of times throughout the construction programme. Many of the most important bat commuting routes identified by the Applicant follow the same hedgerows and rural lanes proposed for construction access. Yet the Environmental Statement contains no quantitative assessment of repeated disturbance to commuting bats arising from prolonged traffic.

Similarly, the assessment does not consider whether repeated traffic may alter the behaviour of breeding birds, mammals or other nocturnal wildlife occupying roadside habitats.

Simultaneous construction across the Scheme

The Applicant's approach also fails to recognise the cumulative nature of disturbance. Construction will not occur at a single isolated location. Multiple compounds, access routes, cable corridors, substations and working areas will operate simultaneously across the Order Limits.

Consequently, bats displaced from one construction area may encounter disturbance again at alternative routes elsewhere within the same landscape. This is particularly important given the overlapping Core Sustenance Zones associated with several barbastelle maternity colonies.

The cumulative consequence may be progressive reduction in the availability of undisturbed commuting and foraging habitat across the colony home ranges.

The Environmental Statement assesses construction activities largely on a parcel-by-parcel basis. It does not evaluate the effects of simultaneous disturbance across the entire ecological network.

Interaction with other impact pathways

Construction disturbance cannot properly be separated from the other ecological changes introduced by the Scheme.

Noise interacts with:

- artificial lighting;
- hedgerow severance;
- fencing;
- altered prey availability;
- construction traffic;
- and human activity.

Together these pressures may substantially alter the suitability of retained habitat even where direct habitat loss is limited.

For example:

- a retained hedgerow may remain physically intact but become less suitable because it is repeatedly illuminated by vehicles, bordered by construction traffic and crossed by temporary haul roads;
- a retained woodland edge may experience vibration, lighting and prolonged human activity while simultaneously losing adjoining feeding habitat;
- a hibernaculum may remain structurally undamaged but become functionally degraded through repeated disturbance during critical seasonal periods.

The Applicant has not assessed these interacting effects.

Instead, each impact pathway is considered separately.

This compartmentalised approach does not reflect how wildlife experiences disturbance.

Reliance upon future management plans

The Applicant relies heavily upon the Outline Construction Environmental Management Plan, Ecological Clerk of Works and future method statements to address construction impacts.

Those documents contain useful principles but they do not presently specify:

- exclusion distances from maternity colonies;
- vibration limits;
- species-specific noise thresholds;
- seasonal restrictions around hibernacula;
- colony-specific working methods;
- monitoring protocols;
- behavioural triggers;
- adaptive management measures;
- or enforceable contingency arrangements if disturbance proves greater than predicted.

Nor has the Applicant demonstrated that such measures would be capable of maintaining favourable conservation status for the nationally important bat assemblage identified in its own surveys.

Construction disturbance is therefore not simply being managed through detailed mitigation. It is being deferred.

The Examination is consequently being asked to conclude that impacts will be insignificant before the detailed measures needed to support that conclusion have been developed or tested.

Failure to apply the mitigation hierarchy

The shortcomings of the construction assessment again illustrate the failure to apply the mitigation hierarchy correctly.

Where nationally important bat habitat, known maternity colonies and converted hibernacula occur within the proposed development area, the first question should be whether construction can be avoided in those locations.

Instead, the Applicant has retained major construction activity adjacent to sensitive ecological receptors and seeks to control its effects through later management.

Norfolk Wildlife Trust reached the opposite conclusion. It expressly requested removal of the Spring Wood land parcel because of its ecological importance.

Although the Applicant subsequently reduced the area affected, approximately half of the original parcel remains within the Scheme.

The principal ecological conflict therefore remains unresolved.

Conclusion

The Applicant has not demonstrated that construction disturbance will avoid significant effects on the nationally important bat assemblage or the wider ecological network.

No species-specific assessment has been undertaken of prolonged construction noise, vibration, pile driving, heavy traffic or simultaneous disturbance across multiple maternity colony landscapes.

The Spring Wood hibernacula, known woodland roosts and connected commuting corridors receive no dedicated construction disturbance assessment despite representing one of the most sensitive bat resources within the Scheme.

The reliance upon outline management plans, future Ecological Clerk of Works supervision and later method statements does not satisfy the requirements of EN-1 for effective, secured mitigation. Nor does it demonstrate that the statutory tests relating to European Protected Species can ultimately be met.

BEPS therefore submits that the ecological effects of construction disturbance have been materially underestimated. In the absence of detailed, species-specific assessment demonstrating that construction noise, vibration, traffic and associated disturbance will not impair the functioning of the nationally important bat landscape throughout construction, the Applicant has failed to establish that these impacts can be avoided or adequately mitigated. This weighs strongly against the grant of development consent.

8.6.4 Solar infrastructure, prey availability and ecological function

The Applicant's assessment of ecological effects focuses predominantly on the direct footprint of infrastructure and the retention or creation of habitats. It gives insufficient consideration to the more subtle ecological processes through which large-scale solar developments alter habitat function, food availability and species behaviour. This is a significant omission because the East Pye landscape supports a nationally important bat assemblage whose ecological value depends not simply upon the presence of hedgerows and woodland, but upon the functioning of complex food webs across the wider agricultural landscape.

The Applicant assumes that because mature hedgerows, woodland blocks and many watercourses will remain physically present, their ecological function will also remain. However, ecological function depends upon the continued interaction between vegetation, invertebrates, aquatic systems, birds, mammals and wider ecosystem processes. Those interactions can be altered substantially without the physical removal of habitat.

The Applicant has not adequately assessed those functional changes.

Changes to insect abundance and prey availability

The Environmental Statement contains relatively little assessment of how solar infrastructure may alter the abundance, distribution and behaviour of invertebrates which form the primary prey base for bats and many farmland birds.

This omission is particularly important because the Applicant's own surveys demonstrate exceptionally high bat activity throughout the Scheme. Such activity necessarily reflects an abundant and spatially diverse prey resource. If prey distribution changes significantly, bat activity and habitat use may also change even where the structural habitat remains intact.

Ground-mounted solar developments modify the physical environment in numerous ways.

Large panel arrays alter:

- solar radiation reaching the ground;
- soil temperature;
- soil moisture;
- vegetation structure;
- wind movement;
- humidity;
- frost formation;

- and local microclimate.

These environmental changes influence both plant communities and the abundance and composition of invertebrate populations.

The Applicant has assumed that extensive grassland beneath panels will generally enhance biodiversity. That conclusion is not supported by detailed evidence specific to this landscape.

Grassland developing beneath closely spaced solar panels experiences substantially different environmental conditions from existing field margins and open grassland. Shading patterns, altered moisture regimes and maintenance practices influence plant composition and consequently affect the insects dependent upon those plants.

For insectivorous bats such as barbastelle, Myotis species, brown long-eared bats and Daubenton's bats, these changes have direct ecological consequences.

The Applicant has not modelled whether the prey resource supporting the nationally important bat assemblage would remain functionally equivalent following construction.

Peer-reviewed evidence concerning bat responses to solar development

This omission is particularly striking in light of the findings of Tinsley et al. (2023). That peer-reviewed study examined bat activity across paired solar developments and comparable control sites and found statistically significant reductions in bat activity for six of the eight species analysed.

Importantly, reduced activity was not confined to open areas beneath solar panels. Several species also exhibited reduced activity along retained field boundaries.

This finding is directly relevant to East Pye because the Applicant's principal mitigation strategy relies upon retaining existing hedgerows while introducing solar infrastructure into the adjoining fields.

If retained field boundaries experience reduced use despite remaining physically intact, then the Applicant's assumption that hedgerow retention preserves ecological function becomes substantially weaker.

The mechanisms responsible remain an active area of scientific research. The authors discuss possible explanations including:

- altered insect communities;
- changes in vegetation structure;
- modified microclimates;
- disruption of commuting behaviour;
- altered acoustic environments;
- avoidance of extensive reflective surfaces;
- and broader behavioural responses to industrialised landscapes.

The precise mechanism is less important than the consistent ecological outcome. Solar development changes how bats use landscapes.

The Applicant has not demonstrated why East Pye, despite supporting a nationally important bat assemblage and multiple maternity colonies, should be expected to behave differently.

Indeed, if anything, the ecological consequences are likely to be more significant because the baseline value is considerably higher than that of many ordinary agricultural sites.

Aquatic insects and food-web disruption

The interaction between solar infrastructure and aquatic ecology provides another important example of functional effects that have not been adequately assessed.

The Environment Agency has specifically identified concern regarding the attraction of aquatic insects to solar panels. Many aquatic insects navigate using polarised light reflected from water surfaces. Solar panels may produce optical characteristics capable of attracting emerging insects away from rivers, ponds and streams. Where this occurs, several ecological consequences may follow.

Adult insects may:

- waste energy attempting to oviposit on unsuitable surfaces;
- suffer increased mortality;
- fail to reproduce successfully;
- become concentrated in artificial locations;
- or become unavailable to predators occupying their normal feeding habitats.

The effects extend beyond the insects themselves.

Aquatic insects form an important food source for:

- Daubenton's bats;
- Myotis species;
- pipistrelles;
- birds;
- amphibians;
- fish;
- and many riparian predators.

Consequently, disruption of aquatic insect emergence has the potential to propagate through the wider food web.

The Environment Agency's representation expressly identifies this issue and requests wider riparian buffers while recognising that the interaction has not been fully assessed. The Applicant

does not provide a species-specific assessment of this pathway. Instead, it assumes that maintaining watercourse buffers will adequately protect aquatic ecology.

Buffer distances alone do not answer behavioural effects associated with reflected light or altered insect movement.

Watercourses as ecological corridors

The River Tas, Hempnall Beck, Starston Brook, Broome Beck and associated ditch systems provide much more than aquatic habitat.

They function simultaneously as:

- bat commuting routes;
- insect production systems;
- bird feeding habitat;
- mammal corridors;
- amphibian habitat;
- botanical corridors;
- and hydrological connections linking the wider landscape.

The Applicant's assessment frequently separates these functions into different technical chapters. Ecologically, they operate together.

- Changes affecting aquatic productivity may alter prey availability for bats.
- Changes affecting riparian vegetation may influence commuting routes.
- Changes affecting hydrology may alter invertebrate communities.

The Environmental Statement contains no integrated ecosystem assessment examining these interacting relationships. Instead, aquatic ecology, terrestrial ecology, hydrology and bats are considered largely independently. That compartmentalised approach underestimates ecological complexity.

Effects on woodland-edge ecology

Woodland edges are among the most productive ecological habitats within the South Norfolk Claylands.

They support:

- high insect abundance;
- flowering shrubs;
- sheltered microclimates;
- mature trees;
- deadwood;
- and structurally diverse vegetation.

The Applicant frequently proposes woodland-edge buffering as mitigation. However, woodland-edge ecology depends upon the gradual transition between woodland and surrounding land uses. Introducing extensive solar arrays immediately adjacent to woodland fundamentally alters that transition.

Potential consequences include:

- modified air movement;
- altered humidity;
- changes in edge vegetation;
- altered insect communities;
- increased disturbance;
- lighting;
- maintenance activity;
- and changed predator-prey interactions.

The Forestry Commission has recognised these wider edge effects by expressing concern about woodland isolation and recommending expanded woodland creation around vulnerable ancient woods.

The Applicant has not demonstrated that simple thirty-metre buffers preserve woodland-edge ecological function.

Field margins and ecological productivity

The South Norfolk Claylands are characterised by narrow field margins, species-rich hedgerows and remnant grassland strips. These features support disproportionately high ecological productivity compared with the surrounding arable fields. Many bat species forage intensively along these edges because insects concentrate there.

The Applicant assumes that retaining margins while converting adjoining fields into solar arrays will largely preserve ecological function. That assumption has not been demonstrated.

Solar arrays alter:

- wind patterns;
- vegetation management;
- grazing regimes;
- shading;
- maintenance access;
- and human disturbance.

Each of these changes may influence insect abundance within adjoining margins.

The Applicant has not assessed whether retained margins will continue to produce equivalent prey resources following construction.

Interaction with agricultural stewardship

This issue also relates directly to the existing Countryside Stewardship habitats.

Many of the habitats supporting the current prey base have been actively managed for biodiversity since 2013 under publicly funded stewardship agreements.

Those agreements have increased:

1. floral diversity;
2. seed resources;
3. invertebrate abundance;
4. habitat for ground-nesting birds: lapwing and skylarks
5. and habitat connectivity.

The Applicant proposes replacing functioning stewardship habitats with newly created grassland designed partly to generate Biodiversity Net Gain.

There is no evidence demonstrating that newly established habitat beneath solar panels will immediately replicate the ecological productivity developed through over a decade of conservation management.

The BNG calculations therefore cannot be assumed to represent equivalent prey availability for protected species.

Failure to assess ecosystem function

Perhaps the greatest weakness in the Applicant's assessment is that it considers receptors separately rather than examining ecosystem function.

The nationally important bat assemblage exists because of the interaction between:

- ancient hedgerows;
- woodland;
- ponds;
- chalk streams;
- aquatic insects;
- terrestrial invertebrates;
- flowering margins;
- mature trees;
- grazing land;
- and long-established agricultural management.

Each component supports the others.

Removing or altering one component may produce cascading effects across the wider ecological network. The Applicant has not attempted to evaluate these ecosystem-scale interactions. Instead, the assessment focuses largely upon whether individual habitats remain present after construction.

Ecological function cannot be reduced to habitat presence alone.

Relationship to Biodiversity Net Gain

This omission also exposes one of the principal weaknesses in the Applicant's Biodiversity Net Gain case. The statutory biodiversity metric measures habitat area, distinctiveness, condition and strategic significance.

It does not measure:

- prey availability;
- food-web resilience;
- insect productivity;
- ecological interactions;
- predator-prey relationships;
- or behavioural changes in highly mobile protected species.

Consequently, a positive biodiversity metric cannot demonstrate that the nationally important bat assemblage identified by the Applicant will continue to function at favourable conservation status. Nor can it confirm that the skylarks and lapwing breeding in these stewardship arable fields will continue to do so once they have been stripped during construction and converted to grassland beneath solar panels. Indeed, research by Gwent Wildlife Trust has demonstrated that lapwing have not adopted the mitigation area of the Gwent Levels solar farm and have not returned to the area post construction. They also record reduced insect numbers having an impact on their bat populations.

The Applicant has repeatedly relied upon predicted habitat gains while providing little evidence that existing ecological processes will remain intact.

Failure to apply the mitigation hierarchy

The ecological processes described above reinforce the importance of the mitigation hierarchy.

Where the functioning of a nationally important ecosystem depends upon interactions that are not fully understood and cannot readily be recreated, the appropriate response is avoidance.

Instead, the Applicant has selected a landscape whose ecological value derives from long-established ecosystem function and seeks to justify development through habitat retention, future habitat creation and Biodiversity Net Gain calculations.

That approach reverses the hierarchy required by EN-1.

Rather than demonstrating that ecological processes will remain intact, the Applicant assumes that replacement habitat will compensate for changes whose magnitude has not been quantified.

Conclusion

The Applicant has not demonstrated that the ecological functioning of the East Pye landscape will be maintained following construction of the Scheme.

It has not adequately assessed:

- changes to prey availability;
- changes to insect communities;
- aquatic insect attraction to solar panels;
- woodland-edge ecological processes;
- field-margin productivity;
- ecosystem interactions;
- or the implications of these changes for the nationally important bat assemblage.

The findings of Tinsley et al., the Environment Agency's concerns regarding aquatic insects, the Applicant's own nationally important bat surveys, and the wider evidence concerning ecosystem connectivity all indicate that ecological function may change substantially even where habitat is physically retained.

The Environmental Statement does not adequately address these processes. Consequently, the Applicant has failed to demonstrate that the Scheme will preserve the ecological function of the nationally important bat landscape or that these impacts can be effectively mitigated. In accordance with EN-1 and the mitigation hierarchy, the appropriate response is avoidance rather than reliance upon generic habitat creation and Biodiversity Net Gain metrics.

8.6.5 Landscape fragmentation by fencing, roads and operational infrastructure

The Environmental Statement consistently underestimates the ecological consequences of fragmentation because it treats most infrastructure elements as having only localised effects. In reality, East Pye Solar would introduce a continuous network of fencing, access roads, substations, BESS compounds, CCTV infrastructure, maintenance tracks, drainage works, cable corridors and security infrastructure across an existing connected ecological landscape. The ecological significance of these features lies not simply in their individual footprints, but in their cumulative effect on the permeability, resilience and long-term functioning of the landscape.

This is particularly important because the Applicant's own surveys demonstrate that the ecological value of the Scheme area is fundamentally landscape-scale. The nationally important bat assemblage, overlapping barbastelle maternity-colony Core Sustenance Zones, connected hedgerow network, chalk-stream tributaries, ancient woodland complexes and widespread priority habitats all indicate that ecological function depends upon the continued movement of species through the landscape. Fragmentation therefore becomes one of the principal ecological impact pathways.

The Applicant's assessment largely considers habitat loss in terms of hectares removed. That is not the correct ecological question. The relevant question is whether the landscape will continue to function as a connected ecological system following sixty years of industrial development. On the evidence before the Examination, that has not been demonstrated.

Fragmentation is recognised as a principal ecological threat

The importance of fragmentation is not merely a matter of professional opinion. It is consistently recognised throughout the evidence submitted to this Examination.

The Forestry Commission identifies fragmentation as one of the greatest threats to ancient woodland, particularly where small woodland blocks become isolated within the wider landscape. In relation to East Pye Solar, it expresses specific concern regarding Doyly's Grove and especially Ringers Grove, observing that Ringers Grove would become almost completely enclosed by the development, with Market Lane forming the only remaining undeveloped boundary. The Forestry Commission explains that woodland isolated within development becomes progressively less resilient over time and recommends increasing woodland connections rather than relying solely upon buffer strips.

That advice has wider significance than woodland management. Ancient woodland does not exist independently of its surrounding landscape. Its ecological value depends upon the exchange of species, genetic material and ecological processes with adjacent habitats. The same principle applies to bats, woodland birds, invertebrates, fungi, mammals and countless other species.

The Applicant's mitigation strategy retains woodland while fundamentally altering the surrounding landscape within which that woodland functions. The Forestry Commission's evidence therefore directly supports BEPS' contention that landscape connectivity, rather than simple woodland retention, is the critical ecological issue.

Security fencing and ecological permeability

One of the least adequately assessed elements of the Scheme is the cumulative effect of fencing. The development would require extensive lengths of permanent security fencing around:

- solar fields;
- BESS compounds;
- substations;
- customer substations;
- National Grid infrastructure;
- operational compounds;
- and associated infrastructure.

Although the fencing may be designed to allow passage for some small mammals, its cumulative ecological effects extend well beyond direct physical exclusion.

The Forestry Commission expressly raises concern regarding deer movement. It notes that large areas of farmland would be removed from existing deer ranges and warns that fencing may:

- isolate woodland;
- alter movement patterns;
- increase browsing pressure elsewhere;
- affect surrounding stewardship habitats;
- increase pressure on ancient woodland regeneration;
- and increase road collisions as displaced deer seek alternative routes.

These observations illustrate a wider ecological principle. Species move through landscapes using established behavioural pathways developed over many generations. Introducing extensive fencing changes those movement patterns. Where movement is constrained, ecological pressures are redistributed elsewhere.

The Environmental Statement assesses fencing largely as an engineering requirement. It does not provide a landscape-scale analysis of how fencing alters ecological permeability for the wider species assemblage. Nor does it adequately assess cumulative fragmentation resulting from fencing acting together with roads, compounds, lighting and other infrastructure.

Fragmentation of woodland landscapes

The consequences are particularly important around the ancient woodland network. The Applicant correctly proposes that direct loss of ancient woodland should be avoided. However, avoiding direct felling is not equivalent to avoiding ecological fragmentation. Woodland ecology depends upon:

- surrounding woodland edge;
- adjoining scrub;
- transitional habitats;
- connected hedgerows;
- adjacent grassland;
- insect-rich margins;
- and uninterrupted ecological links to the wider landscape.

These ecological relationships are particularly important for woodland bats. Barbastelles, brown long-eared bats, Myotis species and many woodland birds routinely move between woodland blocks using hedgerows, lanes, tree belts and riparian corridors. Where those connections become interrupted by:

- fencing;
- roads;
- compounds;
- substations;
- maintenance infrastructure;
- repeated vehicle movements;
- lighting;
- or security infrastructure,

the woodland itself may remain physically intact while its ecological function progressively declines. This concern is particularly acute for Spring Wood, Doyly's Grove, Ringers Grove and other woodland blocks located close to development parcels.

The Applicant has not undertaken a functional woodland connectivity assessment demonstrating that these ecological relationships will remain intact throughout construction, operation, replacement and decommissioning.

Roads, access tracks and operational infrastructure

The Scheme introduces a permanent network of operational infrastructure extending throughout the Order Limits. This includes:

- internal maintenance roads;
- permanent access tracks;
- junction improvements;
- widened rural lanes;
- substations;
- transformer compounds;
- BESS infrastructure;
- CCTV poles;
- security equipment;
- drainage infrastructure;
- and permanent operational compounds.

Each element occupies relatively little land individually. Collectively they transform the structure of the landscape. The Environmental Statement generally assesses these features separately. There is no integrated assessment examining how the combined infrastructure alters movement opportunities for wildlife across the entire Scheme. For example, a bat commuting along a hedgerow may encounter:

- a widened access road;
- security fencing;
- operational lighting;
- maintenance vehicles;
- CCTV columns;
- altered vegetation management;
- and increased human activity.

Each individual feature may be considered insignificant. Together they fundamentally alter the ecological character of that commuting corridor. The same applies to mammals, birds, reptiles and invertebrates moving through the landscape.

Long-term industrialisation of a historic landscape

The duration of fragmentation also requires greater attention. This is not a temporary construction project. The Scheme would industrialise the landscape for approximately sixty years, followed by a substantial period of decommissioning.

Throughout that time, ecological communities would experience:

- altered habitat configuration;
- altered movement opportunities;
- repeated maintenance;
- vegetation management;
- infrastructure replacement;
- security requirements;
- operational access;
- and periodic reconstruction.

The Applicant frequently describes habitat creation as if it will progressively offset these effects. However, fragmentation is not simply an issue of habitat quantity. It concerns the organisation of the landscape itself.

The historic South Norfolk Claylands developed over centuries as an interconnected ecological mosaic. Replacing that mosaic with compartmentalised solar fields enclosed by fencing and linked by infrastructure represents a fundamental change in landscape structure.

No amount of newly planted hedgerow can immediately recreate centuries of ecological connectivity.

Cumulative interaction with other ecological pressures

Fragmentation cannot be assessed independently of other impact pathways. It interacts continuously with:

- artificial lighting;
- construction disturbance;
- altered prey availability;
- hydrological change;
- tree decline;
- road widening;
- cable corridors;
- and changing land management.

For example:

A woodland enclosed by fencing may also experience:

- increased lighting;
- altered insect abundance;
- repeated maintenance activity;
- construction vibration;
- and modified groundwater conditions.

Each effect reinforces the others. The Applicant's assessment largely considers these impacts chapter by chapter. Wildlife experiences them simultaneously.

This cumulative interaction is especially important for barbastelles. The Applicant's own surveys establish that the nationally important bat assemblage depends upon movement throughout the Scheme. Fragmentation occurring simultaneously with lighting, disturbance and altered prey availability is considerably more significant than any one pressure considered in isolation.

The Environmental Statement does not evaluate these cumulative behavioural consequences.

Biodiversity Net Gain does not address fragmentation

The Applicant relies heavily upon Biodiversity Net Gain calculations to demonstrate ecological enhancement. However, the statutory biodiversity metric principally measures habitat area, distinctiveness and condition. It does not measure:

- landscape permeability;
- connectivity;
- fragmentation;
- commuting routes;
- woodland enclosure;
- behavioural avoidance;
- metapopulation function;
- or ecological resilience.

Consequently, positive habitat-unit calculations do not demonstrate that fragmentation has been avoided.

This distinction is recognised by the Forestry Commission. Its recommendation is not simply to plant more woodland. It recommends enlarging woodland blocks and strengthening ecological connectivity because habitat area alone does not resolve fragmentation.

Similarly, the South Norfolk Tree Warden Network identifies mature hedgerows and trees as ecological infrastructure whose function cannot be replicated through simple replacement planting.

The Applicant's reliance upon Biodiversity Net Gain therefore does not answer the principal ecological concern.

Failure to apply the mitigation hierarchy

The treatment of fragmentation again illustrates the Applicant's failure to apply the mitigation hierarchy correctly.

The first stage of the hierarchy is avoidance.

Where nationally important ecological networks exist, infrastructure should be located so as to avoid severing those networks wherever possible.

Instead, the Applicant has selected a layout extending across multiple connected ecological corridors and then proposes to mitigate fragmentation through:

- retained hedgerows;
- additional planting;
- biodiversity enhancement;
- ecological management;
- and future monitoring.

That approach assumes fragmentation can be repaired after it has occurred. The evidence before the Examination indicates otherwise.

The Forestry Commission, Norfolk Wildlife Trust, the South Norfolk Tree Warden Network, local ecological evidence and the Applicant's own bat surveys all demonstrate that the ecological value of this landscape derives from long-established connectivity. Once fragmented, that connectivity cannot simply be recreated through post-development habitat enhancement.

Conclusion

The Applicant has materially underestimated the effects of landscape fragmentation.

The ecological consequences of fencing, operational roads, substations, access infrastructure, woodland enclosure, security measures and long-term industrialisation have not been assessed as components of a single interacting landscape. Instead, they have been considered individually, leading to systematic underestimation of cumulative effects.

The evidence submitted by the Forestry Commission, Norfolk Wildlife Trust, the South Norfolk Tree Warden Network and other consultees consistently identifies fragmentation as one of the principal ecological risks associated with the Scheme. The Applicant's own bat surveys demonstrate why: the nationally important bat assemblage depends upon movement through an extensive, connected landscape rather than isolated habitat parcels.

The Applicant has not demonstrated that this landscape will remain functionally connected following construction, operation, replacement and decommissioning. Nor has it shown that the fragmentation created by fencing, infrastructure and operational management can be effectively mitigated or compensated through Biodiversity Net Gain or future ecological management.

BEPS therefore submits that the effects of landscape fragmentation have been substantially underestimated. The Scheme conflicts with the mitigation hierarchy because it fails to avoid fragmentation of a nationally important ecological network and instead relies upon generic enhancement measures that do not address the underlying loss of ecological connectivity. This represents a fundamental ecological objection to the Scheme and provides a further reason why development consent should be refused.

8.6.6. Mitigation and BNG insufficient

The applicant cannot mitigate:

- Loss of maternity roost functionality
- Landscape-scale connectivity
- CSZ integrity

BNG proposals cannot replace:

- Mature woodland roost features
- Established bat movement networks

Examination consequence

These are not matters which can now be characterised as acceptance-stage deficiencies. The relevant question is whether the outstanding ecological evidence is sufficiently complete for the ExA to reach a robust conclusion on likely significant effects, mitigation and protected-species implications before making its recommendation. Where information is still needed to determine whether development can be avoided, relocated or made environmentally acceptable, that information goes to the consentability of the authorised envelope rather than merely to post-consent implementation.

ExQ1 now places the adequacy of the bat baseline directly in issue. The ExA asks Natural England whether the Applicant has established an adequate bat baseline, including in relation to barbastelle and woodland adjoining the Order Limits. That question is significant because the remaining issue is not merely whether barbastelles are present; the Applicant's own evidence already establishes a nationally important assemblage and widespread barbastelle activity. The unresolved question is whether the survey evidence is sufficient to identify the functional maternity-colony landscape, roost network, principal commuting routes and foraging areas which need to be protected before the final layout is fixed.

Closing statement

The scheme is located within a confirmed, multi-colony barbastelle metapopulation, with overlapping Core Sustenance Zones across the entire site. In the absence of a complete baseline and lawful assessment, the environmental effects cannot be understood and lawful consent cannot be granted.

Natural England's definition of Favourable Conservation Status for barbastelle bats confirms that the species is highly light-averse and dependent on dark, connected landscapes for foraging and movement between colonies. Artificial lighting is identified as a growing national threat, fragmenting habitats, reducing prey availability, and disrupting connectivity between maternity colonies.

The East Pye Solar scheme introduces permanent sources of artificial lighting across the entirety of a confirmed barbastelle maternity landscape, within overlapping Core Sustenance Zones. This will result in fragmentation of dark corridors, disruption of commuting routes, and degradation of foraging habitat at a landscape scale.

Natural England further states that favourable conservation status requires protection of existing roosts, maintenance of connectivity, and an increase in suitable roosting habitat. The proposed development directly conflicts with these requirements by introducing long-term disturbance, habitat fragmentation, and lighting into a functionally connected woodland network supporting maternity colonies.

In these circumstances, the present evidence does not demonstrate with sufficient confidence that the Scheme would be compatible with maintaining the affected barbastelle population at favourable conservation status. That creates a material unresolved issue for any future EPS licensing process and for the weight which can safely be placed on the Applicant's present mitigation case.

8.7 Ancient Woodland

8.7.1 Six ancient woodlands directly adjoining the Scheme

The concentration of ancient woodland immediately adjoining East Pye Solar is exceptional and must be treated as a defining constraint upon the Scheme, not as a collection of peripheral features capable of being protected by standard buffers. The Forestry Commission identifies six ancient woodlands directly adjacent to the proposed development:

- Saxlingham Grove — Ancient Semi-Natural Woodland;
- Doyly's Grove — Ancient Semi-Natural Woodland;
- Popes Wood — Plantation on an Ancient Woodland Site;
- Spring Wood — Plantation on an Ancient Woodland Site;
- Little Wood — Ancient Semi-Natural Woodland; and
- Ringers Grove — Ancient Semi-Natural Woodland.

Both Ancient Semi-Natural Woodland and Plantations on Ancient Woodland Sites are ancient woodland and therefore irreplaceable habitat. PAWS may have been replanted with non-native or plantation species, but its soils, seedbanks, fungi, hydrology, archaeological features and continuity of woodland cover retain characteristics developed over centuries. Its policy protection is not reduced because the present canopy has been modified. The Forestry Commission's

scoping advice accordingly emphasised that ancient woodland has been continuously wooded since at least 1600 and that the protection applies equally to ASNW and PAWS.

The absence of ancient woodland within the proposed panel footprint does not resolve the objection. National policy protects ancient woodland against both loss and deterioration, and EN-1 requires the direct and indirect effects of development upon ancient woodland and other irreplaceable habitats to be addressed during construction and operation. The relevant assessment must therefore extend beyond felling or excavation within the mapped woodland boundary. It must consider whether the Scheme would degrade the woodlands through fragmentation, enclosure, altered hydrology, dust, lighting, noise, vibration, edge effects, soil compaction, pollution, increased traffic and the loss of their ecological relationship with surrounding hedgerows, watercourses, field margins and other woodland blocks.

The Planning Inspectorate's Scoping Opinion required the ES to assess impacts upon the six ancient-woodland parcels adjoining the Scheme and to consider avoidance, mitigation and enhancement. The consultation advice recorded Popes Wood beside Sub-Site 7C, Doyly's Grove beside Sub-Site 7C, Saxlingham Grove beside Sub-Sites 7F and 7G, Little Wood beside Sub-Site 7H, Ringers Grove beside Site 8A, and Spring Wood beside Sub-Sites 3A and 3B. It also stressed that the standard 15-metre woodland buffer is only a minimum and may need to be increased where indirect effects extend further. The Applicant's own early site description likewise acknowledged that Doyly's Grove adjoins Sub-Site 7C on three sides, Popes Wood adjoins its southern side, Saxlingham Grove adjoins the Site 7 development and Little Wood lies beside Sub-Site 7H.

This spatial relationship is not incidental. The six woods lie within the same historic Claylands matrix of old hedgerows, mature trees, lanes, ditches, ponds, wet corridors and small fields that supports the Applicant's nationally important bat assemblage. Their ecological importance is therefore both intrinsic and relational. Each woodland contributes roosting, breeding, shelter and foraging habitat, while the surrounding landscape allows species, genetic material and ecological processes to move between woods. Development immediately around those woods threatens not only their individual condition but the functioning of the woodland network.

Saxlingham Grove

Saxlingham Grove is particularly sensitive because it is both ancient woodland and part of the Shotesham–Woodton Hornbeam Woods SSSI. The Applicant's scoping material describes that SSSI as a group of ancient coppice-with-standards woods that may once have formed part of a continuous primary hornbeam forest. It identifies Saxlingham Grove, Shotesham Little Wood, Hempnall Little Wood and Winter's Grove as representative examples of the distinctive south Norfolk and north-east Suffolk hornbeam-woodland type.

The woodland also supports a documented barbastelle maternity colony. Records summarised in the Applicant's bat assessment include roosts in ash, oak and dead oak trees, emergence counts and a lactating female. The woodland directly adjoins development parcels and forms part of the landscape in which the Applicant recorded widespread barbastelle activity. The significance of Saxlingham Grove therefore cannot be reduced to whether panel foundations fall outside a 30-

metre line. Its condition and protected-species function depend upon dark, connected and sufficiently undisturbed habitat extending beyond the woodland boundary.

Natural England's Relevant Representation identifies Shotesham–Woodton Hornbeam Woods SSSI as hydrologically connected to the Order Limits and accepts that damage can only be ruled out if the water-quality, pollution-prevention and runoff controls relied upon are followed and secured. It also identifies Saxlingham Grove itself as an ancient woodland hydrologically linked to the Scheme. That conditional position confirms that the woodland is exposed to indirect pathways and that its protection cannot be assumed merely from the absence of direct land take.

Doyly's Grove and Popes Wood

Doyly's Grove and Popes Wood are closely associated with Sub-Site 7C. The Applicant's own scoping report records Doyly's Grove adjacent to the south, west and north of the sub-site and Popes Wood adjacent to its south. This configuration places the proposed development within the immediate ecological setting of both woods and creates a particular risk of enclosure and loss of connectivity.

The Forestry Commission has expressed concern about Doyly's Grove because it is a relatively small ancient woodland and therefore especially vulnerable to isolation and climate-related pressures. Small ancient woods depend heavily upon their surrounding habitats. Their resilience is reduced where hedgerows, scrub, grassland and other wooded links are replaced by fenced infrastructure or where edge conditions become hotter, drier, brighter or more disturbed.

Natural England also identifies Popes Wood and Doyly's Grove as hydrologically connected ancient woodland. This is important because indirect deterioration may occur through changes in groundwater flow, surface runoff, sediment movement and soil moisture, as well as through visible physical disturbance. A buffer measured only as a horizontal distance from the woodland edge does not establish that those processes will be unaffected.

Norfolk Wildlife Trust identified both Popes Wood and Doyly's Grove as sensitive ancient woodland beside Site 7C and required large buffers, ecotones of shrubs and rough grassland, construction controls and evidence that the development would not have negative effects. The Trust's request for an ecotone is materially different from leaving a narrow strip of otherwise ordinary land between panels and woodland. A functioning ecotone should provide a graduated, semi-natural transition capable of supporting woodland-edge plants, invertebrates, birds and bats and of reducing abrupt microclimatic and disturbance effects.

Spring Wood

Spring Wood is a PAWS directly adjoining the Site 3 landscape. Its sensitivity is heightened by its relationship with Hempnall CWS, a known barbastelle roost and foraging area, and the converted Second World War bomb shelters used as bat hibernacula. The woodland and shelters form a combined year-round bat resource linked to the surrounding hedgerows, mature trees and fields.

Norfolk Wildlife Trust expressly sought removal of the development parcel adjoining Spring Wood because of the impacts upon ancient woodland, the County Wildlife Site and bats. The Applicant

removed only part of that parcel. The remaining development therefore continues to occupy the ecological setting of the woodland and the associated bat resource.

The appropriate question is not whether part-removal has reduced the number of panels. It is whether the remaining Scheme has avoided deterioration of Spring Wood and impairment of its woodland, roosting, hibernation, foraging and commuting functions. No complete radio-tracking, hibernacula-specific disturbance assessment or functional connectivity assessment has been produced to demonstrate that it has.

Little Wood

Little Wood is ASNW directly adjacent to the Site 7 and Site 8 development landscape. Its importance is reinforced by the Norfolk Barbastelle Study Group's confirmation of a maternity colony there. The woodland therefore functions not merely as a mapped ancient-woodland parcel but as an active breeding resource for a rare Annex II and European Protected Species.

The Scheme lies within the Core Sustenance Zone of that colony, and the Applicant recorded barbastelle activity throughout the surrounding Order Limits. Development beside Little Wood must consequently be assessed in terms of the continuing function of the maternity colony, including access to dark commuting routes, prey-rich margins, wet habitats and alternative woodland roosts. A retained woodland boundary and a nominal buffer do not establish that those functions will continue.

Norfolk Wildlife Trust identified the proximity of Site 7H to Little Wood, sought at least a 30-metre buffer and required that the buffer comprise a suitable shrub and rough-grassland ecotone rather than an unstructured stand-off distance.

Ringers Grove

Ringers Grove is ASNW beside Site 8A and is especially vulnerable because the development would surround it on three sides. Norfolk Wildlife Trust expressly identified this configuration, noted the presence of veteran trees and the proximity of Shotesham–Woodton Hornbeam Woods SSSI, and required the ES to demonstrate how connectivity between the woodlands would be maintained.

The Forestry Commission's later representation goes further, warning that Ringers Grove would become almost completely enclosed by development, with Market Lane providing the principal remaining open boundary. It identifies enclosure and isolation as long-term threats, particularly for a small ancient wood facing climate pressure, and recommends expansion and connection to create a more resilient woodland block with graduated woodland edge and scrub habitat.

That advice exposes the inadequacy of assessing Ringers Grove only by reference to direct loss. The Scheme may leave every mapped woodland tree standing and still cause deterioration by converting the woodland from part of a permeable rural network into an ecological island surrounded by panel arrays, fencing, roads and operational activity.

The six woods form a network, not six separate constraints

The ES does not adequately recognise the cumulative importance of having six irreplaceable woodland sites directly adjoining one development. Each woodland is assessed largely against the nearest parcel and proposed buffer. That approach fails to consider whether the combined Scheme would:

- reduce movement among the woodland blocks;
- interrupt hedgerow and riparian connections;
- isolate bat maternity colonies and satellite roosts;
- alter the hydrological conditions upon which woodland soils and ground flora depend;
- impose repeated lighting, noise, dust and traffic effects across the network;
- or reduce the woodlands' collective resilience over the Scheme's proposed lifetime.

The ancient woods of the South Norfolk Claylands are surviving components of a formerly more extensive historic woodland and hedgerow system. Their small size increases, rather than reduces, their dependence upon the surrounding ecological matrix. Professor Tom Williamson's Claylands evidence explains that woodland in this landscape has historically been connected through hedges, farmland trees, ponds, margins and other semi-natural features. The proper policy objective is to restore and reinforce that connectivity, not to preserve the mapped woodlands as fragments while industrialising the land between them.

The Applicant proposes approximately 25 hectares of new woodland planting and other habitat creation. That may provide future ecological value, but it does not establish avoidance of deterioration to the six existing ancient woods. Newly planted woodland cannot reproduce ancient woodland soils, fungi, seedbanks, veteran structures or long-established species relationships. Nor does planting elsewhere necessarily repair the enclosure of a particular woodland or preserve an existing bat route.

Natural England presently treats ancient woodland as a 'green' issue, but its position is expressly dependent upon the 30-metre buffers and associated protections being consistently recorded and secured in the LEMP, CEMP and DEMP. It also requires full BS5837-compliant survey, strict root protection, arboricultural supervision, no-dig methods, compaction prevention, dust and runoff control and micrositing. Natural England's absence of an objection is therefore not a finding that proximity to six ancient woods is environmentally immaterial. It is a conditional position based upon mitigation that must still be made consistent, detailed and enforceable.

BEPS submits that the six directly adjoining ancient woodlands must be treated as a scheme-wide irreplaceable-habitat constraint. Their protection cannot be demonstrated through the absence of direct felling or by drawing standard buffers around individual polygons. The assessment must establish that their condition, setting, hydrology, edge habitats, protected-species functions and connectivity with the wider Claylands network will not deteriorate throughout construction, operation, equipment replacement and decommissioning.

The Applicant has not yet made that demonstration. The concentration of six ancient woods immediately beside the development, several supporting or associated with barbastelle maternity and year-round bat habitat, is a strong indication that the Scheme has been located in the wrong

ecological landscape. Under the mitigation hierarchy, the first response should have been avoidance through site selection and removal of conflicting development areas, rather than enclosure of irreplaceable habitats accompanied by buffers and compensatory planting.

8.7.2 Woodland fragmentation, enclosure and loss of ecological function

The principal threat to the ancient woodlands adjoining East Pye Solar is not confined to direct felling or physical encroachment within their mapped boundaries. It is the long-term fragmentation, enclosure and degradation of the ecological network within which those woods have survived and continue to function.

The Applicant's own scoping work identified 29 areas of Ancient Woodland Inventory woodland within two kilometres of the principal sites, with six ancient woodland parcels directly adjoining the development. It also recorded native hedgerows throughout the sites, numerous ponds, hundreds of parcels of deciduous woodland and adjoining lowland fen and floodplain grazing marsh. The ecological question is therefore not whether six individual woodland polygons can be retained. It is whether those woods will continue to function as parts of a permeable woodland–hedgerow–watercourse network after the intervening and surrounding landscape has been occupied for approximately sixty years by panel arrays, substations, BESS infrastructure, access tracks, fencing, compounds, lighting and maintenance activity.

The Applicant has not demonstrated that they will.

Ancient woodland depends upon its surrounding landscape

Ancient woodland is irreplaceable because of the continuity and complexity accumulated within its soils, seedbanks, fungi, veteran trees, deadwood communities, hydrology and species assemblages over centuries. Those characteristics do not stop at a cartographic boundary. The ecological condition and resilience of a small woodland are strongly influenced by its surrounding land use, woodland-edge habitats and connections to other woods, hedgerows, trees, ponds and watercourses.

This is particularly important in the South Norfolk Claylands. Professor Tom Williamson's landscape history evidence explains that the Claylands historically supported an intricate network of small fields, species-rich hedges, farmland trees, ponds, commons, wide grassy lanes and woodland. Those features produced not merely habitat parcels but 'a wealth of connections between them'. The same evidence explains that hedges acted as habitat corridors, that ponds and ditches formed a connected seasonal water network, and that grassland verges and field margins extended the ecological web through the farmed landscape.

The surviving ancient woods are therefore remnants of, and nodes within, a much larger historic ecological system. Their small scale makes those external relationships more important, not less important. Small woodlands have a high proportion of edge habitat relative to interior habitat and are correspondingly more vulnerable to altered temperature, humidity, wind exposure, pollution, disturbance and isolation. Where surrounding hedges and semi-natural land remain intact, those pressures can be moderated and species can move between habitat patches. Where the

surrounding landscape is industrialised and enclosed, the woodland becomes progressively more isolated.

The Applicant's own landscape characterisation recognises that woodland groups, tree belts and hedgerow networks create enclosed wooded horizons and give structure and intimacy to the Site 8 and Site 10 landscapes. Those features cannot simultaneously be treated as integral to landscape structure and ecological value, yet regarded as unaffected merely because the woodland canopy is not felled.

The Forestry Commission's warning on fragmentation and enclosure

The Forestry Commission expressly identifies fragmentation as one of the greatest threats to ancient woodland. Its concern is not theoretical. It identifies Doyly's Grove and Ringers Grove as particularly vulnerable because they are small ancient woods whose relationship with the wider landscape would be altered by the Scheme. In the case of Ringers Grove, the development would almost completely enclose the woodland, leaving Market Lane as the principal remaining undeveloped boundary.

The Forestry Commission's earlier scoping advice stated that woodland isolation is a particular concern where development surrounds woodland on several sides or completely encloses it. It advised that hedgerows, individual trees and woodland must be considered in terms of their overall connectivity and recommended the creation or expansion of connected woodland blocks of at least five hectares to improve resilience across the whole landscape rather than planting isolated areas merely for screening.

That advice is highly material. It confirms that a woodland buffer cannot be considered independently from the configuration of the surrounding development. A retained strip immediately outside the woodland boundary does not overcome enclosure where the land beyond the strip is occupied by fencing, panels, tracks and operational infrastructure.

Nor does the proposal to plant new woodland elsewhere resolve the effect. The Forestry Commission's recommendation is for planting that expands and connects vulnerable woods in the correct locations, with graduated woodland-edge and scrub habitat. It is not an endorsement of generalised planting totals as compensation for enclosing ancient habitat.

Ringers Grove

Ringers Grove is the clearest example of the difference between physical retention and ecological protection.

The Applicant's own scoping material recorded Ringers Grove directly adjacent to the west and north of Sub-Site 8A. Norfolk Wildlife Trust described Site 8 as surrounding Ringers Grove on three sides and expressly required the ES to demonstrate how connectivity between woodland sites would be maintained. It recommended a minimum 30-metre buffer comprising a genuine ecotone of shrubs and rough grassland, not merely a stand-off distance between woodland and infrastructure.

The Forestry Commission's subsequent representation confirms that concern remains despite the proposed buffers and planting. Ringers Grove is a small ancient woodland and would be especially vulnerable to landscape isolation and climate pressures. Its almost complete enclosure would alter the relationship between the woodland and the fields, hedges and wooded links around it.

The potential consequences include:

- reduced movement between Ringers Grove and nearby woodland;
- loss or degradation of bat flight routes;
- altered deer and mammal movement;
- increased browsing pressure within or around the wood;
- changes to edge microclimate;
- increased exposure to lighting, noise and human activity;
- loss of adjoining invertebrate and foraging habitat;
- and reduced capacity for species to respond to climate change by moving through the landscape.

The issue cannot be answered by stating that no ancient woodland trees will be removed. The woodland may remain physically present while becoming ecologically diminished and isolated.

Doyly's Grove and Popes Wood

The same issue arises at Doyly's Grove and Popes Wood. The Applicant records Doyly's Grove adjacent to Sub-Site 7C on its southern, western and northern sides, with Popes Wood adjoining the same sub-site to the south. The development would therefore occupy land within and between the immediate settings of two ancient woodland sites.

Norfolk Wildlife Trust identifies both woods as sensitive County Wildlife Sites and ancient woodland and requires large buffers, woodland-edge ecotones and evidence that no negative effects would occur. The Forestry Commission remains particularly concerned about Doyly's Grove because its small size makes it vulnerable to isolation and climate change.

The configuration matters. A woodland with development along one distant boundary presents a different ecological risk from one bordered on several sides by a major energy scheme. At Doyly's Grove and Popes Wood, the proximity and extent of the development would alter the surrounding habitat matrix and could reduce the effective connection between the woods and the wider hedgerow and tree network.

The Applicant has not produced a woodland-network analysis demonstrating:

- the existing routes connecting Doyly's Grove and Popes Wood to other woods;
- the species using those routes;
- the effects of fencing, tracks and lighting upon those movements;
- how any new planting would maintain or improve the same connections;
- or the length of time before new woodland-edge habitat would become functionally effective.

Without that analysis, the conclusion that a 30-metre buffer avoids deterioration is not established.

Saxlingham Grove and Little Wood

Saxlingham Grove and Little Wood illustrate the close relationship between ancient woodland fragmentation and protected-species function.

Saxlingham Grove is part of the Shotesham–Woodton Hornbeam Woods SSSI, a group of ancient coppice-with-standards woodlands believed to represent remnants of a formerly more continuous hornbeam forest. The Applicant's scoping material describes the site as a distinctive south Norfolk woodland type and records the SSSI immediately adjacent to parts of Site 7. Saxlingham Grove also supports a documented barbastelle maternity colony.

Little Wood is ancient semi-natural woodland and supports a confirmed barbastelle maternity colony identified through Norfolk Barbastelle Study Group work. The Scheme lies within the colony's Core Sustenance Zone and within a wider landscape in which barbastelle activity was recorded throughout the Order Limits.

Fragmentation in these locations therefore has population-level implications. The woods are not simply static repositories of woodland habitat. They are active breeding sites within a connected maternity-colony landscape. Their continuing function depends upon access to:

- alternative tree roosts;
- dark hedgerows and treelines;
- riparian routes;
- prey-rich field margins;
- ponds and wetland;
- neighbouring woods;
- and sufficiently extensive foraging habitat.

A 30-metre strip around a maternity woodland does not preserve those functions where the landscape beyond it is fragmented or behaviourally avoided. For a light-averse and woodland-dependent species, a retained hedge interrupted by an access road or illuminated at a crossing may no longer provide an equivalent route.

The Applicant's own nationally important bat findings reinforce this point. The South Norfolk Tree Warden Network notes that 621 trees across the Order Limits have potential to support roosting bats and that the nationally important assemblage relies upon mature trees, tree lines, hedges and field margins. It accordingly describes those features as 'functional ecological infrastructure' and criticises the absence of a route-wide analysis of cumulative hedgerow severance, buffer disruption, lighting and the time required for replacement planting to become equivalent.

The protection of Saxlingham Grove and Little Wood therefore requires preservation of the network outside the woodland boundaries, not simply preservation of the trees within them.

Spring Wood

Spring Wood demonstrates the same issue in a year-round bat context. It is ancient woodland adjoining the remaining Site 3 development and is associated with a known barbastelle roost and foraging landscape. The converted Second World War bomb shelters immediately beside the woodland provide purpose-created bat hibernation habitat.

Norfolk Wildlife Trust sought removal of the relevant development parcel because of its relationship with Spring Wood, the County Wildlife Site and bats. Only part of the parcel was removed. The retained development therefore continues to fragment and industrialise the ecological setting of the woodland and hibernacula.

The woodland may remain standing, but its function can be reduced if bats encounter lighting, piling, vehicle activity, fencing or loss of foraging habitat when moving between the shelters, the woodland and the wider landscape. The Applicant has not shown that the remaining development preserves those year-round connections.

Physical and behavioural fragmentation

The ES appears to treat fragmentation principally as physical removal or severance of habitat. That is too narrow.

Woodland networks can be fragmented in at least two ways.

The first is physical fragmentation, caused by removal of trees or hedges, road and cable crossings, fencing and the replacement of permeable land with infrastructure.

The second is behavioural or functional fragmentation, where the physical feature remains but species cease or reduce their use because of:

- artificial lighting;
- noise and vibration;
- regular vehicle movement;
- human activity;
- altered prey availability;
- changed vegetation structure;
- increased exposure;
- or the cumulative perception of the surrounding land as unsuitable.

This distinction is especially important for bats. Tinsley et al. found reduced bat activity at ground-mounted solar sites, including reduced activity along retained field boundaries for some taxa. That evidence demonstrates that retaining the physical boundary does not necessarily retain its ecological use.

The same principle applies to woodland. A woodland buffered by grass but enclosed by arrays and fencing may remain mapped as ancient woodland and yet become less accessible, less productive or less suitable to the species that previously used it.

Edge effects and altered microclimate

Enclosure also changes the quality of woodland edges.

Woodland edges are dynamic transition zones. Their condition depends upon surrounding vegetation, shelter, humidity, light, soil moisture and management. The replacement of an open or semi-natural agricultural edge with panel arrays and infrastructure may alter:

- wind flow;
- shading;
- reflected heat;
- humidity;
- soil moisture;
- dust deposition;
- runoff;
- and the composition of edge vegetation and invertebrates.

These changes are especially significant for small woods, where a greater proportion of the habitat lies close to an edge.

The Applicant proposes 30-metre buffers to ancient woodland, but there is no site-specific evidence showing that 30 metres is sufficient to address every indirect pathway. Natural England and Forestry Commission standing advice treats 15 metres as a minimum and expressly recognises that larger buffers may be needed where effects extend farther, including traffic-related air pollution and construction dust.

A fixed buffer cannot substitute for assessment of the actual Zone of Influence. The necessary distance depends upon:

- the size and vulnerability of the woodland;
- topography and prevailing wind;
- the type and duration of construction activity;
- drainage and groundwater pathways;
- lighting design;
- the location of access tracks and compounds;
- and the ecological functions occurring beyond the woodland boundary.

Hydrological fragmentation

Woodland isolation is not only terrestrial. Natural England identifies several ancient woodlands as hydrologically connected to the Scheme and relies upon pollution-prevention, water-quality and runoff controls when reaching its present ‘green’ conclusion.

Changes to drainage, groundwater recharge, soil compaction, cable trenches and preferential flow paths may affect woodland soils and wet features even where excavation remains outside the

buffer. Ancient woodland ground flora, fungi and tree health may be sensitive to relatively small or gradual changes in water availability.

The Applicant has not provided a single integrated assessment showing how surface-water, groundwater and ecological connectivity will be protected for each of the adjoining ancient woods throughout construction, operation and decommissioning.

Deer fencing and redistributed ecological pressure

The Forestry Commission also identifies an indirect fragmentation pathway arising from extensive fencing. By excluding deer from large areas of existing farmland or constraining their customary routes, fencing may concentrate browsing and grazing pressure in surrounding woodlands, hedges and stewardship areas. It may also alter road-crossing patterns and increase collision risk.

This is a useful illustration of why effects cannot be confined to the land inside each solar field. The Scheme changes the movement of species across the wider area and may transfer ecological pressure into the very ancient woods the Applicant claims to protect.

The Applicant's ecology assessment does not contain a sufficiently detailed landscape-scale assessment of those displacement effects.

New planting does not remove the time lag or location problem

The Applicant relies in part upon approximately 25 hectares of proposed woodland planting, together with tree belts and scrub, to improve habitat connectivity.

BEPS does not dispute that well-designed and properly managed native planting could provide future ecological benefit. The problem is that the existence of new planting does not prove that deterioration of existing ancient woods has been avoided.

There are three reasons:

First, location matters. Planting used for visual screening may not reconnect the woodland blocks or maternity-colony routes most at risk. The Forestry Commission specifically advises that planting should connect existing woodland and create resilient blocks rather than be distributed as isolated screening features.

Secondly, time matters. Newly planted trees and scrub will take decades to develop woodland structure, sheltered edge conditions, deadwood, cavities, fungal relationships and an associated invertebrate community. Harm arising from enclosure begins at construction and cannot be cancelled by habitat that may become effective later.

Thirdly, ancient woodland is not reproducible. New planting cannot replace ancient woodland soils, seedbanks, archaeology, veteran structures and continuous ecological history. It may supplement the network but cannot compensate for deterioration of the ancient habitat itself.

Absence of a scheme-wide woodland connectivity assessment

The Applicant has not supplied an adequate scheme-wide assessment of woodland connectivity.

Such an assessment should identify:

- all ancient, priority and other woodland within the Zone of Influence;
- existing hedgerow, tree-line, riparian and grassland links;
- the species and ecological functions dependent upon each connection;
- physical and behavioural barriers introduced by the Scheme;
- the combined effects of arrays, roads, cables, fencing, lighting and construction;
- the effects of other plans and projects;
- the ecological purpose and maturity timetable of every proposed connection;
- measurable standards by which continued connectivity would be judged;
- and remedial action if monitoring identifies reduced use or woodland decline.

Instead, the ES relies upon mapped buffers, broad statements that hedges will largely be retained and future planting delivered under outline plans.

That is insufficient for a scheme directly adjoining six ancient woods and affecting a landscape of national importance for bats.

Natural England's position is conditional, not determinative

Natural England currently categorises ancient woodland and ancient or veteran trees as a green issue. However, that position is expressly conditional upon the 30-metre buffers being recorded consistently in the LEMP, CEMP and DEMP and upon strict protection measures being secured, including full BS5837-compliant survey, root-protection controls, no-dig methods, arboricultural supervision, soil-compaction prevention, runoff and dust control and micrositing.

That position does not establish that every wider fragmentation effect has been resolved. Natural England's representation focuses principally upon buffers and direct working controls. It does not displace the distinct concerns of the Forestry Commission regarding landscape isolation, Ringers Grove and Doyly's Grove, or Norfolk Wildlife Trust's requirement that woodland connectivity be demonstrated.

Nor does a consultee's green classification determine the statutory question. The Examining Authority must assess the whole evidence and determine whether loss or deterioration of irreplaceable habitat has been avoided.

Conclusion

The Scheme would not merely sit beside six separate ancient woods. It would alter the matrix connecting and supporting those woods for approximately sixty years. Ringers Grove would be substantially enclosed; Doyly's Grove and Popes Wood would be closely bordered by

development; Saxlingham Grove and Little Wood form part of an active barbastelle maternity-colony network; and Spring Wood is connected to known roosting and hibernation resources.

The proposed buffers may reduce some direct effects, but they do not by themselves prevent:

- landscape isolation;
- behavioural fragmentation;
- woodland-edge deterioration;
- loss of connectivity;
- hydrological change;
- displaced browsing pressure;
- or the cumulative effects of fencing, lighting, traffic and infrastructure.

The Forestry Commission, Norfolk Wildlife Trust and South Norfolk Tree Warden Network all identify connectivity as a central ecological issue. Their evidence is consistent with the Applicant's own findings that mature trees, hedgerows and woodland relationships support a nationally important bat assemblage.

BEPS therefore submits that the Applicant has not demonstrated that the six adjoining ancient woods will retain their ecological function, resilience and connectivity throughout the life of the Scheme. Physical retention of the woodland polygons is not sufficient. In the absence of a fixed and evidence-based woodland connectivity strategy, supported by a final scheme-wide arboricultural and ecological assessment, the risk of deterioration of irreplaceable habitat remains unresolved.

The mitigation hierarchy required the Applicant first to avoid enclosing and fragmenting these ancient woods. The Scheme instead places development around them and relies upon buffers and future planting to manage the resulting harm. That is not avoidance and does not establish compliance with EN-1 or the NPPF protection afforded to irreplaceable habitats.

8.7.3 Woodland buffers do not mitigate all indirect effects

The Applicant places substantial reliance on buffer zones as the principal means of protecting ancient woodland and other sensitive woodland habitats. The Environmental Statement states that the Outline Operational Environmental Management Plan adopts a minimum 30-metre buffer around ancient woodland, within which operational maintenance would be avoided apart from habitat-management activities. Natural England has welcomed that commitment in principle but has required it to be recorded consistently and secured through the Landscape and Ecological Management Plan, Construction Environmental Management Plan and Decommissioning Environmental Management Plan.

A properly designed and enforced buffer can reduce some risks. It can help protect roots from direct excavation, keep machinery away from woodland edges, provide space for transitional vegetation and reduce some forms of immediate disturbance. It does not follow, however, that a uniform 30-metre stand-off automatically prevents deterioration of ancient woodland.

The correct question is not whether a numerical buffer has been drawn on a plan. It is whether the Applicant has demonstrated, for each woodland and each relevant impact pathway, that the proposed buffer will prevent loss or deterioration throughout construction, operation, equipment replacement and decommissioning.

That demonstration has not been made.

Fifteen metres is a minimum, not a safe distance for every effect

Natural England and Forestry Commission standing advice identifies 15 metres from the boundary of ancient woodland as a minimum buffer intended principally to avoid root damage. The Forestry Commission expressly advised at scoping that, where impacts are likely to extend beyond that distance, a larger buffer will be required. It gave air pollution arising from significant traffic increases and construction dust as examples of effects that may extend beyond 15 metres. It also advised that buffers should form part of wider ecological networks and should consist of semi-natural habitat such as woodland, scrub, heathland or wetland rather than simply retained agricultural land.

Natural England likewise advised at scoping that 15 metres is a minimum and that the standing advice should be used to determine when a larger distance is necessary. It specifically required the ES to assess impacts upon the six ancient woodland parcels directly adjoining the Scheme and drew attention to construction dust as a potentially relevant pathway notwithstanding the Applicant's proposal at that stage to scope out air-quality effects.

The Applicant's subsequent adoption of 30 metres is therefore an improvement upon the minimum position, but it does not remove the need for assessment. Thirty metres is not a universally protective distance prescribed by national policy. It remains necessary to establish whether effects from a particular activity, in a particular location, extend beyond it.

For example, the appropriate stand-off from:

- a lightly used solar field;
- a major substation;
- a BESS compound;
- a construction haul road;
- an HDD entry or exit compound;
- a piling operation;
- an abnormal-load route;
- or a drainage outfall

cannot safely be assumed to be identical.

Each presents different risks, durations and zones of influence. A fixed buffer cannot replace a receptor-specific assessment.

Inconsistency between construction, operation and decommissioning controls

The available documents do not yet establish a single, unambiguous buffer regime applying to every relevant phase and document.

Natural England records that the Environmental Statement refers to a 30-metre ancient-woodland buffer through the Outline OEMP, but it has asked for the same commitment to be expressly carried into the LEMP, CEMP and DEMP. Natural England also requires a full BS5837:2012-compliant arboricultural survey, strict Root Protection Area protection, arboricultural supervision, no-dig methods, soil-compaction prevention, dust and runoff controls and micrositing.

That request is important. It indicates that a statement in the Outline OEMP is not, by itself, sufficient to secure woodland protection during the other phases of the development. Ancient woodland may be most exposed during construction and decommissioning, when the principal activities include excavation, cable installation, vehicle movements, storage, piling, compounds and removal of infrastructure. A buffer expressed clearly for operational maintenance cannot be assumed to control those materially different activities.

Norfolk Wildlife Trust similarly records concern that the Scheme relies in relevant locations on a 15-metre construction buffer and a 30-metre operational buffer. It considers that those distances may not be adequate for particularly sensitive habitats, including ancient woodland and lowland fen, and requests larger precautionary buffers, prohibition of compounds, lighting and storage within them, and resolution of HDD entry and exit locations before the close of examination.

The DCO must not leave different buffer distances, exclusions or exceptions scattered across outline documents. Unless the protective distance, permitted activities and prohibited activities are consistent and legally secured for every phase, the claimed mitigation cannot safely be treated as certain.

A buffer must be defined by the effect, not by convenience

The Applicant appears to treat 30 metres as a standard solution applicable across the Scheme. That is not an adequate application of the mitigation hierarchy.

The necessary buffer should be derived from:

- the sensitivity and condition of the particular woodland;
- the nature of the adjoining works;
- local topography;
- soils and geology;
- prevailing wind direction;
- surface-water and groundwater pathways;
- the location of veteran and boundary trees;
- the protected species using the woodland edge;
- the duration and timing of disturbance;
- and the cumulative effects of other adjoining development.

A small ancient wood surrounded on several sides by solar infrastructure may require a materially different protective arrangement from a larger woodland with extensive undeveloped land beyond it. Likewise, a woodland supporting a barbastelle maternity colony or connected hibernation habitat presents additional functional requirements that cannot be resolved by root protection alone.

The Applicant has not provided a woodland-by-woodland buffer justification demonstrating why 30 metres is sufficient at:

- Saxlingham Grove;
- Doyly's Grove;
- Popes Wood;
- Spring Wood;
- Little Wood;
- and Ringers Grove.

Nor is there a transparent assessment showing how the chosen distance relates to the identified zones of influence for dust, hydrology, lighting, noise, vibration, traffic, prey availability or protected-species movement.

The buffer therefore appears to operate as a general design rule rather than the result of a completed effects assessment.

Root protection and soil compaction

Avoiding direct root severance is one of the principal purposes of an ancient-woodland buffer, but even this function depends upon accurate baseline information and strict construction controls.

Tree roots frequently extend beyond the apparent canopy and may extend beyond mapped woodland boundaries. Boundary trees may have root systems extending into the adjoining development area. Soil compaction from vehicle movements, storage, temporary surfacing and construction plant may reduce soil porosity, water availability and oxygen exchange without visibly damaging the tree at the time of construction. Decline may only become apparent years later.

The Forestry Commission advised that Root Protection Areas must be identified and protected wherever land within or adjoining woodland is required for temporary use or utility works. It identified root cutting, trenching, vehicle compaction, heavy-equipment storage, chemical contamination and unintended construction incursions as risks requiring specific controls.

Natural England accordingly requires a full BS5837-compliant survey before construction and strict controls over Root Protection Areas, no-dig working, compaction and micrositing.

The South Norfolk Tree Warden Network remains concerned that the arboricultural position is preliminary and dependent upon later surveys and method statements. It identifies unresolved clashes between indicative access routes and ancient or veteran-tree buffers and requests final Tree Protection Plans showing exclusion zones, no-dig areas, ground protection, haul-road stand-

offs, storage exclusions, manoeuvring areas, lighting exclusions and fuel or chemical exclusion zones.

A nominal 30-metre line does not answer those concerns where:

- access routes remain flexible;
- compounds have not been fixed;
- visibility splays may change;
- Root Protection Areas are not finally mapped;
- or micrositing remains available after consent.

The protective function of the buffer depends upon those matters being resolved before authorisation, not after construction design has begun.

Construction dust and air pollution

Dust is capable of affecting woodland vegetation beyond the immediate works footprint. Deposition on leaves may interfere with photosynthesis and transpiration, alter leaf-surface chemistry and affect lichens, bryophytes and other sensitive organisms. Dust may also alter soil chemistry when washed from foliage or deposited directly upon woodland soils.

The Applicant originally proposed to scope air-quality effects upon ecological receptors out. However, the Forestry Commission and Natural England expressly identified construction dust and traffic-related pollution as pathways requiring consideration in determining buffer width. The Scoping Opinion recorded that ancient woodland within one kilometre should remain scoped into the assessment because of possible pollutants and disturbance.

The issue is particularly important where woodland borders:

- haul roads;
- construction accesses;
- earthworks;
- stockpiles;
- cable trenches;
- substations;
- or other prolonged working areas.

A general commitment to dust suppression does not demonstrate that deposition at each woodland will remain below a level capable of causing deterioration. The assessment should identify the works nearest each woodland, their duration, prevailing wind direction, soil type, likely dust generation and the measures necessary to avoid deposition.

Nor should the Applicant assume that effects are temporary merely because construction eventually ends. Damage to sensitive woodland ground flora, tree health, fungal communities or soils may persist beyond the period of dust generation.

Surface-water runoff and hydrological change

A buffer measured horizontally from a woodland boundary does not sever hydrological pathways.

Natural England records that Saxlingham Grove, Popes Wood and Doyly's Grove are hydrologically connected to the Order Limits through watercourses or groundwater flow. It considers effects capable of being ruled out only if the relevant pollution-prevention, water-quality and surface-water controls in the outline CEMP are followed and secured.

That is a conditional conclusion. It confirms that the woods remain exposed to indirect effects notwithstanding the proposed physical stand-off.

Ancient woodland may be affected by:

- altered surface-water flow;
- increased or reduced groundwater recharge;
- concentrated runoff from tracks or compounds;
- sediment-laden water;
- preferential flow along cable trenches;
- dewatering;
- changes to soil moisture;
- chemical spills;
- and contamination associated with construction or firewater.

Some of those processes may originate well beyond 30 metres. Cable trenches and access tracks can redirect flows across a wider catchment. Substation and BESS drainage systems may concentrate water into new discharge locations. Soil compaction may reduce infiltration and increase runoff towards woodland edges.

The Applicant has not provided a site-specific woodland hydrology assessment for each of the six adjoining ancient woods. Nor has it demonstrated through monitoring data or modelling that construction, operation and decommissioning will maintain the existing water regime upon which each woodland depends.

A buffer may provide physical space for a swale or vegetated strip. It does not, by itself, prove that the existing hydrological regime will be preserved.

Lighting and loss of dark woodland edges

Artificial lighting is another impact that cannot be controlled solely by distance.

Ancient woodland edges provide commuting and foraging habitat for bats and other nocturnal species. The Applicant's own evidence identifies a nationally important bat assemblage, widespread barbastelle use and multiple maternity-colony Core Sustenance Zones across the Scheme. Saxlingham Grove, Little Wood and Spring Wood are directly associated with known or

likely barbastelle colonies, while Spring Wood is also connected to converted wartime structures used as bat hibernacula.

The ecological function of these woods therefore depends upon retaining dark emergence routes, woodland edges and connections to the wider landscape.

A 30-metre buffer does not necessarily prevent light spill from:

- construction compounds;
- HDD operations;
- security lighting;
- substations;
- vehicle headlights;
- emergency work;
- maintenance operations;
- or temporary night-time activity.

Norfolk Wildlife Trust specifically requests that no lighting spill be permitted onto woodland edges, hedgerows, watercourses or designated sites, that enforceable lux limits be secured and that monitoring occur near known barbastelle roosts. It also notes that temporary continuous lighting may be required during HDD operations lasting one or two days and that the locations of associated compounds are not yet fully defined.

The appropriate control is therefore not merely a buffer distance. It requires:

1. mapped dark corridors;
2. fixed lighting exclusion zones;
3. maximum illuminance limits;
4. horizontal and vertical spill controls;
5. restrictions on vehicle orientation and compound location;
6. seasonal controls;
7. monitoring;
8. and enforceable remedial action.

None of those protections can be inferred from the existence of a 30-metre strip.

Noise, vibration and piling

Construction noise and vibration may also extend beyond a standard woodland buffer. Pile driving, trenching, HDD, heavy vehicle movements and construction plant can disturb fauna using woodland edges, tree roosts and hibernation sites.

This is particularly relevant at Spring Wood because of the known or reported combination of barbastelle roosting, commuting and hibernation resources. Norfolk Wildlife Trust previously asked for Site 3 to be removed because of its effects upon the County Wildlife Site, ancient woodland and bats. Although part of the parcel was removed, NWT remains concerned about

development immediately west of Spring Wood and states that an even wider buffer may be required between the woodland and the substation.

There is no evidence that a uniform 30-metre stand-off has been derived from vibration modelling or species-specific disturbance assessment. In particular, the Applicant has not demonstrated that:

- percussive piling would be imperceptible within the woodland;
- vibration would not reach tree roosts or the converted bomb shelters;
- repeated HGV movements would not disturb woodland fauna;
- or the combined effect of noise, lighting and vegetation change would remain insignificant.

A buffer may attenuate some noise and vibration, but its effectiveness depends upon source level, soil and geological conditions, duration, topography, woodland structure and receptor sensitivity. Those matters require assessment, not assumption.

Woodland-edge microclimate and ecological transition

A woodland buffer should protect and enhance the ecological transition between woodland and the surrounding landscape. A simple strip of grass does not necessarily perform that function.

Ancient woodland edges are influenced by:

1. temperature;
2. humidity;
3. wind;
4. shading;
5. soil moisture;
6. adjoining vegetation;
7. pollution;
8. and surrounding land management.

Panel arrays and associated infrastructure may alter those conditions by changing wind movement, shade, reflected heat, drainage and management. These changes may affect woodland-edge vegetation, insects, bats, birds and other fauna.

Norfolk Wildlife Trust has repeatedly advised that 30-metre woodland buffers should comprise genuine ecotones of shrubs and rough grassland. It recommends such treatment around Spring Wood and the woodland adjoining Sites 4 and 5, and around sensitive woods and County Wildlife Sites at Site 7. It further states that wider buffers may be necessary in particular locations, including between the substation and Spring Wood.

That evidence shows that the quality and design of the buffer are as important as its width.

A satisfactory woodland-edge buffer would need to provide:

- a graduated transition from woodland canopy to scrub and rough grassland;

- locally appropriate native species;
- structural diversity;
- long-term management;
- protection from lighting and disturbance;
- hydrological compatibility;
- and continuity with adjoining hedgerows and other woodland.

The Applicant has not demonstrated that every proposed ancient-woodland buffer will meet those requirements. Nor is it clear that planting intended principally for visual screening has been designed around woodland ecology.

Buffers do not preserve wider connectivity

Even a well-designed 30-metre ecotone cannot preserve a woodland's wider ecological function if the landscape beyond it becomes fragmented.

The six adjoining ancient woods form part of a network connected through hedgerows, mature trees, field margins, ponds, lanes and watercourses. The Applicant's own scoping report identified ancient woodland within one kilometre as requiring assessment for indirect effects and acknowledged that the surrounding farmed landscape contains priority hedgerows, ponds and extensive deciduous woodland.

The Forestry Commission advised that woodland buffers should contribute to wider ecological networks and that woodland and hedgerow planting should connect existing woods rather than be confined to isolated screening areas. It recommended connected woodland blocks of at least five hectares where feasible.

A 30-metre strip around Ringers Grove does not answer the enclosure of that woodland where panel arrays and fencing remain beyond the strip on several sides. A buffer around Little Wood does not preserve the maternity colony's functional landscape unless dark flight routes to surrounding foraging habitat remain intact. A buffer around Saxlingham Grove does not protect the colony if adjoining hedgerows are interrupted or illuminated.

The Applicant's buffer case therefore confuses local separation with landscape connectivity. Both are necessary, but they are not interchangeable.

Buffers must remain free from incompatible uses

The protective value of a buffer depends upon what is permitted within it. A buffer cannot perform its intended function if it accommodates:

- access roads;
- drainage structures;
- cable trenches;
- fencing;
- security equipment;

- lighting;
- storage;
- compounds;
- temporary working areas;
- turning heads;
- crane oversail or manoeuvring;
- or intensive maintenance.

Natural England states that operational maintenance, other than habitat management, should be avoided within the ancient-woodland buffer. It has asked for that commitment to be carried into all relevant management plans. NWT similarly seeks a prohibition on construction compounds, lighting and storage within precautionary buffer zones.

Those exclusions must be secured in the DCO itself or through requirements with clear approval criteria. They should not depend upon later contractor discretion.

The protective plan must also distinguish between the Order Limits and the actual construction exclusion zone. Inclusion of woodland buffers within broad works envelopes may permit later micrositing or temporary use that undermines the mitigation relied upon in the ES.

Long-term management and monitoring are unresolved

The Scheme would operate for approximately sixty years. A woodland buffer cannot be treated as successful merely because it is planted or fenced at the start of operation.

Its continued effectiveness will depend upon:

- establishment success;
- replacement of failed planting;
- control of invasive species;
- maintenance of structural diversity;
- appropriate grazing or cutting;
- protection from compaction;
- retention of darkness;
- avoidance of chemical use;
- continued hydrological function;
- and prevention of gradual operational encroachment.

Natural England has advised that the LEMP should explicitly secure management, monitoring and maintenance of ecological measures for the full operational lifetime, with performance indicators and remedial actions. It treats that aspect of the draft DCO as outstanding.

The same concern applies to decommissioning. Removal of panels, fencing, piles, tracks and cables may require extensive plant and renewed access close to woodlands. Unless the DEMP carries the same or stronger buffer controls, woodlands protected during operation may be exposed to significant disturbance at the end of the project.

The Applicant has not yet demonstrated how woodland buffers will be protected, funded, monitored and enforced across the full project life, including against successor owners or operators.

Natural England's 'green' classification is conditional

Natural England presently categorises ancient woodland and ancient or veteran trees as a green issue. That should be represented accurately but not overstated.

Natural England's classification is expressly conditional upon the mitigation being adequately secured. It asks for the 30-metre commitment to be incorporated consistently into the LEMP, CEMP and DEMP and for standing-advice protections to be followed. It also requires strict Root Protection Area controls, an arboricultural survey, no-dig methods, dust and runoff controls and micrositing.

Natural England's position therefore does not establish that a 30-metre buffer, by itself, eliminates all indirect effects. It confirms the opposite: additional construction, arboricultural, hydrological and long-term management measures are required.

Nor does its green classification displace the concerns of the Forestry Commission, Norfolk Wildlife Trust or the Tree Warden Network concerning:

- woodland isolation;
- ecotone quality;
- buffer clashes;
- construction disturbance;
- lighting;
- hydrology;
- incomplete arboricultural information;
- and the need for wider buffers in particular locations.

The Examining Authority must assess the evidence as a whole and determine whether deterioration has been avoided, rather than treating a consultee colour classification as determinative.

Buffers are mitigation, not avoidance

The Applicant's reliance on buffers also exposes a fundamental mitigation-hierarchy issue.

Leaving a strip between development and ancient woodland is a form of mitigation. It is not avoidance of the wider conflict where the development continues to surround, enclose or disturb the woodland.

True avoidance would involve:

- removing development parcels adjoining the most sensitive woods;
- relocating substations and compounds;

- keeping major construction routes away from woodland;
- preserving broad undeveloped connections between woodland blocks;
- and selecting a less constrained landscape in the first place.

At Spring Wood, NWT expressly recommended removal of Site 3 because of impacts on the County Wildlife Site, ancient woodland and bats. Partial removal of the parcel combined with a buffer does not represent full avoidance where development remains beside the same sensitive receptor.

At Ringers Grove, a buffer does not avoid enclosure. At Doyly's Grove and Popes Wood, it does not avoid the development occupying the surrounding ecological matrix. At Saxlingham Grove and Little Wood, it does not avoid development within the support landscape of barbastelle maternity colonies.

The Applicant cannot therefore use the existence of buffers to claim that the first stage of the mitigation hierarchy has been satisfied.

Conclusion

Buffer zones are a necessary component of ancient-woodland protection, but they are not a complete answer to the indirect effects of East Pye Solar.

The Applicant's proposed 30-metre buffer may reduce some direct risks, but it has not been demonstrated to prevent:

- construction dust and traffic-related pollution;
- hydrological change;
- soil compaction and root damage;
- lighting and loss of dark woodland edges;
- noise and vibration;
- disturbance to maternity and hibernation habitat;
- altered woodland-edge microclimate;
- loss of prey and foraging function;
- enclosure and landscape fragmentation;
- displaced animal movement;
- or impacts arising during replacement and decommissioning.

The Forestry Commission's advice establishes that 15 metres is only a minimum and that larger buffers are required where effects extend farther. Norfolk Wildlife Trust requests at least 30 metres, genuine shrub and rough-grassland ecotones and, in sensitive locations such as Spring Wood, potentially greater separation. Natural England's present position is conditional upon the 30-metre commitment and detailed protective measures being made consistent and enforceable across every project phase. The Tree Warden Network identifies unresolved buffer clashes and deficiencies in the final arboricultural evidence.

BEPS therefore submits that the Applicant has not demonstrated that a standard 30-metre buffer will prevent deterioration of the six adjoining ancient woodlands. Each woodland requires a site-

specific Zone of Influence assessment and a buffer designed around the actual sources and pathways of harm. Where that assessment cannot establish that indirect effects will be avoided, the adjoining development must be removed or relocated.

The policy test concerns loss or deterioration of irreplaceable habitat, not compliance with a nominal distance. Unless the Applicant can demonstrate that the woodlands' soils, hydrology, edge conditions, protected-species functions and landscape connectivity will remain intact throughout the whole life of the Scheme, reliance on buffers does not establish compliance with EN-1, the NPPF or the mitigation hierarchy.

8.7.4 Ancient trees, veteran trees and the wider tree network

The ancient and veteran tree resource affected by East Pye Solar is not confined to the six adjoining ancient woodlands. Individual ancient and veteran trees, mature boundary trees, tree lines and hedgerow trees occur throughout the Order Limits and the surrounding landscape. Together, they form an irreplaceable ecological and historic network that provides continuity between woodland blocks, watercourses, ponds, old lanes and field boundaries.

The Applicant's own evidence confirms that this is an extensive resource. Appendix 8.1 records 49 trees with veteran features within the Order Limits and a further 21 within 30 metres of the site boundary, distributed across Sites 3, 4, 5, 7, 9 and 10 and Cable Route Corridor section 6. Native hedgerows occur throughout the sub-sites, alongside ponds, watercourses and arable field margins. These veteran-feature trees are therefore not isolated specimens. They form part of the ecological structure through which wildlife moves across the Scheme landscape.

The same evidence base identifies a still larger tree resource relevant to protected bats. Chapter 8 records 621 trees assessed as having potential to support roosting bats, comprising 577 trees within Sites 1–10 and the BESS Site and 44 within the Cable Route Corridor and Highway Improvement Works boundaries. The Applicant recognises that the loss of trees capable of supporting roosting bats could cause direct harm, population fragmentation and habitat degradation. It also concludes that the Order Limits and surrounding landscape support a nationally important assemblage of foraging and commuting bats, including barbastelle, within the Core Sustenance Zones of several maternity colonies.

Those figures show that the affected tree resource is not peripheral to the Scheme. Ancient, veteran and mature trees are present across the development landscape, including along the access, cable and highway corridors through which the most disruptive works would occur.

Ancient and veteran trees are irreplaceable habitat

An ancient tree is one that has reached a great age in comparison with others of the same species and has developed exceptional ecological, cultural and historic value. A veteran tree need not yet be ancient, but displays important features associated with age, damage or natural decay, such as:

- cavities and hollowing;
- rot holes;
- loose or fissured bark;

- dead limbs and exposed heartwood;
- water pockets;
- fungal fruiting bodies;
- sap runs;
- and complex deadwood habitat.

Those features support highly specialised communities of fungi, lichens, bryophytes, invertebrates, birds and bats. They are the product of biological processes operating over many decades or centuries. They cannot be recreated by planting a young tree elsewhere.

National policy accordingly treats ancient and veteran trees as irreplaceable habitats, whether they occur within woodland, within a hedgerow or as individual field trees. The Forestry Commission's scoping response quoted EN-1 paragraph 5.4.53, under which development consent should not be granted for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, unless there are wholly exceptional reasons and a suitable compensation strategy exists. It also referred to EN-1 paragraph 5.4.32, which requires applicants to mitigate fully the direct and indirect effects of development on ancient woodland and ancient and veteran trees during construction and operation.

The policy test is therefore not limited to whether a tree is felled. It includes deterioration. A retained veteran tree may deteriorate through root severance, compaction, excessive pruning, altered hydrology, pollution, bark damage, fungal infection, loss of surrounding habitat or isolation from the wider ecological network.

The Applicant must therefore demonstrate not only that veteran trees will remain standing, but that the conditions necessary for their continued survival and ecological function will be preserved throughout construction, operation, replacement and decommissioning.

The wider tree network is part of the ecological infrastructure of the Claylands

The ecological importance of individual trees cannot be understood by treating them as separate arboricultural objects. In the South Norfolk Claylands, mature oaks, ash, hornbeam and other field and hedgerow trees operate collectively with old hedges, copses, ponds, ditches and ancient woodland.

The South Norfolk Tree Warden Network describes those features as functional ecological infrastructure. Its representation explains that the landscape is structured by mature hedgerows, field trees, woodlands and veteran features and that these features provide roosting, foraging and commuting habitat. It criticises the absence of a route-wide analysis of cumulative hedgerow severance, gap creation, veteran-tree buffer disruption, access widening, visibility splays, construction lighting and haul-road disturbance.

This is especially relevant to barbastelle bats. Barbastelles frequently use trees with splits, loose bark and other veteran features and may change roosts repeatedly within a woodland or wider tree network. The protection of one known roost tree is therefore not sufficient. The surrounding

resource of potential alternative roosts and the dark routes connecting them must also be retained.

The Applicant's own finding that barbastelle activity occurred across the Scheme and that mature trees, hedgerows and tree lines contribute to a nationally important bat landscape reinforces the point. Damage to mature and veteran trees may affect not only the tree itself but the functioning of maternity-colony landscapes extending across several development parcels.

Individual veteran trees may also operate as ecological 'stepping stones' between ancient woodland blocks. Their loss or deterioration can increase the distance between suitable roosting or refuge habitats, reduce landscape permeability and weaken the resilience of species populations. That function is not captured by a simple count of trees retained and removed.

The arboricultural assessment remains preliminary

The Applicant has submitted a Preliminary Arboricultural Impact Assessment, but the evidence does not establish a final, construction-ready understanding of the effects upon every tree, group, woodland and hedgerow.

The Tree Warden Network notes that the Applicant itself describes Appendix 7.10 as a Preliminary AIA based upon targeted surveys within the sites and wider surveys along the Cable Route Corridor. It is not a final tree-by-tree and hedgerow-by-hedgerow assessment of:

- all permanent and temporary accesses;
- all visibility splays;
- all highway works;
- all AIL routes and manoeuvring requirements;
- all construction compounds;
- all haul roads;
- all cable trenches and HDD compounds;
- all drainage works;
- all crane and delivery movements;
- or all decommissioning works.

The Applicant proposes a further pre-construction survey to re-establish the baseline and inform Tree Protection Plans, construction exclusion zones and an Arboricultural Method Statement. Those later controls may be necessary, but they are not a substitute for a complete impact assessment during Examination.

The purpose of the Environmental Statement is to identify the likely significant effects of the authorised development before consent is granted. A future survey cannot lawfully be used to postpone the central question of whether the Scheme can be constructed within the proposed limits without unacceptable harm to irreplaceable trees.

There is also an obvious risk in relying upon a future survey to 're-establish' the baseline. Trees may decline, branches may fail, ownership or management may change, and development pressure may increase between consent and commencement. The examination baseline should be fixed,

comprehensive and auditable so that subsequent changes can be identified rather than incorporated silently into a revised pre-construction position.

Four unresolved clashes with ancient and veteran tree buffers

The Applicant's own assessment has identified four clashes between indicative access routes and buffer zones applied to ancient and veteran trees within the Order Limits. Chapter 7 states that these clashes can be addressed at detailed design because the access routes are indicative and may be moved within the flexible envelope of Work No. 4.

That is not an adequate response.

An identified conflict with the buffer of an irreplaceable tree is an environmental constraint requiring redesign before consent. It is not simply a construction detail. The Examining Authority should know:

- which trees are affected;
- the location and purpose of each proposed access;
- whether an alternative route exists;
- the necessary road width and loading;
- whether visibility splays or turning movements require crown pruning;
- whether excavation or surfacing enters the Root Protection Area;
- whether ground protection or no-dig construction is practicable;
- and whether large vehicles can pass without branch, stem or root damage.

The use of a flexible works envelope creates a particular risk. While flexibility may assist engineering design, it must not permit an access route or haul road to be shifted after consent into the protected area of an ancient or veteran tree. A commitment to resolve the conflict during detailed design does not establish that a feasible avoidance solution exists.

The four clashes should therefore be resolved through fixed plans before the end of the Examination. Where an access cannot be delivered without intrusion into an ancient or veteran tree buffer, the access or the development it serves should be redesigned or removed.

Buffer requirements for individual ancient and veteran trees

The Forestry Commission's scoping advice states that the buffer around an ancient or veteran tree should be at least 15 times the tree's stem diameter, or extend five metres beyond the edge of the canopy where that produces a larger area. This is intended to establish a minimum Root Protection Area. The advice also makes clear that a larger buffer may be necessary where indirect effects extend farther.

A uniform distance is therefore not necessarily sufficient for every tree. The appropriate protection must account for:

- tree dimensions and rooting pattern;

- species and physiological condition;
- existing damage or decay;
- surrounding soil conditions;
- topography and drainage;
- the location of adjoining hedges and other trees;
- construction loading;
- vehicle turning and oversail;
- lighting;
- storage and compound use;
- and the nature and duration of nearby works.

Natural England records that the Applicant proposes a 30-metre buffer around veteran trees and states that veteran trees will not be removed and pruning will be avoided. Natural England welcomes that position but requires the 30-metre commitment to be recorded consistently in the LEMP, CEMP and DEMP. It also requires a full BS5837:2012-compliant arboricultural survey, strict Root Protection Area protection, arboricultural supervision, no-dig methods, soil-compaction prevention, dust and runoff control and micrositing.

Natural England's 'green' classification is therefore conditional. It depends upon the identified measures being made consistent, detailed and enforceable. It does not cure the unresolved access clashes or establish that every works component can remain outside the relevant protection areas.

Accesses, visibility splays and abnormal-load movements

The greatest risks to mature and veteran trees may arise not from the solar panels themselves but from the road and access works required to construct the Scheme.

The project requires articulated HGV access, abnormal indivisible load deliveries, cable-drum movements and the movement of transformers and other large electrical equipment. Existing agricultural accesses will be used where practicable, but new accesses and visibility splays will be required in some locations.

These activities may cause:

- removal of hedgerow sections and associated trees;
- crown lifting or lateral pruning;
- branch damage from high or wide loads;
- bark strikes;
- excavation within Root Protection Areas;
- soil compaction from repeated vehicle loading;
- installation of kerbs, drainage or hard surfacing;
- and changes in water movement around tree roots.

Visibility splays create a particular risk because they may require repeated management rather than a single intervention. A tree initially retained may later be subjected to continued pruning to preserve highway visibility throughout construction or operation.

AIL movements present another distinct risk. The swept path of a transformer or cable-drum vehicle includes not only the wheel track but vehicle overhang, turning space and vertical clearance. The Applicant must demonstrate that every such movement is feasible without damage to veteran trees, mature roadside trees and old hedgerows.

An assurance that trees will be retained 'wherever possible' is insufficient. Irreplaceable habitat should be a fixed design constraint, not an interest to be balanced against later contractor convenience.

Cable routes, trenching and Root Protection Areas

The extensive Cable Route Corridor creates a second major risk. Cable installation involves excavation, temporary working widths, haul roads, compounds, soil storage, jointing bays and potentially HDD entry and exit areas.

Tree roots do not follow mapped boundaries and may extend well beyond the visible canopy. Trenching can sever structural and absorbing roots, while repeated plant movement can compact soils and reduce air and water availability. Damage may occur even where the trunk and canopy remain untouched.

The Applicant's reliance upon reduced working widths, micrositing and future arboricultural supervision does not establish that harm will be avoided. The final route should identify:

- every Root Protection Area crossed or approached;
- the exact working width;
- the excavation method;
- whether trenchless installation is required;
- the position of soil storage;
- vehicle routes;
- temporary surfacing;
- and the method of reinstatement.

Where a cable route cannot avoid the Root Protection Area of an ancient or veteran tree, an alternatives assessment should be required. Convenience, cost saving or the desire to retain route flexibility cannot amount to wholly exceptional reasons for deterioration of irreplaceable habitat.

Soil compaction and delayed decline

Tree damage is not always immediate or visually obvious. A veteran tree may survive the construction period yet enter decline years later because of root injury, compaction, altered drainage, fungal infection or physiological stress.

The Tree Warden Network expressly identifies the risk of delayed harm from:

- soil compaction;
- root severance;
- excessive pruning;
- bark damage;
- fungal infection;
- altered drainage;
- pathogens;
- soil contamination;
- branch failure;
- and long-term decay.

Compaction is particularly significant. Heavy machinery compresses soil pores, restricting oxygen, water infiltration and root growth. The effect may persist long after temporary tracks or compounds have been removed. Simply loosening or reinstating the upper soil horizon may not restore the original structure of deeper compacted ground.

Changes to drainage may have similar delayed consequences. Cable trenches, new tracks and compacted surfaces can redirect water, creating either waterlogging or drought stress. A veteran tree already containing extensive heartwood decay may have limited capacity to respond to those changes.

The assessment must therefore address both immediate physical damage and delayed physiological deterioration. Success cannot be measured simply by whether a tree remains standing at the end of construction.

Operational pressure from shading, leaf fall and tree growth

The risk continues during operation.

Trees adjoining solar arrays, substations and access roads will continue to grow. Their crowns may shade panels, deposit leaves, seeds or sap, obstruct CCTV sightlines, encroach upon security fencing or affect operational access. Roots may extend beneath tracks or other infrastructure.

These ordinary biological processes can create pressure for future pruning or removal. The Tree Warden Network accordingly seeks express assurance that woodland and adjoining trees will not be cut back during the life of the Scheme to address shading, leaf fall, sap, seed deposition, root growth or other perceived operational inconvenience.

That protection should not depend upon an operator's general commitment to avoid pruning. It should be secured through the DCO and management plans, with any exceptional safety work subject to independent arboricultural assessment and approval.

The layout must be designed to accommodate the natural future growth of retained trees. A panel or access road placed so close to a mature tree that conflict becomes inevitable has not avoided the impact; it has merely postponed it.

Protected-species implications

The extensive potential-roost tree resource creates a separate legal issue under the Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981.

A tree may support a bat roost even if no bat was observed during an initial inspection. Roost features can be concealed, bats may use different trees seasonally, and occupancy may change between survey and construction. The Applicant's identification of 621 trees with roost potential confirms the scale of the issue.

Works capable of affecting those trees may include:

- felling;
- pruning;
- crown lifting;
- root damage leading to later failure;
- lighting of an emergence point;
- obstruction of a flight route;
- and vibration or disturbance close to a roost.

Pre-construction inspection is therefore necessary, but it cannot be the sole safeguard. The Scheme must first minimise the number of potentially affected trees through fixed avoidance. Where impacts cannot be excluded, the Applicant must establish what further surveys, licensing and mitigation are required and whether there is a realistic prospect of satisfying the relevant licensing tests.

Natural England continues to classify protected species as an amber matter and seeks clarification as to whether licences will be required for roosting bats and other species. That outstanding issue is directly relevant to any veteran or mature tree works.

Replacement planting and Biodiversity Net Gain are not equivalent compensation

The Applicant relies upon extensive proposed planting and Biodiversity Net Gain. New native trees and hedges may provide future benefits, but they cannot replace ancient or veteran trees.

A sapling does not contain:

- centuries-old heartwood decay;
- hollow trunks;
- loose bark;
- veteran cavities;
- long-established fungal communities;
- complex deadwood;
- or the same cultural and landscape presence.

Even well-designed planting may take many decades before developing limited veteran characteristics. Some specialist species may be unable to persist during that time. The loss is therefore not merely quantitative but temporal, structural and ecological.

Nor can habitat units elsewhere compensate automatically for the deterioration of an individual irreplaceable tree. The biodiversity metric is not a licence to trade ancient or veteran habitat for a greater area of younger planting.

The appropriate policy response is avoidance. Compensation arises only in the exceptional circumstances contemplated by national policy, after the decision-maker is satisfied that wholly exceptional reasons exist. No such reasons have been demonstrated for damaging trees to accommodate access geometry, temporary working space or route flexibility.

Required protection and monitoring

The South Norfolk Tree Warden Network requests a final AIA covering the whole Order Limits, Cable Route Corridor, highway works, AIL routes, visibility splays, compounds, accesses, haul routes, drainage works and decommissioning assumptions. It also seeks final Tree Protection Plans showing construction exclusion zones, no-dig areas, fencing, ground protection, haul-road stand-offs, storage exclusions, vehicle manoeuvring areas, lighting exclusions and fuel or chemical exclusion zones.

Those requirements are proportionate to the scale and sensitivity of the resource.

BEPS further submits that the DCO should secure:

- a presumption against removal or pruning of ancient, veteran and high-value mature trees;
- resolution of all access and buffer clashes before consent;
- fixed Root Protection Areas and construction exclusion zones;
- no-dig construction where any works are exceptionally permitted close to roots;
- prohibition of storage, compounds, drainage infrastructure, lighting and vehicle movements within protection areas;
- independent arboricultural and ecological clerks of works with authority to stop works;
- photographic and condition records before and after construction;
- and long-term monitoring for compaction, hydrological change, fungal infection, branch failure and delayed decline.

Monitoring must extend for a period sufficient to detect delayed effects. A short inspection immediately after construction would not establish that a veteran tree has avoided deterioration.

Conclusion

The Applicant's evidence establishes that East Pye Solar affects an extensive and highly valuable tree network. At least 49 trees with veteran features occur within the Order Limits, a further 21 occur within 30 metres, and 621 trees have been identified as having potential to support roosting bats. Those trees operate collectively with ancient woodland, hedgerows, ponds and watercourses as part of the functional ecological infrastructure of the South Norfolk Claylands.

Despite that importance, the arboricultural assessment remains preliminary. Four known clashes between indicative access routes and ancient or veteran tree buffers are deferred to detailed design, while important matters concerning AIL movements, visibility splays, cable routes, Root Protection Areas and future operational pressure remain dependent upon later surveys and method statements.

The Applicant's stated intention not to remove veteran trees and to avoid pruning is welcome, but it is not yet demonstrated by a fixed and deliverable design. Nor does retention alone exclude deterioration through root damage, compaction, altered drainage, excessive disturbance, lighting, isolation or delayed decline.

BEPS therefore submits that ancient and veteran trees must be treated as absolute design constraints throughout the Order Limits. Every known conflict must be resolved before development consent is granted. Where an access, cable route, visibility splay, compound or other works component cannot be delivered without risking loss or deterioration, that element of the Scheme must be redesigned or removed.

Replacement planting and Biodiversity Net Gain cannot make the loss or deterioration of centuries-old living habitat acceptable. In the absence of a final arboricultural assessment, fixed protection plans and enforceable whole-life safeguards, the Applicant has not demonstrated compliance with EN-1 or the national policy protection afforded to irreplaceable habitats.

8.7.5 The South Norfolk Tree Warden Network evidence

The Relevant Representation submitted by the South Norfolk Tree Warden Network provides important specialist and locally informed evidence concerning the Scheme's effects on trees, hedgerows, ancient woodland, veteran features and the wider ecological network. Its evidence should not be treated as a general objection to development or as a repetition of landscape concerns. It identifies specific deficiencies within the Applicant's Environmental Statement, including the preliminary nature of the arboricultural assessment, unresolved conflicts with ancient and veteran tree buffers, incomplete information about hedgerow removal, reliance on flexible access design and the absence of a final scheme-wide assessment of cumulative tree and hedgerow harm.

The Network's central conclusion is that the arboricultural effects of a project of this scale must be understood before development consent is granted, rather than being left to future surveys, detailed design and contractor method statements. That conclusion is supported by South Norfolk Council's own consultation evidence. The Council asked for tree surveys to inform the Scheme's detailed design and stated that, from its experience of other NSIPs, the arboricultural assessment should not be left until final design because it would otherwise be difficult to understand and weigh the implications of the proposals. It also expected a full arboricultural impact assessment for all elements of the Scheme to be available for Examination.

The Tree Warden Network's evidence demonstrates that this requirement has not yet been met.

A landscape structured by trees and hedgerows

The Network begins from the correct landscape and ecological characterisation. East Pye Solar is proposed within a landscape structured by mature hedgerows, hedgerow trees, field trees, woodland groups, veteran features, old lanes, ponds and watercourses. These features are not incidental obstructions within otherwise open agricultural land. They are among the defining components of the South Norfolk Claylands.

The Applicant's own scoping report describes several development areas as containing remnant hedgerow networks, isolated mature trees, established tree belts and woodland groups of high ecological and visual quality. At Site 8, for example, the Applicant described irregular small and medium-sized fields defined by a remnant hedgerow network and established tree belts and woodland groups, including ancient woodland, which create wooded horizons and landscape intimacy. Similar characteristics were recorded at Sites 9 and 10.

The Tree Warden Network therefore objects to the treatment of trees and hedgerows as individual landscape features capable of being removed in small sections and replaced by later planting. Its representation explains that they form functional ecological infrastructure. They connect woodland, roosting habitat, watercourses, ponds and feeding areas and provide the structure through which bats, birds, mammals and invertebrates move across the landscape.

That conclusion is strongly supported by the Applicant's ecological evidence. The Scheme contains native hedgerows throughout the sub-sites, at least 49 trees with veteran features within the Order Limits and a further 21 within 30 metres of the boundary. The trees are distributed across Sites 3, 4, 5, 7, 9 and 10 and part of the Cable Route Corridor. The affected resource is therefore extensive and dispersed, not confined to one or two isolated locations.

The ecological importance is further demonstrated by the Applicant's identification of 621 trees with potential to support roosting bats: 577 within Sites 1–10 and the BESS Site and 44 within the Cable Route Corridor and Highway Improvement Works boundaries. The Applicant also concludes that the Order Limits and surrounding landscape support a nationally important assemblage of foraging and commuting bats, including barbastelle, and that mature trees, tree lines, hedgerows and field margins provide supporting habitat within overlapping maternity-roost Core Sustenance Zones.

The Network is therefore correct that the arboricultural and ecological issues cannot be separated. Damage to a mature tree or hedgerow may simultaneously constitute:

- loss of a landscape feature;
- damage to historic landscape structure;
- interruption of a bat commuting route;
- loss or degradation of potential roosting habitat;
- fragmentation of woodland connectivity;
- loss of nesting or feeding habitat;
- and reduction in the resilience of the wider ecological network.

The Environmental Statement does not adequately assess those combined functions.

The Arboricultural Impact Assessment remains preliminary

A principal concern raised by the Tree Warden Network is that Appendix 7.10 is expressly described as a Preliminary Arboricultural Impact Assessment. It is based upon targeted surveys within the principal sites and wider survey work along the Cable Route Corridor. It is not a final, construction-ready assessment of every tree, hedgerow, access, compound, visibility splay, haul route and cable working area that may be affected by the authorised development.

This distinction is important. A preliminary assessment may identify broad constraints and inform early design, but it does not provide the certainty needed to determine the final environmental effects of a DCO containing extensive flexibility. The Network identifies unresolved matters including:

- temporary and permanent accesses;
- road widening and visibility splays;
- abnormal indivisible load routes;
- articulated HGV manoeuvring;
- haul roads;
- cable trenches;
- HDD compounds;
- construction compounds;
- soil and material storage;
- drainage works;
- lighting;
- and decommissioning access.

Each of those elements may affect trees and hedgerows beyond the footprint of the solar arrays. Several are also subject to later design or micrositing.

The Applicant proposes a further pre-construction survey to re-establish the baseline and inform Tree Protection Plans, construction exclusion zones and an Arboricultural Method Statement. The Network accepts that those measures will be necessary, but correctly states that they cannot substitute for a complete assessment at Examination.

A pre-construction survey may confirm current tree condition and refine working methods. It should not be used to determine for the first time:

- whether a proposed access can be constructed;
- whether a visibility splay requires tree removal;
- whether an AIL can pass beneath a mature canopy;
- whether a cable route enters a Root Protection Area;
- or whether an ancient or veteran tree buffer can be maintained.

Those are consent-stage questions because they bear directly upon whether the Scheme is environmentally acceptable and physically deliverable.

South Norfolk Council made the same point during consultation. It expected a full arboricultural impact assessment for all elements of the Scheme at Examination and stated that any potential conflict caused by uncertain GPS positions should be confirmed on site before approval of the Scheme, not merely before commencement of works. The Council also noted that the absence of a Tree Preservation Order does not indicate that no trees worthy of formal protection are present.

The continuing reliance on later survey and design therefore conflicts with both the local authority's advice and the Tree Warden Network's specialist evidence.

Four unresolved conflicts with ancient and veteran tree buffers

The most direct evidence of inadequate design resolution is the Applicant's identification of four conflicts between indicative access routes and buffer zones associated with ancient or veteran trees. The Applicant proposes to resolve those conflicts during detailed design because the access routes are indicative and can move within the flexible envelope of Work No. 4.

The Tree Warden Network identifies this as a central defect, and BEPS agrees.

Ancient and veteran trees are irreplaceable habitats. A known conflict with an irreplaceable-habitat buffer is not a minor engineering matter. It is a design constraint that should be resolved before consent.

The Applicant has not yet established:

- which precise trees are involved;
- what access each route serves;
- the required road width and construction method;
- whether excavation or surfacing enters the Root Protection Area;
- whether crown lifting or branch removal would be required;
- whether articulated HGVs can pass safely;
- whether abnormal loads can negotiate the route;
- whether alternative access is available;
- or whether moving the access merely transfers harm to another tree or hedgerow.

The use of a flexible works envelope increases rather than removes the need for certainty. A wide envelope may enable a later contractor to choose between routes, but it does not demonstrate that a route free from unacceptable arboricultural harm exists.

The Network therefore asks that all four conflicts be resolved before consent and that any access, visibility splay, AIL manoeuvre or haul road that cannot be delivered without entering an ancient or veteran tree buffer should be redesigned.

That request is necessary to ensure that the Environmental Statement's conclusions are based upon a deliverable design rather than an assumption that avoidance will be possible later.

Repeated hedgerow removal and cumulative severance

The Tree Warden Network also challenges the Applicant's treatment of hedgerow removal. Chapter 8 accepts that temporary removal of hedgerow sections, generally up to approximately 10 metres at individual locations, will be required for cable works, haul routes and access requirements. The Applicant proposes reinstatement, new planting and management through the Outline LEMP and Outline CEMP.

The assessment treats each opening as localised and relatively minor. The Network's evidence demonstrates why that is misleading.

The Scheme requires repeated crossings and openings across:

- the Cable Route Corridor;
- construction haul routes;
- new and widened accesses;
- visibility splays;
- highway improvement works;
- AIL routes;
- and internal operational routes.

A single 10-metre gap may appear limited. Repeated gaps across a large connected landscape can produce substantial cumulative effects, including:

- severance of bat commuting routes;
- loss of nesting habitat;
- opening of previously sheltered woodland and field edges;
- increased light spill;
- changes in wind exposure and microclimate;
- interruption of historic field patterns;
- and gradual loss of the age and structural diversity of the hedgerow network.

Reinstatement does not immediately restore those functions. A newly planted hedge cannot replicate the height, density, root structure, woody biomass, invertebrate community or ecological continuity of an old established boundary. The time required to recover an equivalent landscape and ecological function may extend for decades.

The Applicant's landscape assessment itself recognises loss of trees and hedgerow sections along the Cable Route Corridor, effects upon Important Hedgerows and alteration of field patterns. In some locations the effects on landscape features are assessed as Major Adverse and Significant or Moderate Adverse and Significant. The Network therefore correctly observes that the Applicant cannot rely upon those same trees, hedges and woodland features to screen and assimilate the Scheme while simultaneously treating their removal, disturbance and later reinstatement as minor or readily compensable.

Important Hedgerows have not been fully resolved

The evidence also identifies uncertainty concerning the Hedgerows Regulations 1997. The Applicant's landscape baseline assumes that Important Hedgerows are present within the Order Limits where complete assessment has not been undertaken. South Norfolk Council expected a full assessment against all relevant importance criteria for any hedgerow proposed for removal, including off-site works necessary for construction access or transportation.

That work is material because an Important Hedgerow is not simply a generic habitat unit. It may have archaeological, historical, landscape and ecological significance arising from its age, species composition, relationship to historic boundaries or associated features.

The Network's evidence indicates that the Examination does not yet have a final schedule identifying:

- every hedgerow proposed for complete or partial removal;
- whether it qualifies as Important;
- the reason for removal;
- the length and age structure affected;
- associated mature or veteran trees;
- bat-roost and commuting potential;
- and the precise reinstatement or replacement proposed.

Without such a schedule, the cumulative significance of hedgerow loss cannot be properly assessed. BEPS has evidence that an important hedgerow has already been grubbed up in site 9 in anticipation of the DCO.

Accesses, visibility splays and AIL routes create particular risks

The Tree Warden Network places particular emphasis on access and transport works because these may cause some of the most serious tree damage.

The Applicant confirms that new accesses will be constructed where existing field accesses are unsuitable and that access points must accommodate articulated HGVs. Abnormal loads are expected to include transformers and cable drums, and HGVs may use internal access tracks as haul roads. Localised hedgerow removal may also be required for visibility splays.

Those activities may require more than removal of the vegetation directly within the road opening. They can generate:

- crown lifting to provide vertical clearance;
- lateral pruning for vehicle overhang;
- removal of boundary trees;
- excavation and surfacing within Root Protection Areas;
- drainage installation;
- soil compaction;

- repeated loading from heavy vehicles;
- bark and branch strikes;
- and the removal or continued cutting back of vegetation within visibility splays.

The impact area should therefore be based upon the complete swept path, manoeuvring envelope and construction method, not merely the width of the finished access.

The targeted consultation changes made this issue more significant. The Applicant consulted on alterations involving additional land, AIL routes, general construction traffic routes and changes around Site 1, the National Grid Substation Site and Site 7D. The Network states that, without a final arboricultural schedule and impact plan, consultees could not determine whether those changes would lead to additional removal, pruning, Root Protection Area incursion or compaction.

This is both a substantive and procedural deficiency. The environmental consequences of route changes cannot be dismissed as materially unchanged where the tree and hedgerow effects of the revised routes have not been definitively assessed.

Risks of delayed and indirect tree decline

The Network's evidence is also important because it explains that damage to mature and veteran trees may not be immediately apparent. Potential causes of delayed decline include:

- soil compaction;
- root severance;
- altered drainage;
- excessive or unbalanced pruning;
- branch and bark damage;
- introduction of pathogens;
- fungal infection;
- chemical or fuel contamination;
- and long-term physiological stress.

A tree may remain standing at the completion of construction while having suffered damage that leads to canopy decline, branch failure or death several years later. This is particularly serious for veteran trees, whose ecological value may depend upon a complex balance between living tissue, decay and structural defects.

The Network therefore requests post-construction monitoring of retained veteran and mature trees, hedgerows and affected woodland edges. Monitoring should expressly address compaction, root damage, bark damage, fungal infection, branch failure, soil contamination, hydrological change and delayed decline.

That is a necessary safeguard, but monitoring cannot replace avoidance. It may identify deterioration after it occurs; it cannot restore a veteran tree that has entered irreversible decline.

Operational pressure upon retained trees

The Tree Warden Network also raises a legitimate whole-life concern. Trees adjoining solar arrays and electrical infrastructure will continue to grow during the proposed operational period. Their normal growth may cause:

- panel shading;
- leaf, seed or sap deposition;
- root interaction with tracks or infrastructure;
- obstruction of CCTV sightlines;
- interference with security fencing;
- or operational access concerns.

Those effects may create continuing pressure for pruning or removal after consent.

The Network therefore seeks assurance that woodland trees and other retained trees will not be cut back during the life of the Scheme merely to prevent shading, leaf fall, sap fall, seed fall, root growth or other ordinary consequences of tree growth.

That concern should be addressed through enforceable requirements. A layout that places infrastructure so close to retained trees that ordinary future growth will create operational conflict has not genuinely avoided the impact. It has deferred it.

Any consent would therefore need to secure:

- sufficient stand-off for the anticipated mature dimensions of retained trees;
- a prohibition on pruning for solar-yield or ordinary maintenance convenience;
- independent arboricultural approval for exceptional safety works;
- retention of standing and fallen deadwood where safe;
- and replacement or remedial habitat provision where unavoidable safety work affects veteran features.

Protected bats reinforce the need for a precautionary approach

The Tree Warden Network's evidence has particular weight because of the relationship between the tree network and the Applicant's nationally important bat assemblage.

The identification of 621 trees with bat-roost potential means that tree works cannot be regarded as purely arboricultural. Roost occupancy can change over time, and many woodland bats use networks of alternative roosts rather than one permanent tree. Barbastelles in particular may change roost frequently and depend upon loose bark, splits, cavities and other features commonly associated with mature and veteran trees.

Accordingly, even where a particular tree is not confirmed as occupied at the time of the initial survey, it may form part of the functional roost resource supporting a maternity colony or wider local population.

The Network's request for a presumption of avoidance covering veteran trees, ancient trees, high-value mature trees, trees with potential roost features, ancient woodland edges and Important Hedgerows is therefore justified by both arboricultural and protected-species evidence.

Natural England's Relevant Representation does not displace that concern. Natural England welcomes the Applicant's statement that veteran trees will not be removed and that pruning will be avoided, but asks that the proposed 30-metre protection be recorded consistently in the LEMP, CEMP and DEMP. Natural England also retains an amber position in relation to protected species.

Natural England's position is therefore conditional upon the commitments being secured and upon protected-species issues being resolved. It does not establish that the current preliminary assessment is adequate or that the four identified access conflicts can safely be left to detailed design.

The consultation deficiency remains relevant

The Tree Warden Network also identifies a procedural problem. The full arboricultural position now revealed by the Environmental Statement—including the Preliminary AIA, the identified buffer conflicts, the number of veteran-feature trees, the scale of the potential bat-roost tree resource, the repeated hedgerow removals and the reliance on later surveys—was not available during the principal statutory consultation.

The subsequent targeted consultation did not provide a final arboricultural assessment of the revised land, AIL routes, access routes or general construction traffic routes. The Network therefore could not meaningfully determine the final effect of those changes upon trees and hedgerows.

This is relevant not simply as a historical complaint. It explains why important issues remain unresolved at Examination. The purpose of consultation was to allow specialist and local consultees to understand the likely significant effects and influence the design before the application was finalised. Where the necessary tree and hedgerow information was unavailable, the opportunity to secure genuine avoidance through consultation was materially reduced.

The result is an application that still proposes to resolve identified arboricultural conflicts after consent.

The Network's requested safeguards

The South Norfolk Tree Warden Network identifies seven principal measures necessary to address the deficiencies:

- A final Arboricultural Impact Assessment covering the entire Order Limits, Cable Route Corridor, highway works, AIL routes, visibility splays, compounds, accesses, haul routes, drainage and decommissioning assumptions.
- Final Tree Protection Plans and Root Protection Area plans showing construction exclusion zones, no-dig areas, fencing, ground protection, vehicle and haul-road stand-offs, storage exclusions, manoeuvring areas and lighting and chemical exclusion zones.

- Resolution of all four access conflicts with ancient and veteran tree buffers before consent.
- A presumption of avoidance for ancient, veteran and high-value mature trees, trees with potential roost features, ancient woodland edges and Important Hedgerows, supported by a specific alternatives assessment wherever harm is asserted to be unavoidable.
- Independent arboricultural and ecological clerks of works for vegetation works, accesses, AIL works, trenching, HDD compounds, haul routes and reinstatement, with authority to stop works.
- Long-term monitoring for delayed harm to retained trees, hedges and woodland edges.
- A prohibition on relevant works until the final AIA, Arboricultural Method Statement, Tree Protection Plans and hedgerow impact schedules have been approved following consultation with the local authority arboricultural officer and affected parish Tree Wardens.

These safeguards are proportionate to the scale of the Scheme and the value of the affected resource. They are not substitutes for removing unacceptable development, but they represent the minimum evidence and controls necessary before any residual impact could be evaluated.

Conclusion

The South Norfolk Tree Warden Network's evidence materially reinforces the objection to the Applicant's treatment of ancient woodland, veteran trees, mature trees and hedgerows.

It demonstrates that:

1. the affected resource forms the ecological and historic infrastructure of the Claylands landscape;
2. at least 70 veteran-feature trees occur within or close to the Order Limits;
3. 621 trees have potential to support roosting bats;
4. the arboricultural assessment remains preliminary;
5. four known conflicts with ancient or veteran tree buffers remain unresolved;
6. repeated hedgerow removals have not been assessed cumulatively;
7. the Important Hedgerow position is incomplete;
8. access, AIL and highway works remain capable of causing pruning, root damage and compaction;
9. delayed decline may not become apparent until years after construction;
10. and future tree growth may create pressure for operational pruning or removal.

The Network's conclusion is consistent with South Norfolk Council's earlier requirement that the tree surveys and full arboricultural impact assessment should inform design and be available for Examination. It is also consistent with Natural England's insistence that veteran-tree and ancient-woodland protection be recorded and secured across all project phases.

BEPS therefore submits that the Tree Warden evidence should be given substantial weight. The current application does not demonstrate that the Scheme can be constructed, operated, maintained and decommissioned without unacceptable harm to the mature tree, veteran tree, hedgerow and woodland network.

The appropriate response is not to defer the conflicts to detailed design. The Applicant should be required to produce a final, scheme-wide arboricultural assessment and fixed protection plans during the Examination and to remove or redesign every component that cannot be delivered without risking loss or deterioration of irreplaceable or high-value tree habitat. Until that work has been completed, the Examining Authority cannot safely conclude that the Applicant has complied with the mitigation hierarchy or the national policy protection afforded to ancient woodland and ancient and veteran trees.

8.7.6 Irreplaceable habitats, policy conflict and the mitigation hierarchy

The protection afforded to ancient woodland and ancient or veteran trees is materially stronger than the ordinary planning balance applicable to most ecological receptors. These habitats are not treated as interchangeable habitat units whose loss can be offset through planting elsewhere. They are classified as irreplaceable because their ecological characteristics arise from age, continuity, rarity, species assemblages, soils, fungi, deadwood and other processes that cannot realistically be recreated within a planning or project timescale.

This distinction is central to East Pye Solar. The Applicant cannot answer the proximity, enclosure or potential deterioration of ancient woodland and ancient or veteran trees by relying generally upon Biodiversity Net Gain, proposed woodland planting or future landscape management. The applicable policy requires the Applicant first to demonstrate avoidance and full mitigation of both direct and indirect effects. If loss or deterioration remains, development consent should not be granted unless the separate and demanding policy gateway of wholly exceptional reasons and a suitable compensation strategy is met.

The applicable EN-1 policy

The current Overarching National Policy Statement for Energy, EN-1 (2025), came into force on 6 January 2026. The Forestry Commission's February 2025 scoping response necessarily referred to the equivalent provisions of the then-current 2024 EN-1, at paragraphs 5.4.32 and 5.4.53. Those protections have been carried forward into the present EN-1 at paragraphs 5.4.33 and 5.4.55.

EN-1 paragraph 5.4.15 defines irreplaceable habitats as habitats that would be technically very difficult, or would take a very significant time, to restore, recreate or replace, having regard to their age, uniqueness, species diversity or rarity. Paragraph 5.4.16 expressly identifies ancient woodland and ancient and veteran trees as particularly valuable resources and records the Government's commitment to maintain and enhance them. Lowland fen is also expressly identified as an irreplaceable habitat.

Paragraph 5.4.33 requires applicants to include measures to mitigate fully the direct and indirect effects of development upon ancient woodland, ancient and veteran trees and other irreplaceable habitats during construction and operation. Paragraph 5.4.55 then directs that the Secretary of State should not grant development consent for development resulting in the loss or deterioration of an irreplaceable habitat unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Those provisions create a sequential policy test:

1. the direct and indirect effects must be identified;
2. avoidance must be applied first;
3. effects that cannot be avoided must be fully mitigated;
4. the decision-maker must determine whether any loss or deterioration nevertheless remains; and
5. where it does, consent should not be granted unless wholly exceptional reasons and a suitable compensation strategy are both established.

The Applicant's approach does not yet satisfy that sequence. It begins from the proposition that the woodlands and veteran trees will remain physically present and then treats buffers, management plans and replacement planting as sufficient protection. That is not the same as demonstrating that loss or deterioration has been avoided.

Critical National Priority status does not disapply the protection

The Applicant may rely upon the Scheme's status as Critical National Priority infrastructure and upon the substantial national need for renewable generation. That status does not remove the requirement to apply the mitigation hierarchy.

EN-1 paragraph 4.2.23 expressly provides that applicants for CNP infrastructure must continue to demonstrate compliance with the relevant NPSs, the mitigation hierarchy and all applicable legal and regulatory requirements. Paragraph 4.2.24 requires an applicant to demonstrate that residual effects are genuinely effects that cannot be avoided, reduced or mitigated. Compensation does not reduce the underlying adverse effect and is addressed only after the avoidance and mitigation exercise has been completed.

EN-1 does establish a strong presumption in favour of CNP infrastructure where ordinary residual environmental effects remain after the mitigation hierarchy has been applied. However, paragraph 4.2.28 expressly excludes residual effects presenting an unacceptable risk to, or unacceptable interference with, irreplaceable habitats from that presumption. Irreplaceable habitats therefore occupy an exceptional position even within the CNP regime.

It follows that CNP status cannot be used to bypass the preliminary question of whether the Scheme creates an unacceptable risk of loss or deterioration. Nor does the general need for renewable energy establish that every proposed parcel, access, cable route, compound or infrastructure location is necessary in its present form.

The policy requires a project-specific demonstration that avoidable conflicts have been removed. Otherwise, the CNP presumption would deprive the express irreplaceable-habitat exception in paragraph 4.2.28 and the decision-making rule in paragraph 5.4.55 of practical effect.

EN-1 also recognises that a limited reduction in generation capacity may exceptionally be justified where mitigation would produce a significant environmental benefit outweighing the marginal loss of function. The Applicant cannot therefore assume that every panel parcel must be retained merely because its removal would reduce generating capacity. It must identify the actual capacity consequence and weigh it against the benefit of avoiding harm to an irreplaceable habitat.

The NPPF establishes the same policy sequence

The National Planning Policy Framework reinforces this approach. Paragraph 193(a) states that, where significant biodiversity harm cannot be avoided through locating development on an alternative site with less harmful impacts, adequately mitigated or, as a last resort, compensated, permission should be refused.

Paragraph 193(c) separately states that development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and ancient or veteran trees, should be refused unless wholly exceptional reasons and a suitable compensation strategy exist. Footnote 70 gives infrastructure projects as a possible example only where the public benefit would clearly outweigh the loss or deterioration. NSIP status is therefore capable of forming part of the exceptional-reasons case, but it does not automatically establish it.

Natural England and the Forestry Commission's standing advice is equally clear. It requires decision-makers to assess both direct and indirect effects during construction and operation and identifies alternative siting and redesign as methods of avoiding harm. It also states that compensation must not form part of the assessment of whether wholly exceptional reasons exist and must not be used to improve the perceived merits of the development proposal.

That separation is important. The correct approach is not:

the Scheme provides renewable energy and proposes extensive new planting, therefore some deterioration of ancient woodland is acceptable.

The proper sequence is:

has the Applicant first demonstrated that all loss and deterioration have been avoided or fully mitigated; if not, are there wholly exceptional reasons for the remaining harm; and, separately, is there a suitable compensation strategy?

The Applicant's BNG and landscape planting case cannot answer the first or second questions.

'Deterioration' includes indirect and functional harm

The policy is engaged not only where ancient woodland is felled or a veteran tree is removed, but also where the habitat deteriorates.

Natural England and Forestry Commission standing advice identifies direct and indirect pathways capable of causing deterioration. These include root damage, soil compaction, damage to understorey and fungi, fragmentation of functional habitat, air and light pollution, noise and vibration, altered drainage and water tables, woodland-edge removal, reduced semi-natural habitat around woodland, interruption of connections between woods and veteran trees, disturbance from traffic and reduced resilience to environmental change.

Those are the same pathways identified in relation to East Pye Solar:

- woodland enclosure by panel arrays and fencing;
- interruption of hedgerow and tree-line links;
- construction dust;
- lighting;
- noise and vibration;
- pile installation;
- HGV and abnormal-load movements;
- access widening;
- cable trenching;
- Root Protection Area incursion;
- soil compaction;
- altered surface-water and groundwater movement;
- loss or degradation of woodland-edge foraging habitat;
- and the displacement of deer and other animals into retained woodland.

The absence of direct felling therefore does not establish policy compliance. The relevant question is whether the physical condition, ecological resilience and functional relationships of the habitat will be maintained.

The East Pye evidence demonstrates an unusually high level of exposure

The Applicant's scoping evidence identified 29 Ancient Woodland Inventory areas comprising 53 woodland parcels within two kilometres of the principal sites. Six ancient woodland parcels were identified as directly adjoining the Scheme: Popes Wood, Doyly's Grove, Saxlingham Grove, Little Wood, Ringers Grove and Spring Wood. The same baseline identified lowland fen, another irreplaceable habitat, beside Site 7B.

The Planning Inspectorate's Scoping Opinion accordingly required assessment of those six adjoining woods, including direct and indirect effects, avoidance, mitigation and opportunities for enhancement. The Forestry Commission advised that the minimum buffer is not necessarily sufficient where impacts extend further and expressly raised woodland isolation, dust, Root Protection Areas and the need to maintain connections between woodland blocks.

The exposure is not uniform but includes particularly serious configurations:

- Ringers Grove is surrounded by the proposed Site 8 development on three sides;
- Doyly's Grove adjoins Site 7C to the south, west and north;
- Popes Wood adjoins the same development area;
- Saxlingham Grove and Little Wood are connected with known barbastelle maternity-colony landscapes;
- Spring Wood lies between the Site 3 parcels and is associated with both roosting habitat and converted wartime bat hibernacula.

Norfolk Wildlife Trust expressly identified Ringers Grove's three-sided enclosure and required the Applicant to demonstrate how connectivity between woodlands would be maintained. It sought

substantial buffers comprising genuine shrub and rough-grassland ecotones, rather than simple undeveloped strips.

Natural England has also confirmed that Saxlingham Grove and the Popes Wood–Doyly's Grove complex are hydrologically connected to the Order Limits through watercourse or groundwater pathways. Its conclusion that effects can be ruled out is expressly conditional upon the relevant pollution, runoff and water-quality measures being followed and legally secured.

These facts demonstrate that potential deterioration is not hypothetical. The Scheme is immediately adjacent to multiple irreplaceable habitats and introduces recognised impact pathways into their settings.

The Applicant has not demonstrated avoidance

The first stage of the mitigation hierarchy is avoidance. Natural England and Forestry Commission standing advice gives alternative siting and scheme redesign as examples of avoidance.

At East Pye, the evidence indicates that the Applicant has instead treated proximity to ancient woodland as a constraint to be managed largely by buffers. That is mitigation, not avoidance.

Avoidance would have required the design process to consider, among other matters:

- removing development that encloses Ringers Grove;
- withdrawing Site 7C development from the immediate setting of Doyly's Grove and Popes Wood;
- removing the remaining Site 3 development beside Spring Wood and the bat hibernacula;
- keeping substations, compounds and major accesses well beyond woodland influence zones;
- fixing cable routes outside Root Protection Areas;
- preserving broad, undeveloped connections between woodland blocks;
- and resolving every ancient or veteran tree conflict before submission.

There is evidence that these alternatives were available for consideration. Norfolk Wildlife Trust had previously recommended removal of Site 3 because of likely effects upon Spring Wood County Wildlife Site and the adjoining woodland. Although the Applicant reduced the parcel, it did not remove it in full, and concern remained regarding infrastructure in the field immediately west of the ancient woodland.

Partial reduction may reduce the scale of an impact, but it does not establish avoidance where the retained development continues to affect the same receptor through the same pathways. The Applicant has not produced an assessment demonstrating that the retained half of the parcel is outside the woodland's functional zone or is unused by the bats associated with Spring Wood and the adjoining hibernacula.

Likewise, the Applicant has retained development around Ringers Grove rather than avoiding its enclosure. A 30-metre strip around the woodland does not alter the fundamental fact that solar infrastructure would occupy the surrounding landscape on several sides.

Buffers are mitigation and must not be mischaracterised as avoidance

The Applicant's proposed 30-metre buffers may provide useful mitigation if correctly designed, protected and managed. Natural England welcomes them in principle but has required the commitment to be incorporated consistently into the LEMP, CEMP and DEMP. It also requires full BS5837-compliant survey work, strict Root Protection Area protection, arboricultural oversight, no-dig construction, compaction prevention, runoff and dust controls and micrositing.

Natural England's position therefore confirms that buffers do not operate alone. Their effectiveness depends upon several additional controls, some of which remain to be developed or secured.

The standing advice states that buffer size and type must respond to the scale and nature of the development and the character of the surrounding area. Fifteen metres is only a minimum root-protection distance, and a larger buffer is required where other effects extend farther. Buffers should contribute to the wider ecological network and should comprise semi-natural habitat.

The Applicant has not demonstrated on a woodland-by-woodland basis that 30 metres is sufficient to address:

- the near-enclosure of Ringers Grove;
- the multi-sided relationship between Site 7C, Doyly's Grove and Popes Wood;
- the barbastelle maternity-colony functions of Saxlingham Grove and Little Wood;
- the roosting and hibernation functions associated with Spring Wood;
- hydrological pathways to Saxlingham Grove, Popes Wood and Doyly's Grove;
- or construction dust, vibration, lighting and traffic associated with works close to those habitats.

Drawing the same numerical distance around each woodland is not evidence that the actual zone of influence has been avoided.

Deferred design is incompatible with the required certainty

The mitigation hierarchy cannot be demonstrated while known conflicts remain dependent upon post-consent design.

The South Norfolk Tree Warden Network records that the Applicant's arboricultural assessment remains preliminary and identifies four specific clashes between indicative access routes and ancient or veteran tree buffer zones. It requests that those conflicts be resolved before consent and that any access, visibility splay, AIL manoeuvre or haul road incapable of avoiding the buffer be redesigned.

That is the correct policy approach. A conflict with an irreplaceable-habitat buffer is not an ordinary detailed-design matter. Unless the Applicant identifies the final route, swept path, working width, excavation method and Root Protection Area implications, the Examining Authority cannot know whether deterioration will occur.

The Tree Warden evidence also records 621 trees with potential to support roosting bats and explains that the Applicant has not provided a route-wide assessment of cumulative hedgerow severance, lighting, access widening, haul-road disturbance and loss of tree-buffer integrity.

South Norfolk Council had already advised that a full arboricultural impact assessment should be available for Examination and that tree surveys should inform detailed design rather than being deferred until later. It also required possible positional conflicts to be confirmed before approval of the Scheme, not merely before commencement.

Where the design remains flexible, EN-1 requires the ES to assess the likely worst-case effects. The Applicant cannot rely upon the possibility that micrositing may later avoid a conflict without also demonstrating that a feasible, environmentally acceptable location exists within the authorised envelope.

Biodiversity Net Gain does not resolve irreplaceable-habitat harm

The Applicant's claimed BNG is not evidence that the policy test for ancient woodland or veteran trees has been met.

The statutory Biodiversity Gain Hierarchy is distinct from the ordinary ecological mitigation hierarchy and does not apply to irreplaceable habitats in the same way as ordinary metric habitats. Government guidance confirms that BNG does not replace the requirement first to avoid significant biodiversity harm and that irreplaceable habitats are subject to separate arrangements.

This is necessary because a metric cannot reproduce the defining characteristics of ancient woodland or an ancient tree. New woodland planting may eventually create valuable habitat, but it cannot reproduce:

- ancient soils and undisturbed soil profiles;
- long-established fungal and microbial communities;
- veteran decay structures;
- centuries of ecological continuity;
- the existing genetic resource;
- or current relationships between the woodland, protected species and the surrounding habitat network.

Natural England and Forestry Commission standing advice expressly states that new woodland is not a direct replacement for lost or damaged ancient woodland and that compensation can only ever partially compensate for the damage. It also states that ancient woodland cannot be relocated because the same ecological conditions cannot be recreated elsewhere.

Accordingly, the Applicant cannot place proposed woodland creation, hedgerow planting or habitat units on the positive side of the planning balance and treat them as cancelling deterioration of an irreplaceable habitat. Those measures may constitute enhancement or, in exceptional circumstances, part of a compensation strategy. They do not turn deterioration into no deterioration.

No suitable irreplaceable-habitat compensation case has been presented

The Applicant's case appears to be that no ancient woodland or ancient or veteran tree will be lost or deteriorated. It has therefore not advanced a distinct compensation strategy addressing such loss or deterioration under EN-1 paragraph 5.4.55.

That creates a clear consequence for the Examination.

If the Examining Authority concludes that deterioration cannot presently be excluded—for example through enclosure, loss of connectivity, hydrological change, Root Protection Area conflict, lighting, dust, vibration or delayed tree decline—the Applicant cannot fall back upon its general BNG proposals. A suitable compensation strategy directed specifically to the nature, scale and location of the irreplaceable-habitat harm would be required.

Such a strategy would need to be additional to ordinary mitigation and BNG and would require, among other matters:

- identification of the exact habitat and function lost or deteriorated;
- evidence that avoidance and full mitigation had first been exhausted;
- restoration and management of relevant existing ancient woodland;
- reconnection of affected woodland and veteran-tree networks;
- long-term monitoring and remedial measures;
- secure land, funding and governance;
- and evidence that the measures were proportionate to the harm while acknowledging that full replacement is impossible.

No such case has been presented because the Applicant assumes the policy gateway will not be engaged. That assumption is unsafe while the arboricultural assessment remains preliminary and the indirect effects described above remain unresolved.

Wholly exceptional reasons have not been demonstrated for avoidable harm

The Scheme provides nationally important renewable-energy benefits and falls within the CNP policy. Those matters attract significant weight. They do not demonstrate that deterioration of each affected woodland or tree is unavoidable.

A wholly exceptional reasons case would need to address why the public benefit requires the particular harmful element in the particular location. It is not enough to establish that solar generation is needed nationally. The Applicant would need to show, for example, why:

- panels must surround Ringers Grove on three sides;
- development must remain beside Spring Wood despite NWT's avoidance request;
- Site 7C must occupy the immediate setting of Doyly's Grove and Popes Wood;
- an access must conflict with an ancient or veteran tree buffer;
- or a cable, compound or road cannot be moved outside the relevant zone of influence.

The policy test would otherwise be satisfied by every renewable-energy NSIP irrespective of its design, making the express protection for irreplaceable habitats ineffective.

BEPS does not submit that renewable infrastructure could never meet the wholly exceptional reasons test. The submission is narrower: that the Applicant has not demonstrated wholly exceptional reasons for avoidable deterioration created by the present site selection, layout and retained design flexibility.

Natural England's 'green' position does not determine policy compliance

Natural England presently categorises ancient woodland and ancient or veteran trees as a green issue. That position should be recorded accurately, but its basis must also be understood.

Natural England's green classification is expressly subject to the proposed mitigation being secured. It requires the 30-metre buffer to be incorporated into the LEMP, CEMP and DEMP and requires strict Root Protection Area controls, an updated arboricultural survey, no-dig methods, arboricultural supervision, prevention of compaction, dust and runoff control and micrositing.

It is therefore a conditional consultation position, not a determination that all direct and indirect effects have been fully assessed or that the statutory decision-making test has been satisfied.

It also does not answer the separate evidence from:

- the Forestry Commission concerning woodland isolation and connectivity;
- Norfolk Wildlife Trust concerning Ringers Grove, Spring Wood and woodland ecotones;
- the Tree Warden Network concerning the preliminary AIA and unresolved access conflicts;
- South Norfolk Council concerning the need for a full arboricultural assessment;
- or Natural England's own acknowledgement of hydrological connectivity.

The Secretary of State remains responsible for applying EN-1 paragraph 5.4.55 on the complete evidence.

Conclusion

The policy protection for irreplaceable habitats is not satisfied merely because the Applicant does not propose to fell ancient woodland. The relevant test includes deterioration through indirect, functional and cumulative effects.

East Pye Solar directly adjoins six ancient woods, surrounds Ringers Grove on three sides, borders the Spring Wood maternity and hibernation landscape, lies beside barbastelle maternity woodland at Saxlingham Grove and Little Wood, and affects a wider network of veteran and mature trees, hedgerows and hydrologically connected habitats. The arboricultural assessment remains preliminary, known access-buffer conflicts remain unresolved and the Applicant relies upon buffers and later detailed design to demonstrate acceptability.

The applicable policy sequence has not been completed. In particular, the Applicant has not demonstrated that:

- all reasonable avoidance has been applied;
- each woodland's actual zone of influence has been identified;
- the 30-metre buffer fully mitigates every direct and indirect pathway;
- the remaining development will not cause woodland enclosure or functional fragmentation;
- all ancient and veteran tree conflicts can be resolved within the authorised envelope;
- hydrological and construction effects will not cause deterioration;
- or any residual deterioration is supported by wholly exceptional reasons and a suitable, habitat-specific compensation strategy.

BEPS therefore submits that the Scheme remains in conflict with EN-1 paragraphs 4.2.23–4.2.28, 5.4.33 and 5.4.55 and with NPPF paragraph 193. CNP status does not remove that conflict and BNG cannot compensate for it.

The development parcels and infrastructure that enclose, fragment or create unresolved risks to ancient woodland and ancient or veteran trees should be removed or relocated. If the Applicant cannot demonstrate before the close of Examination that loss and deterioration will be avoided, the irreplaceable-habitat policy gateway is engaged. In the absence of a demonstrated wholly exceptional reasons case and a suitable compensation strategy, development consent should not be granted.

8.7.7 Conclusions and remedies sought

The evidence considered in Sections 8.7.1–8.7.6 demonstrates that ancient woodland, ancient and veteran trees, mature hedgerows and the wider tree network are not peripheral constraints capable of being addressed by standard stand-off distances and post-consent management. They are defining features of the ecological structure of the East Pye landscape.

The Planning Inspectorate's Scoping Opinion identified six ancient woodland parcels directly adjoining the proposed development: Popes Wood, Doyly's Grove, Saxlingham Grove, Little Wood, Ringers Grove and Spring Wood. It required the Environmental Statement to assess the effects upon those woods and upon ancient and veteran trees, including the scope to avoid and mitigate harm. It also expressly identified construction dust as a potential impact pathway and confirmed that 15 metres is only a minimum buffer, to be increased where the nature or extent of the effects requires it.

The significance of that concentration cannot be reduced to the absence of development inside the mapped ancient-woodland polygons. The Scheme would introduce solar arrays, fencing, access roads, cable works, substations, construction compounds, lighting, drainage infrastructure and prolonged operational activity into the immediate setting of six irreplaceable woodland sites. In several cases, development would border the woods on more than one side or occupy land forming part of their wider ecological setting.

The Applicant's own scoping evidence records Doyly's Grove adjoining Sub-Site 7C to the south, west and north, with Popes Wood also adjoining that sub-site; Saxlingham Grove adjoining Sub-Sites 7F and 7G; Little Wood adjoining Sub-Site 7H; Spring Wood immediately between Sub-Sites 3A and 3B; and Ringers Grove immediately adjacent to Site 8A.

Those relationships engage the policy protection against both loss and deterioration of irreplaceable habitat. The evidence does not establish that deterioration has been avoided.

The woodland resource must be assessed as a connected network

The ancient woods do not function as six isolated receptors. They form part of the historic South Norfolk Claylands network of woodlands, hedgerows, mature field trees, ponds, watercourses, lanes, verges and field margins.

The Forestry Commission's advice expressly warns that isolation is a particular concern where woodland is surrounded by development on several sides. It requires consideration of the connectivity between woodland, individual trees and hedgerows and recommends that new planting should link existing woods and form meaningful connected woodland blocks rather than isolated screening belts. It also identifies root damage, trenching, soil compaction, chemical contamination and dust as indirect effects requiring protection beyond the woodland boundary.

The Norfolk Wildlife Trust's Claylands evidence similarly emphasises that ecological benefit depends upon restoring and strengthening connections between habitats. Linking existing hedges, grassland and other semi-natural features multiplies their ecological value, whereas isolated habitat creation does not provide the same function.

The Applicant has not provided a final, scheme-wide woodland-connectivity assessment establishing:

- the existing connections between the six ancient woods and the wider woodland network;
- the species and ecological functions dependent upon each connection;
- the routes used by bats and other woodland species;
- the effects of fencing, access roads, cable crossings, lighting and maintenance activity;
- the extent to which woodland-edge habitat will be altered;
- or the time required for proposed planting to become functionally effective.

Instead, the assessment relies largely upon retention of woodland, standard buffer distances and future habitat creation. That approach does not establish that the woods will retain their ecological resilience or their functional relationship with the surrounding landscape.

The ancient woods perform protected-species functions

The woodland issue cannot be separated from the Applicant's own bat findings.

Saxlingham Grove, Little Wood and Spring Wood are associated with known or reported barbastelle maternity or roosting resources. Spring Wood also adjoins the converted former Second World War shelters used as bat hibernacula. The Applicant identifies the wider Order Limits as supporting a nationally important bat assemblage and records mature trees, hedgerows and tree lines as important commuting, foraging and potential roosting habitat.

Norfolk Wildlife Trust considers bats to be one of the most significant ecological issues arising from the application. It records the Applicant's conclusion that the landscape supports a nationally

important assemblage and challenges the proposition that temporary hedgerow gaps, lighting and construction disturbance will not materially affect habitat functionality. NWT also warns that habitat creation cannot automatically replace established commuting routes and mature landscape features that may take decades to develop equivalent function.

This materially increases the sensitivity of the ancient-woodland setting. Protection cannot be confined to roots and woodland canopy. It must also maintain:

- dark woodland edges;
- maternity-roost support habitat;
- hibernation access;
- alternative tree-roost resources;
- prey-rich margins;
- connected hedgerows;
- and unobstructed movement between woodland blocks.

The Applicant has not demonstrated that the proposed layout and outline mitigation will preserve all of those functions.

Spring Wood demonstrates the failure to achieve avoidance

Spring Wood provides the clearest example of the difference between reducing a development parcel and avoiding an ecological conflict.

The Applicant's scoping report records Spring Wood as ancient replanted woodland and priority deciduous woodland immediately between Sites 3A and 3B. Norfolk Wildlife Trust expressly advised during consultation that Site 3 should be dropped from the site-selection process because of potential effects upon Spring Wood County Wildlife Site. Although the Applicant removed the field south of Spring Wood from the panel area, NWT remained concerned about works in the area, particularly the substation proposed immediately west of the woodland, and advised that an even wider buffer might be required.

NWT's Relevant Representation maintains that position. It states that Site 3 had previously been recommended for removal because of effects upon the County Wildlife Site, ancient woodland and bats; welcomes the changes made; but remains concerned and ideally recommends that the site be removed from the overall Scheme.

The Applicant has therefore not followed the avoidance advice in full. Only part of the affected parcel has been removed, while infrastructure remains beside the same ancient woodland, known bat habitat and hibernation resource.

A partial reduction may reduce the extent of development, but it does not demonstrate that the remaining land is ecologically unimportant or that the same impact pathways have been eliminated. No complete tracking, hibernacula-specific disturbance assessment or woodland-function assessment has been provided to show that the retained part of Site 3 falls outside the functional landscape of Spring Wood.

The mitigation hierarchy has consequently not been exhausted at this location.

Buffers have not been shown to prevent deterioration

The proposed 30-metre ancient-woodland buffer is a useful improvement upon the minimum 15-metre root-protection distance. It is not evidence that every indirect effect has been avoided.

The Forestry Commission's advice is explicit that the minimum distance must be increased where effects extend farther, including construction dust and traffic-related pollution. It also states that buffers should contribute to ecological networks and consist of appropriate semi-natural habitat.

Norfolk Wildlife Trust likewise seeks buffers comprising genuine ecotones of rough grassland and shrubs and advises that greater distances may be necessary in sensitive locations. Its Relevant Representation raises concern that the Applicant's construction and operational buffers may be insufficient for ancient woodland and other irreplaceable habitats, particularly where the locations of HDD compounds, construction lighting and temporary works remain unresolved.

Natural England presently identifies ancient woodland and ancient or veteran trees as a green matter, but that position is conditional. Natural England requires the 30-metre commitment to be recorded consistently and secured through the LEMP, CEMP and DEMP. It also notes that veteran trees are not to be removed and pruning is to be avoided.

Natural England's position does not establish that a uniform 30-metre buffer addresses:

- enclosure and loss of landscape connectivity;
- hydrological change;
- construction dust;
- lighting;
- noise and vibration;
- piling;
- disturbance of bat roosts or hibernacula;
- altered woodland-edge microclimate;
- Root Protection Area conflicts;
- displaced deer browsing;
- or operational pressure arising from future tree growth.

Natural England also confirms that Saxlingham Grove and the Popes Wood–Doyly's Grove complex are hydrologically connected to the Order Limits. Its conclusion that damage can be ruled out is expressly dependent upon water-quality, pollution-prevention and surface-water measures being followed and legally secured.

The proposed buffers are therefore part of a package of conditional mitigation. They are not a finding of no effect and should not be treated as a substitute for site-specific assessment of the actual zone of influence around each woodland.

The arboricultural baseline and design remain unresolved

The evidence concerning individual trees and hedgerows reinforces the woodland objection.

The South Norfolk Tree Warden Network records that the Applicant's baseline includes:

- 49 trees with veteran features within the Order Limits;
- a further 21 veteran-feature trees within 30 metres of the boundary;
- native hedgerows throughout the sub-sites;
- and 621 trees assessed as having potential to support roosting bats.

It also records that Appendix 7.10 remains a Preliminary Arboricultural Impact Assessment, rather than a final, construction-ready assessment of all access routes, visibility splays, AIL routes, compounds, haul roads, cable works and Root Protection Area incursions.

Most significantly, the Applicant has already identified four clashes between indicative access routes and buffers applied to ancient or veteran trees. The Applicant proposes to resolve those clashes at detailed design because the routes are indicative and flexible within Work No. 4. The Tree Warden Network objects to that approach and requests that every conflict be resolved before consent.

That objection is well founded. A known conflict with the protection area of an irreplaceable tree cannot properly be treated as a routine construction detail. Until the final route, working width, vehicle swept path, surfacing method and Root Protection Area implications are known, the Examining Authority cannot determine whether deterioration will occur.

The same uncertainty affects repeated hedgerow gaps, visibility splays, cable crossings and highway works. Although each individual removal may be described as localised, the cumulative effect across the Order Limits may include loss of mature structure, fragmentation of bat corridors and permanent alteration of the historic field network. The Tree Warden Network expressly states that the ES does not contain a clear route-wide analysis of cumulative hedgerow severance, veteran-tree buffer disruption, construction lighting, access widening or the time needed for replacement planting to become functionally equivalent.

The Applicant's conclusion of no unacceptable arboricultural or woodland effect is therefore premature.

Biodiversity Net Gain does not answer the irreplaceable-habitat objection

The Applicant's proposed woodland, hedgerow and grassland creation may produce ecological benefits. It does not demonstrate that deterioration of ancient woodland or ancient and veteran trees has been avoided.

Ancient woodland and veteran trees derive their value from continuity over centuries. New planting cannot reproduce ancient soils, fungal networks, veteran decay features, hollowing, deadwood assemblages or established relationships with protected species within the operational life of the Scheme.

Norfolk Wildlife Trust warns that biodiversity metrics do not fully account for temporal losses of ecological function, particularly for bats and species dependent upon mature hedgerows and connected habitat networks. It therefore seeks early habitat establishment, meaningful success criteria, long-term monitoring and adaptive management.

Natural England similarly welcomes the proposed net gain but asks for clearer success criteria, remedial triggers and long-term management responsibilities.

BNG should therefore be treated as a separate enhancement obligation. It cannot be used to convert a risk of deterioration to irreplaceable habitat into a neutral or beneficial effect.

Natural England's consultation position is not determinative

BEPS recognises that Natural England currently records no amber or red issue specifically for ancient woodland and veteran trees. That position must be represented accurately.

It is, however, expressly subject to the appropriate requirements being adequately secured. Natural England seeks consistent 30-metre protection in the LEMP, CEMP and DEMP and relies upon construction pollution and runoff controls when reaching its conclusions concerning hydrologically connected sites. It also retains an amber position concerning protected species and advises that licences may be required for roosting bats and other species.

The green classification therefore does not determine:

- whether the six woods will become ecologically isolated;
- whether Spring Wood has been adequately avoided;
- whether the four known tree-buffer clashes can be resolved;
- whether the preliminary AIA is sufficient;
- whether the woodland-dependent bat functions will be retained;
- or whether the proposed buffers address the full zone of influence.

Those matters remain for the Examining Authority and ultimately the Secretary of State on the whole of the evidence.

Overall conclusion

The Applicant has not demonstrated that East Pye Solar will avoid loss or deterioration of ancient woodland, ancient or veteran trees and the wider mature tree and hedgerow network.

The principal unresolved matters are cumulative and mutually reinforcing:

1. six ancient woodland parcels directly adjoin the Scheme;
2. development borders some woods on multiple sides;
3. several woods support or are associated with nationally important bat functions;
4. Spring Wood is linked to maternity, commuting and hibernation habitat;
5. the Forestry Commission identifies woodland isolation, root damage, compaction and wider connectivity as material concerns;

6. NWT continues to seek removal of Site 3 and wider, ecologically functioning buffers;
7. Natural England's conclusions depend upon mitigation being secured and consistently applied;
8. at least 70 veteran-feature trees occur within or close to the Order Limits;
9. 621 trees have bat-roost potential;
10. the AIA remains preliminary;
11. and four known access conflicts with ancient or veteran tree buffers remain unresolved.

This is not an evidential basis upon which the Examining Authority can safely conclude that deterioration will not occur.

The Applicant's case depends upon the proposition that the woods and veteran trees will remain physically present and that future plans, buffers and planting will control the indirect effects. Physical retention is not the relevant policy test. The issue is whether the habitats will retain their condition, resilience, ecological setting, protected-species functions and connectivity throughout construction, operation, equipment replacement and decommissioning.

That has not been established.

Remedies sought

BEPS submits that the following remedies are required before any conclusion of acceptability could be reached.

First, the remaining development at Site 3 adjoining Spring Wood, including infrastructure within its functional ecological setting, should be removed. This is the only response consistent with NWT's express avoidance advice and the combined ancient-woodland, maternity-roost and hibernation evidence.

Secondly, development enclosing or closely surrounding Ringers Grove, Doyly's Grove, Popes Wood, Saxlingham Grove and Little Wood should be redesigned to retain broad, undeveloped and dark ecological connections between the woods and the wider hedgerow and woodland network. A standard buffer around the woodland boundary is not sufficient where the wider landscape remains enclosed.

Thirdly, the Applicant should submit during the Examination:

- a final, scheme-wide Arboricultural Impact Assessment;
- final Tree Protection Plans;
- fixed Root Protection Areas;
- a complete schedule of tree and hedgerow retention, removal and pruning;
- all access, AIL, highway and cable-route impacts;
- and a woodland-by-woodland assessment of hydrology, dust, lighting, noise, vibration, edge effects and connectivity.

Fourthly, all four identified conflicts between access routes and ancient or veteran tree buffers must be resolved through fixed design before consent. The DCO should not permit those conflicts to be transferred to detailed design within a flexible works envelope.

Fifthly, every ancient-woodland and veteran-tree buffer should be based upon the site-specific zone of influence rather than a uniform numerical distance. Buffers should comprise functioning ecotones of native scrub, rough grassland and other appropriate semi-natural habitat and should remain free from compounds, roads, storage, cables, drainage infrastructure, fencing, lighting and ordinary operational activity.

Sixthly, the DCO should prohibit removal or pruning of ancient and veteran trees and prohibit later pruning of retained trees for panel efficiency, shading, leaf fall, CCTV visibility or ordinary operational convenience.

Seventhly, the final CEMP, LEMP, OEMP and DEMP should secure consistent woodland and tree protections for the entire project life, supported by independent arboricultural and ecological supervision, measurable success criteria, long-term monitoring and enforceable remedial action.

If the Applicant cannot provide that evidence and redesign before the close of Examination, the risk of deterioration to irreplaceable habitat remains unresolved. In that event, the Applicant has not demonstrated compliance with the mitigation hierarchy or the policy protection afforded to ancient woodland and ancient or veteran trees.

BEPS therefore submits that the ancient-woodland and tree evidence weighs strongly against the grant of development consent in the Scheme's present form. The affected parcels and infrastructure should be removed or relocated. Failing that, the Secretary of State should refuse consent because the Applicant has not demonstrated that loss or deterioration of irreplaceable habitat will be avoided.

8.8 Hydrologically connected ecology and chalk streams

The aquatic ecology affected by East Pye Solar cannot be assessed as a series of isolated ditches, crossings and watercourse buffers. The Applicant's own evidence identifies a connected network of rivers, becks, tributaries, field drains, ponds and seasonally flowing ditches extending across the Order Limits and into the River Tas and River Waveney catchments. Water, sediment, pollutants, aquatic organisms and ecological effects can move through that network beyond the immediate footprint of an individual construction activity.

This section should be read alongside Chapter 9 of this Written Representation, which addresses the adequacy of the Applicant's hydrological, hydrogeological, flood-risk, water-quality and Water Framework Directive assessments. The matter must nevertheless remain within Chapter 8 because hydrological connectivity is not merely a water-engineering issue. It is the mechanism by which aquatic and riparian habitats function, fish and invertebrates disperse, chalk-stream characteristics are maintained and pollution or sediment effects may reach downstream ecological receptors.

The Applicant's Aquatic Habitat Assessment identifies 21 waterbodies within or adjacent to the Order Limits. These include connected reaches and tributaries of Hempnall Beck and the River Tas, Pulham Beck and Starston Brook, Broome Beck and extensive field-ditch systems. The assessment uses hydrological connectivity, including Environment Agency information from downstream monitoring locations, to infer the likely fish and aquatic-invertebrate assemblages within the Scheme. That approach confirms that the affected watercourses are parts of wider catchment systems rather than independent local drains.

The central deficiency is that the Applicant relies upon connectivity when determining which species may be present, but does not assess the same connectivity adequately when determining how construction sediment, pollutants, altered runoff, drilling-fluid releases or changes to flow may propagate downstream. There is no equivalent catchment-scale analysis of the geographical extent, concentration, timing and ecological consequence of those effects.

8.8.1 River Tas, Hempnall Beck and connected tributaries

The River Tas system is the most ecologically sensitive aquatic network affected by the Scheme. The Applicant's Scoping Report identifies Hempnall Beck as a main river flowing between Site 7 and Sites 4–6. It identifies the River Tas itself as a main river running along the boundaries between Sub-Sites 8A and 8B, together with ordinary tributaries of the River Tas along or adjacent to other development parcels.

The Environment Agency has expressly identified the River Tas as a chalk-stream priority habitat and a focus of its ecological activity. At scoping, the Agency recorded that the River Tas was within the red-line boundary, was ecologically classified as Poor, and required a Water Framework Directive assessment because inadequately controlled works could cause prohibited deterioration. The Agency also sought watercourse and wetland Biodiversity Net Gain aligned with River Basin Management Plans, WFD objectives, catchment plans and the emerging Local Nature Recovery Strategy.

That priority status is important. Chalk streams are groundwater-influenced systems whose ecological character depends upon the interaction of the chalk aquifer, spring and seepage flows, stable water chemistry, relatively consistent temperatures, clean gravels, marginal vegetation and connected tributaries. Their value cannot be protected merely by avoiding direct excavation within the main river channel. Activities throughout the contributing catchment may affect the watercourse by changing runoff, sediment supply, groundwater movement or water quality.

The ecological function of the River Tas must therefore be understood at catchment scale. The main channel receives water and material from Hempnall Beck, smaller tributaries, roadside drains, field ditches and seasonally active headwaters. Some of those features may appear dry during summer or early autumn but carry significant flow during wetter periods. They may provide seasonal habitat, dispersal routes and pathways through which pollutants and fine sediment enter the main watercourse.

The Applicant recognised that ditch networks and watercourses are ecological features from the beginning of the project. Its Scoping Report states that the design would seek to avoid ditch networks and watercourses and acknowledges that ditches provide habitat for protected

mammals and foraging or commuting bats. It also proposed targeted otter and water-vole surveys where construction or habitat-clearance works could not be kept at least 10 metres from watercourse banks.

That approach is too narrow for aquatic ecology. A ten-metre construction distance may reduce immediate bank disturbance, but it does not define the hydrological zone of influence. Runoff generated farther upslope, drainage changes, cable trenches, access roads, piling, soil compaction or contamination may all reach a watercourse through topography, field drains or groundwater pathways.

The relationship between groundwater and surface water is particularly material. The Scoping Report identifies Principal and Secondary Aquifers beneath parts of the Scheme. The Environment Agency advised that the Applicant had not adequately demonstrated the relationship between groundwater and surface-water bodies and required further evaluation of that relationship. It also required hydrogeological risk assessment where HDD or other trenchless works could interact with aquifers, watercourses or sensitive ecological receptors.

The relevant pathways include:

- direct runoff from disturbed soil into ditches and streams;
- mobilisation of fine sediment from haul roads, access works and cable trenches;
- contaminated runoff containing fuels, oils, cementitious material or other construction substances;
- altered infiltration and groundwater recharge caused by compaction and new surfaces;
- preferential flow along cable trenches;
- temporary dewatering or interception of shallow groundwater;
- drilling-fluid escape during HDD;
- changes to bank structure or channel form at crossings;
- obstruction or delay of fish movement;
- and changes to the volume, timing or direction of surface-water flow.

Those are ecological pathways because they affect habitat quality, spawning gravels, dissolved oxygen, aquatic plants, macroinvertebrates and fish. Fine sediment may fill gravel interstices, smother eggs and reduce the availability of refuge habitat. Pollution can cause acute mortality or chronic ecological stress. Flow alteration can affect water depth, velocity, temperature, oxygenation and the seasonal accessibility of tributaries.

The Applicant's aquatic evidence itself records sediment release, increased turbidity, accidental pollution, temporary alteration of drainage or flow pathways and physical effects at crossings as relevant construction risks. It also records failing fish and dissolved-oxygen or phosphate elements within parts of the connected River Tas waterbody and recognises the need to avoid WFD deterioration.

These existing pressures increase the sensitivity of the receptor. A waterbody already failing particular ecological or chemical elements has less capacity to absorb additional disturbance. A temporary effect cannot be dismissed simply because the construction activity eventually ceases.

Loss of a spawning season, deposition of fine sediment or a pollution incident may affect fish or invertebrate populations beyond the duration of the works.

The Environment Agency has expressly challenged the Applicant's definition of short-term ecological effects. Chapter 8 defines short-term or temporary effects as lasting up to two years. The Agency states that this is too long for fish because two consecutive years of disturbance may affect two spawning or juvenile year classes and could significantly affect populations or contribute to WFD deterioration. It requires activities or effects lasting more than six months to be assessed as if they were permanent.

That criticism is directly relevant to the dispersed construction programme. Watercourse crossings, cable works, haul roads and reinstatement may not all affect one location continuously for two years, but repeated works across the same catchment can expose different tributaries and alternative habitats over successive seasons. A catchment-wide fish population may therefore experience a sequence of disturbances rather than one isolated temporary event.

The River Tas network is also known to support notable fish and protected aquatic species. At scoping, the Environment Agency identified records within Hempnall Beck of brown or sea trout, bullhead, European eel and brook lamprey. It required fish to be included in the desk study and required the effects of continuous HDD noise, sediment runoff and pollution to be assessed.

The ecological sensitivity is further reinforced by the white-clawed crayfish evidence. The Environment Agency's scoping response recorded the species in the River Tas and required a commitment to undertake surveys at relevant locations when the works affecting watercourses were known. Subsequent evidence submitted by a local resident records repeated Norfolk Rivers Trust surveys confirming a breeding white-clawed crayfish population at Saxlingham Thorpe, together with other notable species including river lamprey and brown trout.

That submission also identifies the pathways by which East Pye works could affect the population: connected ditches, drains, culverts, streams, groundwater runoff, sediment changes, contamination and potential bentonite releases associated with trenchless cable installation. The precise distribution of white-clawed crayfish is addressed elsewhere in this Chapter, but its confirmed presence within the receiving chalk-stream system is material here because it demonstrates the ecological consequences of getting the hydrological assessment wrong.

The Examining Authority has already determined that the aquatic baseline requires further attention. Its Rule 6 letter quotes Appendix 8.9's acknowledgement that the surveys were undertaken during unusually dry conditions and may under-represent the typical wetted extent and habitat availability of ephemeral headwaters and field ditches. Having regard to the survey timing and representations from BEPS, South Norfolk Council and Norfolk Wildlife Trust, the Examining Authority requested further information and survey proposals concerning white-clawed crayfish.

The River Tas and Hempnall Beck should therefore be assessed as a connected chalk-stream ecological system. The question is not limited to whether direct works within the main river are undertaken by HDD. It is whether all construction and operational activities within the hydrologically connected catchment have been assessed sufficiently to demonstrate that they will not:

- add fine sediment;
- mobilise contaminants;
- alter groundwater or surface-water flow;
- degrade spawning and refuge habitat;
- obstruct fish movement;
- spread invasive species or crayfish disease;
- or reduce the ecological status and resilience of the chalk-stream system.

The Applicant has not supplied a catchment-scale ecological model capable of answering those questions. The use of general pollution-prevention measures and outline water-management plans may reduce risk, but it does not establish the spatial extent or ecological significance of the effects being mitigated.

8.8.2 River Waveney-linked systems

The ecological connectivity issue is not confined to the River Tas catchment. The eastern and southern parts of the Scheme interact with watercourses and ditch networks draining towards the River Waveney system.

The Applicant's Scoping Report identifies Broome Beck as an ordinary watercourse adjoining the southern boundaries of Sub-Sites 10A and 10C before becoming a main river shortly downstream. It also identifies ordinary tributaries of Starston Brook along or adjacent to the south-western part of Sub-Site 4A. The Aquatic Habitat Assessment includes Starston Brook, Broome Beck and associated field ditches within the wider connected aquatic baseline.

These features should not be treated as low-value drainage channels simply because parts are classified as ordinary watercourses or are seasonally dry. Their ecological functions include:

- conveying water and sediment to downstream brooks;
- providing habitat for aquatic and semi-aquatic invertebrates;
- offering seasonal access and refuge for fish and amphibians;
- connecting ponds, wet field margins and riparian habitats;
- providing foraging routes for bats and birds;
- and acting as pathways for the spread of both native organisms and invasive species.

The distinction between a main river and an ordinary watercourse is principally regulatory. It does not determine ecological value. A small tributary may be critical to the quality of a downstream waterbody because it contributes clean flow, spawning habitat, refuge from high flows or connectivity between otherwise isolated habitats.

The Scheme introduces several potential impact mechanisms within these Waveney-linked systems.

Cable installation may require crossings of watercourses and ditches by trenchless or open-cut techniques. Even where HDD is used, launch and reception compounds, access routes, drilling-fluid management, dewatering and working areas remain necessary. An HDD bore may also

interact with shallow groundwater, mobilise existing contamination or produce a drilling-fluid breakout into the channel or adjoining ground.

At scoping, the Environment Agency stated that the final cable and haul-road routes had not been fixed and that their watercourse effects could not be determined if the Water Environment were scoped out. It required a WFD assessment, MoRPh or River Corridor surveys, information on crossing methods and environmental control documents including a drilling-fluid breakout plan.

Access works create separate effects. Temporary or permanent crossings may require culverts, bridges, bank works, vegetation clearance and repeated HGV movements. These activities may compact banks, damage marginal vegetation, introduce sediment, interrupt channel continuity and alter flow.

The Environment Agency's application-stage representation confirms that the Flood Risk Assessment continues to refer to the possible use of culverts. The Agency objects to new culverts and recommends clear-span bridges in accordance with its anti-culverting policy because culverts may increase flood risk and damage watercourse function. It also requires the locations and set-backs of main-river crossing works and HDD pits to be confirmed.

The ecological objection to culverting is additional to the flood-risk objection. A culvert may:

- remove natural bed and bank habitat;
- reduce light and vegetation;
- change velocity and sediment deposition;
- form a barrier to fish and invertebrate movement;
- trap debris;
- and reduce the continuity of the riparian corridor.

A temporary culvert may still affect a breeding season or leave compacted and altered banks after removal. The assumption that a structure is temporary does not determine that its ecological effect is insignificant.

Surface runoff is another important pathway. Solar fields, tracks, compounds, cable works and access roads may alter the distribution and velocity of runoff. Chapter 9 addresses whether the drainage strategy adequately predicts and controls those changes. Within Chapter 8, the relevant issue is the effect on downstream habitat and species.

Runoff from disturbed clay soils may carry fine sediment into ordinary ditches that subsequently discharge into Starston Brook or Broome Beck. Runoff from substations, compounds or construction areas may carry oils, fuels, concrete washout or other pollutants. Where several Scheme parcels drain into the same brook system, individually small releases may combine or occur repeatedly over the construction programme.

The Applicant has not provided a sufficiently integrated assessment showing:

- the catchment draining to each Waveney-linked watercourse;
- every Scheme parcel, access, compound and cable section within that catchment;

- the final location and method of each crossing;
- the direction and travel time of runoff;
- the location of sensitive downstream habitats;
- the interaction with groundwater;
- or the cumulative consequence of multiple works within the same system.

This absence is important because Broome Beck changes regulatory status shortly downstream of the Scheme. An impact originating beside an ordinary-watercourse reach may therefore be transmitted into a main river. The regulatory classification at the point of construction does not limit the downstream ecological zone of influence.

The field-ditch network also requires a seasonal assessment. The Applicant's surveys encountered many dry or partly dry features, but that does not mean those ditches are hydrologically disconnected. During wetter periods they may carry runoff rapidly into Starston Brook, Broome Beck and the wider Waveney system. They may also provide temporary habitat and dispersal pathways.

The proposed reliance on later construction planning is therefore insufficient. Before consent, the Applicant should identify all crossings and working areas within the Waveney-linked system and demonstrate, through a source–pathway–receptor assessment, that effects will not propagate beyond the immediate works.

At minimum, the assessment should distinguish:

- direct channel and bank effects;
- sediment and contaminant pathways;
- altered surface flow;
- groundwater interaction;
- barrier and fragmentation effects;
- effects upon fish, invertebrates and riparian species;
- and cumulative effects across all crossings within each connected catchment.

The present assessment does not provide that level of certainty.

8.8.3 Incomplete aquatic baseline

The reliability of the Applicant's conclusions depends upon the adequacy of the aquatic baseline. Appendix 8.9 is not a comprehensive aquatic-species survey. It is described as a proportionate, habitat-led appraisal. No direct macroinvertebrate sampling was undertaken, and the appraisal uses habitat characteristics, desk-study information and data from connected off-site or downstream monitoring locations to infer the likely ecological assemblages.

A habitat-led appraisal can be useful for identifying potential value and determining where more detailed work is required. It is less capable of supporting a confident no-significant-effect conclusion where:

- the catchments are complex and connected;
- protected or priority species are known downstream;
- crossing and compound locations remain flexible;
- direct biological sampling is absent;
- and the survey conditions under-represent normal hydrology.

The dry-condition limitation is not speculative. Appendix 8.9 expressly states that surveys were completed during unusually dry conditions and that many smaller drainage features were dry or partly dry. It accepts that the observed wetted extent, depth and in-channel habitat may under-represent typical conditions, particularly in ephemeral headwaters and field ditches. The surveys were undertaken in September and October 2025.

That timing matters because seasonal ditches and headwaters may perform their greatest hydrological and ecological role during winter, spring or periods of sustained rainfall. A feature that was dry in September may:

- carry substantial runoff in winter;
- connect otherwise isolated ponds and channels;
- provide temporary fish or amphibian habitat;
- transport macroinvertebrates;
- convey sediment and pollutants;
- or recharge wetland and riparian soils.

The dry survey therefore risks understating both habitat availability and impact pathways.

The limitation is especially significant because the Applicant's own methodology relies upon hydrological connectivity. Downstream Environment Agency fish and invertebrate data are used to infer what may occur within or close to the Order Limits. The Ecology Chapter recognises that Hempnall Beck could support diverse aquatic macroinvertebrate communities and that sensitive taxa are likely within flowing sections and principal tributaries.

That inference supports a precautionary conclusion that ecologically important assemblages may be present. It does not support a conclusion that the effect of the Scheme will be insignificant. To reach the latter conclusion, the Applicant must assess how impacts move through the same network.

There is presently an asymmetry in the assessment:

- downstream connectivity is used to infer ecological presence;
- but downstream connectivity is not modelled adequately when assessing impact propagation.

For example, downstream data may establish that eel, lamprey, salmonids or sensitive invertebrates are likely to use the connected system. The assessment does not then quantify how sediment released at an upstream cable crossing would travel, where it would deposit, how long elevated turbidity would persist or which downstream habitat could be affected.

Similarly, the existence of connected ditches is recognised when describing the aquatic network, but there is no wet-season survey or integrated model showing which ditches become active during rainfall and how they connect solar parcels, substations, roads and cable works to the main rivers.

No direct macroinvertebrate sampling means that the Applicant has not established the actual composition, abundance or seasonal use of the affected reaches. That matters because different assemblages have different sensitivities to:

- sediment deposition;
- altered flow;
- oxygen depletion;
- temperature change;
- pollution;
- channel shading;
- bank disturbance;
- and polarised light from solar panels.

A habitat appraisal may identify that a reach could support diverse invertebrates. It does not establish which taxa are present, whether breeding occurs there, or whether a particular season is critical.

The absence of direct sampling is particularly relevant to the Environment Agency's concern about the attraction of aquatic insects to panels. Without an adequate baseline, it is difficult to determine:

- which emerging aquatic insects occur;
- their source reaches;
- their normal dispersal direction;
- the distance over which they may respond to reflected polarised light;
- and whether panel arrays lie within that behavioural zone of influence.

The white-clawed crayfish evidence demonstrates the practical consequence of relying too heavily on desk-study radii and walkover signs. Appendix 8.9 stated that the environmental search had not returned records within the two-kilometre search area. The separate River Tas evidence submitted to the Examination records a professionally confirmed breeding population at Saxlingham Thorpe and argues that it lies within the relevant connected system and within two kilometres of affected parts of the Scheme.

Whether every detail of the local evidence is ultimately accepted is a matter for Examination. It is already sufficient to show that absence of a record from one data search is not equivalent to ecological absence. The Examining Authority has accordingly required the Applicant to explain further survey work or provide robust justification if additional survey is not undertaken.

The baseline is also incomplete in temporal terms. Fish and aquatic invertebrates use different reaches at different life stages and seasons. Salmonids may depend upon clean gravel for spawning, juveniles upon shallow marginal habitat and adults upon deeper cover. Eels migrate through connected systems. Aquatic insects emerge seasonally and may disperse from

watercourses into adjoining land. A one-off autumn habitat inspection cannot characterise all of those functions.

The Environment Agency's application-stage response also identifies errors and omissions in the Applicant's treatment of fish habitat. It notes that Appendix 8.9 refers to coarse fish, eel and lamprey but does not specifically describe salmonid habitat use, including spawning gravels, marginal cover and woody material. The Agency considers that salmonids should be identified expressly even where some of the relevant habitat features overlap with those used by other species.

A robust aquatic baseline should therefore include, proportionately to the final works:

- wet-season and appropriate seasonal habitat surveys;
- direct macroinvertebrate sampling at sensitive reaches;
- current fish data and, where necessary, targeted fish surveys;
- crayfish survey or eDNA work at relevant connected locations;
- mapping of permanent, intermittent and ephemeral connectivity;
- channel-form and riparian-condition surveys;
- baseline water-quality and sediment data;
- groundwater–surface-water conceptual models;
- and upstream and downstream monitoring locations at each major crossing.

The need for that evidence does not mean that every small ditch requires the same survey effort. It means that survey scope must be determined by ecological function and hydrological connectivity rather than by whether a feature happened to contain water during a dry autumn visit.

Until the baseline is completed, the Applicant cannot confidently determine receptor value, impact magnitude or mitigation effectiveness. Outline pollution controls cannot correct an under-valued receptor, and post-consent monitoring cannot retrospectively establish what ecological conditions existed before construction.

8.8.4 Environment Agency's unresolved ecology concerns

The Environment Agency's Relevant Representation is particularly important because it assesses the final application documents rather than the earlier PEIR alone. Its position is not that all aquatic-ecology matters have been resolved through Chapter 8, Appendix 8.9 and the outline management plans. It identifies continuing disagreement and further work concerning fish valuation, temporary effects, electromagnetic fields, aquatic invertebrates and the security of riparian enhancement.

European eel has been undervalued

The Applicant's Table 8.14 classifies freshwater fish as being of Local ecological importance. The Environment Agency expressly disagrees with that valuation because it fails to account for European eel.

The Agency identifies European eel as a critically endangered species and a priority species under section 41 of the Natural Environment and Rural Communities Act 2006. It states that retaining fish at Local value may lead to the significance of effects on protected fish being underestimated and requires freshwater fish to be categorised as being of County importance under the Applicant's own geographical scale.

Receptor value is one of the inputs used to determine effect significance. If the receptor is assigned too low a value, the same magnitude of effect produces a lower significance conclusion.

The error therefore affects the Applicant's assessment of:

- construction noise;
- sediment and pollution;
- temporary obstruction;
- bank disturbance;
- HDD effects;
- operational EMF;
- and cumulative effects across connected watercourses.

The Applicant should revise the receptor valuation and reassess every relevant effect using County importance. The existing conclusions cannot simply be retained unless the Applicant demonstrates that the corrected valuation makes no difference to the significance assessment.

The Environment Agency also disputes the Applicant's treatment of temporary effects. The Applicant's two-year definition may encompass two fish breeding cycles. The Agency requires effects lasting longer than six months to be assessed as permanent for fish and WFD purposes.

Taken together, these points indicate a systematic risk of under-assessment: the fish receptor is valued too low, while effects lasting long enough to affect multiple year classes are labelled temporary.

EMF and the 12-microtesla precautionary threshold

The Environment Agency expressly states that it does not agree with the conclusion at paragraph 8.9.481 of Chapter 8 that operational electromagnetic fields are not expected to cause ecologically significant effects on freshwater fish.

The Agency identifies a risk that residual magnetic fields from buried cables may affect European eel behaviour. It refers to evidence that anguillid species can detect magnetic fields as low as 12 microtesla and requires the Applicant to demonstrate that cable burial depth will reduce the magnetic field to below that level at the bed of the watercourse.

This requirement is especially material at the 400 kV cable crossing of Hempnall Beck. The Agency had raised the issue at scoping and required evidence that the cables would be buried sufficiently deeply for fields at the watercourse to remain below levels detectable by fish.

The application-stage representation records that the Applicant has indicated a field strength of approximately 95 microtesla at one metre above ground, while recognising that the field attenuates rapidly with distance. The Agency does not accept attenuation in principle as sufficient. It requires a calculated or modelled result at the ecological receptor: the bed of the watercourse.

The relevant assessment should therefore specify:

- the number, voltage and configuration of cables;
- conductor spacing and phasing;
- normal and maximum load;
- the depth below the watercourse bed;
- the thickness and magnetic characteristics of surrounding material;
- the predicted field at the bed and within the water column;
- the position of the maximum field relative to likely eel movement;
- and the effect of any cable-depth variation or scour during the operational lifetime.

A general statement that fields decline with distance does not demonstrate compliance with the precautionary threshold. Nor should the question be deferred entirely to detailed design, because the feasibility of achieving the necessary burial depth and field strength is part of the ecological acceptability of the crossing.

The Applicant must either demonstrate that the field at the watercourse bed will remain below 12 microtesla under the reasonable worst-case operating configuration or redesign the cable arrangement, burial depth or crossing location accordingly.

Aquatic-invertebrate attraction to solar panels

The Environment Agency also identifies a separate operational effect omitted from Chapter 8: the potential attraction of aquatic invertebrates to solar panels.

Certain aquatic insects use reflected polarised light as a cue for locating water. Solar panels may imitate aspects of that signal, causing insects to approach panels or attempt to lay eggs upon them. The result may be wasted reproductive effort and interruption of the aquatic-invertebrate life cycle.

The Agency raised this matter at scoping, noting that aquatic invertebrates had not been considered adequately and that Norfolk hawker records existed within the scoping area. It requested assessment and mitigation of polarised-light effects, including measures that break up reflected polarisation where necessary.

The final application has still not resolved the issue. In its Relevant Representation, the Agency states that the potential attraction of aquatic invertebrates to panels has not been addressed and identifies the impact as interruption of their life cycle.

This matters beyond the insects themselves. Aquatic invertebrates form part of the food resource for:

- fish;
- bats;
- birds;
- amphibians;
- and riparian predators.

A change in emergence, dispersal or reproductive success may therefore alter wider ecological function. The effect is especially relevant to Hempnall Beck because Appendix 8.9 identifies the Beck as capable of supporting a diverse aquatic-invertebrate community.

The Applicant should assess not simply the distance between the nearest panel and the watercourse, but the likely behavioural zone of influence. That requires consideration of:

- the aquatic-invertebrate assemblage;
- panel orientation and tracking;
- surface treatment and reflected polarisation;
- the extent and density of panel arrays;
- topography and visibility from the watercourse;
- intervening vegetation;
- seasonal emergence periods;
- and cumulative effects where arrays lie on more than one side of a connected riparian corridor.

The omission is directly relevant to the Applicant's reliance on retained riparian habitat and watercourse BNG. A watercourse may remain physically intact while its invertebrate community is affected by infrastructure beyond the nominal bank buffer.

Wider watercourse buffers are not secured

The Environment Agency acknowledges that the outline masterplan does not appear to place solar modules immediately beside the relevant watercourses. It nevertheless states that the wider distances shown on that plan are not secured. The Design Principles, Parameters and Commitments document appears to commit only to a 10-metre stand-off from watercourses.

The Agency requires wider buffers to be secured around watercourses capable of supporting diverse aquatic-invertebrate communities, including through both the OLEMP and the Design Principles document.

This distinction between indicative design and secured mitigation is important. An outline masterplan may show a wider gap, but unless the DCO and certified documents impose that gap, later detailed design may move panels or infrastructure closer while remaining within the Order Limits and parameters.

The appropriate buffer cannot be determined by applying one standard distance to every feature. It should reflect:

- ecological value;
- channel width and morphology;
- floodplain and riparian habitat;
- fish and invertebrate use;
- groundwater dependence;
- topography;
- the nature of adjoining development;
- lighting and reflected-polarisation effects;
- and the location of compounds, roads and drainage infrastructure.

A ten-metre stand-off may be a minimum control for certain construction activities. It is not evidence that solar panels beyond that distance cannot affect emerging invertebrates or that runoff, lighting and disturbance are adequately controlled.

The EA's water-quality comments reinforce the need for clear and consistent distances. It notes that some application documents merely require storage to be 'away from' watercourses, while others specify ten metres. It asks for consistent wording measured from the top of bank and for compounds and materials to be kept at least ten metres away, with greater separation where practicable in areas of high groundwater vulnerability.

Those minimum pollution controls should not be confused with an ecologically sufficient operational buffer. The latter may need to be materially wider where required to maintain riparian habitat, aquatic-insect life cycles, dark corridors and protected-species movement.

Riparian enhancement is not secured consistently

The Environment Agency identifies a material inconsistency between the Biodiversity Net Gain Report and the Outline Landscape and Ecology Management Plan.

Section 4.3 of the BNG Report apparently relies upon riparian enhancement and reduced encroachment. The OLEMP does not contain the corresponding commitments. The Agency warns that riparian management and enhancement opportunities may therefore be overlooked and identifies the management of Himalayan balsam, acknowledged to contribute to the poor condition of Hempnall Brook, as an example. It requires the riparian enhancements relied upon in the BNG Report to be secured in the OLEMP and requires explicit measures for checking and managing invasive species.

The inconsistency has several consequences.

First, it undermines the deliverability of the claimed watercourse BNG. The Applicant's BNG Report predicts a 16.08% gain in watercourse units, but the practical management document does not secure all of the riparian measures on which that calculation relies.

Secondly, it weakens the ecological mitigation case. If enhanced riparian habitat is relied upon to offset disturbance, improve connectivity or increase ecological resilience, the measures must be specified, funded, managed and monitored.

Thirdly, it creates uncertainty about invasive-species management. Himalayan balsam can dominate riverbanks and, following winter dieback, leave exposed soil vulnerable to erosion. Disturbance by construction machinery may also spread seed along the catchment. A general future commitment is not equivalent to a mapped and funded catchment-management programme.

The final LEMP should therefore identify:

- every riparian reach to be enhanced;
- the baseline habitat condition;
- the width and type of buffer;
- planting or natural-regeneration measures;
- invasive-species survey and treatment;
- bank and channel management;
- livestock and machinery exclusion;
- monitoring indicators;
- timescales;
- remedial triggers;
- and responsibility for delivery throughout the operational period.

The BNG metric should then be recalculated against measures that are actually secured. Unsecured or inconsistent commitments should not be credited.

The Environment Agency's overall position remains unresolved

The Agency's Relevant Representation summarises its ecology and fisheries concerns as requiring further consideration. These include:

- short-term and temporary effects on fish;
- the ecological status and valuation of European eel;
- EMF effects on eel;
- the effect of panels on macroinvertebrate life cycles;
- and the securing of BNG and riparian recommendations.

The Applicant therefore cannot state that the statutory regulator has accepted the Chapter 8 conclusions on aquatic ecology. The Agency does not agree with the EMF conclusion and considers the fish valuation and duration methodology inadequate. It also identifies an unassessed operational effect and a mismatch between the mitigation claimed in the BNG Report and that secured by the OLEMP.

These matters are not capable of being dismissed as minor drafting points. They affect:

- receptor valuation;
- impact magnitude and duration;
- the existence of an operational effect;
- the adequacy of cable design;

- the necessary width of ecological buffers;
- and the deliverability of mitigation and BNG.

BEPS submits that the Applicant has not demonstrated that the River Tas, Hempnall Beck, Starston Brook, Broome Beck and their tributary and ditch networks will retain their ecological function throughout the Scheme.

Before any conclusion of acceptability can be reached, the Applicant should be required to provide:

- a catchment-scale ecological assessment of the Tas and Waveney-linked systems;
- wet-season mapping of permanent, intermittent and ephemeral connectivity;
- direct aquatic-invertebrate sampling at sensitive reaches;
- updated fish and protected-species evidence;
- completion of the white-clawed crayfish work requested by the Examining Authority;
- a final schedule and method for every watercourse and ditch crossing;
- groundwater–surface-water conceptual models for sensitive crossings;
- sediment and pollutant-pathway assessment extending to downstream receptors;
- EMF modelling demonstrating less than 12 microtesla at the watercourse bed;
- assessment and mitigation of aquatic-invertebrate attraction to panels;
- site-specific and legally secured riparian buffers;
- and reconciliation of the BNG Report, OLEMP and DCO commitments.

Until those matters are resolved, the Applicant's conclusion of no significant adverse aquatic-ecology effect is not supported by a complete baseline or by agreement with the Environment Agency. The hydrologically connected ecology of the Scheme should therefore attract substantial adverse weight.

8.9 White-clawed crayfish

White-clawed crayfish are a distinct and potentially decisive ecological constraint for East Pye Solar. The issue cannot be absorbed into a general discussion of aquatic habitats because there is specific evidence of a breeding population within the River Tas catchment, a material conflict between that evidence and the Applicant's baseline, multiple credible pathways by which the Scheme could affect the population or connected habitat, and a protected-species and Water Framework Directive framework requiring precautionary assessment.

The Applicant's Aquatic Habitat Assessment states that its environmental data search returned no records of white-clawed crayfish within a two-kilometre search area. It also relies upon the absence of field signs during habitat walkovers when reaching its conclusions. However, the same assessment acknowledges that the absence of signs during a walkover does not establish absence, that white-clawed crayfish are legally protected and vulnerable to habitat modification and sedimentation, and that biosecurity, pollution prevention and sediment controls are required because of the wider River Tas catchment context. The Ecology Chapter separately records an Environment Agency record approximately six kilometres downstream and historical occurrence within the wider catchment.

More importantly, evidence submitted to the Examination records a professionally confirmed breeding population at Saxlingham Thorpe, within the River Tas chalk-stream system and stated to be within two kilometres of part of the Scheme. That evidence also states that the Applicant was given the relevant Norfolk Rivers Trust information in December 2025, before submission of the DCO application.

The evidential effect is not merely that another record should be added to a desk-study table. The existence of a breeding population materially changes the assessment of receptor value, likely presence, survey requirements, the geographical Zone of Influence and the adequacy of generic construction controls. It requires the downstream and hydrologically connected River Tas system to be treated as a known protected-species catchment, rather than as a landscape in which absence can be inferred from incomplete records and dry-condition walkovers.

8.9.1 Evidence of a breeding River Tas population

The River Tas white-clawed crayfish evidence submitted to the Examination provides a chronology of discovery, professional confirmation and repeat Norfolk Rivers Trust survey.

The chronology begins with the discovery of a dead white-clawed crayfish in the River Tas at Saxlingham Thorpe during summer 2020. The specimen was retained and supplied to the Environment Agency in October 2020. According to the submitted report, the Environment Agency confirmed the identification, referred to the rarity of the species and to historical records near Newton Flotman, and arranged for Norfolk Rivers Trust to undertake further survey work.

Norfolk Rivers Trust subsequently surveyed the Saxlingham Thorpe reach on 10 October 2020. The submitted evidence records that the survey found two juvenile white-clawed crayfish. Juveniles are important evidence because they demonstrate recent successful reproduction rather than the incidental presence of one ageing or displaced adult. The report consequently characterises the finding as confirmation of a healthy breeding population and states that the location was then one of only six known native-crayfish sites in Norfolk. The results were reported through the Norfolk Crayfish Group's summary of conservation work undertaken during 2020.

The population was not based upon a single survey or isolated specimen.

On 9 August 2021, Norfolk Rivers Trust worked with a Bristol University doctoral researcher to undertake hand-searching and environmental DNA work for native and non-native crayfish in several Norfolk rivers, including the River Tas at Saxlingham Thorpe. The submitted evidence records that three white-clawed crayfish were found and that photographic evidence is available.

Norfolk Rivers Trust surveyed the location again on 28 September 2022 and reconfirmed the species' presence. The evidence also records that Banham Zoo volunteers installed two short brash-bundle habitat-enhancement areas close to the known concentration. This intervention is consistent with the location being treated by those involved as an identified conservation site rather than an unverified anecdotal record.

The chronology therefore comprises:

- Environment Agency confirmation of a specimen in 2020;
- two juveniles found by Norfolk Rivers Trust in October 2020;
- three animals found during further Norfolk Rivers Trust and university-associated survey work in August 2021;
- reconfirmation by Norfolk Rivers Trust in September 2022;
- and subsequent habitat enhancement close to the recorded concentration.

That is materially stronger evidence than an uncorroborated public sighting. The presence of juveniles, combined with repeated findings over several survey seasons, supports the conclusion that Saxlingham Thorpe holds, or at the relevant survey dates held, a reproducing River Tas population.

The submitted report also records other notable aquatic species in the same reach or system, including river lamprey and brown trout. While those species are addressed separately, their presence reinforces the ecological quality and sensitivity of the receiving watercourse.

Proximity to East Pye Solar

The River Tas evidence submission places the Saxlingham Thorpe population within two kilometres of part of the East Pye Scheme and within the hydrologically connected River Tas system. Precise coordinates are stated to be available for the physical evidence, although they are appropriately withheld from the public version because of the sensitivity of the species record.

The exact distance from every individual Scheme component is not the decisive issue. A radial distance from a panel field or cable route is not an ecological Zone of Influence where watercourses are connected.

The relevant questions are:

- which Scheme parcels, access routes, compounds and cable works drain into the River Tas or its tributaries;
- whether the population lies upstream or downstream of individual works;
- whether affected ditches, field drains, culverts, becks or groundwater pathways connect the works to occupied or potentially occupied reaches;
- how sediment, contaminants, altered flows or disease could travel through that system;
- and whether construction activity could affect other, as yet unrecorded populations between the Scheme and the known Saxlingham Thorpe site.

The Applicant itself relies upon hydrological connectivity when using downstream Environment Agency information to infer likely aquatic assemblages in reaches closer to the Scheme. It cannot logically treat the same connectivity as irrelevant when a protected-species record demonstrates risk elsewhere in the connected catchment.

The evidence was supplied before the application

The timing is also material.

The River Tas evidence submission states that professionally confirmed information concerning the Saxlingham Thorpe population was provided to East Pye Solar Limited in December 2025. BEPS' full Relevant Representation likewise records that the Applicant was supplied pre-application with Norfolk Rivers Trust evidence identifying a repeatedly surveyed breeding population within two kilometres in the connected chalk-stream system.

The DCO application was subsequently submitted with an Aquatic Habitat Assessment stating that the environmental search had returned no records within two kilometres.

BEPS does not suggest that the Applicant was necessarily required to accept every item of locally submitted evidence without verification. The proper response to credible, specific and professionally attributable protected-species evidence was to investigate it. That should have included obtaining the relevant Norfolk Rivers Trust and Environment Agency records, confirming the location and survey methodology, consulting the Norfolk Crayfish Group or county records service, and undertaking properly licensed survey work within potentially affected reaches.

The evidence should not have been omitted while the application continued to rely upon a conclusion of no records within two kilometres.

Even if the Applicant disputed the precise distance or current status of the Saxlingham Thorpe population, the repeat survey evidence was sufficient to defeat an assumption of absence and to trigger a precautionary catchment-scale assessment.

Natural England's current standing advice confirms that a survey should be required where distribution or historical records suggest that white-clawed crayfish may be present. It expressly warns that absence of a record does not demonstrate absence because it may simply reflect a lack of survey data, and it identifies July to September as the appropriate survey period.

The Planning Inspectorate has treated the evidence gap as material

The Examining Authority's Rule 6 letter confirms that the matter remains unresolved.

The ExA records concerns raised by South Norfolk Council, Norfolk Wildlife Trust and BEPS. It quotes Appendix 8.9's admission that surveys were undertaken during unusually dry conditions, that many smaller drainage features were dry or only partly wet, and that observed habitat availability may under-represent normal conditions, particularly in ephemeral headwaters and field ditches. The ExA also records that the relevant site visits took place in September and October 2025.

Having regard to those limitations and the representations received, the ExA has required further information. It requested an update by Procedural Deadline A on any additional survey undertaken or proposed, or robust justification and further evidence where no further survey is undertaken. The request was made early to allow work during the July-to-September survey period and expressly directs the Applicant to Natural England's white-clawed crayfish standing advice.

The ExA's procedural decision does not determine that the Scheme will harm the population. It does establish that the application evidence is not presently sufficient for the ExA to complete its assessment without further information.

BEPS therefore submits that the breeding-population evidence must be treated as part of the environmental baseline unless and until competent, current and appropriately licensed evidence demonstrates otherwise.

8.9.2 Defective Applicant baseline

The principal baseline defect is the conflict between the Applicant's statement that no white-clawed crayfish records were returned within two kilometres and the specific River Tas evidence described above.

That conflict is compounded by four further deficiencies:

- the use of an arbitrary radial search distance in a connected catchment;
- reliance upon the absence of walkover signs;
- the absence of direct species survey;
- and the lack of a sufficient catchment-scale impact assessment.

The two-kilometre desk-study search is not the Zone of Influence

A two-kilometre data-search radius may be a useful starting point for obtaining records. It is not a lawful or ecological boundary beyond which effects can be disregarded.

The EIA must assess the likely significant effects of the Scheme throughout the area in which those effects may occur. For an aquatic species, that area is determined by:

- catchment boundaries;
- surface-water flow;
- groundwater movement;
- ditch and culvert connections;
- locations of crossings and discharge points;
- the mobility of sediment and contaminants;
- and the potential movement of animals, disease and invasive species.

The River Tas evidence submission correctly identifies the distinction between a conventional desktop search radius and the actual Zone of Influence. It states that, where construction land drains into a watercourse, the relevant area may extend along the downstream pathway, irrespective of whether the receiving receptor lies outside an arbitrary two-kilometre circle.

The defect is apparent even on the Applicant's own evidence. Chapter 8 records an Environment Agency white-clawed crayfish record approximately six kilometres downstream and historical presence in the wider River Tas catchment. It then accepts that biosecurity, pollution prevention and sediment control are needed to safeguard downstream habitat.

That means the Applicant itself recognises both a protected-species record beyond two kilometres and a pathway by which effects could extend beyond the immediate works. The two-kilometre record search cannot therefore define the ecological assessment boundary.

Absence of walkover signs does not establish absence

The Applicant's field work did not comprise a direct white-clawed crayfish survey. The Aquatic Habitat Assessment was a habitat-led appraisal. No licensed hand search, hand-netting, refuge search, night search, trapping programme or targeted eDNA survey was undertaken to establish presence or absence at the potentially affected reaches.

The assessment nevertheless refers to the absence of field signs.

That evidence carries little weight in determining actual absence. White-clawed crayfish can remain concealed beneath stones, roots, undercut banks, woody debris and other submerged refuges. Their detectability varies with water depth, clarity, flow, season, survey method and population density. Absence of obvious remains, burrows or animals during a general aquatic walkover is not equivalent to a competent species survey.

The Applicant itself accepts that absence of signs during a walkover does not confirm absence. Natural England's standing advice makes the same point more generally: absence of a record may simply indicate absence of survey data. It identifies direct survey methods including hand searching, hand-netting, night searching, licensed refuge trapping and eDNA.

The Applicant's conclusion therefore relies upon a form of evidence that its own appendix acknowledges cannot establish the proposition for which it is being used.

Surveys were undertaken in unusually dry conditions

The baseline was further compromised by hydrological conditions.

Appendix 8.9 accepts that its inspections took place during unusually dry conditions, with many smaller drainage features dry or only partly wet. It states that observed wetted extent, depth and in-channel habitat availability may under-represent typical conditions, especially in ephemeral headwaters and field ditches. The Rule 6 letter records those admissions and the September–October 2025 survey dates.

Those limitations are directly relevant to crayfish assessment.

A dry ditch may not provide permanent occupied habitat, but during wetter periods it may:

- connect occupied and potentially occupied reaches;
- convey sediment and pollutants;
- provide seasonal refuge or dispersal habitat;
- connect ponds, tributaries and the main river;
- or form part of the pathway by which disease or invasive organisms are transported.

The problem is therefore not limited to whether crayfish were visible in a dry feature. The dry conditions obscured the hydrological connections needed to determine the extent of the Scheme's impact pathways.

An assessment undertaken in dry conditions should have been supplemented by wet-season connectivity work before conclusions were reached. The Applicant has instead relied on acknowledged under-representation of the watercourse network while characterising residual effects as negligible or non-significant.

The Scoping Opinion had already required attention to the species

The omission is particularly serious because the Applicant was put on express notice at scoping.

The Environment Agency's scoping response stated that its records showed white-clawed crayfish on the River Tas and that the species had not been considered in the Scoping Report. It identified a risk of harm to a protected species and requested a commitment to survey at relevant locations once the watercourse works were known.

The Environment Agency also disagreed with scoping out the water environment and associated receptors, including white-clawed crayfish. It identified the River Tas as a chalk-stream priority habitat and required the effects of watercourse and haul-road crossings to be assessed.

By the time of the DCO application, the Applicant knew that the Scheme would require multiple cable and access interactions with watercourses and that HDD would be the default technique for many cable crossings. The works were therefore sufficiently developed to identify locations requiring species survey or, at minimum, to define precautionary survey zones.

The application does not contain the direct survey commitment sought by the Environment Agency translated into completed survey evidence.

The baseline omits known or readily obtainable evidence

The River Tas submission identifies several sources that, on its account, contradicted the no-record conclusion:

- the Environment Agency's confirmation of the 2020 specimen;
- Norfolk Rivers Trust surveys from 2020, 2021 and 2022;
- the Norfolk Crayfish Group's 2020 conservation summary;
- Norfolk Rivers Internal Drainage Board material;
- local information supplied to the Applicant;
- and the Planning Inspectorate's Scoping Opinion recording Environment Agency knowledge of the species on the River Tas.

The point does not depend on every one of those sources being independently conclusive. Collectively they provided more than sufficient reason to investigate.

A competent baseline should reconcile conflicting information. It should not state only that one search returned no records while omitting credible evidence supplied through consultation and other recognised sources.

No sufficient catchment-scale assessment

The Applicant has also failed to translate the known River Tas context into a catchment-scale impact assessment.

The Aquatic Habitat Assessment recognises hydrological connectivity when inferring likely fish and invertebrate assemblages. It identifies sediment release, turbidity, accidental pollution, changes to drainage and flow, and bank or barrier effects as relevant construction pathways. However, it does not model or map how those effects would move through the connected Tas system.

The assessment does not provide:

- a definitive map of all land draining towards occupied or potentially occupied reaches;
- a wet-season map of active ditch and tributary connections;
- the final location and method of every cable and access crossing;
- identification of every HDD launch and reception area;
- pollutant and sediment travel pathways;
- groundwater–surface-water interaction at sensitive crossings;
- the likely deposition points for mobilised sediment;
- or cumulative assessment of multiple works affecting the same connected system.

The River Tas evidence submission identifies the same deficiencies, including the absence of definitive species surveys, pollutant-pathway modelling, population data, cumulative assessment and species-specific mitigation.

The baseline defect therefore extends beyond a missing dot on a records map. It affects the identification of the receptor, the geographical scope of assessment, the magnitude of effects and the design of mitigation.

The Applicant's present conclusion is premature

Natural England's standing advice says that survey should be sought where historical or distribution evidence suggests presence and that the developer should submit information with the application explaining how harm will be avoided or mitigated.

Here, the evidence indicates:

- a repeatedly surveyed breeding population;
- an Environment Agency record elsewhere in the connected River Tas system;
- a statutory scoping request for survey commitment;
- an application baseline developed under unusually dry conditions;
- no direct species survey;

- and an ExA request for further information.

In those circumstances, a conclusion of negligible or non-significant effect cannot safely be maintained until the evidence has been corrected and the assessment repeated.

8.9.3 Risk pathways

White-clawed crayfish are vulnerable not only to direct excavation of occupied habitat but to changes transmitted through the water environment. The absence of works at the precise Saxlingham Thorpe survey location does not remove risk where Scheme activities occur within the connected catchment.

Natural England identifies the principal development threats as introduction of non-native crayfish, spread of disease through poor biosecurity, habitat loss or modification, obstruction of movement, and reductions in water quality or quantity through altered flow, increased siltation, reduced oxygenation or pollution.

Each of those pathways is relevant to East Pye Solar.

Sedimentation

Construction of a dispersed solar NSIP requires extensive soil disturbance. Relevant activities include:

- cable trenching;
- HDD compounds and pit excavation;
- new and upgraded access tracks;
- highway and visibility works;
- temporary haul roads;
- piling and foundation works;
- drainage construction;
- stockpiling;
- vegetation clearance;
- and repeated HGV movement.

Fine sediment can be mobilised from disturbed ground and transported through field drains, ditches, tributaries and groundwater-fed channels into the River Tas system.

For crayfish, the relevant effect is not simply temporary visual turbidity. Deposited fine sediment may:

- fill spaces beneath cobbles and woody material used as refuge;
- reduce habitat complexity;
- alter the bed substrate;
- affect prey communities;
- increase oxygen demand;

- and compound existing water-quality stress.

Natural England's standing advice expressly identifies increased siltation and decreased oxygenation as threats and recommends reducing the amount of sediment released as a core mitigation measure.

The Applicant's own aquatic assessment recognises sediment release and increased turbidity as construction risks. The relevant question is therefore not whether the pathway exists, but whether it has been quantified and controlled for every part of the connected catchment.

Generic statements that good-practice silt controls will be used do not establish:

- the sediment yield from each works area;
- the performance of controls during intense rainfall;
- the consequence of simultaneous works;
- the route taken through seasonal ditches;
- or the sensitivity of occupied and potential crayfish habitat downstream.

Chemical pollution

Potential chemical pathways include:

- fuel and hydraulic-fluid spills;
- oils and lubricants;
- concrete or cementitious washout;
- contaminated soil;
- cleaning chemicals;
- drainage from compounds;
- drilling fluids;
- firewater or contaminated runoff from electrical infrastructure;
- and accidental damage to existing utilities or drainage systems.

The River Tas evidence submission records existing pressures upon the population, including diffuse agricultural pollution, persistent chemicals, water-industry discharges and low dissolved oxygen. It characterises the Saxlingham Thorpe population as small or isolated and therefore vulnerable to additional stress.

A population already exposed to poor water quality may have reduced resilience. The consequence of an additional pollution event must therefore be assessed against the existing condition of the waterbody, not against a hypothetical pristine baseline.

The Scheme's scale increases the importance of prevention. Numerous work fronts, vehicles, compounds and crossings create repeated opportunities for failure. Even where the probability of an incident at one location is low, the cumulative probability across the whole construction programme may be materially greater.

The Applicant has not produced a white-clawed crayfish-specific incident model or emergency plan explaining how a pollution event entering the Tas system would be detected, contained and remediated before reaching occupied habitat.

Crayfish plague, signal crayfish and biosecurity

Disease is one of the most serious pathways because its effects may be rapid and irreversible.

The River Tas evidence records Environment Agency information that signal crayfish are established within the wider Yare catchment and have been identified around the River Tas–River Yare junction. It also records more recent reports of signal crayfish elsewhere within the wider system.

The presence of signal crayfish in the wider catchment makes strict biosecurity essential. Machinery, boots, nets, pumps, hoses, vehicles and other equipment moving between watercourses may carry water, mud, animals or disease organisms.

Natural England's standing advice expressly identifies spread of disease through poor biosecurity as a development threat and requires use of the Check, Clean, Dry protocol. It also identifies the introduction of non-native crayfish through new hydrological connections as a risk.

The Applicant's management documents must therefore do more than contain a generic invasive-species clause. A crayfish-specific biosecurity plan should identify:

- every watercourse at which personnel, machinery or equipment may enter;
- the sequence in which catchments and reaches will be worked;
- designated cleaning and disinfection areas;
- the treatment and disposal of wash water;
- drying periods;
- restrictions on movement of pumps, hoses and plant between watercourses;
- staff training;
- ecological supervision;
- procedures following suspected signal-crayfish discovery;
- and immediate stop-work and notification requirements.

Particular care is required where equipment is brought from outside the Scheme or used by contractors on other river projects.

The risk is not resolved by saying that no crayfish were observed during the Applicant's walkover. The biosecurity requirement arises from known presence within the connected catchment and from the potentially catastrophic consequence of disease introduction.

Altered flows and hydrological conditions

White-clawed crayfish require water of sufficient quality, quantity and oxygenation, together with stable submerged refuges. Changes to flow may affect water depth, velocity, wetted habitat, oxygen levels, temperature, substrate stability and the availability of refuges.

Scheme activities capable of altering those conditions include:

- soil compaction;
- panel and track drainage;
- cable trenches acting as preferential pathways;
- temporary dewatering;
- interception of shallow groundwater;
- new culverts or crossings;
- drainage outfalls;
- changes to field drains;
- and altered infiltration around substations and compounds.

Natural England identifies changes to water flow, water quantity, siltation and oxygenation as development threats to white-clawed crayfish.

The Environment Agency had already objected at scoping to the Applicant's incomplete understanding of groundwater–surface-water connectivity. It required hydrogeological risk assessment for HDD and other deep works potentially affecting shallow groundwater.

A hydrological change does not have to dry the whole river to be ecologically significant. Localised reduction in water depth may expose refuges, reduce connectivity or increase temperature and oxygen stress. Increased peak runoff may mobilise sediment, destabilise substrate or displace animals. Changes may also occur seasonally and therefore be missed by annual-average modelling.

The assessment must address these biological consequences rather than treating flow solely as a flood-risk or drainage-design issue.

HDD and cable crossings

The Applicant proposes trenchless methods, principally HDD, as the default for many main-river and ordinary-watercourse cable crossings, while retaining the possibility that other techniques may be used for some ordinary watercourses and ditches.

HDD may avoid open excavation of a riverbed, but it is not ecologically risk-free.

Relevant risks include:

- release of drilling fluid through a frac-out or inadvertent return;
- excavation and drainage effects at launch and reception pits;

- interception of groundwater;
- vibration;
- contamination from plant or stored materials;
- sediment runoff from compounds;
- and creation of preferential subsurface pathways.

The submitted River Tas evidence specifically identifies potential bentonite use and the hydrological connection between solar fields, substations, ditches, drains, culverts, streams and groundwater runoff.

Where the crossing passes beneath or near chalk-stream habitat, the hydrogeology requires particular care. Fissured and permeable chalk can provide pathways different from those assumed in a simple surface-drainage model. An inadvertent drilling-fluid return may emerge at the channel, in the hyporheic zone, through a spring or at another point away from the bore alignment.

The assessment should therefore specify for every Tas-connected HDD:

- final entry and exit locations;
- bore depth and profile;
- geology and groundwater level;
- estimated fracture risk;
- drilling-fluid type and volume;
- monitoring pressures;
- surface and subsurface monitoring points;
- containment equipment;
- emergency shutdown criteria;
- access for response;
- and measures for removing material without causing further habitat damage.

A generic frac-out plan does not demonstrate that a particular crossing is acceptable where the species baseline and subsurface pathway remain uncertain.

Open-cut crossings of smaller ditches may create still greater direct risks through bed disturbance, sediment release, flow interruption and movement of contaminated equipment. The Applicant should not assume that an ordinary or seasonally dry ditch is ecologically insignificant where it connects to the River Tas during wetter conditions.

Construction access and culverts

Construction access may affect crayfish habitat even where no electrical cable crosses the watercourse.

Temporary and permanent access works may require:

- culverts;
- temporary bridges;

- bank grading;
- bed protection;
- vegetation removal;
- drainage installation;
- and repeated HGV passage.

Natural England identifies obstruction of movement, including through new culverts, as a threat to white-clawed crayfish. Culverts may also alter light, substrate, velocity and sediment deposition and can create barriers or unsuitable uniform habitat.

Heavy vehicles increase the risks of bank collapse, compaction, fuel spills and sediment mobilisation. Access construction may also bring equipment into direct contact with wet channels, increasing disease-transfer risk.

All Tas-connected access crossings should therefore be fixed and assessed before consent. Clear-span structures should be preferred where a crossing cannot be avoided, with supports and working areas outside the channel and riparian protection zone.

Groundwater and chalk-fissure pathways

The Applicant's early water-environment evidence did not adequately characterise groundwater–surface-water relationships. The Environment Agency expressly identified failures to recognise evidence of connectivity and required hydrogeological risk assessment for HDD and deep foundation works.

This matters because the River Tas is a groundwater-influenced chalk-stream system. Effects may reach aquatic habitat through:

- direct surface runoff;
- shallow groundwater;
- springs and seepages;
- fissures in chalk;
- permeable superficial deposits;
- and cable trenches intersecting or redirecting subsurface flow.

The conventional assumption that soil, a nominal buffer or distance from the bank will contain a pollutant may be unsafe where subsurface pathways exist.

A robust assessment should provide a catchment conceptual model linking:

- the chalk and superficial geology;
- groundwater bodies;
- springs and seepages;
- field drains and ditches;
- the River Tas and Hempnall Beck;
- the Saxlingham Thorpe population;

- and every relevant cable, substation, compound and access location.

Without that model, the Applicant cannot demonstrate that sediment, pollution, altered flow or drilling fluid will remain outside occupied or potentially occupied crayfish habitat.

8.9.4 Legal and policy consequences

The white-clawed crayfish issue engages several overlapping legal and policy duties. Those duties must be stated accurately.

Protected-species status

White-clawed crayfish are protected under the Wildlife and Countryside Act 1981. Natural England's current standing advice states that intentional taking is an offence and that intentional or reckless possession, transport and sale-related activities are also prohibited. The species' present Schedule 5 protection is therefore not identical to the full killing, injury and habitat protections applying to some other Schedule 5 species. It nevertheless remains a legally protected species, and activities affecting animals or requiring their capture or relocation may require a Natural England licence and Environment Agency permission.

That distinction does not reduce the planning importance of the population.

Natural England advises that developers should submit information with the application showing how harm will be avoided or mitigated. It states that a survey should be requested where historical or distribution evidence suggests presence and that the absence of a record does not establish absence.

Where works may affect white-clawed crayfish, the decision-maker must therefore have enough information to determine:

- whether the species is present;
- which works may affect it;
- whether avoidance is possible;
- what mitigation or compensation is required;
- whether capture or relocation may be necessary;
- and whether there is a realistic and lawful licensing route.

Natural England's guidance states that it will confirm whether a white-clawed crayfish licence is needed for an NSIP. It also requires a mitigation plan where a licence is necessary.

The Applicant cannot defer the basic presence, impact and avoidance questions to a later licence application. A licence is not a substitute for an adequate EIA or for designing the Scheme to avoid the protected population.

Species of principal importance

White-clawed crayfish are also included on the list of species of principal importance in England under section 41 of the Natural Environment and Rural Communities Act 2006. Natural England's standing advice states expressly that their conservation must be considered as part of the planning decision.

The section 41 list exists to identify priority species of conservation concern and to inform public bodies' biodiversity responsibilities.

This means the planning assessment is not confined to avoiding the specific criminal offences created by the Wildlife and Countryside Act. It must consider the conservation of the population and the ecological network supporting it.

For East Pye, that requires attention to:

- population viability;
- breeding success;
- maintenance of occupied and potential habitat;
- water quality and flow;
- catchment connectivity;
- disease exclusion;
- recovery opportunities;
- and avoidance of further fragmentation or decline.

A conclusion that no individual will intentionally be taken does not answer those broader conservation obligations.

Water Framework Directive no-deterioration obligations

The River Tas system is also subject to the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

The environmental objectives include preventing deterioration of the status of surface-water bodies. The Planning Inspectorate's current NSIP advice explains that the WFD protects surface water and groundwater, requires the Secretary of State to consider implications for WFD objectives and requires the ExA to ensure that sufficient information is available for that decision.

The WFD assessment must be comprehensive and identify waterbodies directly or indirectly affected, their baseline characteristics, the methods used to quantify impacts, the risk of deterioration, and the mitigation required and how it will be secured.

White-clawed crayfish are not necessarily a separate formal classification element in every River Tas WFD assessment. However, the pathways capable of affecting the population are directly relevant to WFD quality elements, including:

- aquatic invertebrate communities;

- fish;
- physicochemical conditions;
- specific pollutants;
- hydromorphology;
- flow;
- and habitat continuity.

The loss or deterioration of crayfish habitat could therefore coincide with, evidence or result from deterioration in one or more WFD elements.

Planning Inspectorate guidance states that deterioration occurs where the status of at least one quality element falls by one class, even if the waterbody's overall classification does not change. Where an element is already in the lowest class, any further deterioration is treated as deterioration. A project risking deterioration cannot be authorised unless the applicable derogation requirements are met.

The Applicant must therefore demonstrate, on a comprehensive evidence base, that:

- sedimentation will not worsen biological or hydromorphological elements;
- pollution will not worsen chemical or physicochemical status;
- flow alteration will not degrade habitat or ecological function;
- crossings will not create barriers or morphological deterioration;
- and cumulative Scheme effects will not prevent achievement of the waterbody's objectives.

The existence of a breeding priority-species population materially increases the need for that assessment to be precautionary and receptor-specific.

Precautionary assessment

The precautionary requirement arises from the combination of credible presence evidence, potentially severe consequences and incomplete baseline information.

Natural England's standing advice does not permit absence to be inferred merely because a data search returned no record. It requires survey where distribution or historical information suggests presence.

The evidence before the Examination includes:

- Environment Agency knowledge of white-clawed crayfish on the River Tas recorded at scoping;
- a submitted chronology of repeat Norfolk Rivers Trust surveys;
- juvenile evidence indicating breeding;
- an Applicant-acknowledged downstream record and wider catchment history;
- unusually dry survey conditions;
- no direct Applicant species survey;
- and an ExA request for further information and survey proposals.

That is not an evidential position in which absence can safely be assumed.

The Applicant must assess a reasonable worst case until adequate survey demonstrates the distribution and status of the species. The reasonable worst case is not that crayfish occur in every ditch within the Order Limits. It is that occupied or functionally important habitat may occur within the hydrologically connected Tas system and that Scheme effects may reach it through surface-water or groundwater pathways.

Avoidance must precede mitigation

Natural England's advice identifies avoidance as the first response. It states that development should, where possible, be redesigned to avoid work in or near the relevant waterbody. Only where avoidance is not possible should mitigation or, as a last resort, compensation be considered.

For East Pye, avoidance should include:

- rerouting cables away from occupied and potential crayfish reaches;
- avoiding haul-road and construction-access crossings of the River Tas and its connected tributaries;
- excluding open-cut working from hydrologically connected channels;
- keeping HDD pits, compounds and storage areas outside species-specific riparian and hydrogeological protection zones;
- avoiding new culverts;
- retaining natural banks, beds and riparian vegetation;
- and avoiding works where chalk-fissure or groundwater pathways create an unacceptable frac-out or pollution risk.

Mitigation cannot be relied upon before the Applicant demonstrates that the relevant works are genuinely unavoidable.

Nor can translocation be treated as a routine solution. Natural England describes movement of crayfish as a last-resort compensation measure and emphasises the need to minimise disease spread. Moving animals may itself require capture, handling, licensing and identification of a suitable disease-free receptor site.

Irreversible harm

The Saxlingham Thorpe evidence describes a small and isolated breeding population within a catchment where signal crayfish and other existing pressures are already present.

That context increases the potential severity of harm. A major pollution incident, persistent sediment deposition or disease introduction could cause population collapse that would not be repaired by later habitat planting or biodiversity-unit delivery. Monitoring after construction would record the loss; it would not reverse it.

The mitigation hierarchy must therefore be applied before works are authorised, with a strong presumption against activities capable of introducing disease, drilling fluid, significant sediment or uncontrolled hydrological change into the connected catchment.

Required outcome

BEPS submits that the current Environmental Statement does not provide a sufficient evidential basis for concluding that effects upon white-clawed crayfish will be negligible or non-significant.

Before the Examination can reach a lawful and reliable conclusion, the Applicant should be required to provide:

- verification and full incorporation of the Norfolk Rivers Trust and Environment Agency evidence;
- direct, appropriately licensed survey between July and September at all potentially affected and hydrologically connected reaches;
- targeted eDNA and physical survey using competent white-clawed crayfish ecologists;
- wet-season mapping of ditch, tributary and groundwater connectivity;
- a catchment-scale distribution and impact assessment;
- a definitive plan of every cable, HDD, access, culvert and drainage interaction within the River Tas system;
- a hydrogeological risk assessment for every relevant HDD and deep excavation;
- sediment and pollutant-pathway modelling extending to occupied and potential habitat;
- a white-clawed crayfish-specific biosecurity plan;
- a drilling-fluid breakout and emergency pollution plan;
- WFD assessment of the corrected baseline and all relevant biological, chemical and hydromorphological elements;
- and fixed avoidance, buffer, monitoring and stop-work measures secured through the DCO and final management plans.

Where survey confirms occupied or functionally connected habitat, works capable of causing material sedimentation, pollution, disease transfer, obstruction or hydrological alteration should be removed or rerouted unless the Applicant demonstrates, on species-specific evidence, that harm can be avoided.

The ExA has already recognised that further evidence is required. Until that evidence is supplied, assessed and incorporated into a revised ecological and WFD assessment, the white-clawed crayfish issue remains unresolved.

BEPS therefore submits that the present baseline is materially defective and that the Scheme has not demonstrated compliance with protected-species requirements, the conservation duties associated with a section 41 priority species, the ecological mitigation hierarchy or the WFD no-deterioration objective. Development consent should not authorise works within the River Tas catchment that may cause irreversible harm while the distribution, pathways and mitigation remain uncertain.

8.10 Botany, lowland meadow, roadside verges and field margins

The botanical effects of East Pye Solar require assessment as a distinct ecological impact rather than merely as a deficiency in the Applicant's baseline. The Scheme would not affect only the interiors of intensively cultivated fields. Its access works, visibility splays, haul routes, cable corridors, compounds and construction movements would be concentrated along roadside verges, hedgerow banks, ditch edges, grassland strips and field margins. Those are the parts of an agricultural landscape most likely to have escaped repeated cultivation and chemical improvement and, consequently, the places most capable of retaining locally important plant assemblages.

The Applicant's own habitat evidence demonstrates that these habitats are widespread. Its surveys record species-rich native hedgerows, other neutral grassland, modified grassland margins, wet and dry ditches, ponds, scrub, floodplain grazing marsh, lowland fen and arable margins across the Scheme. Some margins are several metres wide and are expressly described as floristically diverse. The application mapping also identifies lowland meadow, arable field margin and other grassland priority habitats within and around the Order Limits.

That evidence is important, but it is not a substitute for a proper botanical survey. The Applicant's extended habitat survey expressly disclaims being a full botanical survey. Records of dominant or notable plants were incidental to broad UK Habitat Classification mapping, and the survey also disclaims providing complete mapping of invasive plants or a definitive protected-species baseline. BEPS' evidence from a botanist described as holding Level 6 botanical expertise identifies the need for a full-season survey because important and potentially rare plant assemblages may occur in the very verges, field margins, ditch edges and semi-natural strips threatened by the development.

Norfolk Wildlife Trust reaches substantially the same conclusion. Its Relevant Representation describes the East Pye landscape as containing miles of species-rich hedgerows, semi-natural road verges, Roadside Nature Reserves and rare threatened flora dispersed through a landscape that is 'dense with nature'. It states that the application lacks a comprehensive assessment of roadside verge impacts and strongly recommends botanical surveys in all areas potentially affected by transport, haul roads and road widening.

The Applicant therefore cannot treat botanical effects as minor simply because most of the Scheme is mapped broadly as arable land or modified grassland. The ecological value in this landscape is concentrated disproportionately within its edges, boundaries, surviving meadow fragments and less intensively managed linear habitats. Those features are also the locations through which much of the Scheme's engineering and construction activity is proposed.

8.10.1 Rare and locally important plant assemblages

BEPS relies upon evidence from a Level 6 botanist that the East Pye area has the potential to support important and potentially rare botanical assemblages, particularly within field margins, roadside verges, ditch edges and other semi-natural strips. The expert recommendation is for a proper full-season botanical survey rather than reliance on incidental plant recording undertaken while assigning broad UKHab categories. That distinction is fundamental.

A habitat may be classified as modified grassland, other neutral grassland or an arable margin without the survey having established its complete floristic composition. Broad habitat classification is useful for mapping land cover and calculating habitat units, but it does not necessarily identify:

- plants visible only during a limited flowering period;
- species whose identification depends upon flowers, fruits or mature vegetative features;
- annual arable plants whose appearance varies according to cultivation;
- small populations occurring in hedge bottoms, banks or disturbed ground;
- assemblages whose importance derives from the combination of species present rather than the rarity of one plant;
- or species surviving in a narrow strip that may not influence the classification assigned to the wider habitat polygon.

The Applicant's own disclaimer is therefore material. If the survey was not designed to be a full botanical inventory, the absence of a recorded rare plant cannot properly be treated as evidence that no rare or locally important assemblage is present.

The potential importance of these habitats is reinforced by the ecological and historical character of the Norfolk Claylands. Norfolk Wildlife Trust's Restoring the Claylands, written by Professor Tom Williamson of the University of East Anglia, describes an historically intricate landscape of small fields, pasture, hedges, trees, commons, greens and wide roadside corridors. It explains that many of the landscape's roads, woods and field boundaries have medieval origins; that small fields were commonly enclosed by hedges planted on banks accompanied by ditches and trees; and that historic land use created not only varied habitats but extensive connections between them.

The same evidence describes the severe simplification of that landscape during the twentieth century. Hedges were removed, fields amalgamated, pastures and meadows ploughed, ponds lost and mature trees reduced. Permanent grassland was also lost through post-war agricultural intensification. The surviving grassland strips, pockets, field margins and roadside habitats are therefore remnants of a much more extensive ecological network rather than interchangeable pieces of low-value vegetation. Norfolk Wildlife Trust explains that even narrow grassland strips can be valuable and that connecting existing grasslands by unploughed field margins significantly multiplies their ecological benefit.

This historical context matters to the evaluation of significance. A narrow verge or meadow fragment may appear small when assessed in isolation, but its scarcity is partly the product of extensive historic loss. Remaining examples can hold plant communities, seed banks and ecological relationships that have disappeared from the surrounding cultivated land. Their importance cannot be assessed simply by measuring their area.

Norfolk Wildlife Trust's consultation evidence similarly identifies the Claylands as a focus for the conservation and reconnection of hedges, woods, meadows and ponds, including a 'suite of localised meadow flora'. Its objective is to restore connectivity between those features rather than treat them as isolated habitat parcels.

The Applicant's own survey descriptions support the conclusion that potentially valuable edge habitats are widespread:

- Sub-Site 1A is bounded by two-to-three-metre grassland margins, species-rich native hedgerows with trees, veteran-feature oaks, a ditch and a pond.
- Sub-Site 3A contains three-to-four-metre margins expressly described as floristically diverse other neutral grassland, together with a pond and scrub.
- Sub-Site 5A is surrounded by margins of up to four metres and mostly continuous unmanaged species-rich native hedgerows, associated ditches, a wet ditch, pond and woodland.
- Sub-Site 5B has grassland margins, species-rich hedgerows and ditches.
- Site 6 has field margins ranging up to five metres, with species-rich native hedgerows.
- Site 7 includes other neutral grassland margins, floodplain grazing marsh, lowland fen and reedbed habitat associated with Fritton Grange Meadows.
- Site 10 includes tussocky grass margins, temporary grass and clover leys, neutral grassland, hedgerows and ditches.

Other application mapping records arable margins sown with wildflowers or pollen and nectar mixes. Such features are not ecologically equivalent to the cropped field interiors surrounding them. They may have been deliberately established or retained to provide flowering resources, cover and ecological connectivity.

The Applicant also identifies arable field margins as priority habitat present within the Scheme. Its own desk study records Roadside Nature Reserves as designated road verges with notable botanical diversity. These admissions are inconsistent with any general assumption that the verges and margins affected by engineering works are of negligible value.

The correct survey question is not merely whether a broad habitat category has been mapped. It is whether the species composition, condition, seasonal variation and ecological relationships of each potentially affected verge, margin, meadow, ditch bank and hedgerow bank have been established with sufficient confidence to inform avoidance.

That work should have included appropriately timed botanical surveys across the growing season, with repeat visits where required; species lists and abundance information; identification of locally or nationally notable species and assemblages; condition assessment of lowland meadow and other grassland priority habitat; identification of important seed-bank areas; and integration with hedgerow, ditch and invertebrate evidence. Surveys should have covered not only land beneath the proposed arrays but the complete construction footprint, including every access, visibility splay, passing place, highway intervention, cable working width, HDD compound, haul road and storage area.

Until that work is undertaken, the Applicant cannot reliably distinguish between vegetation that is genuinely of limited botanical value and habitat which has been undervalued because it was visited at the wrong season, assessed only to broad habitat level or excluded from the principal survey area.

8.10.2 Road widening and highway works

The botanical risk is particularly acute along the construction and abnormal-load routes.

South Norfolk Council's targeted-consultation response records that additional land was added to the Scheme for highway visibility splays and to accommodate abnormal indivisible loads, with potential highway works, removal of street furniture and vegetation removal. The targeted-consultation material also identified boundary enlargements and vegetation removal at Fairstead Lane and the A140, further vegetation removal associated with an internal access between Sites 7B and 7C, and comparable interventions at Broaden Lane, Church Hill and other junctions.

The final extent of intervention remains important because the Applicant's transport documents retain flexibility for passing places, visibility improvements, local highway alterations and temporary management along constrained rural roads. The CTMP also identifies Parker's Lane and numerous other rural roads as potentially subject to closures or restrictions while acknowledging that the precise affected sections and distances remain subject to detailed design.

That degree of flexibility prevents a reliable botanical assessment unless the maximum potential footprint of the highway works has itself been surveyed.

Verge stripping

Verge stripping would remove not only visible vegetation but also the upper soil horizons and seed bank upon which recovery depends. Where a species-rich verge has developed over decades, removing the turf and soil can eliminate both established plants and dormant propagules. Reinstatement using generic topsoil or a standard seed mix would not recreate the previous assemblage.

The effect can be permanent even if the engineering work is described as temporary. A verge reconstructed with compacted subsoil, imported material or nutrient-rich topsoil may support coarse grasses, ruderal vegetation or invasive plants rather than the original community. Changes in soil depth and chemistry may make restoration of the former flora impossible within the construction period or even the operational life of the Scheme.

Visibility splays

Visibility splays can require more than a single episode of cutting. They may create a continuing requirement to suppress regrowth for the operational use of an access. Their impacts may include removal or repeated reduction of verge vegetation, hedgerows, scrub and young trees, together with the loss of shaded hedge-bottom or bank conditions.

The ecological effect is not confined to the triangular area shown on a highway drawing. Opening a splay can expose previously sheltered vegetation to increased sunlight, wind, dust and road spray. It can alter the humid microclimate at the base of a hedge and interrupt the continuity between verge, bank, hedge and ditch.

Where a splay is said to be temporary, the application must establish when it will cease to be needed and how its former vegetation will be restored. Where the access is retained for operation, panel replacement or decommissioning, the effect may continue for decades.

Hedgerow and bank removal

Many Claylands hedges are established on historic banks with associated ditches. Their botanical interest may lie not only in woody hedge species but in the ground flora of the bank, base and adjoining verge. Removal of a short hedge section can therefore affect several habitat components simultaneously.

Norfolk Wildlife Trust records that the Environmental Statement identifies partial removal of 32 hedgerows, removal of five trees and temporary removal of hedge sections for cable installation and access. It requests confirmation that no ancient or species-rich hedgerows will be removed, even temporarily, and seeks detailed restoration and monitoring for any removal.

The repeated creation of access gaps across a dispersed Scheme cannot be treated as one small effect. Each gap may remove woody vegetation, bank flora and soil; interrupt a linear habitat; expose adjacent vegetation to edge effects; and create an area subject to repeated vehicle movement. The cumulative botanical effect must be assessed across all sites, accesses, haul routes and cable crossings.

Soil disturbance and mixing

Highway construction commonly involves excavation, grading, temporary storage and replacement of soil. Unless the existing soil profile is carefully characterised and separately handled, valuable surface soil and seed banks may be mixed with subsoil or imported aggregates.

This can alter:

- soil fertility and pH;
- soil depth and moisture retention;
- the distribution of dormant seeds;
- mycorrhizal and microbial communities;
- and the suitability of the substrate for the former vegetation.

Species-rich grassland and long-established verge communities often depend upon relatively low soil fertility. Nutrient enrichment from imported topsoil, construction mud, straw, fertilisers or inappropriate reinstatement material may favour a small number of vigorous grasses and weeds, displacing less competitive plants.

The application has not demonstrated, for every affected verge, that soils will be stripped, stored and replaced in a manner appropriate to that particular botanical community.

Compaction

Norfolk Wildlife Trust expressly identifies soil compaction from repeated vehicle movements as a threat to roadside verge habitat, including damage from HGVs and abnormal loads overrunning the carriageway edge. It warns that direct removal is not necessary for ecological degradation to occur.

Compaction reduces pore space, impedes root growth, changes infiltration and aeration, and can alter the balance between species adapted to drier, wetter or less disturbed conditions. Damage may extend beyond the visible wheel rut because heavy vehicle loading affects the soil profile beneath and beside the point of contact.

This pathway is particularly credible on narrow lanes where large vehicles may need to mount or overrun soft verges, pass opposing traffic, negotiate bends or wait for escorts. Temporary protective matting does not necessarily prevent deeper compaction, particularly under repeated HGV loading or in wet conditions.

The Applicant must therefore identify the maximum vehicle tracking envelope, not merely the nominal carriageway width, and survey all verge habitat within that envelope.

Drainage alteration

Verges, hedge banks and ditches form an integrated drainage system. Road widening, culvert works, new kerbing, hardstanding, grips, drainage channels and changes in road camber may redirect water or alter seasonal soil moisture.

This matters botanically because the distribution of plants along a rural verge may reflect fine-scale hydrological variation. A short section may support damp grassland, ditch-edge or seepage vegetation, while an adjoining raised bank supports a drier community. Altering the drainage regime can damage a plant assemblage without physically removing it.

The same applies to lowland meadow habitat. Meadows may depend upon a particular combination of groundwater, surface-water movement, periodic saturation and low nutrient inputs. Drainage intended to protect an access or working area can dry one part of the habitat while concentrating runoff, sediment or pollutants in another.

Construction access and indirect disturbance

Roadside habitats may also be affected by:

- storage of materials and spoil;
- placement of traffic signs, barriers and temporary lighting;
- installation of fencing;
- refuelling or plant maintenance;
- deposition of dust and mud;
- accidental fuel or hydraulic-fluid releases;
- road-salt or contaminated runoff;

- repeated cutting to maintain clearance;
- and colonisation by invasive plants carried on machinery.

These effects can extend outside the permanently acquired highway footprint. A narrow construction boundary on a plan does not demonstrate that adjoining vegetation will remain unaffected.

Norfolk Wildlife Trust's conclusion is therefore important. It states that many rare plants persist on road verges precisely because those areas have escaped agricultural improvement and that temporary works can cause disproportionate ecological damage. It asks the Examination to establish the full extent of verge loss, compaction, disturbance and vegetation clearance and to secure avoidance, protection, reinstatement and monitoring through the DCO.

BEPS agrees. A commitment to use existing accesses 'where practicable', retain vegetation 'wherever possible' or determine final works after contractor appointment is not sufficient. The full maximum highway footprint must be surveyed and assessed before the works are authorised.

8.10.3 Roadside Nature Reserves and Parker's Lane

Roadside Nature Reserves require separate consideration because they are not ordinary pieces of highway verge. Their designation records recognised local ecological importance, often based upon botanical interest that has survived within the road corridor despite extensive loss from the surrounding countryside.

The Applicant's own desk study includes Roadside Nature Reserves within its non-statutory designated-sites baseline and describes individual reserves as road verges with notable botanical diversity. Norfolk Wildlife Trust confirms that the Order Limits include or adjoin several Roadside Nature Reserves, expressly including Bussey's Loke, Market Lane and Parker's Lane.

The fact that these are non-statutory designations does not deprive them of planning significance. Their designation is evidence that a competent conservation body or local authority has identified ecological value warranting recognition and management. The decision-maker must consider both direct effects upon the designated verge and indirect effects upon the conditions which sustain it.

The Applicant's position that no activities other than limited vegetation management are proposed within certain Roadside Nature Reserve boundaries does not answer the issue. Norfolk Wildlife Trust expressly states that the ES acknowledges potential temporary reductions to overgrown hedgerows and tree canopies beside access roads but does not comprehensively assess verge impacts throughout the transport network. Nor does a commitment confined to the mapped RNR boundary address:

- HGV or abnormal-load overrun;
- compaction beside the carriageway;
- temporary signs, barriers or lighting;
- changes to drainage;
- removal of adjacent hedge sections;
- dust and sediment deposition;

- altered verge management;
- works immediately outside the designation;
- or effects upon an adjoining meadow or connected habitat.

Parker's Lane

Parker's Lane is specifically identified by Norfolk Wildlife Trust as one of the Roadside Nature Reserves included within or adjoining the Order Limits. The transport evidence also places Parker's Lane within the Scheme's wider access and traffic-management network.

The Wood Green representation is important in this context because it identifies the risk as direct and site-specific rather than merely a general concern about rural verges. It raises the relationship between the designated roadside habitat, the associated lowland meadow resource and the works that may be required to make the construction and cable strategy function.

That relationship must be assessed as an ecological unit. A roadside verge may provide the surviving connection between a meadow, hedgerow, ditch and nearby woodland or grassland. Damage to the verge can therefore isolate the meadow or reduce its effective size even where the principal meadow polygon is not directly excavated.

The Applicant should not be permitted to draw a narrow line around the formal RNR and conclude that everything outside that line is ordinary highway land. The relevant receptor includes:

- the designated verge;
- any supporting bank, ditch and hedgerow;
- adjoining species-rich or lowland meadow vegetation;
- the soil and hydrology sustaining those habitats;
- and the ecological connection to Wood Green and the wider habitat network.

Lowland meadow and historic habitat loss

Lowland meadow is a priority habitat whose value depends upon more than the presence of grass cover. Its significance arises from the plant community, soil conditions, management history and associated invertebrate and animal assemblages.

The historical evidence makes remaining meadow habitat particularly important. Restoring the Claylands records that pasture and grassland once formed a much greater part of the South Norfolk landscape but declined through enclosure, agricultural change and especially post-war ploughing and intensification. The surviving areas are remnants of a formerly connected landscape.

The relevant baseline is therefore not that a small meadow remains among extensive arable fields and can be balanced against a larger area of proposed new grassland. The correct baseline recognises that:

- a substantial proportion of the historic meadow resource has already been lost;
- surviving examples may retain long-established soils and seed banks;

- small and linear remnants may be essential to ecological connectivity;
- the condition and species composition cannot be inferred from aerial mapping;
- and newly sown grassland is not immediately equivalent to an established lowland meadow.

The Applicant's priority-habitat mapping itself identifies lowland meadow among the habitat types occurring through the wider Scheme landscape. That should have prompted a precautionary survey of every meadow and grassland fragment potentially exposed to highway or cable works.

Survey must precede authorisation

The Wood Green and Parker's Lane evidence demonstrates why botanical and hedgerow surveys cannot be deferred until after consent.

Before any highway work, access construction, cable installation, visibility clearance or vegetation removal is authorised in this area, the Applicant should be required to provide:

1. a full botanical survey of the Roadside Nature Reserve and all adjoining verge and meadow habitat;
2. repeat visits at appropriate seasons;
3. a National Vegetation Classification or equivalent detailed community assessment where potentially species-rich or priority grassland is present;
4. a hedgerow survey identifying woody species, ground flora, bank, ditch, age and historical importance;
5. mapping of the precise RNR and lowland meadow boundaries;
6. soil and hydrological assessment;
7. fixed maximum construction and vehicle-tracking envelopes;
8. final visibility-splay and passing-place drawings;
9. and an impact assessment addressing direct loss, compaction, drainage, dust, pollution, fragmentation and management change.

The outcome must inform the design. Survey undertaken only after the DCO has authorised the works would reverse the mitigation hierarchy: it would discover the receptor after the location and principle of the potentially harmful intervention had already been approved.

Where survey identifies species-rich verge, important hedgerow, lowland meadow or an ecologically necessary connection, the work should be removed or rerouted. Later reinstatement should not be accepted as a substitute for avoiding the loss of an established community.

8.10.4 Field margins and cable corridors

The same principle applies to field margins throughout the Scheme. They cannot be treated as spare engineering land simply because their use would avoid trenching through the centre of a crop.

The Applicant's own habitat evidence records field margins throughout the Order Limits. These include modified grassland margins, other neutral grassland, floristically diverse strips, tussocky

grass margins and areas sown with wildflowers or pollen and nectar mixtures. Arable field margin is itself identified as priority habitat present within the Scheme.

The Cable Route Corridor is likely to encounter these features repeatedly because field margins provide apparently convenient linear routes between sites. But engineering convenience is not evidence of ecological acceptability.

Norfolk Wildlife Trust stated during consultation that no detailed habitat mapping had been provided for the Cable Route Corridor. It emphasised that underground cable works can adversely affect biodiversity, that routes must be designed to avoid important habitat, that hedgerow removal should be minimised, and that retained boundaries are important for landscape connectivity.

The Applicant's later assessment must therefore be tested against whether it now provides a route-wide, species-level botanical baseline for the complete cable working area. Mapping the broad habitat crossed by the centre line is insufficient where the actual construction footprint may include:

- one or more cable trenches;
- haul and access tracks;
- working strips;
- topsoil and subsoil storage;
- drainage and pumping;
- jointing bays;
- compounds;
- HDD launch and reception areas;
- security fencing;
- and turning or parking areas for plant.

Each of those elements may extend into a margin that the final cable itself does not occupy.

Botanical assemblages

Field margins may contain plants excluded from the cultivated field by herbicide use, ploughing or crop competition. They may also retain remnants of earlier grassland, hedge-bank or wet-ditch communities. Their flora can vary substantially over short distances according to management, aspect, shading, soil type and moisture.

Trenching can destroy established plants and mix their seed bank through the soil profile. Heavy plant can compact adjoining vegetation. Stockpiling can smother the margin and enrich it with nutrients. Reinstatement can introduce a uniform seed mix unrelated to the previous flora.

The Applicant has not established that the relevant margins are botanically interchangeable or that every affected community can be recreated after construction. Where important assemblages are found, the proper response is route avoidance or a crossing method that retains the habitat and its soils undisturbed.

Invertebrates

Botanically diverse field margins provide flowering resources, foliage, stems, litter and overwintering habitat for invertebrates. Even where a specific invertebrate assemblage has not been fully surveyed, the ecological pathway is evident: reducing plant diversity and structural variation is likely to reduce the range of niches and food resources available.

This function extends beyond the margin itself. Invertebrates emerging or dispersing from grassland, hedgerows, ditches and woodland edges provide prey for birds and bats. Loss or degradation of a narrow margin may therefore affect other receptors without producing a large area of direct habitat loss.

A metric calculation based on the number of hectares temporarily disturbed does not capture those food-web and connectivity functions.

Farmland birds

The Applicant's ecological material recognises that fields, hedgerows and grassland margins provide nesting and foraging opportunities for red- and amber-listed farmland birds, including skylark, turtle dove, corn bunting and reed bunting.

Different species use margins in different ways. They may provide seed, invertebrate prey, nesting cover, shelter or a transition between crop, hedge and ditch. Margins managed through stewardship or pollen-and-nectar prescriptions may have been deliberately created to support those functions.

Construction can affect them through vegetation clearance, repeated disturbance, trenching, lighting, noise, loss of cover and changes in future management. Restoring a strip after the cable is installed does not eliminate the temporary loss during construction, and there is no assurance that the restored strip will regain its previous plant composition or bird use.

The Applicant must therefore assess margins as part of the farmland-bird habitat mosaic, not merely as a botanical polygon.

Bat prey and commuting habitat

The Applicant itself states that hedgerows, tree lines, woodland and ditches provide suitable bat foraging and commuting habitat and that areas near riverine habitats and woodland are likely to support higher activity. Norfolk Wildlife Trust likewise stresses that the Scheme's nationally important bat assemblage depends upon connected networks of hedges, woodland edges, tree lines and watercourse corridors.

Field margins contribute to that system in two related ways.

First, flowering and structurally varied vegetation supports invertebrates forming bat prey. A margin beside a hedge or ditch can therefore increase the foraging value of the linear feature.

Second, the combined hedge–margin–ditch structure provides a wider and more sheltered corridor than the hedge alone. Trenching or stripping the margin may reduce habitat quality even where the woody hedge is retained. The Applicant's repeated reliance on hedge retention therefore does not demonstrate that corridor function will be maintained if the associated margin is compacted, cleared, lit or used as a haul route.

This is particularly important within a landscape the Applicant has assessed as nationally important for foraging and commuting bats. The effect of numerous small margin losses and working corridors must be assessed cumulatively across the multiple sites and maternity-colony sustenance zones.

Ecological connectivity

Field margins connect ponds, woods, hedgerows, ditches, grassland fragments and road verges. Their significance therefore depends partly on position rather than area. A narrow strip connecting two larger habitats may have greater functional importance than a larger isolated grassland parcel.

Norfolk Wildlife Trust's Claylands evidence expressly states that connecting grassland areas by unploughed margins significantly multiplies environmental benefit. The reverse is also true: removing, narrowing or repeatedly disturbing such a margin can disproportionately reduce connectivity.

Cable construction may create several forms of severance:

- removal of hedge sections at field boundaries;
- stripping of the margin parallel to a hedge;
- crossing of ditches;
- temporary lighting at compounds;
- movement of heavy machinery;
- and establishment of long working corridors through previously continuous habitat.

The Applicant must therefore identify ecological bottlenecks and connected margin systems before fixing the cable route. It is not enough to reinstate a line after construction without showing that its interim loss, altered soils and future management will not reduce ecological function.

Reinstatement is not equivalent to avoidance

The Applicant may argue that cable impacts are temporary because trenches will be backfilled and the ground reseeded. That conclusion is not justified without receptor-specific evidence.

Successful restoration depends upon:

- preserving the correct soil horizons;
- retaining an appropriate seed bank;
- avoiding compaction;
- preventing nutrient enrichment and contamination;
- using suitable locally derived material;

- matching previous hydrological conditions;
- controlling invasive species;
- and maintaining the area for long enough to restore the former community.

Even then, the result may not be equivalent to an established margin or lowland meadow. Where the original habitat contains a locally important assemblage or has a strategic connecting function, the mitigation hierarchy requires avoidance before restoration is considered.

The same objection applies to Biodiversity Net Gain. Proposed wildflower areas elsewhere cannot compensate automatically for the loss of a particular established margin, verge or meadow whose value lies in its species composition, soils, history and position within the ecological network. Habitat units do not demonstrate continuity of ecological function.

Conclusion and remedies sought

The botanical issue is not a minor matter capable of being left to a pre-construction walkover. The evidence presently available shows:

- a Claylands landscape in which much historic meadow, pasture, hedgerow and pond habitat has already been lost;
- surviving species-rich hedgerows, grassland strips, Roadside Nature Reserves and locally important meadow flora;
- priority arable margins, lowland meadow and other grassland habitats within the Scheme's ecological network;
- a Level 6 botanist's recommendation for full-season survey;
- an Applicant survey that expressly does not constitute a full botanical assessment;
- highway and access proposals involving visibility splays, vegetation removal and potential verge intervention;
- designated roadside habitat at locations including Parker's Lane;
- and cable and construction works concentrated within the margins and boundaries most likely to retain botanical value.

On that evidence, the Applicant has not demonstrated that the likely botanical effects have been identified, avoided or adequately mitigated. It has also not shown that proposed road, cable and access works can be delivered without unacceptable harm to Roadside Nature Reserves, lowland meadow, species-rich verges, important hedgerows and ecologically functional field margins.

BEPS requests that no highway improvement, visibility splay, passing place, access, cable working area or vegetation-removal power be authorised unless the complete maximum footprint has first been subject to full-season botanical and hedgerow survey and the results have been incorporated into a revised impact assessment and fixed design.

At minimum, the Applicant should be required to provide:

- full-season botanical surveys by suitably qualified botanists across all affected verges, Roadside Nature Reserves, lowland meadow, field margins, ditch edges, cable corridors and access works;

- detailed surveys of Parker's Lane and the Wood Green verge–meadow network;
- route-wide hedgerow assessment, including banks, ditches and ground flora;
- final visibility-splay, passing-place, access and vehicle-tracking plans;
- mapping of every area at risk of overrun, compaction, storage or drainage alteration;
- avoidance of all Roadside Nature Reserves, priority lowland meadow, important botanical assemblages and ancient or species-rich hedgerows;
- fixed exclusion zones preventing plant, compounds, lighting and storage from encroaching upon retained habitat;
- receptor-specific soil handling, reinstatement and invasive-species controls;
- and long-term botanical monitoring with measurable restoration criteria and remedial obligations.

Where those surveys identify important assemblages or ecological connections that cannot be protected, the affected works must be removed or rerouted. The discovery of such habitats after consent should not be managed merely through later mitigation because, by that stage, the Applicant would already possess powers to undertake the works.

BEPS therefore submits that the current botanical evidence is insufficient to support the Applicant's conclusion of no significant residual ecological effect. Development consent should not be granted on the assumption that unsurveyed verges, meadows and field margins can be disturbed and later recreated. The mitigation hierarchy requires the Applicant first to establish what is present and then to avoid the harm. It has not yet done so.

8.11 Breeding and wintering birds

The East Pye landscape supports a substantial assemblage of breeding and wintering farmland birds. Its ecological value arises from the combination of large open arable fields, grazing pasture, winter stubbles, game-bird and wildflower strips, field margins, species-rich hedgerows, mature trees, scrub, ponds, reedbeds, ditches, watercourses and woodland edges. Those habitats perform different but complementary functions: open fields provide breeding territories for ground-nesting birds; hedgerows and scrub provide nesting cover; margins and low-input crops provide seed and invertebrate food; and ponds, ditches and reedbeds support wetland-edge species.

The Applicant's final breeding-bird survey recorded 85 species between May 2024 and July 2025. It confirmed linnet, skylark and yellowhammer—all Birds of Conservation Concern Red List species—as breeding within the survey area. Dunnock, moorhen and whitethroat were confirmed as breeding Amber List species. Barn owl, greenfinch, kestrel, mallard, song thrush, woodpigeon and wren were assessed as probable breeders.

The Applicant's Planning Statement separately acknowledges that some fields are subject to Countryside Stewardship and that priority birds confirmed as breeding within the Order Limits include linnet, skylark and yellowhammer. It records that many territories are associated with mature boundary hedgerows, trees and field margins, while skylark territories occur within the arable fields themselves.

That evidence is incompatible with any general characterisation of the affected land as ecologically neutral or as merely low-value intensive arable land. The Applicant's own results demonstrate that the fields and boundaries currently perform active breeding functions for declining farmland birds.

The Applicant nevertheless values the breeding-bird assemblage at only Local importance and assesses most arable fields as being of negligible nesting value, apart from their use by skylark. It then limits its assessment of all breeding birds other than skylark to construction and decommissioning, because operational effects were scoped out. That approach understates three important matters.

First, the value of the landscape is not confined to nests physically located within hedgerows. Open cropland, field margins, stewardship features and adjoining boundary habitats operate together as a breeding and feeding system. Secondly, the change from open farmland to arrays of panels, fencing, tracks, substations, inverters and maintenance infrastructure is an operational land-use change, not merely a temporary construction effect. Thirdly, the Applicant's own species-specific skylark assessment accepts that the solar arrays will render substantial areas unsuitable for nesting. The same operational layout may affect the availability, accessibility and functional relationship of nesting and foraging habitats used by other species, even where nests are concentrated in retained boundaries.

Norfolk Wildlife Trust raised precisely this point during consultation. It advised that priority species unlikely to be accommodated within the solar footprint, expressly including skylark and lapwing, required a separate mitigation strategy if present. It also advised that operational effects should be assessed and monitored rather than being scoped out and expressed concern that hedgerow, tree and scrub removal could affect breeding birds.

The wintering-bird position is still weaker. The Applicant proposed to scope out wintering and passage birds in all phases. Its reasoning focused primarily on the perceived unlikelihood that whooper swan and Bewick's swan associated with the Broadland SPA and Ramsar site would regularly use the Scheme. It then assumed that future habitat management would benefit wintering buntings, larks, finches and partridges by increasing food and shelter.

The Planning Inspectorate accepted that scope-out at scoping stage on the evidence and assumptions then presented. It did not make a finding, based upon winter survey data, that no locally important wintering assemblage existed. The final Environmental Statement confirms that wintering and passage birds were not assessed because PINS and Natural England had agreed to the scope-out.

That distinction matters. A decision to scope out effects based upon an assumed future benefit is not evidence that the existing wintering function of the land has been identified or that the assumed benefit will occur. The Applicant has not provided a wintering-bird survey capable of establishing:

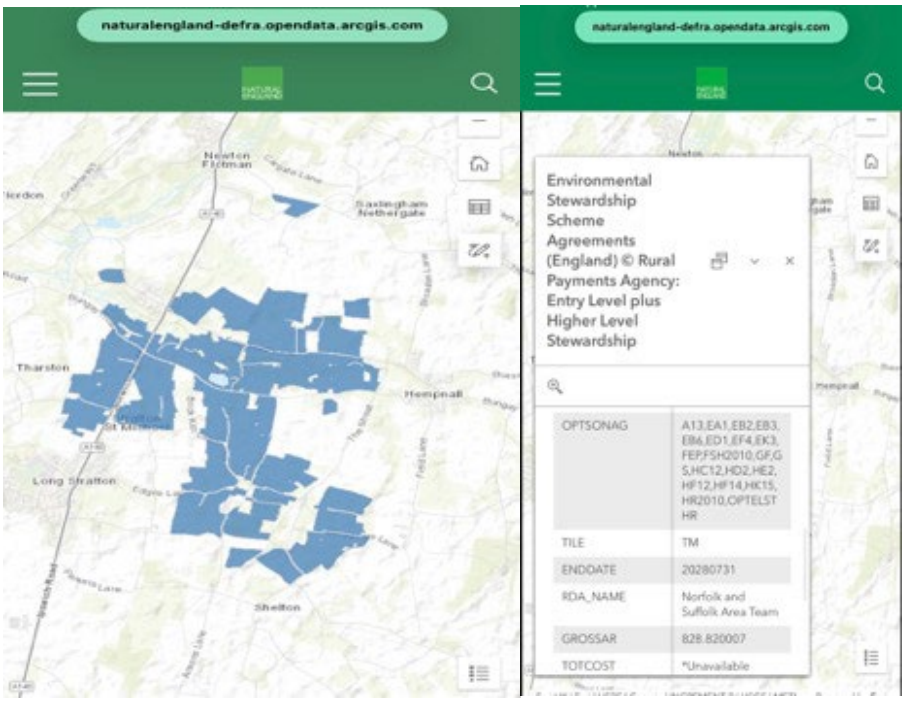
- which fields are used by winter flocks;
- the importance of winter stubbles, stewardship plots and seed-rich margins;
- the locations and sizes of regular aggregations;
- movement between feeding and roosting areas;

- the relationship between local flocks and the Scheme's woodland, reedbed and settlement-edge roosts;
- or how concurrent construction across multiple parcels would affect the availability of alternative feeding areas.

BEPS therefore submits that the effects on breeding and wintering birds have been materially understated. The issue is not confined to avoiding destruction of active nests. It includes permanent displacement from open breeding habitat, interruption of established stewardship management, loss of winter feeding resources, degradation of hedgerow and margin habitat, disturbance, fragmentation and the absence of demonstrated replacement habitat capable of performing the same species-specific functions.

8.11.1 Countryside Stewardship Scheme

The proposed East Pye Solar development is not situated on ecologically neutral or ordinary agricultural land. Evidence from Natural England's Environmental Stewardship spatial data confirms that substantial parts of the Order Limits – including land parcels 4, 5 and 7 – are subject to active agri-environment agreements, comprising Entry Level Plus and Higher Level Stewardship extending to at least 2028. These agreements are not incidental; they are structured, publicly funded interventions designed to restore and maintain declining farmland biodiversity, particularly ground-nesting and arable-associated bird species.



The option codes recorded for these agreements (including A, EB, EF and related prescriptions) are characteristic of measures such as low-input cropping, overwinter stubbles, field margins, and habitat mosaics specifically intended to support farmland bird assemblages. This aligns directly with field evidence across the Site, where multiple Birds of Conservation Concern (BoCC Red and Amber List species) are recorded, including skylark, lapwing, yellowhammer, linnet, starling and others. Several parcels are explicitly identified within Countryside Stewardship targeting frameworks for priority farmland bird species, and the ecological conditions present – large, open arable fields with low disturbance and managed margins – are those required for successful skylark and lapwing breeding.

Accordingly, the Site currently functions as **active conservation land**, delivering ecological outcomes funded through public money. It is not baseline farmland awaiting enhancement. This distinction is critical and has not been properly reflected in the Applicant's assessment.

The industrialisation of this landscape through the introduction of extensive solar infrastructure, security fencing, lighting, inverter stations and construction disturbance would result in the direct displacement and functional loss of this managed habitat. Ground-nesting birds such as skylark and lapwing are particularly sensitive to enclosure, fragmentation and disturbance; the transformation of open arable systems into enclosed, engineered parcels would render large areas unsuitable for breeding. These impacts are not speculative but well established in ecological literature and reflected in the targeting rationale of the stewardship schemes themselves.

This has three significant implications.

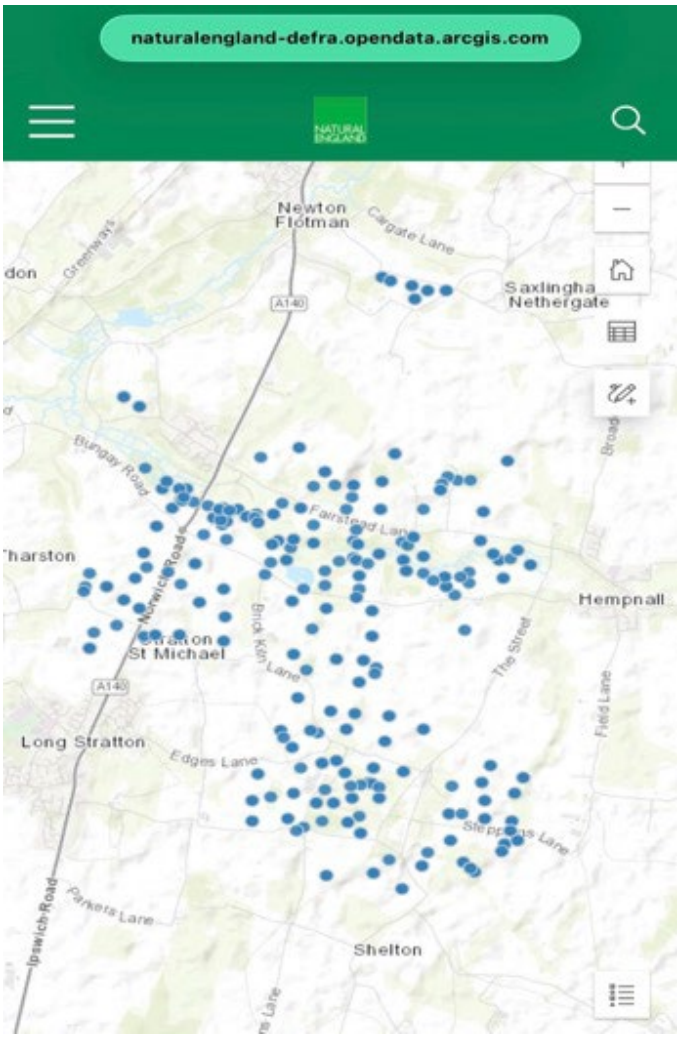
First, in **Biodiversity Net Gain (BNG)** terms, the Applicant's position is fundamentally undermined. BNG calculations premised on a low ecological baseline are invalid where land is already delivering enhanced biodiversity under stewardship. The Scheme would not be creating biodiversity value from a neutral baseline, but replacing an existing, functioning ecological system with one of uncertain and likely reduced value. There is no evidence that the specialised habitat requirements of farmland bird assemblages – particularly open, disturbance-free breeding territories – can be recreated within a solar array layout.

Second, the Scheme would result in the **loss of publicly funded environmental goods**. Countryside Stewardship agreements represent targeted investment by the state to reverse long-term declines in farmland birds. Their displacement by private energy infrastructure raises a clear issue of policy conflict: land currently subsidised to deliver biodiversity recovery would be removed from that function without any demonstrated equivalence in replacement. This is not merely habitat loss, but the loss of an ongoing, funded conservation programme.

Third, the **ecological damage is cumulative and structural**, not minor or mitigable. The Site forms part of a wider farmed landscape supporting interconnected populations of declining bird species.

The removal and fragmentation of stewardship-managed land across multiple parcels risks undermining the integrity of that network, reducing breeding success, and contributing to further regional decline of already threatened species.

In this context, the Birds of Conservation Concern recorded within the Site are not incidental occurrences. They are indicators of a landscape that is currently functioning, by design and by public investment, as a recovery area for declining farmland biodiversity. The failure to recognise and assess this baseline condition represents a fundamental flaw in the ecological assessment of the Scheme.



The consequences of development in this context are immediate and irreversible. The stewardship options identified are not passive designations but active management prescriptions that require continuity over time to deliver ecological outcomes, particularly for ground-nesting and overwintering farmland birds. The Environmental Stewardship data confirms that these

agreements commenced in approximately 2013 and are secured until at least 2028, meaning that the Site has been subject to sustained ecological management for over a decade. This duration is significant: it reflects the gradual establishment and maturation of habitat conditions required by declining farmland bird species, including the development of suitable breeding territories, foraging resources and landscape-scale ecological coherence.

The timing of the proposed development is therefore directly conflicting. Construction of the Scheme is anticipated to begin at or around the point at which these agreements are still active, resulting in their premature termination or effective nullification. This would lead to the abrupt cessation of long-established ecological management and the immediate loss of habitats that have taken years to develop. This is not a gradual transition but a step-change: land that has been deliberately managed for biodiversity recovery over an extended period would be converted into an industrialised landscape of panels, fencing and infrastructure, rendering it unsuitable for those species from the outset of construction.

The implications are twofold. First, there is a clear and immediate loss of ecological function at the point of construction, including breeding and foraging habitat for Birds of Conservation Concern, which cannot be maintained during construction and cannot be meaningfully replicated within the operational layout of a solar array. Second, there is a loss of continuity, which is fundamental to the success of stewardship schemes. Many farmland bird populations depend on stable, long-term habitat management; interrupting that management after more than a decade of delivery risks undermining breeding success, disrupting established territories, and contributing to further population decline. The Scheme therefore conflicts directly with the objectives and temporal logic of the stewardship agreements themselves, resulting in the displacement of a long-standing, publicly funded conservation regime without any demonstrated equivalence in replacement

Skylarks

The application area includes land that has been **specifically targeted and actively managed for skylark conservation under Countryside Stewardship agreements**, including **Land Parcels 4, 5 and 7**, where field-level stewardship options are in place to support breeding territories. These agreements, many of which commenced in 2013 and run until 2028, have been publicly funded to create and maintain suitable nesting habitat for skylarks (open arable fields with low disturbance and appropriate sward structure). The proposed introduction of industrial-scale solar infrastructure into these parcels would result in the **immediate and irreversible loss of this purpose-built habitat at the point construction is due to begin**, directly undermining over a decade of ecological investment. There is a substantial and well-established evidence base demonstrating that skylarks are **highly sensitive to vertical structures, enclosure and disturbance**, with studies consistently showing **reduced territory density, displacement, and in some cases complete abandonment of solar sites** where panel arrays, fencing and associated infrastructure fragment open farmland. The effect is not mitigable through Biodiversity Net Gain measures, as skylarks require large, uninterrupted expanses of open ground and do not adapt to

the presence of panel rows or enclosed layouts. The conversion of these stewardship-managed fields therefore represents not only a significant ecological impact on a species of principal conservation concern, but also a **misuse and nullification of public environmental funding**, with direct conflict between agri-environment policy objectives and the proposed development.

The Applicant recorded 81 skylark breeding territories, of which 70 occur within areas subject to permanent development. It confirms that skylark was the only open-habitat ground-nesting species proven to be breeding within the Order Limits during its survey and recognises the species as both Red Listed and a species of principal importance under section 41 of the Natural Environment and Rural Communities Act 2006.

Seventy affected territories is not a theoretical habitat-suitability calculation. It is direct evidence that the land proposed for permanent development currently supports an extensive breeding population.

The Applicant also makes a significant admission regarding the effect of the Scheme. It accepts that nesting within solar arrays is rare or non-existent and that the shaded, fragmented and enclosed conditions beneath panels reduce visibility and appear to increase predation risk. It consequently assumes that skylarks will be deterred from nesting in fields containing solar arrays, the BESS and associated infrastructure.

The permanent development would therefore remove the nesting function of land containing most of the recorded territories. The fact that skylarks may continue to fly, display or forage above or beside panels does not replace the lost breeding territories. Foraging use and successful nesting are different ecological functions.

The Applicant attempts to convert this admitted displacement into an overall beneficial effect by arguing that grass beneath panels may provide additional invertebrate prey for birds nesting on surrounding land. However, it has not demonstrated:

- that the surrounding land has sufficient unoccupied nesting capacity for displaced pairs;
- that displaced birds will establish territories there rather than compete with existing pairs;
- that the distance between replacement nesting land and panel-field forage is suitable;
- that management beneath panels will produce the assumed prey resource;
- or that increased foraging opportunities would compensate for the loss of 70 known territories.

The Applicant's proposed skylark plots do not answer that problem. Chapter 8 expressly states that skylarks do not nest in those plots: the plots provide access and foraging opportunities within dense cereal crops. The Applicant identifies a 60-hectare rotational area within which at least 40 hectares of arable land would contain skylark plots, together with open grassland at Sites 3, 4B, 8B and 10B.

No calculation demonstrates how many breeding territories those areas can support. Nor is there a territory-by-territory comparison between the 70 territories displaced and the proposed replacement nesting resource. The mitigation therefore lacks the basic evidence needed to

demonstrate equivalence: available area, habitat structure, territory density, location, continuity, freedom from disturbance and predicted breeding capacity.

The affected skylark population also cannot be dismissed merely because it represents less than one per cent of an historic county estimate. The planning question is whether the Scheme will cause significant effects upon the identified population and whether the mitigation hierarchy has been applied. A percentage comparison with the whole Norfolk population does not replace assessment of the consequences of displacing most of the territories recorded within the Order Limits.

Lapwing

The Applicant states that no lapwing were found breeding within the Sites during its survey. That result must be recorded accurately. It does not, however, establish that the affected land has no lapwing function or that future use can be excluded.

BEPS' review of Defra and Natural England spatial data identifies parts of the Scheme, particularly in Site 7, as lying within stewardship targeting for lapwing and other declining farmland birds. The BEPS scoping response specifically identified land managed for a farmland-bird assemblage including lapwing and asked that wintering and passerine birds be assessed rather than scoped out.

The Site 7 design history adds further evidence. The Applicant's earlier layout retained large open cultivated areas within Sites 7D and 7F 'for habitat and to provide open areas for species, for example nesting birds'. The targeted consultation subsequently reduced the open area at Site 7D and introduced an access through or immediately beside the retained area. BEPS' targeted-consultation representation identified the land as a lapwing stewardship priority and objected that the revision reduced the open habitat without a corresponding updated assessment of ground-nesting birds.

The absence of a breeding territory during one survey programme does not erase the conservation purpose of the land or establish that it will not be used in another year. Use by lapwing can vary with crop, soil moisture, cultivation, vegetation height, disturbance and seasonal conditions. That variability is precisely why sustained stewardship management and maintenance of suitable open land matter.

The Applicant should therefore distinguish between:

- no breeding lapwing recorded during the particular survey period;
- desk and local records of lapwing in the wider Scheme landscape;
- land managed or targeted to provide suitable lapwing conditions;
- and the future potential of that land if management continues.

It has instead treated the survey result as sufficient reason to omit any lapwing-specific mitigation. Norfolk Wildlife Trust's advice was that lapwing, if present and not accommodated within the solar footprint, required separate mitigation and operational monitoring. No precautionary area has

been secured specifically to maintain future lapwing breeding function, despite the identified stewardship context and the acknowledged need for open land.

Turtle dove

The turtle-dove evidence also extends beyond the Applicant's breeding-season territory results.

The Applicant's desk study returned multiple turtle-dove records across the search area. These included historic records associated with Sites 1B, 2B, 3 and 7C and three more recent records from Site 7L dating between 2004 and 2012. At scoping, the Applicant itself identified turtle dove among the Red List species likely to occur within the South Norfolk farmland assemblage.

Norfolk Wildlife Trust's Relevant Representation describes the Scheme landscape as supporting local populations of rare farmland birds, expressly including turtle dove, corn bunting and yellowhammer. It emphasises that the ecological character of the area is not one of large, featureless fields but of a connected Claylands mosaic containing species-rich hedges, margins, woods, ponds, verges and other habitats.

BEPS' review of stewardship and local records likewise identifies turtle dove as one of the target farmland species relevant to affected land.

The final breeding-bird summary does not identify turtle dove as confirmed or probable breeding during the Applicant's survey period. That should not be converted into a finding that the species has no relationship with the Scheme. The desk records demonstrate previous use of several individual sites, including comparatively recent records at Site 7L. The landscape also retains the combination of dense hedgerows or scrub for nesting and seed-rich, sparsely vegetated foraging habitat upon which the species' use would depend.

The relevant impact pathways include:

1. loss or repeated disturbance of dense hedgerow and scrub nesting habitat;
2. loss of open seed-rich feeding areas;
3. removal of stewardship margins;
4. construction noise and vehicle activity close to potential nesting boundaries;
5. severance between nesting and foraging habitat;
6. and changes in long-term hedge and margin management.

Generic new planting does not necessarily provide equivalent turtle-dove habitat. Newly planted hedges require time to develop the height, width and density needed for nesting, while generic grassland beneath panels does not necessarily provide the open, seed-rich feeding conditions associated with the species.

A precautionary strategy should therefore retain and manage the specific former-record locations and connecting habitat, provide species-appropriate forage in advance of construction and require continuing survey during the appropriate season. No such turtle-dove-specific strategy is presently secured.

Yellowhammer and linnet

Yellowhammer and linnet are not merely desk-study possibilities. Both were confirmed breeding during the Applicant's surveys and are identified by the Applicant as Red List priority birds within the Order Limits.

Their presence confirms the ecological function of the field-boundary network. The Applicant records that many breeding territories are associated with mature hedgerows, trees and field margins. Those habitats provide nesting cover, song posts, seed resources and invertebrate prey and connect the open fields with scrub, woodland and ditch habitats.

The Applicant's reliance on retaining most hedgerows does not demonstrate that those functions will remain unaffected. The Scheme requires repeated access gaps, cable crossings, visibility works and construction activity along field boundaries. Chapter 8 accepts working widths of up to ten metres where access or cabling crosses hedgerows, field margins or ditches, but treats each loss as a very small part of the overall network and assumes reinstatement will prevent significant effects.

That approach does not assess:

- the relationship between each proposed gap and mapped breeding territories;
- whether several territories depend upon the same boundary;
- the effect of construction disturbance on adjoining retained habitat;
- the delay before reinstated vegetation becomes suitable for nesting;
- or the cumulative consequences of repeated severance throughout the Scheme.

For yellowhammer and linnet, a hedge that remains physically present may nevertheless lose ecological value if its margin is stripped, the adjoining food resource is removed, vegetation is repeatedly cut, lighting is introduced or construction activity occurs throughout the breeding season.

Bullfinch and song thrush

Song thrush was assessed by the Applicant as a probable breeder. Bullfinch appears within the wider local bird records collated by BEPS, although it is not identified as a confirmed or probable breeder in the Applicant's Chapter 8 summary.

These species reinforce the value of the Scheme's hedges, scrub, woodland edges, mature trees and damp margins. Their interest cannot be measured solely by the number of metres of woody vegetation removed. Habitat structure, understorey, adjoining food resources, leaf litter, invertebrate abundance and the relationship between boundaries and woodland all contribute to territory quality.

The Applicant scopes out operational effects on such birds on the basis that maintenance will be occasional and habitat creation will be beneficial. But the operational habitat will be materially different: retained boundaries will adjoin security fencing, panel arrays, tracks and managed solar grassland rather than the existing crop, stewardship and margin mosaic. The Applicant has not

provided a species-specific assessment showing that the altered setting will maintain the present nesting and feeding functions for probable breeders such as song thrush or for locally recorded bullfinch.

Reed bunting and reed warbler

The Scheme contains ditches, wet margins, ponds and reedbed habitat, including mapped reedbed at Site 7B. BEPS' local records include reed bunting, and its full Relevant Representation records that the Applicant's desk and habitat evidence identifies field margins and boundary habitats as supporting farmland birds including reed bunting.

Reed warbler is not identified as a confirmed or probable breeder in the summary results reproduced in Chapter 8. Nor has the material reviewed for this section established a quantified reed-warbler territory within the Order Limits. Its relevance is therefore habitat-based and should not be overstated. Reedbeds and well-vegetated ditches within the Scheme provide potentially suitable habitat, and any local records should be reconciled with the Applicant's raw survey data before the Examination concludes.

For both reed bunting and reed warbler, the important point is that ditch and reedbed habitat cannot be assessed separately from the adjoining margins and hydrology. Construction access, cable works, vegetation clearance, altered drainage, lighting and disturbance may affect the ecological function of retained wetland-edge habitat without removing the mapped reedbed itself.

The Applicant should provide the full registration data for these species and confirm:

- whether they were recorded during any survey visit;
- whether breeding behaviour was observed;
- which ditches or reedbeds were used;
- whether those locations are affected directly or indirectly;
- and what operational management will maintain vegetation structure and water conditions.

In the absence of that information, it is not sufficient to rely on the broad proposition that all valuable nesting habitat is retained within generic buffers.

Corn bunting

Corn bunting was identified in the Applicant's Scoping Report as one of the notable Red List farmland species potentially forming part of the expected breeding assemblage. Norfolk Wildlife Trust also identifies corn bunting among the rare farmland birds occurring within the wider East Pye landscape. BEPS' local record compilation includes the species.

The final Chapter 8 summary does not identify corn bunting as a confirmed or probable breeder. The appropriate conclusion is therefore not that a breeding population has been proven within the Order Limits, but that credible scoping, conservation-body and local evidence establishes a potential and wider landscape interest that should be reconciled with the complete survey results.

Corn bunting is particularly relevant to the Applicant's treatment of open arable land as low-value habitat. The species' ecological requirements depend upon open farmland, song posts, winter seed availability and suitable nesting vegetation. A habitat metric that records the land simply as cropland does not determine whether it performs those functions.

The full Appendix 8.4 registration maps and raw results should be examined to establish whether corn bunting was recorded as a non-breeding visitor, outside a territory cluster or immediately beyond the survey boundary. Unless that information is made readily accessible and assessed against local records, the absence of the species from the short Chapter 8 summary cannot safely be treated as evidence of absence from the Scheme's Zone of Influence.

Local winter starling murmurations

Starling was one of the Red List species the Applicant expected to occur within the South Norfolk farmland assemblage at scoping. Starling also appears in the local bird records compiled by BEPS. Local residents have reported winter starling murmurations within the East Pye landscape.

BEPS does not presently put forward a quantified population estimate for those murmurations. The significance of the local evidence is that the Applicant has undertaken no wintering-bird assessment capable of confirming their scale, regularity, feeding fields, flight routes or roost relationship.

Murmurations are not supported by a single field in isolation. Winter starling aggregations may use a broad landscape of feeding areas during the day and move collectively to sheltered roosts. The relevant Scheme effects therefore include:

- loss of winter stubbles and seed-rich feeding land;
- concurrent disturbance across alternative feeding fields;
- displacement by construction activity;
- alteration of flight routes by extensive infrastructure;
- loss of hedgerow and margin feeding resources;
- and disturbance or lighting near roost approaches.

The Applicant's assertion that future grassland and habitat creation will benefit wintering birds is not a substitute for identifying how the existing landscape is used. Nor can the absence of a winter survey be cured by saying that wintering effects were scoped out before the local evidence had been evaluated.

The Applicant should be required to obtain and assess dated local records, including photographs or video where available, and undertake proportionate winter vantage-point and field-use surveys before concluding that the Scheme will have no significant wintering-bird effect.

Overall existing interest

The evidence must be kept in its proper categories:

1. skylark, linnet and yellowhammer are confirmed breeders;

2. song thrush is a probable breeder;
3. lapwing was not confirmed breeding during the Applicant's survey but is relevant through stewardship targeting and local records;
4. turtle dove has multiple desk records associated with individual Scheme sites;
5. corn bunting is identified by the Applicant at scoping and by NWT and BEPS as part of the wider local farmland-bird interest;
6. bullfinch and reed bunting occur in local records;
7. reed warbler is a potential wetland-edge receptor whose presence requires confirmation from the full survey data;
8. and local winter starling murmurations have been reported but were not investigated because wintering birds were scoped out.

That is an ecologically diverse assemblage dependent upon open fields, stewardship management, mature boundaries, margins, scrub, ditches and wetland features. The Applicant's conclusion that breeding birds are of no more than Local importance does not relieve it of the need to assess those functions properly. Nor does it justify the assumption that generic habitat creation will replace the species-specific value of the existing landscape.

8.11.2 Stewardship land and public investment

Existing agri-environment management is part of the baseline

BEPS' review of Natural England Environmental Stewardship spatial data identifies substantial areas within the Order Limits, including land associated with Sites 4, 5 and 7, as subject to Entry Level Plus and Higher Level Stewardship agreements. The mapped agreements commenced at approximately 2013 and continue to at least 2028. The associated option pattern includes low-input management, field margins, winter food or stubble features and habitat mosaics relevant to declining farmland birds, including skylark, lapwing and turtle dove.

The Applicant acknowledges the underlying point. Its Planning Statement confirms that some fields are subject to Countryside Stewardship. Chapter 8 also expressly recognises that current active Countryside Stewardship schemes or similar arrangements exist, although it dismisses their future significance on the basis that they have finite timescales.

The finite contractual duration of an agreement does not erase the ecological condition produced by that agreement. An EIA baseline must describe the environment as it exists, including management that has shaped current habitats and species use. It cannot treat publicly funded conservation management as though it has already ceased merely because an agreement is due to expire during the proposed construction period.

The affected land is therefore not simply conventional cropland awaiting ecological enhancement by the Applicant. Parts of it have been actively managed through public funding to provide environmental goods. Those functions include:

- open nesting habitat;
- reduced disturbance in selected areas;
- field margins;

- seed resources;
- winter stubble or other winter food;
- varied crop and vegetation structure;
- and connectivity between fields, hedges, ditches and other semi-natural habitats.

The Applicant's 81 skylark territories, including 70 in permanent development areas, provide direct biological evidence that at least part of the existing land-management system is supporting a substantial breeding population. The confirmed breeding of linnet and yellowhammer and probable breeding of song thrush further demonstrate that the fields and boundaries function as more than low-distinctiveness metric habitat.

Management for skylark, lapwing and turtle dove

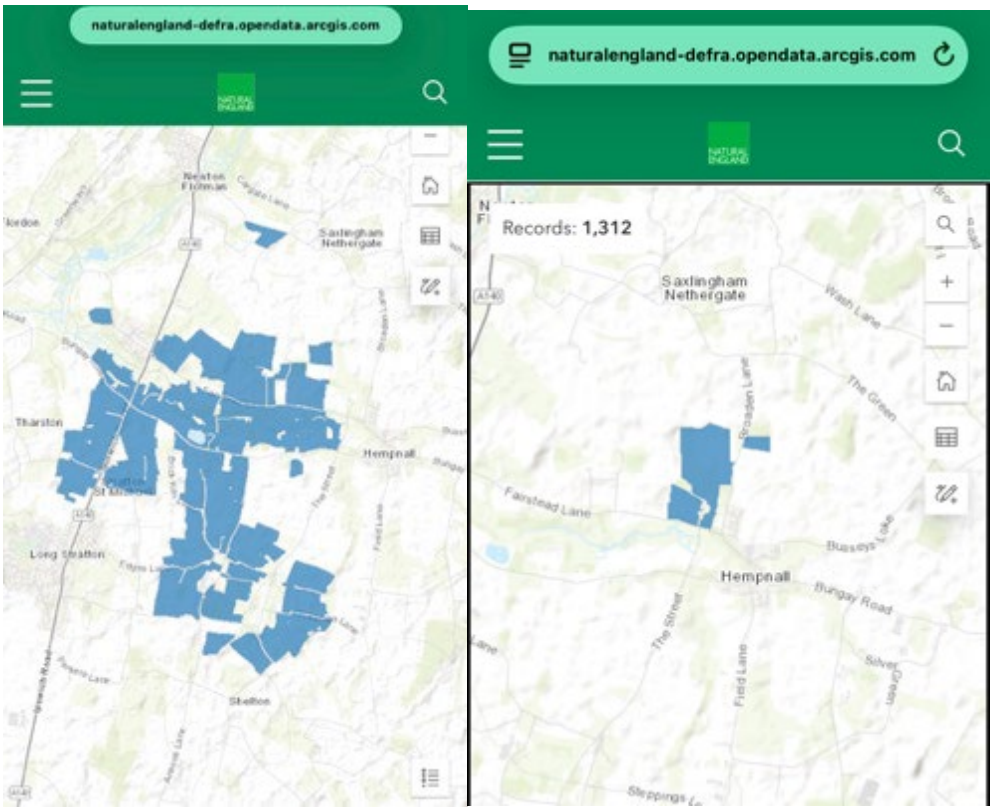
The stewardship evidence is particularly relevant to skylark, lapwing and turtle dove because those species depend upon different elements of the managed farmland mosaic.

For skylark, the direct territory evidence is compelling. The agreements have maintained open arable conditions and associated margins over a prolonged period, and the Applicant has recorded breeding territories throughout the affected fields. The present population is therefore part of the existing baseline, regardless of whether the specific agreement option was labelled expressly as a skylark option.

For lapwing, the Applicant did not confirm breeding during its survey, but the stewardship targeting remains material. Site 7 was identified by BEPS through Defra's MAGIC mapping as priority land for lapwing stewardship, and the Applicant's earlier design retained open cultivated areas expressly for nesting birds. The management has maintained the potential for use in years when crop, moisture and seasonal conditions are suitable. Removing that open-land function eliminates future opportunity even if no pair was mapped during one survey programme.

For turtle dove, the stewardship mosaic is relevant because nesting and feeding functions are spatially separate. Dense hedgerows and scrub provide potential nesting habitat, while lightly vegetated, seed-rich margins and plots provide feeding opportunities. The Applicant's desk study records demonstrate previous use of several Scheme sites, including records at Site 7L between 2004 and 2012. The appropriate response is to assess whether the stewardship landscape continues to retain or could restore those functions, not to treat the absence of a mapped 2024–2025 territory as proof that the land is irrelevant.

The three species therefore illustrate why stewardship land cannot be evaluated solely by broad habitat type. 'Cropland' under the biodiversity metric may encompass an intensively cultivated field with little edge habitat or a field managed with open nesting conditions, winter food, conservation margins and a decade of continuity. Those landscapes are not ecologically equivalent.



Land within the order limits currently in the Countryside Stewardship Scheme.

Records corroborate the purpose of the management

The stewardship evidence is supported by biological records. The Applicant confirmed extensive skylark breeding. It also recorded historical and comparatively recent turtle-dove records associated with individual Scheme parcels. Lapwing appears within the wider local species evidence and is specifically identified in the stewardship targeting relied upon by BEPS, although the Applicant did not confirm current breeding.

The correct evidential conclusion is therefore differentiated:

- the stewardship land demonstrably supports skylark breeding;
- it has a documented historic relationship with turtle dove;
- and it retains targeted potential for lapwing, notwithstanding the absence of breeding confirmation in the Applicant's survey year.

That combination is sufficient to require the stewardship history and management prescriptions to be incorporated into receptor valuation, impact assessment and mitigation design.

Accumulated habitat value since 2013

By the scheduled expiry in 2028, relevant agreements commencing around 2013 will have provided approximately 15 years of continuous agri-environment management.

The significance of that period is not that every ecological outcome can be attributed exclusively to the agreement. The importance lies in continuity. Field margins develop vegetation structure; seed resources are maintained across seasons; hedgerows and scrub mature; management patterns become predictable; and birds can return to established territories and feeding areas over successive years.

The Applicant has not provided an assessment of:

- the particular options applied to each affected field;
- how those options changed management from the previous baseline;
- the habitats created or retained;
- the species outcomes achieved;
- the public funding invested;
- or the ecological consequence of terminating the management.

Instead, Chapter 8 assumes that, without the Scheme, most of the land would remain under intensive crop rotation and might suffer continuing ecological decline. It refers to active stewardship schemes as finite and treats future retention of margins as dependent upon whatever agricultural policy exists later.

That future baseline is not adequately evidenced. The expiry of one agreement does not prove that the land would immediately revert to the most intensive possible management. A replacement environmental land-management agreement, voluntary continuation, revised stewardship scheme or other conservation management is equally possible. More fundamentally, the habitats and species present at expiry do not disappear automatically because a payment contract ends.

The Applicant has effectively compared the Scheme against an assumed degraded future rather than the actual managed baseline. That assumption inflates the claimed ecological benefit of ceasing intensive agriculture while failing to credit the environmental outcomes already being delivered.

The direct temporal conflict in 2028

The timing is particularly significant. The Applicant anticipates commencing construction in 2028, for approximately 24 months. That is the same period in which the identified stewardship agreements are expected to end.

The result would not be an environmentally neutral transition between two management regimes. The end of the stewardship commitment would coincide with site preparation, fencing, access works, cable construction, piling or foundation installation, panel erection and prolonged movement of machinery and personnel.

The immediate effects would include:

- cessation of stewardship cropping and margin prescriptions within construction areas;
- loss of open nesting fields beneath permanent infrastructure;
- disturbance of established breeding territories;

- removal or degradation of field-margin habitat;
- interruption of winter food provision;
- fragmentation of formerly connected areas;
- and displacement into surrounding farmland whose capacity is untested.

The ecological value accumulated under the agreements would not vanish on their contractual end date, but the management continuity supporting it would be broken immediately by construction. That discontinuity is a material impact of the Scheme and should have been assessed expressly.

Public investment cannot be disregarded

Agri-environment agreements represent public expenditure intended to secure environmental outcomes that ordinary agricultural markets may not provide. In this case, that investment has supported land forming part of a declining farmland-bird landscape for more than a decade.

BEPS does not submit that receipt of stewardship funding creates an absolute legal prohibition on later development. The relevant point is that the existing publicly funded environmental function is a material part of the ecological baseline and planning balance.

The Applicant should identify:

- which parcels have received funding;
- the duration and value of the agreements;
- the relevant management options;
- the habitats and species targeted;
- whether early termination or repayment is required;
- and what equivalent environmental outcome will be provided if the land is developed.

Without that information, the Examination cannot determine whether the Scheme is replacing existing environmental delivery or genuinely creating an additional benefit.

The present application instead treats the land as low-value cropland in the BNG calculation and then claims substantial gain from converting it to solar grassland and new margins. BEPS' review of the BNG material identifies this as a structural weakness: species such as skylark, lapwing and turtle dove respond to open sightlines, nesting structure, disturbance, food resources and continuity of management, none of which is represented adequately by the broad metric category 'cropland'.

A positive habitat-unit balance cannot compensate for the loss of a known breeding territory or prove that an operational solar layout will perform the same stewardship function.

The skylark mitigation does not replace the stewardship system

The Applicant's proposed skylark mitigation illustrates the problem.

It identifies 60 hectares within which at least 40 hectares of arable land would be managed rotationally with skylark plots. It also proposes areas of open grassland. But Chapter 8 expressly states that the plots are not nesting locations.

The mitigation therefore does not demonstrate like-for-like replacement of:

- the 70 territories within permanent development areas;
- the wider open-field context;
- established crop and margin relationships;
- winter food provision;
- or the multi-species stewardship mosaic.

No carrying-capacity model has been provided. There is no evidence that 40 hectares can support the displaced territories, and no secured ratio between lost territories and replacement nesting habitat. There is also no demonstration that the rotational area will remain in the most suitable location throughout construction and operation rather than being moved according to farming or engineering convenience.

The Applicant's conclusion of a beneficial effect depends principally on anticipated foraging improvements beneath panels. It nevertheless accepts that the developed fields will cease to function as nesting habitat. A claimed increase in one ecological function cannot be treated as automatic compensation for the loss of another.

Site 7 demonstrates the instability of the mitigation

The treatment of Site 7 further reduces confidence in the mitigation.

The earlier scheme design retained open cultivated areas at Sites 7D and 7F for habitat and nesting birds. During targeted consultation, the open area at 7D was reduced and an access was introduced into or through the remaining area. BEPS' representation records that this change was justified partly by decommissioning efficiency rather than by ornithological evidence.

This design evolution demonstrates that bird mitigation areas have been adjusted to meet engineering requirements without a published, updated territory-capacity assessment. It also raises a practical question: an area crossed by construction traffic or placed immediately beside an active access cannot be assumed to perform as undisturbed ground-nesting habitat.

Where mitigation is necessary to support the Applicant's no-significant-effect conclusion, its extent, location and management cannot remain vulnerable to later design optimisation. It must be fixed and protected through the DCO.

Loss is immediate; replacement is uncertain and delayed

The Applicant repeatedly relies upon future habitat creation and management. Those measures may benefit some birds, particularly boundary and scrub species, if delivered successfully. They do not prevent the immediate loss of existing open breeding and winter feeding functions.

There is a temporal difference between:

- an established field that already supports skylark territories;
- a hedge and margin system managed for more than a decade;
- and a proposed grassland or newly planted boundary whose eventual bird use is predicted but unproven.

The impact begins when stewardship management ceases and construction excludes or displaces birds. Replacement value, if achieved, develops later. The Environmental Statement does not quantify that temporal loss or explain how displaced birds will be supported during the establishment period.

Norfolk Wildlife Trust's request for species-specific mitigation, operational assessment and post-construction monitoring is therefore particularly important. Monitoring should not merely record whether birds use the general Scheme area. It should compare territory numbers, distribution and breeding success against the pre-construction baseline and trigger enforceable remedial action if the predicted outcome is not achieved.

Conclusion

The breeding- and wintering-bird evidence demonstrates that East Pye Solar would replace an already functioning farmland-bird landscape, not create ecological value upon neutral land.

The Applicant's own evidence establishes:

- 85 species recorded during breeding surveys;
- confirmed breeding by Red List linnet, skylark and yellowhammer;
- probable breeding by song thrush and other notable species;
- 81 skylark territories, including 70 within permanent development areas;
- multiple turtle-dove records associated with specific Scheme sites;
- priority bird territories concentrated in open fields, mature hedgerows, trees and margins;
- and the presence of active Countryside Stewardship on some fields.

Other submitted evidence establishes stewardship targeting relevant to skylark, lapwing and turtle dove; local records of a wider declining farmland-bird assemblage; and local reports of winter starling murmurations. The Applicant has not assessed the latter because wintering birds were scoped out.

BEPS submits that the Applicant has not demonstrated that:

- the breeding-bird assemblage is adequately valued;
- the operational effects on species other than skylark are negligible;
- 70 displaced skylark territories can be accommodated;
- skylark foraging plots replace nesting habitat;
- lapwing potential and stewardship targeting can be disregarded;
- turtle-dove records and habitat have been addressed by species-specific mitigation;
- wintering-bird use will improve rather than decline;

- or the publicly funded environmental function of the stewardship land will be replaced.

The following evidence and safeguards are therefore required before the close of Examination:

- The complete Appendix 8.4 survey data, territory maps and registrations for all notable species, including records falling outside confirmed territory clusters.
- A parcel-by-parcel reconciliation of Applicant, NBIS, NWT, BEPS and other local records for skylark, lapwing, turtle dove, yellowhammer, linnet, bullfinch, song thrush, reed bunting, reed warbler, corn bunting and starling.
- A wintering-bird assessment addressing stewardship fields, winter stubbles, regular feeding areas, local starling murmurations and movement between feeding and roosting locations.
- A full schedule of Environmental Stewardship and Countryside Stewardship land, including agreement dates, option codes, management prescriptions, target species, affected area and expected termination arrangements.
- A replacement-habitat and carrying-capacity assessment demonstrating how the 70 skylark territories within permanent development areas will be replaced, with nesting habitat distinguished from foraging provision.
- Fixed and protected open areas for ground-nesting birds, free from panels, fencing, access routes, compounds, regular disturbance and lighting.
- Species-specific strategies for lapwing and turtle dove, based upon current and historic use, stewardship targeting and annual variation in habitat suitability.
- Protection and enhancement of the particular hedgerows, margins, scrub, ditches and reedbeds associated with linnet, yellowhammer, song thrush, bullfinch, reed bunting and any recorded reed warbler.
- Construction phasing that ensures sufficient unaffected breeding and winter feeding habitat remains available throughout the works.
- Long-term independent monitoring of territory numbers, distribution and breeding success, with defined performance thresholds, reporting and enforceable adaptive-management measures.

Unless those matters are resolved, the Applicant's conclusion of negligible adverse effects and an overall beneficial operational outcome is not supported by the evidence. The Scheme would cause the immediate loss of established, publicly funded farmland-bird habitat at the point when long-running stewardship agreements end and construction is scheduled to begin. That loss should attract substantial adverse weight, and development parcels that cannot retain or replace their existing bird function should be removed from the Scheme.

write this section in full with evidence: 8.12 Other protected and priority species Keep this concise but complete: great crested newt; water vole; otter; badger; reptiles; brown hare; hedgehog; terrestrial and aquatic invertebrates; invasive species and biosecurity. For each, focus on the principal deficiency rather than repeating the entire ES. 8.13 Construction-phase ecological effects Bring all construction pathways together: road widening; haul roads; compounds; piling; trenching; HDD; watercourse crossings; vegetation removal; dust; noise; vibration; lighting; HGV movement; soil compaction; contamination; accidental spills. This section should expose the mismatch between the full construction footprint and the narrower habitat-loss calculations.

8.12 Other protected and priority species

The principal protected-species issues arising from East Pye Solar are addressed elsewhere in this Chapter in relation to bats, birds and white-clawed crayfish. The Scheme also affects a wider assemblage of protected and priority species associated with its ponds, hedgerows, ditches, watercourses, woodland edges, grassland margins, scrub and open farmland.

The application does not lack all survey information for these species. The more fundamental problem is that the Applicant repeatedly concludes that effects will be negligible by relying upon broad habitat retention, standard buffers, future pre-construction checks and an Outline Protected Species Mitigation Strategy, notwithstanding that the detailed position of accesses, crossings, compounds, haul routes and other works remains subject to later design.

Natural England has not treated protected species as a resolved matter. Its Relevant Representation categorises protected species as an amber issue and records that the Applicant's Outline Protected Species Mitigation Strategy indicates that licences may be required for great crested newts, water vole or otter, roosting bats and badger-sett closures. Natural England strongly advises that the licensing position be addressed at the earliest opportunity.

That position is materially different from the Applicant's repeated conclusion that no additional mitigation and no residual effects are anticipated. The Examining Authority must be satisfied not merely that generic precautions could be devised later, but that the authorised development can be delivered within the proposed limits without committing offences, impairing priority-species populations or depending upon mitigation whose feasibility and licensing status remain unresolved.

Great crested newt

The Applicant has now established or assumed great crested newt presence in a significant number of ponds. Chapter 8 records six ponds with confirmed presence and six with assumed presence within the Order Limits, together with further relevant ponds in the surrounding landscape within 250 metres. It accepts that the more suitable terrestrial habitat comprises hedgerows, ditches, woodland edges and uncultivated field margins.

The principal deficiency is therefore no longer simply an absence of evidence that great crested newts occur. Presence is established. The issue is whether the full construction design and licensing strategy adequately respond to that presence.

The Applicant treats the arable field interiors as habitat of negligible importance and relies upon retention and buffering of the principal ponds and linear features. It concludes that construction effects will be negligible, that terrestrial and aquatic opportunities will be maintained or enhanced during construction, and that no additional mitigation or residual effect is expected.

That conclusion is insufficiently precautionary for three reasons.

First, the habitats that the Applicant identifies as most suitable for great crested newts are the same linear habitats repeatedly encountered by the construction works: hedgerows, ditches,

woodland edges and field margins. Cable routes, haul roads, accesses and highway works may require temporary removal, crossing, compaction, lighting or disturbance of those features. Physical retention of the majority of a hedgerow or margin does not demonstrate that terrestrial movement between breeding ponds, foraging habitat and hibernation sites will remain functional.

Secondly, the assessment treats the loss and later reinstatement of narrow habitat sections as short-term and reversible without demonstrating the effect of repeated severance across the complete pond network. An individual opening may be small, but several simultaneous or sequential openings may interrupt more than one dispersal route. The assessment does not provide a pond-by-pond map of:

- confirmed and assumed breeding status;
- terrestrial habitat within the relevant distance bands;
- likely connections between ponds;
- every cable, access and road crossing;
- the duration of each temporary barrier;
- or the cumulative effect of fencing, trenching and vegetation removal.

Thirdly, the licensing route remains unresolved. Natural England expressly records that a great crested newt licence may be required and retains the matter as amber. South Norfolk Council has also asked the Applicant to liaise with Natural England's district-level licensing delivery team to ensure that sufficient pond provision exists for East Pye and other development proposals.

The Applicant should therefore provide a definitive great crested newt strategy before the close of Examination. It should identify whether the Scheme will proceed through a conventional mitigation licence, district-level licensing or a combination of avoidance and licensing; demonstrate that the selected route covers the whole authorised footprint; and reconcile that route with the proposed pond buffers, cable crossings, highway works and construction phasing.

No works should be authorised within the functional terrestrial habitat of a confirmed or assumed pond unless the Applicant has demonstrated that the works are unavoidable, the licensing route is realistically available and the necessary habitat connectivity will be retained throughout construction.

Water vole and otter

The Applicant's water vole and otter surveys were undertaken in September 2025 and January 2026. No field signs were recorded within the Order Limits, and Chapter 8 therefore treats both species as currently absent. It nevertheless acknowledges potential injury, disturbance, fragmentation and habitat degradation within the wider Zone of Influence and relies upon 10-metre riverbank buffers, HDD and the Outline Protected Species Mitigation Strategy to address any colonisation before construction.

The principal deficiency is the conversion of a time-limited absence finding into a negligible-effect conclusion across a large, mobile and hydrologically connected system.

The Planning Inspectorate had expressly refused to scope these species out on the basis originally proposed. It found that water vole and otter are mobile, may range beyond a 10-metre watercourse buffer and, in the case of water vole, may occupy apparently suboptimal habitat. It required an assessment or survey-supported statement of absence. The Environment Agency made the same point.

The final survey work addresses part of that requirement, but it does not establish that the position will remain unchanged when construction begins. Chapter 8 itself accepts that future colonisation is possible. The Scheme crosses a large number of ditches and watercourses, and some crossing methods, launch and reception pits, temporary access structures and working areas remain dependent upon detailed design. A species absent from one reach during the survey period may occupy it before or during the construction programme, particularly where connected upstream and downstream habitat exists.

The Applicant's 10-metre buffer is also not a complete Zone of Influence. Noise, lighting, vibration, drainage changes, sediment, pollution and vehicle activity can extend beyond that distance. Otter may move overland between watercourses and ponds, while water vole may use smaller or seasonally active ditches which are not visually prominent during dry conditions.

Natural England's Relevant Representation records that a licence may be required for water vole or otter. The DCO must therefore secure:

1. current surveys before works commence at each watercourse or ditch;
2. a defined validity period for survey data;
3. species-specific triggers for further survey;
4. fixed exclusion distances based upon the activity and habitat rather than a universal 10 metres;
5. restrictions on night working and lighting along riparian corridors;
6. maintenance of dry and wet passage beneath temporary crossings;
7. and a clear stop-work and licensing procedure if either species is found.

Until the final crossing schedule, access arrangements and construction compounds are fixed, the Applicant cannot demonstrate that all potential riparian-mammal effects have been avoided.

Badger

The Applicant's surveys identified partially active setts at Site 5A, Site 7A and within Cable Route Corridor section 7. It estimates that up to six badger clans partially use habitats within the Order Limits.

Chapter 8 relies principally upon 30-metre sett buffers, retention of foraging and commuting habitat and the provision of gaps beneath security fencing. It accepts a short-term reduction in foraging habitat but compares the resulting disturbance with ordinary agricultural operations and concludes that no significant effect will occur.

The principal deficiency is that a fixed 30-metre buffer does not itself demonstrate that every potentially disturbing activity is acceptable. The ecological effect depends upon:

- whether the sett is a main, annex, subsidiary or outlier sett;
- the type and intensity of activity;
- pile-driving and vibration levels;
- night lighting;
- duration and season;
- the position of haul routes and compounds;
- and the availability of undisturbed alternative foraging and commuting habitat.

Agricultural cultivation is not an adequate analogue for construction of substations, extensive cable works, haul roads and solar arrays. The latter involves sustained noise, vehicle activity, fencing, excavation, compounds and permanent land-use change rather than intermittent farming operations.

Natural England records that badger-sett closure licences may be required. The final design should therefore identify, confidentially where necessary, the relationship between each sett and every permanent or temporary work. It should demonstrate that access, piling, trenching, lighting and storage can remain outside an activity-specific disturbance zone and that the Scheme will not isolate setts from essential foraging land.

Any sett closure necessary to accommodate the Scheme should be identified during Examination rather than arising unexpectedly during detailed design. The Examining Authority should also require a fixed fencing-permeability specification. Reliance on naturally occurring undulations or later provision of 'suitable' gaps does not ensure that badgers and smaller mammals will be able to move across every fenced parcel.

Widespread reptiles

The Applicant identifies the principal suitable reptile habitats as hedgerows, ditches, woodland edges, scrub, grassland margins and the Hempnall Beck corridor. It relies on seasonal working, Ecological Clerk of Works supervision and HDD at the most sensitive locations and concludes that construction effects will be negligible and that no additional mitigation is necessary.

The principal deficiency is that the reptile assessment is habitat-led and the species is included principally for legislative-compliance purposes rather than through a population assessment. The application does not identify the distribution or relative importance of reptile populations across the Order Limits.

That matters because construction activity is concentrated in the very habitat types identified as suitable. Vegetation clearance, hedgerow crossings, ditch works, field-margin stripping, soil storage and the movement of tracked plant may kill or injure animals sheltering in vegetation, rubble, roots, tussocks or hibernation features.

A generic method based on seasonal cutting and watching briefs cannot be assumed to work equally at every location. The final Protected Species Mitigation Strategy should classify each affected area by habitat suitability, specify the clearance method and season, identify where destructive search or displacement is necessary and prohibit clearance during unsuitable weather

or hibernation periods. Reptile protection must apply to highway works, cable compounds and temporary access areas, not merely the solar-array parcels.

Brown hare and hedgehog

The Applicant identifies field margins, hedgerows, ditches, permanent grassland, woodland edges, scrub, ponds, riparian corridors and lowland fen as suitable for brown hare, hedgehog, harvest mouse and polecat. It also accepts that open arable fields are regularly used by brown hare. Its desk study includes multiple brown-hare and hedgehog records, with recent hare records and historic hedgehog and harvest-mouse records within the Order Limits. Brown hare was repeatedly recorded during surveys undertaken between 2024 and 2026.

Despite that evidence, these priority mammals were scoped out of the substantive operational assessment. The Applicant treats the arable fields as generally negligible for priority mammals, even though it separately acknowledges regular use of those fields by brown hare.

That is the principal deficiency. Brown hare is an open-farmland species. Its habitat cannot be reduced to retained field boundaries. Conversion of extensive open fields to fenced solar arrays, access tracks, substations and compounds changes the structure, visibility and permeability of the habitat for the full operational period. The Applicant has not provided a population estimate, mapped regular hare use or assessed whether fencing and panel arrays will alter territorial, breeding or escape behaviour.

For hedgehog, the primary risks arise from trenching, vegetation clearance, construction traffic, open excavations and impermeable fencing. Retention of hedgerows does not prevent injury where animals move between those hedges and adjoining margins, gardens, ponds and woodland.

Norfolk Wildlife Trust identifies hedgehog and great crested newt as characteristic species of the Claylands landscape and emphasises the need for connected habitat rather than isolated enhancement areas. The final Scheme should therefore secure continuous small-mammal permeability across all fences, daily inspection and escape provisions for open excavations, restrictions on night-time vehicle movements, and a prohibition on uncovered trenches or pipes capable of trapping animals.

The effect upon brown hare should be reassessed as a permanent operational habitat effect, not merely a short-term construction issue.

Terrestrial and aquatic invertebrates

The Applicant considers the arable field interiors to be of negligible importance for terrestrial invertebrates and describes the semi-natural habitat as generally narrow, linear and fragmented. It relies upon retention and buffering of hedgerows, ditches, woodland edges, ponds, watercourses and grasslands and concludes that construction effects will not be significant. It accepts, however, that cable routes, haul routes, new accesses and highway works will affect hedgerows and field-boundary habitats and that construction dust and sediment deposition may degrade those features.

The principal terrestrial-invertebrate deficiency is the absence of a sufficiently detailed assessment of the margins and edge habitats that actually support the resource. Describing a habitat as narrow or fragmented does not make it ecologically unimportant. Those strips provide flowers, larval food plants, bare ground, litter, deadwood and overwintering habitat and supply prey for bats, birds, reptiles and other mammals.

The assessment also understates temporal loss. A hedge or grass margin reinstated after cable construction does not immediately regain its former floral structure, soil profile, litter layer or invertebrate community. The same applies to scrub, banks and ditch margins affected by access works.

For aquatic invertebrates, the Applicant accepts that diverse assemblages, including sensitive taxa, are likely in Hempnall Beck and its main tributaries. It nevertheless concludes that HDD, setbacks, pollution control and reinstatement reduce construction effects to negligible.

The Environment Agency does not consider the aquatic-invertebrate position fully resolved. It states that the potential attraction of aquatic insects to solar panels has not been assessed, creating a risk of life-cycle interruption, and that the wider watercourse buffers shown on the indicative masterplan are not securely carried into the controlling documents.

The Applicant should therefore provide:

- targeted survey where species-rich terrestrial or aquatic habitat is affected;
- full protection of larval food plants and overwintering habitat;
- a quantified assessment of temporary habitat time-lag;
- an assessment of polarised-light attraction to panels;
- and secured watercourse buffers based upon invertebrate function rather than a general 10-metre minimum.

These issues are relevant not only to invertebrates themselves but to the wider food web relied upon by bats, birds and fish.

Invasive species and biosecurity

The Applicant has recorded giant hogweed at five locations in Site 5A and Himalayan balsam in Site 9 and Cable Route Corridor section 7. It proposes avoidance, control and monitoring through the Protected Species Mitigation Strategy.

The Planning Inspectorate had refused to scope invasive non-native species out because the Applicant's original approach did not address the potential introduction of species not already present. The Environment Agency similarly warned that construction and decommissioning could introduce or spread invasive species and that the relevant measures had not been carried through consistently into the commitments.

The principal deficiency is therefore not recognition of the two mapped plants. It is the absence of a complete, route-wide biosecurity system covering:

- contaminated soil and vegetation;
- machinery and tracked plant;
- boots and hand tools;
- water pumps and hoses;
- imported topsoil and aggregate;
- movements between separate watercourses;
- and works undertaken by contractors arriving from other sites.

This is particularly important in the River Tas catchment because aquatic biosecurity must prevent the spread of signal crayfish, crayfish plague and other aquatic invasive organisms, as addressed in Section 8.9.

The final management plan should map all known invasive-species stands, establish exclusion zones, specify treatment and disposal methods, prohibit unauthorised movement of affected soils, require inspection of imported material and secure Check–Clean–Dry procedures for all equipment used in or near water.

Because the Scheme would operate across numerous geographically separated work fronts, biosecurity must be enforced between parts of East Pye as well as between the Scheme and external sites. A general commitment to legislative compliance does not provide that operational control.

Conclusion on other protected and priority species

The evidence does not support the treatment of these species as a collection of minor issues capable of being dealt with solely by toolbox talks and pre-construction checks.

The application confirms:

- great crested newt presence or assumed presence in 12 ponds within the Order Limits;
- watercourses capable of future occupation by water vole and otter;
- several active or partly active badger setts and up to six badger clans;
- reptile habitat along the same boundaries and watercourses crossed by construction;
- repeated brown-hare use of open fields;
- priority-mammal habitat throughout margins, scrub, ponds and riparian corridors;
- diverse aquatic-invertebrate habitat;
- and established invasive plants within the working area.

Natural England retains protected species as an amber issue and identifies unresolved potential licensing requirements.

BEPS therefore submits that the Applicant should provide a final, integrated Protected Species Mitigation Strategy during the Examination. It should be based upon the maximum construction footprint, final access and crossing schedule, valid survey data, identified licensing routes and species-specific monitoring. Where the final design cannot avoid protected-species habitat or cannot demonstrate a realistic licensing pathway, the relevant works must be removed or relocated.

8.13 Construction-phase ecological effects

The construction phase is the point at which the greatest number of ecological pathways operate simultaneously. It includes far more than the land directly occupied by panels, substations and cable trenches. The authorised works encompass highway alterations, new accesses, visibility splays, haul roads, temporary compounds, laydown areas, cable working strips, HDD pits, soil storage, watercourse crossings, piling, drainage, temporary fencing, lighting and extensive vehicle movements.

The Applicant's ecological assessment nevertheless frequently measures habitat effects by reference to the narrow area directly removed. A hedgerow crossing is described as a section of up to 10 metres; a ditch crossing is compared with the total length of the ditch network; and temporary habitat is assumed to be reinstated. Chapter 8 expressly describes repeated temporary hedgerow removals of typically up to 10 metres as proportionately very small and relies upon future replacement planting and BNG.

That approach does not capture the full construction footprint or the Zone of Influence around it.

A 10-metre hedge opening may require a substantially wider vehicle approach, swept path, visibility splay, working area and soil-storage zone. A seven-metre cable trench operates within a construction corridor normally 25 metres wide and capable of being widened further at road, watercourse and utility crossings. An HDD crossing requires launch and reception pits of up to 25 metres by 25 metres, together with plant, access, drilling-fluid storage and monitoring.

The ecological assessment must therefore address the complete maximum construction envelope and the indirect effects extending beyond it. It cannot lawfully or scientifically reduce construction harm to the sum of the habitat polygons physically excavated.

8.13.1 The construction footprint is materially wider than the permanent footprint

Chapter 4 confirms that the authorised development includes temporary construction and decommissioning compounds, access and tunnelling areas for the cable works, construction and decommissioning laydown areas, temporary alterations to streets and highways and off-site works beside highway land.

The cable works alone may involve:

- trenches up to seven metres wide and two metres deep;
- a standard 25-metre construction working width, widened where crossings or other operations require it;
- trenchless bores potentially reaching 12 metres below ground;
- HDD pits up to 25 metres by 25 metres;
- joint bays with excavations approximately 20 metres by seven metres and three metres deep;
- haul and access routes;
- soil-storage areas;
- and temporary compounds and laydown land.

The main sites require land preparation, localised levelling, perimeter fencing, construction laydown areas, internal roads, site entrances, delivery-holding areas, compounds, vegetation clearance and highway modification.

Temporary compounds would contain hardstanding, vehicle parking, workshops, security fencing and lighting, material and equipment storage, drainage and waste infrastructure and utility connections. They are not ecologically neutral simply because they are temporary.

The distinction between permanent and temporary land take is relevant to duration and restoration, but it does not determine whether an effect occurs. Temporary works may kill protected species, sever habitat during a critical breeding season, compact soils, alter drainage, spread invasive plants or cause a pollution incident. Some effects may persist long after the compound or track has been removed.

The assessment should therefore provide a construction land-budget identifying the maximum area of:

- vegetation clearance;
- topsoil stripping;
- hardstanding;
- haul and access roads;
- compounds and laydown;
- trenches and pits;
- spoil storage;
- watercourse crossings;
- highway works;
- and temporary lighting.

That land-budget should be reconciled with the ecological habitat-loss tables and BNG baseline. No equivalent scheme-wide reconciliation is presently apparent.

8.13.2 Road widening, accesses and HGV movements

The Applicant proposes to use existing accesses where practicable, but Chapter 4 confirms that new accesses may be constructed and that localised hedgerow removal may be required for access and visibility splays. New internal tracks may be up to six metres wide. Accesses are designed for articulated HGVs, while abnormal indivisible loads may include transformers and cable drums.

Highway and access effects extend beyond the vegetation directly removed. They may include:

- hedge and tree pruning for horizontal and vertical clearance;
- verge overrun;
- soil compaction;
- bank and ditch damage;
- dust deposition;
- vehicle lighting;

- repeated noise and visual disturbance;
- fuel or hydraulic-fluid leakage;
- and mortality of animals crossing the road or sheltering in vegetation.

The Cable Route Corridor alone is forecast to generate an average of 15 HGV arrivals each day and a peak of 33 arrivals, equivalent to 66 HGV movements, together with up to 60 daily car, light-vehicle and shuttle movements associated with the compounds. Those figures demonstrate that the construction impact is not comparable to a single agricultural vehicle passing intermittently through a field.

The effect is particularly significant on narrow rural lanes, where large vehicles may overrun verges, pass close to hedgerows and veteran trees and require temporary traffic controls or road alteration. The biological receptors include rare roadside plants, nesting birds, hedgehog, badger, amphibians, reptiles and invertebrates, as well as the hedgerow and ditch network itself.

The assessment should identify the complete swept path and ecological clearance envelope for every HGV and abnormal-load route. It is insufficient to map only the finished access width or the vegetation formally scheduled for removal.

Where a route cannot accommodate the construction traffic without loss, compaction or repeated disturbance of important habitat, the route should be changed. Traffic management and smaller delivery vehicles should be considered before vegetation removal or road widening.

8.13.3 Haul roads and temporary access tracks

Haul roads produce a linear construction effect separate from the final infrastructure. They concentrate repeated heavy vehicle movement across fields and between compounds, cable works and array areas.

The ecological pathways include:

- removal or covering of vegetation;
- soil compaction and rutting;
- fragmentation of terrestrial habitat;
- entrapment or mortality of small animals;
- noise and vibration;
- dust;
- altered runoff;
- and repeated severance at hedges, ditches and watercourses.

The Applicant frequently describes temporary crossings as only a small proportion of the total feature. For example, Chapter 8 treats ditch intersections of up to 10 metres as proportionately very small compared with the whole ditch network. It also leaves the type of temporary access ramp—including structures with in-channel supports or closed culverts—to detailed design.

That comparison is ecologically incomplete. The significance of a crossing depends upon its position and function, not simply the percentage of total ditch length affected. A short crossing may:

- sever the only connection between two habitat areas;
- obstruct fish or mammal passage;
- remove a water-vole burrow;
- introduce sediment into a whole downstream network;
- or interrupt a bat and bird corridor.

The haul-road assessment must therefore be receptor-led. Each crossing should be fixed, surveyed and justified before consent. Clear-span solutions should be preferred where watercourse crossings cannot be avoided, and temporary culverts should not remain an open design option in sensitive habitat.

8.13.4 Construction compounds and laydown areas

Construction compounds would contain hardstanding, parking, offices, workshops, fencing, lighting, material storage, drainage and waste facilities. These uses introduce a concentration of ecological risk that cannot be represented by the compound's direct land-take area alone.

Potential effects include:

- displacement of birds and mammals;
- continuous or repeated lighting;
- noise from generators, plant and vehicle activity;
- polluted runoff;
- spills during refuelling and maintenance;
- compaction beyond the hardstanding edge;
- dust and mud deposition;
- and spread of invasive species through stored soil and machinery.

The Applicant states that land is required within the Cable Route Corridor for access, temporary compounds and laydown areas and that indicative compound locations are shown in its figures. Where locations remain indicative, the Environmental Statement must assess the worst environmentally permissible position. It cannot assume that detailed design will select the least harmful location unless that outcome is secured.

All compounds should be fixed outside:

1. protected-species buffers;
2. ancient woodland and veteran-tree zones;
3. bat flight lines;
4. breeding-bird territories;
5. species-rich verges and meadows;
6. ponds and great crested newt terrestrial habitat;
7. watercourse and wetland zones;

8. and hydrologically sensitive or flood-prone land.

A minimum numerical stand-off should not displace the need to assess noise, lighting, drainage and access pathways extending beyond the compound boundary.

8.13.5 Piling and deep foundations

Solar mounting structures may be driven into the ground to a maximum depth of four metres. The BESS and some substation foundations may use piles extending to a maximum depth of 12 metres.

The ecological effects include more than the small surface area occupied by each pile. Repeated installation across extensive arrays may generate:

- percussive noise;
- ground-borne vibration;
- disturbance of breeding, roosting and hibernating fauna;
- compaction by piling rigs;
- risk to tree roots;
- mobilisation of contamination;
- and new pathways between shallow and deeper groundwater.

These pathways are particularly important close to ancient woodland, bat maternity and hibernation habitat, ponds, wetland, groundwater-dependent habitats and the chalk-stream system.

Norfolk Wildlife Trust advised that noise and vibration from cable and other works should be kept away from woods supporting bat maternity colonies and that such work should be avoided during the maternity period. South Norfolk Council's Environmental Management Officer objected at consultation stage to percussive piling and advised that screw piles should be advanced as the preferred installation method.

The Environment Agency's Relevant Representation also states that further work is required on the effect of piling and deep foundations upon the aquifer. It identifies the lack of adequate maximum design information for certain substations as preventing a complete groundwater assessment.

The Applicant should therefore provide an ecological piling schedule showing:

- the maximum number and depth of piles by parcel;
- the proposed installation method;
- proximity to woodland, ponds, watercourses, roosts and setts;
- predicted noise and vibration;
- groundwater interaction;
- and seasonal restrictions.

The ecological assessment should adopt percussive pile driving as the worst case wherever the DCO retains that option. It cannot rely upon the possibility that a quieter method may be selected later.

8.13.6 Trenching and cable installation

Open-cut cable installation is not represented adequately by the seven-metre trench alone. Chapter 4 specifies a standard 25-metre construction width capable of being widened at roads, watercourses, utilities and other constraints. It includes fencing, plant movement, separate storage of soils, drainage and access beside the excavation.

The ecological effects may include:

- complete removal of vegetation within the working strip;
- severance of hedges and ditches;
- destruction of refuges and hibernation sites;
- compaction of adjoining habitat;
- entrapment of amphibians, reptiles and mammals;
- altered groundwater and drainage;
- mixing of topsoil and subsoil;
- spread of invasive plants;
- and delayed recovery after reinstatement.

Spoil generated by trenches, compounds, tracks and substations would be stored beside the cable route and within compounds before being used for backfilling and reinstatement. The storage footprint and duration must therefore be included in the habitat-loss calculation.

The Applicant assumes that reinstatement makes most cable effects short-term and reversible. That assumption is not demonstrated for mature hedgerows, species-rich grassland, ditch banks, wetland soils or long-established field margins. Reinstated soil may differ in structure, drainage, fertility and seed-bank distribution, while replanted hedges may require years or decades to recover equivalent ecological function.

The effect calculation should therefore include the period between clearance and demonstrated ecological recovery. A habitat should not be treated as fully restored merely because the trench has been filled and grass has been sown.

8.13.7 Horizontal directional drilling

HDD can avoid direct excavation of the habitat above the bore. It is nevertheless a substantial construction operation.

The Applicant's maximum parameters permit individual bores to reach 12 metres below ground and require launch and reception pits of up to 25 metres by 25 metres. The pits may be only 10 metres from a watercourse, ditch or hedgerow and 30 metres from a County Wildlife Site.

The ecological pathways include:

- excavation and drainage of pits;
- noise, vibration and lighting;
- plant and vehicle access;
- drilling-fluid storage and handling;
- inadvertent drilling-fluid return or frac-out;
- interception of groundwater;
- mobilisation of contamination;
- and runoff from the working compound.

The use of HDD beneath a receptor does not establish that the receptor has been avoided where launch and reception compounds remain close to it or where the bore may affect groundwater or the hyporheic zone. This is especially important at Hempnall Beck, Fritton Grange Meadows, Lower Spring Wood and other sensitive crossings.

The Outline Protected Species Mitigation Strategy provides for Ecological Clerk of Works monitoring during HDD beneath Hempnall Beck, but the detailed strategy and task-specific methods remain for later approval.

Before consent, the Applicant should identify every HDD crossing and provide:

- fixed pit and compound locations;
- bore profile and depth;
- geology and groundwater information;
- drilling-fluid composition and volume;
- frac-out risk;
- lighting and working-hour assumptions;
- access and spoil arrangements;
- and receptor-specific emergency procedures.

Where those matters remain variable, the assessment should adopt the environmentally worst permissible configuration.

8.13.8 Watercourse and ditch crossings

The Scheme requires numerous interactions with watercourses, ordinary ditches and field-drain networks. Open-cut trenching is stated to be the primary crossing technique for roads, tracks, utilities and watercourses, with trenchless techniques used at selected locations.

Potential ecological effects include:

- direct bed and bank loss;
- sediment release;
- turbidity;
- interruption of flow;
- obstruction of fish and invertebrate movement;
- removal of riparian vegetation;
- pollution;

- and spread of disease or invasive species.

A ditch that is dry during construction may still function during wetter conditions as a route for water, species and pollutants. Its ecological value cannot be determined only by the presence or absence of water on the day works commence.

The Environment Agency objects to new culverts and seeks clear-span bridges where crossings cannot be avoided. It also states that the location and design of temporary main-river works remain insufficiently defined and that flood and environmental risks may not be adequately controlled.

Every watercourse and ditch crossing should therefore be listed in a final crossing schedule before consent, with the method, working width, duration, access, season and protected-species constraints identified. The current proposal to finalise crossing methods through later detailed design leaves the ecological effect uncertain.

8.13.9 Vegetation removal and repeated habitat severance

The Applicant's assessment places substantial weight upon the retention of most hedgerows and other linear habitats. It acknowledges, however, that temporary hedge removals of up to 10 metres will occur throughout the Order Limits for the cable corridor, haul roads and accesses. A final crossing schedule is deferred to each stage of construction.

The issue is not one isolated opening. It is the repeated interruption of a connected network.

Each opening may cause:

- direct habitat loss;
- loss of nesting and shelter;
- interruption of bat, bird, amphibian and mammal movement;
- increased light penetration;
- changes to wind and microclimate;
- removal of bank and ground flora;
- and a period of ecological non-equivalence after replanting.

A newly planted hedge is not immediately capable of replacing a mature boundary. Nor does a quantitative BNG gain elsewhere maintain the function of the particular route severed during construction.

The Applicant should identify the total number and length of temporary and permanent gaps, their duration, the species functions affected and the time required for reinstated vegetation to become equivalent. The habitat-loss calculation should include the ecological time lag rather than recording the feature as simply retained or reinstated.

Construction phasing must also prevent simultaneous severance of alternative routes used by the same species population. That requires a scheme-wide connectivity plan rather than separate method statements prepared for individual work fronts.

8.13.10 Dust

Dust may arise from vegetation clearance, soil stripping, trenching, haul roads, compounds, stockpiles and vehicle movements. Chapter 8 accepts that construction dust and sediment deposition may degrade woodland edges, hedgerows, ditches and watercourses but concludes that the Outline CEMP will prevent significant effects.

The physical footprint of dust is not limited to the land disturbed. It may settle on:

- leaves and flowers;
- lichen and bryophytes;
- aquatic and marginal vegetation;
- invertebrate habitat;
- ponds and watercourses;
- and adjoining designated or priority habitat.

The risk depends upon soil type, weather, wind direction, activity and duration. A generic commitment to damping and good practice does not establish the deposition level at each receptor.

The assessment should identify the most dust-generating works near ancient woodland, species-rich verges, ponds, lowland meadow and watercourses and set receptor-specific monitoring and stop-work thresholds. Dust generated by highway and haul-road traffic outside the principal panel parcels must be included.

8.13.11 Noise and vibration

Construction noise and vibration arise from piling, excavation, HDD, generators, HGVs, cranes and other plant. Their effects extend beyond the area of direct habitat loss.

Potentially sensitive receptors include:

- breeding and wintering birds;
- bat maternity and hibernation sites;
- badger setts;
- otter resting and commuting habitat;
- fish;
- reptiles and amphibians;
- and woodland fauna.

The Applicant often treats construction as progressive and therefore less likely to affect the whole Scheme simultaneously. That may reduce one form of impact but does not establish that a particular population will always retain an unaffected alternative habitat. Progressive works may expose the same connected population to a sequence of disturbances across successive locations.

Noise and vibration limits should therefore be ecological as well as residential. The final CEMP should include receptor-specific exclusion distances, seasonal restrictions and monitoring at bat woods, setts, breeding-bird habitat, hibernacula and sensitive watercourses.

8.13.12 Construction lighting

Temporary lighting would be used during construction, including mobile lighting towers and lighting at compounds. The Applicant proposes directional fittings and inward orientation to reduce spill.

Those controls are useful but do not demonstrate that dark ecological corridors will be maintained. Light may arise from:

- compounds;
- vehicle headlights;
- emergency work;
- HDD operations;
- security requirements;
- and winter working within permitted hours of darkness.

The East Pye landscape supports nationally important bat activity and numerous nocturnal species. A directional light can still affect a hedge, woodland edge, pond or watercourse where the source is close or where reflected light is significant.

The final lighting design should map all temporary and mobile sources, specify horizontal and vertical illuminance limits and secure zero or very low spill on designated dark corridors. Temporary lighting should not be permitted within or facing woodland, hedgerow, pond, watercourse or known roost and sett buffers without prior ecological approval.

8.13.13 Soil compaction and habitat degradation

Heavy construction traffic, compounds, tracks, piling rigs and soil storage may compact ground beyond the directly excavated footprint. The effect may alter:

- infiltration and runoff;
- soil oxygen and root growth;
- plant communities;
- pond and ditch hydrology;
- and the future success of habitat reinstatement.

Compaction is especially important on the Scheme's clay-rich and seasonally wet soils. Damage may be difficult to reverse once soil is trafficked in unsuitable moisture conditions.

For ecology, the consequence is not limited to agricultural productivity. Compacted field margins and woodland edges may lose botanical and invertebrate value; compacted ground around ponds may alter amphibian terrestrial habitat; and changes in runoff may transport sediment into ditches and streams.

The construction footprint should therefore include the complete area liable to plant trafficking, manoeuvring and overrun. It should not be limited to the surfaced track or trench line shown on a plan.

8.13.14 Contamination and accidental spills

The Applicant proposes bunded fuel storage, spill kits and worker training. Those measures reduce risk but do not remove the source–pathway–receptor relationship.

Construction involves fuel, oils, hydraulic fluids, cementitious materials, drilling fluids, waste water and contaminated spoil across numerous dispersed work fronts. A release may reach ponds, ditches, watercourses, groundwater, private supplies or designated habitats through surface runoff, field drains or cable trenches.

The Environment Agency considers the pollution-control position incomplete. Its Relevant Representation states that water-quality monitoring and the outline management plans require further development, that the effects of temporary works remain unclear and that certain preliminary works are not currently covered by the CEMP, creating an unmitigated pollution risk.

That last point is particularly important. Environmental control cannot begin only when formal 'commencement' occurs if preliminary remediation, investigation, vegetation clearance or other enabling work is capable of causing ecological harm.

The draft DCO should therefore be amended so that every intrusive or potentially polluting activity is subject to an approved environmental management plan. Emergency arrangements must identify downstream ecological receptors, notification procedures, containment equipment and stop-work authority.

8.13.15 The mismatch between the assessment and the authorised works

The cumulative effect of the matters above is a structural mismatch.

The ecological assessment often characterises the impact as:

- a short section of hedge;
- a small proportion of a ditch;
- a temporary strip of field margin;
- or negligible habitat loss within an arable field.

The authorised construction works include:

- 25-metre or wider cable working corridors;
- seven-metre-wide and two-metre-deep trenches;
- deep bores and 25-metre-square HDD pits;
- compounds with hardstanding, storage, lighting and drainage;
- six-metre access tracks;
- highway alterations and visibility splays;

- HGV and abnormal-load movements;
- extensive piling;
- spoil storage;
- temporary fencing;
- and indirect zones of dust, light, noise, vibration and runoff.

Those are not equivalent descriptions of the same footprint.

The Applicant's reliance on the Outline CEMP and Outline Protected Species Mitigation Strategy does not cure the discrepancy. Chapter 8 confirms that the detailed Protected Species Mitigation Strategy, method statements and work schedules will be approved later and need only be substantially in accordance with the outline document. Natural England retains protected species as amber, while the Environment Agency identifies continuing gaps in enforceability, pollution control and preliminary-work coverage.

The ecological effect must be assessed before mitigation is relied upon. It is not sufficient to authorise a broad worst-case engineering envelope and then assume that a future contractor will find a low-impact route through it.

8.13.16 Required construction assessment and controls

BEPS submits that the Applicant should provide a consolidated Construction Ecology Impact Schedule before the close of Examination. It should identify, for every construction element:

- the maximum permanent and temporary footprint;
- habitat type and condition;
- protected and priority species affected;
- direct and indirect Zone of Influence;
- timing and duration;
- recovery period;
- mitigation;
- monitoring;
- and residual effect.

The habitat-loss and BNG calculations should then be reconciled with that schedule. Habitat should not be treated as retained where it lies within a haul route, working width, compound influence zone, visibility splay or temporary lighting corridor. Temporary habitat should not be treated as immediately restored where equivalent ecological function will take years to recover.

The final design should also secure:

- fixed compound, access, haul-route, HDD and crossing locations;
- protection of all ecological buffers from plant, storage and manoeuvring;
- activity-specific seasonal restrictions;
- ecological noise, vibration, dust and lighting limits;
- an Ecological Clerk of Works with authority to stop work;
- species-specific pre-commencement surveys with defined validity periods;

- daily inspection and escape measures for excavations;
- route-wide invasive-species and biosecurity controls;
- surface-water and groundwater monitoring;
- and enforceable incident-response and habitat-restoration requirements.

No preliminary, enabling or remediation works capable of causing ecological harm should fall outside those controls.

Conclusion

The Applicant has not demonstrated that the ecological effect of construction is limited to the relatively narrow habitat losses quantified in Chapter 8.

The Scheme's real construction footprint comprises an extensive network of intrusive and disruptive works whose effects extend beyond the trench, pile, access or compound boundary. Road widening, haul routes, HDD, piling, vegetation removal, lighting, HGV traffic, soil compaction, dust, pollution and accidental events operate cumulatively across the same connected landscape.

The assessment repeatedly relies on the propositions that the works are temporary, each individual loss is small and reinstatement or future BNG will restore ecological value. Those propositions do not address the number of interventions, the indirect zones of effect, the loss of connectivity, the establishment time for replacement habitat or the possibility of irreversible harm to protected species and sensitive aquatic receptors.

BEPS therefore submits that the construction conclusions in Chapter 8 should not be accepted until the habitat calculations have been reconciled with the complete maximum construction footprint and all necessary avoidance and mitigation have been fixed and secured. Where the full footprint cannot be constructed without significant harm, the relevant parcel, access, crossing, compound or cable alignment should be removed or redesigned.

8.14 Operational, replacement and decommissioning effects

The Applicant's ecological case cannot be assessed by considering construction alone and then treating the following 60 years as a largely passive period. East Pye Solar would be a long-duration energy installation comprising solar arrays, a BESS, substations, buried cables, access tracks, security fencing, drainage infrastructure and associated operational equipment distributed across a large rural landscape. During that period, components would require maintenance and replacement, while the habitats created or enhanced under the Outline Landscape and Ecology Management Plan would mature and potentially become increasingly valuable.

The Applicant's original Scoping Report recognised that ecological effects may occur during operation, particularly during panel replacement, and during decommissioning. It identified potential disturbance, displacement or mortality of wildlife; damage to breeding, hibernation and resting sites; noise and visual disturbance; dust and other pollutants; vibration; surface-water runoff; and plant and vehicle movements during those phases.

The application nevertheless relies heavily upon the proposition that replacement and decommissioning effects will be similar to, but less extensive than, the original construction effects and can therefore be controlled through later environmental management plans. The application also relies upon substantial habitat creation and enhancement to support its conclusions of ecological acceptability and claimed BNG gains. Those positions are not reconciled adequately.

By the time replacement or decommissioning occurs, the ecological baseline will no longer be the predominantly agricultural landscape surveyed for the application. Grasslands, hedgerows, scrub, woodland belts, ponds and riparian habitats established as mitigation or BNG may have matured for several decades. They may support protected species, priority species and established ecological networks. The later works may therefore affect habitats and species of materially greater value than the land initially occupied during construction.

The whole-life issue is consequently whether the application secures:

1. ecological protection throughout the 60-year operational period;
2. adequate assessment and control of repeated replacement works;
3. retention and protection of habitats during decommissioning;
4. a clear ecological end-state after decommissioning;
5. and sufficient legal and financial mechanisms to ensure those obligations are fulfilled by the project operator and any successor.

On the current evidence, it does not.

8.14.1 Sixty-year industrial use

The Applicant proposes an operational period of up to 60 years. South Norfolk Council described the proposal at consultation as a development extending across approximately 2,232 hectares at that stage, comprising multiple solar sites, the BESS, substations, the Cable Route Corridor and the National Grid infrastructure. Norfolk County Council similarly recorded that the project would operate for up to 60 years before decommissioning, except for the National Grid elements.

Revision 2 of Requirement 21 makes the temporal position more significant. It now expressly provides that the decommissioning date for each part of Work No. 1 may be calculated by reference to final commissioning ‘for that part’. The 60-year period is therefore capable of operating separately for different parts of the solar generating station rather than necessarily from one whole-Scheme date. That matters ecologically because different development parcels could remain operational, managed and physically fragmented for different periods. The Applicant should identify the maximum whole-Scheme duration permitted by this drafting and demonstrate that the ecological assessment, habitat-management obligations, monitoring and decommissioning assumptions cover that maximum temporal envelope. The duration is ecologically important for several reasons.

Long-term alteration of habitat function

For the full operational period, substantial areas would cease to function as open agricultural land and would instead contain rows of panels, conversion equipment, tracks, fencing and associated infrastructure. The ecological change is not confined to the physical footprint of the panel legs or equipment bases. It includes changes to:

- openness and visibility across fields;
- vegetation structure and management;
- solar exposure and shading;
- surface-water distribution;
- movement through fenced parcels;
- predator–prey relationships;
- field-boundary use;
- lighting and disturbance near electrical infrastructure;
- and the relationship between existing habitats and the land around them.

Those effects are relevant to the farmland-bird, bat, mammal, invertebrate and aquatic receptors addressed elsewhere in this Chapter.

For example, the Applicant accepts that solar development is expected to displace skylark from open-field nesting habitat. That is not a temporary construction effect: it would persist for as long as panels occupy those fields. Similarly, fencing permeability for badger, hedgehog, brown hare and other mammals is a whole-life requirement, not a one-off construction measure.

A comparatively low level of routine maintenance activity does not make the operational phase ecologically neutral. The ecological effect arises principally from the enduring land-use and habitat change rather than solely from the number of maintenance visits.

Accumulation of continuing effects

Effects which appear limited when assessed over one season may become material when repeated or maintained for six decades. Examples include:

1. repeated vegetation cutting;
2. continuing management of visibility and access;
3. disturbance around substations and the BESS;
4. recurring use of tracks beside ecological buffers;
5. operational lighting;
6. periodic drainage maintenance;
7. pruning where trees or hedgerows conflict with infrastructure;
8. and repeated localised repairs involving plant and vehicles.

The South Norfolk Tree Warden Network specifically raises the risk of future pressure to cut back retained trees because of shading, leaf or seed fall, sap, root growth, CCTV visibility or operational access. Its requested safeguards include a prohibition on operational cutting merely to manage the ordinary consequences of retained tree growth.

That concern illustrates the importance of duration. A layout that appears compatible with young or recently managed vegetation may become incompatible as trees, hedges and scrub mature. Unless sufficient mature-growth stand-offs are fixed now, the operational phase may generate continuing pressure to reduce the ecological value of retained vegetation.

Ecological maturation creates new receptors

The Applicant relies upon new and enhanced habitats to deliver mitigation, landscape screening, connectivity and BNG. Those habitats are expected to develop over the operational period. New hedgerows may become dense nesting habitat and bat commuting routes; grassland may acquire botanical and invertebrate value; scrub may support birds and mammals; ponds may be colonised by amphibians; and woodland belts may develop substantial root systems, canopy structure and deadwood.

The ecological baseline in year 30 or year 60 may therefore differ profoundly from the pre-construction baseline.

That creates an important assessment issue. Habitat initially described as proposed mitigation cannot subsequently be treated as expendable merely because it was not present when the DCO was granted. Once established, it may:

- support legally protected species;
- perform an essential mitigation function;
- form part of a connected ecological network;
- contribute to a designated-site buffer;
- or constitute habitat upon which the Applicant's BNG claim depends.

Any major operational or decommissioning works must therefore be assessed against the ecological conditions existing at the time, not solely against the original baseline.

Norfolk County Council advised at scoping that ecological surveys would need to remain up to date throughout the project design process and that regular survey might be necessary to ensure that data were no more than approximately 18 months old. It also expressly requested consideration of ecological impacts arising from upgrades to the solar farm and associated infrastructure and of the implications of decommissioning for BNG.

The need for updated evidence is considerably stronger where works may take place 15, 25, 40 or 60 years after the original surveys.

Operational effects remain disputed by regulators

The Environment Agency's Relevant Representation demonstrates that not all operational ecological effects have been resolved.

The Agency does not agree with the Applicant's conclusion that operational electromagnetic fields will not produce ecologically significant effects on freshwater fish. It requires evidence that cable

burial will reduce magnetic fields to below 12 microtesla at the watercourse bed because of potential effects upon European eel behaviour.

The Agency also considers that potential attraction of aquatic insects to polarised light reflected by panels has not been assessed and that wider watercourse buffers shown indicatively are not securely carried into the controlling documents.

It further states that insufficient evidence has been supplied to discount thermal effects from energised buried cables upon sensitive groundwater receptors, including groundwater-dependent terrestrial ecosystems.

These are operational effects extending potentially throughout the 60-year period. They cannot be characterised as insignificant merely because routine staffing levels are low.

The OLEMP does not secure an unchanging outcome

The BNG Report relies upon habitat creation and enhancement represented through the OLEMP. BEPS' review records claimed gains of 37.42% for habitats, 31.35% for hedgerows and 16.08% for watercourses. It also records that management and monitoring duration will be defined in the later LEMP and that the OLEMP does not fix a sufficiently complete long-term strategy for the functional ecological features upon which the Scheme relies.

Natural England welcomes the proposed gains in principle but advises that the BNG case should contain clearer success criteria, remedial triggers and long-term management responsibilities. That advice is significant because habitat creation is not secured merely by planting or seeding. It requires:

- establishment standards;
- management prescriptions;
- measurable condition targets;
- monitoring;
- remedial intervention;
- and continuing responsibility where the target is not reached.

Those matters must operate over a period long enough for the habitat to mature and for any failure to become apparent.

Conclusion on operational duration

The 60-year period should therefore be treated as a long-term ecological effect in its own right. It would encompass continuing land-use change, repeated management, habitat maturation, possible protected-species colonisation and changing relationships between the infrastructure and the vegetation around it.

The Applicant should be required to distinguish clearly between:

- habitats permanently protected throughout operation;

- habitats that may be altered for maintenance;
- replacement working areas;
- BNG and mitigation habitats;
- habitats around infrastructure that will remain after year 60;
- and habitats liable to removal or conversion at decommissioning.

Without that distinction, the assertion of long-term ecological benefit rests upon management flexibility that could also permit the habitats concerned to be disturbed or removed.

8.14.2 Panel and BESS replacement

Replacement of panels and batteries is not an exceptional or unforeseeable event. It is inherent in the Applicant's 60-year proposal.

The Applicant's Scoping Report states that photovoltaic panels were anticipated to have an approximate lifespan of 25–40 years and batteries a lifespan of 15–20 years. It therefore assumed that the panels could require replacement up to twice and the batteries up to four times during operation. The Applicant treated original construction as the worst-case replacement scenario and assumed that replacement effects would be materially lower.

The same Scoping Report confirms that occasional HGV access would be required for equipment replacement and that the permanent accesses would be designed to accommodate those vehicles.

The correct conclusion is therefore that East Pye may experience several substantial replacement programmes during its operational life. The question is not whether replacement will occur, but when, how frequently and over what area.

Replacement has construction-like characteristics

Panel and BESS replacement may require:

- HGV deliveries and removals;
- cranes and lifting equipment;
- temporary compounds and laydown areas;
- reopening of access routes;
- storage of new and redundant equipment;
- worker parking and welfare areas;
- temporary lighting;
- vegetation cutting for access and manoeuvring;
- noise, vibration and dust;
- soil compaction;
- pollution control;
- and removal and transport of large quantities of waste equipment.

The Applicant's own scoping evidence identifies disturbance or mortality of wildlife, damage to breeding, hibernation and resting sites, noise and visual disturbance, dust, pollution, vibration and runoff as potential effects during operational panel replacement.

The assertion that the effects will necessarily be lower than initial construction is not demonstrated merely by assuming that existing foundations and tracks can be reused. Replacement will occur in a different ecological environment.

By the time of the first major replacement cycle:

- new hedges may have matured;
- woodland belts may have substantial root-protection areas;
- scrub and grassland may support breeding birds;
- bat and bird boxes may be occupied;
- ponds may support great crested newts;
- access margins may support reptiles or invertebrates;
- and badger setts or other resting sites may have appeared.

A working area that was ecologically uncomplicated during the original construction phase may have become important habitat after 15, 25 or 40 years.

The replacement footprint is not defined

The application does not provide a final replacement logistics plan showing:

- which access routes will be used;
- whether all existing tracks will be suitable for future equipment;
- where cranes and delivery vehicles will stand;
- where batteries and panels will be stored;
- the maximum proportion of equipment replaced concurrently;
- the duration of each replacement campaign;
- or which created habitats lie within the necessary manoeuvring and working areas.

The absence of that information matters because the habitat plan may otherwise create vegetation across areas later needed for replacement. If those areas are kept permanently clear, the BNG and habitat calculations must reflect that constraint. If habitat is allowed to establish, its later removal or disturbance must be assessed.

The Scheme should not receive ecological credit for habitat created in land that is in reality reserved for repeated replacement access, compounds or storage.

BESS replacement presents additional risks

BESS replacement is likely to occur more frequently than whole-panel replacement under the Applicant's own lifespan assumptions. It may involve several cycles of disconnection, lifting, temporary storage and removal of battery containers and associated electrical or cooling equipment.

Those activities create distinct ecological and pollution risks, including:

1. leakage from damaged or degraded battery units;
2. fire or thermal-runaway incidents during handling;
3. contaminated runoff;
4. transport accidents;
5. damaged cooling systems;
6. emergency access and lighting;
7. and storage of hazardous or potentially contaminated equipment.

The Environment Agency has asked for substantially greater detail concerning emergency response and pollution prevention, including consultation with emergency services, the local authority and the Agency and notification procedures for downstream surface-water and groundwater abstractors. It notes that the oCEMP and oDEMP leave the Emergency Response Plan to detailed design.

A later operational replacement plan should not be permitted to provide a lower standard of ecological and pollution protection than the construction plan. The risk may be greater because ageing equipment is being handled within a mature habitat network.

Replacement of below-ground infrastructure is unclear

The Environment Agency identifies a further omission: the replacement programme does not specify the operational lifespan of the below-ground cabling. It states that deteriorating cables could release contaminants into the groundwater environment and asks the Applicant to confirm that the cable lifespan will at least match the operational phase.

If underground cables, ducts or joint bays require repair or replacement during the 60-year period, the ecological implications may include:

- reopening cable routes;
- excavation in established grassland;
- disturbance of hedges and watercourse crossings;
- renewed HDD or trenching;
- cutting through mature roots;
- groundwater disturbance;
- and new compounds and access routes.

The application does not establish that below-ground infrastructure will remain serviceable for the full project life without such works. The replacement assessment is therefore incomplete if it considers only panels and batteries.

Updated assessment must precede each replacement cycle

The solution cannot be limited to a pre-work protected-species check. Major replacement programmes should require a current ecological baseline and a dedicated Replacement Environmental Management Plan.

The updated baseline should cover:

- protected species;
- breeding and wintering birds where relevant;
- bats;
- badger;
- great crested newt;
- reptiles;
- water vole and otter;
- invasive species;
- mature trees and hedgerows;
- grassland and woodland condition;
- watercourses and ponds;
- and any habitat that has developed County or higher ecological importance.

The assessment must be undertaken early enough to alter the replacement design. A survey shortly before works that merely confirms the need for a licence does not apply the mitigation hierarchy.

The DCO should require each major replacement programme to:

- use existing hardstanding and tracks wherever ecologically acceptable;
- avoid all established BNG and mitigation habitat unless no feasible alternative exists;
- maintain all designated-site, woodland, tree, pond and watercourse buffers;
- update protected-species strategies and licences;
- secure seasonal restrictions;
- control light, noise, dust, runoff and contamination;
- provide Ecological Clerk of Works supervision;
- and restore any temporarily disturbed habitat to a defined condition.

Unless those requirements are fixed, repeated replacement is a foreseeable series of construction-like ecological effects that has not been adequately assessed.

8.14.3 Decommissioning damage to created habitats

The Applicant expects decommissioning to take approximately 12–24 months and to occur in phases. Its Scoping Report states that a DEMP would be prepared and approved before decommissioning. It proposes removal of the solar arrays, associated built infrastructure, substations and BESS, but anticipates that the National Grid substation will remain and that underground ducting may be left in situ. The Report also acknowledges a ‘high degree of uncertainty’ because law, policy, technology and engineering methods may change and states that land will be restored to its original use only ‘as far as reasonably practicable’.

Those qualifications are fundamental.

Decommissioning would not take place on the baseline agricultural land assessed before construction. It would take place after up to 60 years of habitat establishment and ecological

succession. The works could therefore damage the very habitats relied upon to justify the Scheme's ecological conclusions.

Likely decommissioning activities

Potential activities include:

- dismantling and removal of solar panels;
- removal or extraction of mounting piles;
- dismantling BESS and substation equipment;
- crane operations;
- removal of foundations;
- excavation around cables and joint bays;
- reopening access and haul routes;
- temporary compounds and waste-storage areas;
- HGV and abnormal-load movements;
- soil stripping, storage and reprofiling;
- vegetation removal;
- drainage works;
- lighting;
- refuelling and machinery maintenance;
- and reinstatement or conversion to agricultural land.

These activities create substantially the same ecological pathways as construction: direct habitat loss, noise, vibration, lighting, dust, pollution, compaction, disturbance and protected-species risk.

The Environment Agency has already identified detailed deficiencies in the oDEMP. It seeks consistent watercourse buffers, improved fuel and chemical storage requirements, contained wheel-wash facilities and further pollution controls.

That evidence demonstrates that the decommissioning controls are not presently complete even at outline level.

Which BNG habitats will remain?

South Norfolk Council raised this question directly.

The Council noted the Applicant's reference to 'linear terrestrial, riparian and aquatic habitats that will remain within the Site post-decommissioning' and requested a clear plan, potentially through a Biodiversity Net Gain Statement, showing which habitats would actually be retained. It also stated that semi-natural habitats created within the ancient-woodland buffers should remain after decommissioning.

This request has not been answered merely by saying that some habitat may remain. The application should identify, spatially and unambiguously:

- every habitat counted as BNG;
- every habitat relied upon as ecological mitigation;
- every compensatory habitat;
- ancient-woodland buffer habitat;
- veteran-tree buffer habitat;
- new woodland and scrub;
- species-rich grassland;
- hedgerows;
- ponds;
- riparian enhancements;
- and farmland-bird mitigation areas.

For each habitat, the Applicant must state whether it will:

- remain permanently;
- remain subject to continuing management;
- be disturbed temporarily during decommissioning;
- be removed;
- be returned to agricultural use;
- or be left to the choice of the relevant landowner.

Without that schedule, the claimed gains cannot be shown to be durable.

Which habitats will be disturbed by removal works?

The assessment should map the decommissioning footprint over the habitat layout at ecological maturity.

The central practical question is whether panels, BESS units, transformers, inverters, tracks and foundations can be removed without passing through or excavating:

1. established woodland belts;
2. mature scrub;
3. species-rich grassland;
4. mature hedgerows;
5. pond buffers;
6. riparian corridors;
7. dark bat corridors;
8. nesting-bird habitat;
9. or the root-protection areas of trees planted or retained during operation.

A habitat may not lie beneath the infrastructure yet still be damaged by the access required to remove it. Crane outriggers, turning areas, storage, vehicle overrun, soil stockpiles and temporary compounds may extend well beyond the equipment footprint.

The present documents do not provide a mature-habitat decommissioning layout demonstrating that the infrastructure is removable without such damage.

This is particularly important for woodland and hedgerow planting used as landscape screening. Planting may be positioned deliberately between the infrastructure and roads or settlements. That same planting may later obstruct access to the panels or electrical equipment. Unless access corridors are retained, decommissioning may require removal or severe cutting of vegetation that has matured for decades.

If access corridors are retained permanently, they should not be counted as undisturbed habitat. If they are planted, the Applicant must explain how decommissioning will occur without later habitat removal.

Agricultural restoration and BNG are in tension

The Applicant states that the land would be returned to its original use 'as far as reasonably practicable'. Its OLEMP is also understood to provide that, after decommissioning, landowners will determine the later use and management of their land and may return the land to arable cultivation, although some habitat areas may be left in situ.

That creates a direct conflict.

If all or most land is returned to arable use, then substantial grassland, scrub and other habitats relied upon in the BNG calculation may be lost. If those habitats remain, the land will not be restored fully to its former agricultural use. Both propositions cannot apply to the same area.

BEPS' Relevant Representation identifies this inconsistency. It records that the Outline DEMP allows some biodiversity mitigation and enhancement areas to remain while the majority of the sites may return to their original use, but does not identify:

- which habitats would survive;
- what proportion of the claimed biodiversity units would remain;
- or how retained habitats would be protected from excavation, backfilling, reprofiling and reseeding.

The problem is not resolved simply because the habitat may have been managed for a prescribed period by the time decommissioning occurs. The Applicant relies upon those habitats in the current EIA to:

- mitigate operational ecological effects;
- support connected ecological networks;
- provide replacement habitat;
- contribute to nature recovery;
- and justify a beneficial or neutral overall conclusion.

A habitat relied upon in that manner cannot be removed at the final project stage without the ecological consequences being assessed.

Some infrastructure would remain

The end-state is further complicated by the infrastructure that will or may remain.

The Applicant anticipates that the National Grid substation and underground ducting will remain. The Environment Agency records that cable removal may involve opening the ground at intervals and pulling the cable through extraction points while leaving ducts and joint bays in place. It asks the Applicant to assess the best practicable environmental option before decommissioning and to design now for possible future removal.

Norfolk County Council's Lead Local Flood Authority identifies additional uncertainty. It records that underground cables, access points, the National Grid substation, pylons, overhead lines and the sealing-end compound may remain and that some operational access tracks may be retained by later agreement with landowners. The LLFA concludes that elements not removed should be treated as permanent and states that the promise to restore the site 'as far as practicable' already indicates that complete restoration will not be achieved.

Permanent infrastructure creates continuing ecological requirements:

- future access;
- drainage;
- vegetation clearances;
- security;
- inspection;
- pollution control;
- and limitations on root growth or habitat management.

The Applicant must therefore show how habitats around retained infrastructure will be managed indefinitely and who will be responsible for that management once the solar and BESS project ends.

BNG must be recalculated against the true end-state

The application's BNG claim should not be treated as durable unless it is tested against the post-decommissioning habitat outcome.

The necessary analysis should show:

- the habitat units present immediately before decommissioning;
- the units temporarily damaged;
- the units permanently removed;
- the units retained after restoration;
- the effect of land returning to arable use;
- the effect of permanent infrastructure and tracks;
- and the habitat units restored or recreated following decommissioning.

The Environment Agency has already identified a mismatch between the BNG Report and the OLEMP concerning riparian enhancements. It states that management measures relied upon in the BNG Report are not carried consistently into the OLEMP and must be secured.

That existing inconsistency further reduces confidence that the much later decommissioning outcome is secured.

Required decommissioning habitat plan

Before consent, the Applicant should provide an outline Decommissioning Habitat Retention Plan showing:

- permanent retained habitat;
- habitat liable to decommissioning disturbance;
- routes for HGVs and cranes;
- compounds and waste areas;
- foundation and cable excavation areas;
- infrastructure to remain;
- and the intended post-decommissioning land use.

The final version should then be updated shortly before decommissioning against a current ecological baseline. It should not be permissible for the final DEMP to choose between wholesale agricultural restoration and habitat retention without reference to the ecological case on which consent was granted.

8.14.4 Absence of secure whole-life ecological protection

The application relies on a chain of future documents:

1. the detailed LEMP;
2. the OEMP;
3. the DEMP;
4. updated ecological surveys;
5. later Protected Species Mitigation Strategies;
6. task-specific method statements;
7. future licences;
8. and later restoration plans.

Some later updating is unavoidable for a 60-year project. It does not follow that ecological outcomes should be deferred.

The DCO must now secure the fixed principles and minimum outcomes against which future plans will be judged. Otherwise, the present EIA conclusions depend upon measures that may later be altered, weakened or found impracticable.

The Outline DEMP is not a complete whole-life mechanism

South Norfolk Council's Environmental Management Officer questioned the usefulness of attempting to specify detailed decommissioning methods now because methods would change substantially over 60 years and suggested that decommissioning should be secured properly through a DCO Requirement.

That is a sound distinction. The detailed machinery and waste-management methods may need to be determined later. However, the ecological outcomes must be fixed now, including:

- habitats that must remain;
- buffers that must not be infringed;
- survey and consultation requirements;
- protected-species safeguards;
- restoration standards;
- monitoring periods;
- and the financial mechanism ensuring delivery.

The July 2026 revisions do not resolve that financial issue. Requirement 21 has been amended in relation to decommissioning procedure and consultation, but no corresponding bond, escrow or other insolvency-protected financial mechanism has been introduced. A future DEMP can specify what restoration should occur; it does not demonstrate that sufficient funds will remain available to carry it out several decades later. Where ecological conclusions depend upon eventual habitat protection, restoration or remediation, that distinction remains material.

Natural England similarly advises that the 30-metre ancient-woodland and veteran-tree protection should be carried consistently through the LEMP, CEMP and DEMP. This confirms that essential ecological protections should not apply only to construction or operation.

The Environment Agency's Relevant Representation identifies multiple matters still requiring improvement within the oDEMP, including pollution prevention, material storage, wheel-wash containment, emergency response and cable end-of-life arrangements.

The oDEMP should therefore not be treated as demonstrating that decommissioning effects are already adequately controlled.

Future ecological surveys

All ecological surveys undertaken for the application will be obsolete long before replacement or decommissioning.

Before substantial replacement or decommissioning, the Applicant should be required to undertake a comprehensive updated baseline, including:

- UKHab and condition surveys;
- full botanical assessment where established grassland or verge habitat may be affected;

- tree and hedgerow surveys;
- bat activity and roost assessment;
- breeding-bird surveys;
- protected-mammal surveys;
- great crested newt assessment;
- reptile assessment;
- aquatic surveys;
- invasive-species mapping;
- and assessment of ecological connectivity.

Survey scope should reflect the habitats then present, rather than being confined to species recorded before construction.

The survey information must be provided sufficiently early to influence the method and layout. A pre-decommissioning walkover immediately before clearance would be inadequate where the proper ecological response is to change access, retain habitat or use a different removal technique.

Updated Protected Species Mitigation Strategies

The Applicant's Commitments Register, as reviewed by BEPS, relies upon pre-decommissioning surveys and an updated Protected Species Mitigation Strategy at the decommissioning stage. BEPS also notes that the Commitments Register expressly states that it is not itself a secured document and merely tracks commitments to other mechanisms.

An updated strategy is necessary but should not become a mechanism for authorising impacts that were not assessed at the DCO stage.

The DCO should require:

- avoidance before licensing;
- evidence of feasible alternative routes and working areas;
- current survey data;
- consultation with Natural England and the relevant local authorities;
- licences where necessary;
- seasonal restrictions;
- an Ecological Clerk of Works with stop-work powers;
- and replacement or compensation measures secured before harm occurs.

Where a habitat created under the Scheme has become occupied by a protected species, the Applicant should not be entitled to remove that habitat merely because its original purpose was mitigation or screening.

Restoration must be defined precisely

The application's commitment to return land to its original use 'as far as reasonably practicable' is not a defined ecological restoration standard.

‘Restoration’ may mean several different things:

- removing above-ground infrastructure;
- reinstating agricultural soils;
- returning land to arable cultivation;
- restoring habitat disturbed during decommissioning;
- retaining mature BNG habitat;
- or maintaining ecological buffers around permanent infrastructure.

The DCO should distinguish those outcomes spatially.

For habitat temporarily affected during decommissioning, restoration should mean return to at least the ecological condition existing immediately before the works, not simply reseeding to grass. This may require:

- replacement of mature hedgerows;
- restoration of species-rich grassland;
- protection of soil profiles and seed banks;
- replacement of scrub and woodland-edge functions;
- restoration of ponds or watercourse margins;
- and monitoring until equivalent condition is demonstrated.

For land intended to return to agriculture, the Applicant must state which existing ecological gains will be removed and provide an assessment of the resulting loss.

Successor liability

Norfolk Wildlife Trust’s Relevant Representation asks who will pay for decommissioning and whether the obligations will bind successor entities if Island Green Power no longer owns the Scheme in 60 years. It describes these as significant outstanding concerns.

That issue is directly relevant to ecological deliverability. Over six decades, the project may be sold, refinanced or transferred between operators. Land interests may also change. Ecological obligations must therefore bind:

1. the undertaker;
2. any transferee of DCO powers;
3. successor operators;
4. and, where relevant, landowners responsible for retained habitat.

There must be no separation under which one entity is required to remove the infrastructure while another controls the land containing the mitigation habitat, with neither bearing complete responsibility for restoration.

The DCO should require Secretary of State approval before transfer of relevant powers unless the transferee demonstrates the technical and financial capacity to discharge all ecological, decommissioning and restoration obligations.

No identified insolvency-proof financial security

The application materials reviewed by BEPS do not identify a decommissioning bond, escrow account, letter of credit, parent-company guarantee or equivalent ring-fenced provision covering the costs of decommissioning and environmental restoration.

BEPS' Relevant Representation notes that the security identified in the Funding Statement appears to concern compulsory-acquisition compensation rather than decommissioning, insolvency or restoration. It submits that the application contains no ring-fenced, insolvency-proof financial security for a project involving 60 years of operation, buried infrastructure, substations, a BESS, replacement cycles and substantial end-of-life liabilities.

BEPS' separate position note explains the risk: where a project company becomes insolvent, environmental and restoration liabilities do not disappear but may be transferred to landowners, regulators or the public purse. It proposes a DCO requirement for a ring-fenced and insolvency-protected bond, escrow or equivalent instrument sufficient to meet the full estimated costs, callable on default or insolvency, index-linked and reviewed at intervals no longer than five years.

That safeguard is relevant to ecology because habitat restoration and long-term management require funding. The necessary costs may include:

- protected-species surveys and licensing;
- ecological supervision;
- sensitive removal of infrastructure;
- protection of mature habitat;
- treatment of invasive species;
- soil and habitat restoration;
- replacement planting;
- water-quality controls;
- monitoring;
- and remedial work where restoration fails.

A DEMP without secured finance demonstrates an intended process, not that the process is deliverable in the event of insolvency, abandonment or default.

Minimum whole-life controls

BEPS submits that the following should be secured through the DCO:

- A Whole-Life Ecology and Habitat Retention Plan identifying all mitigation, compensation and BNG habitats, permanent buffers, replacement working areas and intended post-decommissioning land uses.
- A requirement that no substantial panel, BESS, transformer or cable replacement may begin without an approved Replacement Environmental Management Plan based on current ecological surveys.
- An approved updated Protected Species Mitigation Strategy before each major replacement programme and before decommissioning.

- A final Decommissioning Habitat Protection Plan based on the habitats and protected species present immediately before decommissioning.
- A fixed schedule of habitats to be retained permanently, including semi-natural habitats within ancient-woodland and veteran-tree buffers and any habitat necessary to maintain ecological connectivity.
- A prohibition on locating replacement or decommissioning compounds, access routes, storage areas and manoeuvring land within established mitigation or BNG habitat unless the relevant authority agrees that no less harmful alternative exists.
- A requirement to quantify habitat loss caused by decommissioning and to restore or replace that habitat to an equivalent or better condition.
- Post-replacement and post-decommissioning ecological monitoring, with defined success criteria and enforceable remedial triggers.
- Binding consultation with South Norfolk Council, Norfolk County Council, Natural England and the Environment Agency on the relevant final plans.
- An index-linked, insolvency-protected decommissioning and ecological restoration security sufficient to fund all removal, restoration, monitoring and remedial obligations.

Overall conclusion

The application does not provide a secure whole-life ecological case.

Its own evidence establishes that:

- the Scheme would operate for up to 60 years;
- photovoltaic panels may require replacement up to twice;
- batteries may require replacement up to four times;
- major replacement works create construction-like ecological pathways;
- decommissioning would take approximately 12–24 months;
- the precise methods are subject to substantial future uncertainty;
- the National Grid substation and underground infrastructure may remain;
- and restoration is qualified by the phrase ‘as far as reasonably practicable’.

The relevant representations materially reinforce those concerns:

- South Norfolk Council asks which terrestrial, riparian and aquatic habitats will actually remain and requires ancient-woodland buffer habitats to be retained;
- Natural England seeks clearer BNG success criteria, remedial triggers and long-term responsibilities;
- the Environment Agency identifies unresolved DEMP, pollution, cabling and operational ecological issues;
- Norfolk County Council identifies infrastructure that may be permanent and questions whether full restoration is possible;
- Norfolk Wildlife Trust asks who will pay and whether successor owners will be legally bound;
- and BEPS identifies the contradiction between a claimed durable BNG, optional habitat retention, possible return to arable use and the absence of insolvency-proof financial security.

Until the Applicant identifies which habitats will survive, assesses the mature-habitat effects of replacement and decommissioning, secures successor responsibility and provides adequate financial security, the claimed operational ecological benefits and BNG should be given limited weight.

A habitat gain that may later be removed, damaged during equipment extraction or returned to arable cultivation at landowner discretion is not demonstrated to be a durable ecological gain. A future DEMP cannot cure that fundamental uncertainty unless the DCO first fixes the ecological outcomes, legal responsibilities and financial means by which they will be delivered.

8.15 Biodiversity Net Gain

The Applicant relies upon its Biodiversity Net Gain Report as an important part of the ecological case for East Pye Solar. The headline figures are a claimed 37.42% gain in habitat units, 31.35% gain in hedgerow units and 16.08% gain in watercourse units across the Order Limits. Those figures substantially exceed the minimum 10% figure against which the Applicant presents the Scheme.

Natural England welcomes the demonstration of gains exceeding 10% using the Defra Biodiversity Metric. It also supports aligning habitat delivery with the Norfolk Local Nature Recovery Strategy and recognises the potential for a project of this scale to contribute to 'more, bigger, better and more joined up' habitats. Natural England's support is not, however, unconditional. It asks for clearer success criteria, remedial triggers, long-term management responsibilities and alignment with the final Norfolk LNRS so that the proposed measures can be delivered effectively. It also advises that the gains must be secured through planning obligations, conservation covenants or DCO requirements.

Natural England did not assign BNG a red, amber or green risk category because mandatory BNG for NSIPs was not due to apply until 2 November 2026. The Applicant is nevertheless relying upon the claimed gain as a policy benefit and as evidence that East Pye would produce a favourable ecological outcome. The calculations must therefore be scrutinised with the same care as any other material part of the Applicant's case.

Norfolk Wildlife Trust takes a similarly qualified position. It supports ambitious BNG exceeding the statutory minimum and landscape-scale nature recovery, but also requires the Scheme to avoid harm to designated sites, priority habitats and protected species and to provide genuine and lasting ecological benefits. Having reviewed the final ES and associated documents, NWT concludes that further information and design refinement are required before the Scheme can be considered ecologically acceptable.

BNG should consequently be treated as a separate and subordinate stage of the ecological assessment. It follows, rather than replaces:

- establishment of an adequate baseline;
- avoidance of harm;
- application of the ecological mitigation hierarchy;
- compliance with protected-species requirements;
- assessment under the Habitats Regulations;

- protection of irreplaceable habitat;
- compliance with Water Framework Directive objectives;
- and assessment of population-level and landscape-scale ecological effects.

The existence of a positive metric balance does not demonstrate that those prior questions have been answered.

8.15.1 BNG does not determine ecological acceptability

The Biodiversity Metric is a habitat-accounting tool. It assigns relative values according to matters such as habitat type, area or length, condition, strategic significance, difficulty of creation and time to target condition. It does not determine whether the Scheme is lawful or ecologically acceptable in all other respects.

The Applicant's own BNG material acknowledges that the metric operates as a habitat proxy providing relative values. BEPS' review of the application identifies that the metric does not measure the functional issues at the centre of the East Pye objection, including bat commuting networks, dark-landscape integrity, landscape permeability and species viability.

A positive BNG result cannot answer the following matters.

Protected-species law

The metric does not determine whether protected species will be killed, injured, disturbed or deprived of breeding sites, resting places or functionally important habitat. Nor does it determine whether any licence tests can be satisfied.

Natural England retains protected species as an amber matter. The Outline Protected Species Mitigation Strategy indicates that licences may be required for water vole or otter, great crested newts, roosting bats and badger-sett closures. Natural England asks for confirmation of whether those licences have been applied for and advises early action.

Habitat units created elsewhere do not demonstrate:

- that barbastelle maternity-colony habitat will remain functional;
- that disturbance of a bat roost is licensable;
- that great crested newt pond connectivity will be maintained;
- that badger-sett disturbance can be avoided;
- or that protected aquatic species will be unaffected.

The Scheme could therefore achieve a positive numerical BNG result while still committing a protected-species offence or failing the applicable licensing tests.

That problem is particularly acute for species whose requirements are spatial and behavioural. A hectare of new grassland does not replace a specific bat flight line. A new pond does not necessarily replace a breeding pond connected to established terrestrial habitat. A length of new

hedge does not automatically replace a mature, dark commuting route between a maternity woodland and its feeding areas.

Habitats Regulations assessment

The Biodiversity Metric does not constitute an assessment under the Conservation of Habitats and Species Regulations. It cannot establish the absence of likely significant effects or adverse effects upon the integrity of a European site.

Natural England addressed the Shadow HRA separately from BNG. Its agreement with the HRA conclusion concerning Norfolk Valley Fens SAC, The Broads SAC, Broadland SPA and Broadland Ramsar is based upon the identified pathways, distance, hydrological evidence and mitigation, not upon the positive BNG calculation.

The legal questions under the Habitats Regulations therefore remain independent. Habitat gains elsewhere cannot be counted against an adverse effect on site integrity or used to avoid the precautionary assessment required where reasonable scientific doubt remains.

Irreplaceable habitat

The metric cannot show that loss or deterioration of ancient woodland, ancient or veteran trees, or lowland fen is acceptable.

South Norfolk Council specifically distinguished the Biodiversity Gain Hierarchy from the ordinary ecological mitigation hierarchy and required the Applicant to consider enhancement of existing habitats rather than relying only upon replacement creation. It also required the semi-natural habitats within ancient-woodland buffers to be retained after decommissioning.

Irreplaceable habitats derive their value from age, ecological continuity, soils, fungi, hydrology, deadwood and other characteristics that cannot be recreated within the operational period of a solar development. A positive total of ordinary habitat units cannot compensate for their loss or deterioration.

The metric result must therefore be calculated and presented separately from the policy test for irreplaceable habitats. It cannot be used to place proposed woodland or grassland creation on the positive side of the balance as though it cancels deterioration of ancient woodland, veteran-tree habitat or lowland fen.

Water Framework Directive compliance

Watercourse BNG does not amount to a Water Framework Directive assessment and cannot establish compliance with the no-deterioration objective.

BEPS' review of the BNG watercourse annex records that many baseline reaches are classified as poor or fairly poor, that proposed enhancement frequently does not move the reach into a higher condition class and that the annex expressly records no increase to the next condition class. Part

of the numerical gain appears to arise from reduced riparian encroachment and changes in strategic significance rather than demonstrable improvement to channel condition.

A watercourse-unit surplus does not establish that:

1. sediment will not enter the River Tas system;
2. a waterbody quality element will not deteriorate;
3. chalk-stream flow or substrate will remain unaffected;
4. HDD will not cause hydrological or pollution effects;
5. white-clawed crayfish habitat will be protected;
6. or European eel movement will remain unaffected.

Those issues require separate source–pathway–receptor and WFD assessment.

Population viability

The metric principally values habitat. It does not directly determine the size, distribution, breeding success or viability of protected and priority-species populations.

This matters at East Pye because the application evidence includes:

- a nationally important bat assemblage;
- overlapping barbastelle maternity-colony support landscapes;
- extensive skylark breeding territories;
- known and potential turtle-dove and lapwing habitat;
- a confirmed breeding white-clawed crayfish population within the connected River Tas system;
- and priority mammals, amphibians, fish and aquatic invertebrates.

A habitat may remain in the metric while becoming less usable by the species for which it is important. Conversely, a newly created habitat may score units before there is evidence that the target species uses it.

The Applicant's BNG Report itself treats the skylark mitigation area as having only a limited effect upon whether the Scheme achieves the 10% target. That exposes the distinction between a habitat-unit outcome and the actual conservation consequences of displacing a large number of skylark territories.

The metric does not answer whether the displaced population can be accommodated, whether replacement land has sufficient carrying capacity or whether breeding success will be maintained.

Ecological connectivity

The metric cannot be treated as a complete analysis of functional connectivity.

NWT describes East Pye as a landscape of ancient woodland pockets, miles of species-rich hedgerows, semi-natural road verges, Roadside Nature Reserves, rare flora, farmland birds and

important barbastelle populations. It states that the area is not sparse with nature but is ecologically dense and that the Scheme must contribute meaningfully to connectivity at landscape scale.

The South Norfolk Tree Warden Network similarly explains that trees and hedgerows are functional ecological infrastructure. It identifies the absence of a route-wide assessment of hedgerow severance, gap creation, lighting, haul-road disturbance, access widening, visibility splays and the time required for replanted hedges to become functionally equivalent.

A length of hedge shown as retained or a new habitat strip shown on a plan does not prove that the network remains permeable. Connectivity depends on location, continuity, width, darkness, vegetation structure, adjoining land use and freedom from repeated disturbance.

For all those reasons, the claimed 37.42%, 31.35% and 16.08% gains cannot be used as a single answer to the adverse effects identified in Sections 8.1–8.14. The BNG calculation is relevant only after those effects have been identified, avoided and mitigated in accordance with their applicable legal and ecological tests.

8.15.2 Baseline undervaluation

The credibility of a BNG calculation depends upon the accuracy of the baseline. If existing habitats are assigned too little value, the apparent gain will be overstated even if the post-development calculation is otherwise arithmetically correct.

BEPS' review identifies several related baseline problems.

Low strategic significance assigned to the existing landscape

The BNG Report is understood to assign low strategic significance to baseline habitats, while some proposed habitats receive high strategic significance where they correspond to LNRS opportunity mapping. BEPS objects that this creates an artificial asymmetry: an existing functioning landscape is given low strategic weight, while proposed habitat receives a multiplier because it falls within an area identified for future nature recovery.

That approach requires detailed justification.

An LNRS opportunity area identifies where action for nature recovery would be beneficial. It does not necessarily establish that the existing habitat in that location is strategically insignificant. In some cases, the reason an area is strategically important for restoration is precisely because it connects or supports existing habitats, designated sites, protected-species populations or hydrological networks.

The Applicant's own scoping material stated that its ecology assessment would refer to:

- Norfolk Habitat and Species Action Plans;
- Claylands Wilder Connections;
- South Norfolk Council's advice on strategically significant BNG;

- and the Norfolk LNRS.

That commitment required more than using opportunity mapping to uplift proposed habitat. It required assessment of the strategic role already performed by the existing habitat network.

Natural England welcomes the Applicant's reference to the LNRS but says the BNG documentation should be strengthened to reflect the final strategy and provide clearer delivery controls. The Applicant should therefore explain, habitat parcel by habitat parcel, why existing features were assigned low strategic significance despite their relationship to:

1. ancient woodland;
2. SSSIs and County Wildlife Sites;
3. barbastelle maternity-colony Core Sustenance Zones;
4. the River Tas and Hempnall Beck;
5. priority farmland-bird land;
6. Roadside Nature Reserves;
7. and existing hedgerow and tree networks.

A general baseline assumption of low strategic significance is not adequate for a dispersed Scheme intersecting so many connected ecological receptors.

Stewardship farmland is reduced to generic cropland

The BNG baseline records approximately 942.66 hectares of cropland and 95.10 hectares of grassland across the Sites. That may be an orthodox metric classification, but it conceals important differences in ecological function.

Parts of the land have been managed under Environmental or Countryside Stewardship for many years. As explained in Section 8.11, that management has included functions relevant to skylark, lapwing, turtle dove and other farmland birds. The Applicant's own breeding-bird survey confirms that affected fields support numerous skylark territories.

The broad category 'cropland' does not distinguish between:

- intensively managed crop with little wildlife provision;
- winter stubble;
- low-input land;
- land containing skylark plots;
- wild-bird seed or pollen-and-nectar areas;
- land maintained with open nesting conditions;
- or a field whose boundaries and margins form part of a multi-species stewardship mosaic.

Those functions may depend on management continuity, crop structure, sightlines, seasonal food availability and lack of infrastructure. They cannot be represented adequately by the low distinctiveness ordinarily attributed to generic cropland.

The consequence is that existing publicly funded habitat function can be lost cheaply within the metric and then replaced on paper by grassland beneath panels or other generic habitat. That does not demonstrate ecological equivalence.

Species-specific habitat function is not valued

The same problem extends beyond stewardship land.

For bats, the value of a hedge depends upon its position between roosting and foraging habitat, its darkness, mature trees, height, structure and continuity. For white-clawed crayfish, the importance of a ditch depends upon its hydrological connection to occupied or potential habitat. For great crested newts, a grass margin may be part of the functional connection between breeding ponds and terrestrial refuges. For turtle dove, scrub or hedge structure and proximity to seed-rich forage matter.

The metric may assign the same habitat type and condition to features whose ecological functions are materially different.

The Tree Warden Network's evidence is especially relevant. It records that mature trees, hedgerows and tree lines provide roosting, foraging and commuting habitat within a nationally important bat landscape and should not be assessed merely as generic habitat units.

The baseline should therefore have been supplemented by functional overlays showing:

- principal bat routes and colony-support habitats;
- breeding-bird territories and stewardship functions;
- pond and terrestrial amphibian networks;
- aquatic catchment connectivity;
- designated-site connections;
- veteran-tree and ancient-woodland networks;
- and rare botanical and invertebrate features.

Without those overlays, the metric baseline may be numerically complete while remaining ecologically incomplete.

Ancient landscape structure is undervalued

Norfolk Wildlife Trust's Claylands evidence describes a historic network of hedges, field trees, grasslands, commons, ponds, ditches and other connected habitats. It explains that trees and hedges were central to the web of biological connectivity across the Claylands and that ecological benefit is multiplied where existing habitats are linked.

The strategic value of this structure does not depend only upon the condition of each individual feature. It arises from:

- historical continuity;
- spatial arrangement;

- repeated connections;
- veteran and mature trees;
- banks and ditches associated with old hedges;
- and the relationship between woods, watercourses, ponds and open fields.

A new hedge shown on an LNRS opportunity map may eventually become valuable, but it does not immediately reproduce that existing structure. The baseline should recognise the ecological value already provided by the connected landscape rather than treating it principally as a set of low-significance habitat parcels awaiting enhancement.

Baseline survey limitations may depress unit values

The baseline is also affected by the survey limitations identified elsewhere in this Chapter.

The application did not contain a full botanical survey of all verges, field margins, cable routes and highway works. The aquatic assessment was habitat-led, lacked direct macroinvertebrate sampling and was undertaken during unusually dry conditions. The arboricultural assessment remained preliminary in relation to parts of the construction design.

Where a habitat has been incompletely surveyed, the assigned type or condition may be too low. Examples include:

- species-rich verge classified from a broad walkover;
- dry seasonal ditch assigned low value without wet-season assessment;
- field margin treated as generic grassland despite locally important flora;
- hedgerow condition assessed without complete understanding of its bat or historic function;
- or watercourse condition assessed without direct invertebrate evidence.

A metric calculation cannot be more reliable than the baseline data entered into it. Before weight is given to the claimed gain, the Applicant should recalculate the baseline using the complete ecological evidence required by the Examination.

8.15.3 Post-development overvaluation

The post-development side of the calculation is inherently predictive. It assumes that proposed habitat will be created, maintained and reach a specified condition at a future point. That assumption requires particular scrutiny where the detailed design and management prescriptions remain deferred.

Reliance on LNRS opportunity mapping

The use of the Norfolk LNRS to guide habitat creation is appropriate in principle. Natural England supports alignment with the final LNRS and the opportunity to contribute to nature recovery.

The concern is not use of the LNRS itself. It is the apparent use of LNRS opportunity mapping to award high strategic significance to proposed habitat while existing habitats are assigned low significance.

An opportunity map does not demonstrate that a particular habitat proposal will:

- be successfully established;
- perform the necessary ecological function;
- connect the correct receptors;
- be protected from operational disturbance;
- or remain in place after decommissioning.

Strategic significance should not become a numerical uplift awarded simply because the proposed habitat lies within a broad opportunity area. The Applicant must show how each habitat contributes to the priorities, locations and ecological mechanisms identified by the final LNRS.

That should include an explanation of:

- which LNRS priority or measure is being delivered;
- the existing habitat network to which the proposal connects;
- the species or ecological processes expected to benefit;
- the minimum dimensions and condition needed;
- and how the connection will be maintained throughout construction, operation, replacement and decommissioning.

Optimistic condition assumptions

The Applicant's BNG calculation relies upon the OLEMP, Green Infrastructure Strategy, Hedgerow Removals Plan and assumptions within the BNG Report. The OLEMP is expressly an outline framework. The later LEMP is intended to provide detailed planting locations, species, sizes, densities, implementation timetables, management schedules and monitoring prescriptions.

Those deferred details are the matters that determine whether the predicted condition is achievable.

For example, achievement of moderate or good grassland condition may depend upon:

- appropriate soil fertility;
- successful establishment of the specified plant community;
- grazing or cutting at the correct frequency;
- removal of arisings;
- control of dominant species;
- suitable hydrology;
- prevention of compaction;
- and avoidance of excessive shading.

Woodland and scrub condition will depend upon species selection, survival, structural diversity, edge management, browsing, disease and long-term protection. Hedgerow condition will depend upon width, height, gaps, tree recruitment, cutting regime and freedom from repeated access works.

The application's outline documents do not yet demonstrate that all those requirements are compatible with:

1. panel operation;
2. drainage;
3. access;
4. fire and security requirements;
5. BESS and substation maintenance;
6. cable protection;
7. visual-screening objectives;
8. or future replacement works.

The post-development condition assumptions should therefore be audited against the engineering and operational requirements of the final Scheme, not merely against the habitat aspirations shown in an outline plan.

Time to target condition

The metric applies temporal risk multipliers intended to account for the time required to create or enhance habitat. That numerical discount does not remove the real ecological time lag.

Existing habitat functions are lost or degraded when construction begins. Replacement woodland, hedgerows, scrub, species-rich grassland and riparian habitat may take years or decades to reach their target condition. In the intervening period:

- displaced bats may lack an equivalent route;
- birds may lose nesting or feeding habitat;
- invertebrate communities may not have developed;
- new hedges may provide little shelter or connectivity;
- and new woodland may not reproduce mature-tree functions.

The BNG Report can estimate a future target and apply a multiplier, but it cannot prove that the habitat will reach that condition.

Natural England's request for clearer success criteria, remedial triggers and long-term management responsibilities directly addresses this uncertainty. The current documents do not yet establish:

- the measurable condition criteria for every habitat parcel;
- the monitoring frequency;
- who will assess condition;
- what constitutes failure;

- the time by which remedial action must occur;
- what happens if the original target becomes unachievable;
- or whether additional land or habitat units will be provided following failure.

Those matters must be secured before the predicted units are given full weight.

Uncertainty of establishment

Habitat creation is subject to practical uncertainty arising from:

- soil compaction and damage during construction;
- altered drainage beneath and between panels;
- shade and uneven rainfall distribution;
- drought, flooding and climate change;
- plant disease;
- browsing;
- unsuitable seed sources;
- invasive species;
- pollution incidents;
- and changes in operational management.

The Scheme is to be constructed on extensive clay-rich and seasonally wet land. Habitats shown on a plan may not establish to the assumed condition if soil structure or hydrology is damaged before seeding or planting.

The Applicant should therefore provide evidence that the target habitat is feasible on the actual soil and hydrological conditions of each parcel. A generic habitat prescription applied across multiple sites does not establish deliverability.

Mismatch between mapped retention and actual disturbance

The BNG calculation also requires reconciliation with the full construction footprint. A habitat may be shown as retained within the BNG plan but still be affected by:

- a temporary cable working corridor;
- haul-road traffic;
- HDD compounds;
- visibility splays;
- abnormal-load manoeuvres;
- temporary lighting;
- access widening;
- soil storage;
- pruning;
- or construction runoff.

The Tree Warden Network identifies precisely this mismatch. It notes that the Applicant relies heavily upon retained hedgerows and buffers but has not provided a route-wide analysis of

severance, access widening, lighting, compaction and the time needed for reinstatement to recover equivalent function.

Habitat cannot properly be entered as retained at full value where the authorised works permit it to be:

- crossed;
- compacted;
- illuminated;
- cut back;
- used for access;
- or disturbed for a substantial period.

At minimum, the Applicant must reconcile the BNG map with:

- the Works Plans;
- access and highway plans;
- Hedgerow Removals Plan;
- temporary compounds;
- cable working widths;
- AIL swept paths;
- visibility splays;
- Tree Protection Plans;
- and watercourse-crossing schedules.

Any habitat exposed to disturbance should be entered according to the reasonable worst case rather than the least harmful outcome that might be achieved at detailed design.

Reliance on future management and strategy

BEPS' Relevant Representation records that no specific BNG consultation occurred and that the OLEMP anticipates a future BNG Strategy setting out how the minimum gain will be secured. The current outcome is therefore generated from outline measures whose detailed implementation remains deferred.

That creates circularity:

- the Applicant relies upon the BNG result as evidence of ecological benefit;
- the BNG result relies upon habitat measures in the OLEMP;
- the OLEMP defers the detailed design and management to the later LEMP and BNG Strategy;
- and the future documents are then expected to deliver the result relied upon at consent stage.

The Applicant must provide enough fixed detail during Examination to show that the claimed gain is feasible and secured. The later LEMP may refine implementation, but it should not determine for

the first time the land, habitat type, management prescription or performance standard necessary to achieve the headline figures.

8.15.4 Hedgerow and connectivity accounting

The claimed 31.35% hedgerow-unit gain requires particular scrutiny because the Applicant relies simultaneously upon existing hedgerow retention to avoid ecological harm and proposed hedgerow creation or enhancement to generate BNG.

Hedgerows in the East Pye landscape are not simply lengths of woody vegetation. They perform interconnected functions as:

- nesting and feeding habitat;
- bat commuting routes;
- links between ancient woodland;
- shelter and dispersal routes for amphibians, reptiles and mammals;
- botanical habitat on banks and margins;
- invertebrate habitat;
- and historic landscape boundaries.

NWT records that the ES identifies partial removal of 32 hedgerows, removal of five trees and temporary removal of hedge sections for cable installation and access. It seeks confirmation that no ancient or species-rich hedge will be removed, together with detailed restoration and monitoring for temporary losses.

The Site 5 written representation identifies an apparent and presently unresolved discrepancy which may indicate substantially greater disturbance than the narrative maximum; the Applicant must explain the plan symbols and identify the precise permanent and temporary effect on each Important Hedgerow.

The metric calculation must therefore distinguish between nominal physical retention and retention of ecological function.

Crossings

A hedge crossed for a cable, haul road or access may remain within the same overall mapped line, but its continuity is interrupted. The ecological effect depends upon:

- the width of the gap;
- the duration;
- whether the bank and ditch are also removed;
- lighting;
- traffic;
- the presence of mature trees;
- and the species using the route.

The Applicant's conclusion that gaps of up to approximately 10 metres are small in comparison with the total hedge resource does not answer the functional effect of a gap at a critical location.

NWT specifically challenges the conclusion that 10-metre gaps will not significantly affect bat movement, particularly for barbastelle. It states that small interruptions may reduce permeability and alter movement patterns and asks for scrutiny of key commuting routes, lighting controls and enforceability.

A hedge cannot therefore be counted as retained or enhanced without qualification where it contains a construction gap that may interrupt its primary ecological function.

Lighting

A retained hedge illuminated by a compound, vehicle route, substation or HDD operation may become less usable by light-sensitive bats. The metric may continue to record its type, length and structural condition, but the functional corridor has been degraded.

The BNG calculation does not contain a multiplier for loss of darkness or avoidance by light-sensitive species. That effect must be accounted for separately, and any hedge relied upon for connectivity should have an enforceable lighting limit.

Edge effects and adjoining land use

The value of a hedgerow also depends upon its margins and adjoining habitat. A hedge bordered by crop, grass margin and ditch may provide a wider ecological corridor than the same hedge bordered by a surfaced track, security fence and closely positioned panels.

The metric can record the hedge and the adjoining habitat separately but may not reflect the ecological interaction between them. Removal or compaction of the margin, repeated vehicle use, changes in drainage and operational disturbance may reduce hedge function even where no woody plants are removed.

Temporary loss and time lag

A replanted hedge is not equivalent to the mature hedge removed for construction. It may require many years to regain:

- height and density;
- mature woody structure;
- cavities and deadwood;

- continuous shelter;
- botanical bank vegetation;
- and use by bats and nesting birds.

The BNG calculation may apply temporal risk to newly created habitat, but the ecological assessment must still address what happens during the period of non-equivalence. Construction

phasing should prevent simultaneous severance of alternative routes, and replacement planting should occur in advance wherever practicable.

Functional severance across the Scheme

The effects must be assessed cumulatively. A single gap may be manageable if unaffected alternative routes remain. Numerous gaps, lighting points, accesses and construction corridors distributed across overlapping bat colony-support areas may reduce permeability at landscape scale.

The Tree Warden Network states that the ES contains no clear route-wide assessment of cumulative hedgerow severance, lighting, access widening and loss of tree-buffer integrity. That omission cannot be cured by presenting a positive total hedgerow-unit balance.

The hedgerow metric should therefore be accompanied by a functional-connectivity schedule showing:

- every temporary and permanent crossing;
- each affected species route;
- construction timing;
- lighting exposure;
- reinstatement period;
- alternative corridors;
- and the point at which replacement habitat is expected to become functional.

No hedgerow should be counted at full retained or enhanced value where its functional condition is not protected through the DCO.

8.15.5 Watercourse units

The Applicant claims a 16.08% gain in watercourse units. That figure does not demonstrate that the Scheme will protect or improve the ecological condition of the River Tas, Hempnall Beck, Starston Brook, Broome Beck or their connected tributaries and ditches.

BEPS' review of the watercourse annex records that:

- many baseline reaches are in poor or fairly poor condition;
- major riparian encroachment is widespread;
- proposed enhancement often does not raise the reach into a higher condition class;
- and the annex states that none of the condition scores increased to the next class.

The claimed gain therefore appears to arise in part from reducing encroachment and changing strategic significance rather than from a demonstrated improvement to channel condition. That calculation must be considered against the Environment Agency's Relevant Representation.

The Agency identifies a direct inconsistency between APP-218, the BNG Report, and APP-199, the OLEMP. It states that the OLEMP does not include the riparian enhancements and reduced

encroachment relied upon in section 4.3 of the BNG Report. The result is that management or enhancement opportunities may be overlooked, including treatment of Himalayan balsam, which contributes to the poor condition of Hempnall Brook. The Agency requires the riparian enhancements to be secured in the OLEMP and asks for explicit invasive-species checks and management.

This is a significant deliverability issue.

If the metric credits:

- wider riparian vegetation;
- reduced encroachment;
- invasive-species management;
- or improved bank management,

those measures must appear consistently in the document that controls implementation and long-term management. A measure cannot generate units in the BNG calculation but remain absent or optional in the OLEMP.

The Agency identifies a related inconsistency concerning watercourse buffers. Although the indicative masterplan appears to show wider separation between panels and some watercourses, the secured Design Principles commit only to a 10-metre stand-off. The Agency requires wider buffers around watercourses capable of supporting diverse aquatic-invertebrate communities and asks that those buffers be secured in both the OLEMP and the Design Principles.

The watercourse metric must therefore be recalculated against the buffer that is legally secured, not the wider separation shown indicatively.

The Applicant should provide a reach-by-reach schedule setting out:

- baseline condition;
- baseline strategic significance;
- proposed intervention;
- target condition;
- target strategic significance;
- time to target;
- responsible party;
- monitoring criteria;
- invasive-species measures;
- buffer width;
- and the DCO mechanism securing each commitment.

That schedule should be reconciled with the WFD assessment, aquatic ecology assessment, drainage strategy, OLEMP and construction management plans.

Most importantly, a positive watercourse-unit result does not establish:

- no WFD deterioration;
- no adverse effect upon white-clawed crayfish;
- no effect upon European eel;
- no sediment or pollution impact;
- no disturbance from HDD or crossings;
- or no interruption of aquatic-invertebrate life cycles.

The Environment Agency's disagreement with the Applicant concerning eel valuation and EMF, its concern about aquatic insects being attracted to solar panels, and its request for wider buffers demonstrate that the operational ecological effects have not been resolved through the BNG calculation.

The 16.08% figure should therefore be given limited weight until the riparian measures are consistent, fixed and demonstrably deliverable.

8.15.6 Durability and decommissioning

BNG is meaningful only if the habitat gains are durable. A habitat that exists temporarily during operation but is removed during replacement or decommissioning cannot be treated in the same way as a permanent contribution to nature recovery.

The present documents do not provide sufficient certainty.

Management duration and enforceability

The OLEMP states that management and monitoring duration will be defined in the later LEMP. It also indicates that, after decommissioning, landowners may choose how their land is used and may return all land to arable cultivation, although some habitat areas may remain.

That leaves the ecological end-state unresolved.

The Applicant should not receive full present credit for habitat where:

- the management period is not fixed;
- the responsible party is not identified;
- the habitat may be removed after decommissioning;
- or retention is left to individual landowner choice.

Natural England expressly advises that Requirement 7 should secure management, monitoring and maintenance of all landscape and ecological measures for the full operational lifetime of the development, with long-term habitat-performance indicators and remedial actions.

That is the minimum operational safeguard. A separate decision is still required regarding which habitats remain after the Scheme ends.

South Norfolk Council's request for clarity

South Norfolk Council has already required the Applicant to identify, as far as possible, the habitats that will be created and to provide clearer baseline maps and condition assessments. More importantly, it asks the Applicant to show clearly which 'linear terrestrial, riparian and aquatic habitats' will remain after decommissioning. It also states that the semi-natural habitats created within ancient-woodland buffers should be retained.

This is directly relevant to the claimed gain.

The Applicant must provide a mapped schedule distinguishing:

- habitat retained permanently;
- habitat retained only for the operational period;
- habitat likely to be disturbed by panel or BESS replacement;
- habitat affected by decommissioning access and excavation;
- habitat to be returned to arable cultivation;
- and habitat remaining around permanent National Grid or below-ground infrastructure.

Without that schedule, the percentage gain describes an assumed operational snapshot rather than a secure whole-life ecological outcome.

Replacement and decommissioning disturbance

Habitats created under the OLEMP may mature over several decades. Woodland, scrub, grassland and hedgerows may then lie between access points and the equipment requiring replacement or removal.

Replacement and decommissioning may require:

- HGV routes;
- cranes;
- compounds;
- equipment laydown;
- cable excavation;
- removal of piles and foundations;
- temporary lighting;
- vegetation clearance;
- and soil storage.

Unless the future working areas are fixed and excluded from BNG calculations, habitats credited as gain may later be damaged by foreseeable project activities.

The BNG Report must therefore be reconciled with the replacement and decommissioning scenarios addressed in Section 8.14. It should identify which units remain after:

1. major panel replacement;

2. repeated BESS replacement;
3. cable repair or extraction;
4. and final decommissioning.

A temporary drop in habitat condition during those phases must be accounted for, together with the time and risk associated with restoration.

Return to arable cultivation

The possibility of returning habitat land to arable cultivation creates a direct conflict between the BNG and agricultural-restoration cases.

If species-rich grassland, scrub, pollinator habitat or other created habitat is ploughed after decommissioning, the ecological gain is lost. If the habitats remain permanently, the land is not fully restored to its former agricultural use.

The application must identify which outcome applies to each parcel. It cannot rely simultaneously upon:

- long-term ecological gain;
- landowner discretion;
- and comprehensive return to agriculture.

The fact that a minimum management period may have expired by year 60 does not answer the EIA issue. The Applicant relies upon the habitat as mitigation and as a benefit when seeking consent now. Its later removal would be a foreseeable ecological effect of the Scheme's final phase.

Successor responsibility and financial security

NWT asks who will pay for decommissioning and whether the obligation will bind successor entities if Island Green Power no longer owns the Scheme in 60 years. Those concerns apply equally to BNG.

Over the operational period:

- the DCO powers may be transferred;
- the operating company may change;
- land ownership may change;
- and different entities may control infrastructure and habitat land.

The DCO must ensure that responsibility for habitat management, monitoring, replacement and post-decommissioning retention remains enforceable against every successor.

The habitat obligations should also be supported by adequate financial security. Monitoring clauses alone will not fund replacement planting, invasive-species treatment, habitat recreation or long-term management if the project company becomes insolvent or abandons the Scheme.

This issue is addressed more fully in Section 8.14.4. For BNG purposes, the essential point is that units should not be credited as secure unless the land, management obligation, successor liability and funding are all demonstrably protected.

Overall conclusion on BNG

The Applicant's metric calculation may demonstrate a positive result within the structure of the Defra Biodiversity Metric. It does not establish that East Pye Solar is ecologically acceptable.

The calculation is subject to four fundamental limitations.

First, the metric does not answer the legal and ecological questions concerning protected species, the Habitats Regulations, irreplaceable habitat, WFD no-deterioration obligations, population viability or landscape-scale connectivity.

Secondly, there is a credible risk that the baseline has been undervalued through:

1. low strategic-significance assumptions;
2. broad treatment of stewardship farmland as cropland;
3. failure to value species-specific functions;
4. incomplete botanical and aquatic evidence;
5. and insufficient recognition of the ancient Claylands habitat network.

Thirdly, the post-development value depends upon:

- LNRS-based strategic-significance uplifts;
- predicted habitat condition;
- uncertain establishment;
- time-to-target assumptions;
- and an outline management plan whose detailed prescriptions remain deferred.

Fourthly, the claimed gains are not yet demonstrated to be durable through replacement, decommissioning and possible return to arable use.

The relevant representations corroborate those concerns:

- Natural England asks for clearer success criteria, remedial triggers, long-term management responsibilities and full operational-lifetime protection;
- the Environment Agency identifies a direct mismatch between the watercourse measures credited in the BNG Report and those secured in the OLEMP;
- South Norfolk Council asks for detailed baseline evidence, application of the correct BNG hierarchy and clear identification of habitats retained after decommissioning;
- NWT requires avoidance, lasting benefit and genuine landscape-scale connectivity and concludes that further information and refinement remain necessary;
- and the Tree Warden Network demonstrates that nominal habitat retention does not account for functional severance, lighting, access widening, compaction and delayed recovery.

BEPS therefore submits that the headline BNG percentages should be given limited weight unless and until the Applicant provides:

- A revised and independently auditable metric based upon the final Scheme design and maximum construction footprint.
- Corrected strategic-significance assumptions for existing habitats, with parcel-specific justification and proper recognition of existing connectivity, designated-site relationships, stewardship management and protected-species functions.
- A baseline recalculation incorporating the outstanding botanical, aquatic, hedgerow and other survey evidence.
- A species-function assessment demonstrating how the proposed habitat supports bats, farmland birds, aquatic receptors, amphibians and other priority species, rather than relying upon habitat units alone.
- A reconciliation of the BNG plans with all access routes, highway works, cable corridors, compounds, HDD areas, visibility splays, hedgerow crossings, lighting zones and temporary working areas.
- A hedgerow-connectivity assessment identifying every temporary and permanent gap, the time to functional recovery and the maintenance of alternative routes throughout construction.
- A reach-by-reach watercourse schedule reconciling the BNG Report, OLEMP, WFD assessment, aquatic ecology assessment and Environment Agency requirements.
- Fixed habitat-condition targets, monitoring methods, reporting intervals, remedial triggers and additional provision where target condition is not achieved.
- A whole-life habitat-retention plan identifying the BNG units that will remain through operation, replacement and decommissioning and those that may be disturbed or removed.
- Binding DCO provisions securing the land, management, successor responsibility, post-decommissioning retention and financial resources necessary to deliver the claimed gain.

BNG must remain additional to avoidance and mitigation. It must not be used to balance away harm to protected species, irreplaceable habitats, chalk streams, designated sites or functioning ecological corridors.

Until those matters are resolved, the positive metric balance is not proof of a genuine net ecological benefit. It is a projected accounting outcome dependent upon baseline assumptions, future habitat performance and management commitments that remain incompletely secured.

NOTE: The proper conclusion

The BNG is nominally set off against recorded habitat losses. It is not yet demonstrated to be set off against the full ecological damage that East Pye would actually cause.

The calculation appears to account for:

- permanent conversion of mapped habitat;
- identified tree and hedgerow removal;
- and temporary cable and highway impacts under an assumption of rapid reinstatement.

It does not necessarily account adequately for:

- the full maximum construction footprint;
- indirect and functional damage;
- mature-habitat recovery time;
- lighting and disturbance;
- cumulative severance;
- protected-species habitat function;
- hydrological effects;
- replacement cycles;
- or decommissioning damage.

The key Examination request should be for a complete BNG reconciliation schedule. For every habitat polygon, hedgerow, tree and watercourse affected by every authorised work, the Applicant should identify:

- the actual maximum area or length affected;
- whether it is lost, retained, enhanced, created or reinstated;
- the precise metric entry;
- the construction and indirect disturbance;
- the period before equivalent condition and function are restored;
- the relevant Works Plan and construction drawing;
- and the DCO provision securing the predicted outcome.

Until that audit is produced, the headline percentages do not prove that the proposed gains have genuinely been calculated against everything the Scheme will damage.

8.16 Outline LEMP and other deferred mitigation

The application relies upon a suite of outline management plans and future approval mechanisms to support its conclusions that ecological effects will be avoided, reduced to an insignificant level or converted into beneficial outcomes. The principal documents include the Outline Landscape and Ecology Management Plan ('OLEMP'), Outline Protected Species Mitigation Strategy ('OPSMS'), Outline Construction Environmental Management Plan ('oCEMP'), lighting controls, drainage strategies, later arboricultural documents, species-specific method statements and future protected-species licences.

BEPS does not contend that every construction or operational detail must invariably be fixed before a DCO is granted. Some contractor-dependent information can properly be refined after consent, provided that the effects of the authorised development have already been assessed, the mitigation relied upon is demonstrably feasible and the DCO fixes the environmental outcomes and limits within which later detail may be developed. The scoping consultation material itself recognises that outline management plans are commonly used where contractor information is unavailable, but also emphasises the need for clear controls, monitoring, reporting, enforcement and responsibility, including clarity about whether pre-commencement works are covered.

The objection is therefore not to the word 'outline' in isolation. It is to the extent to which East Pye Solar relies upon future documents to determine matters that are presently necessary to establish:

- what habitat and species interests will be affected;
- whether the proposed layout is capable of avoiding those interests;
- whether the mitigation is technically and legally deliverable;
- whether protected-species licences are likely to be required and obtainable;
- whether effects upon connected aquatic and terrestrial systems can be controlled;
- and whether the residual-effect conclusions in Chapter 8 are reliable.

At East Pye, these questions are material because the Applicant's own evidence identifies a nationally important bat assemblage, multiple barbastelle colony-support areas, ancient woodland and veteran trees, sensitive watercourses, designated and irreplaceable habitats, breeding farmland birds and numerous protected-species constraints. The relevant representations identify continuing uncertainty about buffers, lighting, access works, HDD locations, watercourse protection, riparian enhancement, protected-species licensing, monitoring and long-term habitat performance. Those matters cannot all be reduced to contractor implementation detail.

The Examining Authority must therefore distinguish between two categories of deferred information. The first is legitimate implementation detail, such as the precise sequence in which an already fixed planting scheme is installed. The second comprises matters that determine whether the Scheme is acceptable at all, such as the location of a dark bat corridor, whether an access conflicts with a veteran tree, whether an HDD compound can be accommodated outside a County Wildlife Site buffer, or whether a protected-species licence is realistically available. The second category must be resolved, bounded and secured before consent.

8.16.1 The OLEMP is an outline framework, not final mitigation

The application originally stated that a LEMP would be prepared before commencement of each phase, submitted for approval and secured by a DCO Requirement. It would be 'in accordance with' the OLEMP submitted with the application. The Applicant also stated that the type and level of mitigation and enhancement would remain subject to further environmental assessment and design evolution.

The BEPS Relevant Representation records that the submitted OLEMP remains expressly an outline framework founded on a preliminary design, with details subject to further work and stakeholder engagement. The later LEMP is intended to supply the detailed locations, species, stock sizes, planting densities, implementation timetables, maintenance schedules and monitoring prescriptions. Chapter 8 and the BNG Report nevertheless rely upon the OLEMP and its assumptions when reaching present conclusions about mitigation, enhancement and net gain.

This creates a structural difficulty. The OLEMP is being used both as:

- an outline framework to be completed after consent; and
- evidence that the present Scheme's ecological effects will be adequately mitigated and that its proposed habitats will achieve specified BNG outcomes.

It cannot safely perform the second function unless the matters essential to ecological effectiveness are already sufficiently fixed.

Habitat locations and boundaries

The exact location of habitat creation is not merely a landscaping detail. Location determines whether a habitat:

- connects two existing ecological features;
- forms a continuous bat or mammal corridor;
- protects an ancient woodland or veteran-tree buffer;
- intercepts runoff before it reaches a watercourse;
- provides suitable open-land habitat for farmland birds;
- or conflicts with access, drainage, security and operational requirements.

The application's broad proposals include woodland blocks, tree belts, scrub, hedgerow creation and enhancement, pollinator planting, tussocky and neutral grassland, modified grassland, habitat boxes, skylark mitigation, ghost ponds and arable margins. Those measures may be beneficial in appropriate locations, but they are generic habitat interventions. Their existence in a schedule does not establish that they will perform the species-specific and landscape-scale functions required at East Pye.

The final habitat plans must therefore show fixed boundaries and dimensions, not merely indicative areas within which habitat might later be provided. They must also be reconciled with:

- Works Plans;
- permanent and temporary access routes;
- cable working widths;
- visibility splays;
- compounds and laydown areas;
- HDD launch and reception areas;
- drainage infrastructure;
- security fencing and CCTV;
- abnormal-load manoeuvring areas;
- and replacement and decommissioning access.

A habitat cannot be relied upon as mitigation if the same DCO permits that land to be used for plant movement, storage, drainage, excavation or later equipment replacement.

Species, provenance, stock sizes and planting densities

The choice of species and planting structure determines whether proposed vegetation is ecologically appropriate, resilient and compatible with the local landscape. A screening belt selected principally for rapid visual enclosure may not provide the same function as a locally characteristic species-rich hedge, structurally diverse woodland edge or open grassland mosaic.

The OLEMP's combination of landscape screening and ecological enhancement is therefore not automatically benign. What assists visual screening may, depending upon its location and density:

- shade botanically important margins;
- enclose land intended for lapwing or skylark;
- alter wind and light conditions beside existing hedges;
- obstruct open-flight or sightline requirements;
- or create later pruning pressure around panels, CCTV and access routes.

The later LEMP must specify species, provenance, stock size, planting density, expected mature dimensions and management form. Those details should be assessed now against the ecological function of each location and the operational clearance required over the Scheme's 60-year life.

Implementation and establishment timetables

The timing of habitat creation matters because much of the Applicant's mitigation will not become functional immediately.

A newly planted hedge cannot immediately replace a mature dark commuting route. Young woodland does not reproduce mature-tree, deadwood or cavity functions. Newly seeded grassland may require years of appropriate management before it achieves the botanical structure and invertebrate value assumed in the BNG calculation.

The final framework must therefore identify:

- what will be created in advance of habitat loss;
- the minimum establishment period;
- when each habitat is expected to become functionally effective;
- what alternative habitat remains available during the intervening period;
- and whether construction phasing will avoid simultaneous severance of connected routes.

The metric's time-to-target multiplier is not, by itself, an ecological mitigation strategy. It records numerical risk but does not provide displaced species with habitat during the period of non-equivalence.

Management and monitoring prescriptions

The OLEMP does not yet provide a complete and measurable management regime for each habitat parcel. The later LEMP must determine matters such as cutting or grazing frequency, removal of arisings, hedge rotation, scrub control, woodland thinning, pond management, invasive-species treatment and protection from compaction or operational encroachment.

Natural England's DCO comments are significant. It welcomes Requirement 7 in principle but advises that it should expressly secure management, monitoring and maintenance of all landscape and ecological measures for the full operational lifetime of the development. It also requires long-term habitat-performance indicators and remedial actions. Natural England classifies that DCO matter as amber.

That advice confirms that implementation alone is insufficient. The Requirement must secure continuing performance, not merely initial planting.

Success criteria and remedial action

A meaningful ecological commitment must state what success looks like. It is insufficient to require that habitat be 'established' or 'managed appropriately' without measurable criteria.

The final LEMP should identify, for every habitat:

- target habitat type and condition;
- minimum area or length;
- structural and botanical criteria;
- required connectivity;
- target date;
- monitoring method and frequency;
- reporting authority;
- failure threshold;
- remedial action;
- and the date by which remediation must succeed.

It must also address what happens if the target cannot be achieved. The possible responses should include revised management, replacement planting, soil or drainage remediation, additional habitat provision and, where necessary, provision of further land. Remedial action should not depend solely upon the undertaker deciding that intervention is 'appropriate'.

Natural England's request for performance indicators and remedial actions shows that these matters are not presently secured with sufficient clarity.

Lighting parameters and dark corridors

The OLEMP does not fix a complete site-wide network of protected dark corridors or quantitative lighting parameters. BEPS' Relevant Representation identifies the absence of fixed lighting thresholds, lux modelling, corridor-permeability standards and species-specific protection for the nationally important bat landscape.

The Applicant's original scoping approach proposed to exclude ecological lighting effects on the assumption that night-time working would be avoided and that sensitive lighting design could be captured in the CEMP. It asserted that, on that basis, no discernible biodiversity effects were anticipated.

That is not a substitute for a final assessment. Construction may take place during winter hours of darkness, while operational lighting may arise at compounds, substations, the BESS, access points and through vehicle headlights and emergency activity. A commitment to 'sensitive' lighting does not identify:

- the maximum horizontal or vertical illuminance;

- the position and direction of each source;
- the extent of dark buffers;
- the switching regime;
- the spectrum and colour temperature;
- emergency-lighting assumptions;
- or the response if monitoring shows unexpected spill.

South Norfolk Council's Environmental Management Officer has also questioned the proposed use of motion-sensitive lighting and recommended actively controlled lighting linked to security monitoring using infrared CCTV. This illustrates that the operational method remains disputed even at principle level.

The final lighting strategy must therefore be integrated with the OLEMP and protected-species strategy. It should contain receptor-specific lux contours and maximum limits, fixed dark corridors, controls on mobile lighting, monitoring locations and remedial triggers. Those requirements must apply to construction, operation, equipment replacement and decommissioning.

Species-specific mitigation

The OLEMP largely presents habitats and management types rather than receptor-specific ecological outcomes. That is inadequate where the identified effects concern species whose requirements cannot be represented by generic planting.

Species-specific measures are required for, among others:

- barbastelle and other light-sensitive bats;
- skylark and other open-field birds;
- lapwing and turtle dove;
- great crested newt;
- water vole and otter;
- badger;
- reptiles;
- white-clawed crayfish;
- European eel;
- and aquatic invertebrates.

For bats, the relevant outcome is not simply the presence of more hedgerow units. It is the retention of dark, continuous and suitably structured routes between roosts and foraging habitat. For skylark, dense planting or grassland beneath panels is not equivalent to open nesting habitat. For aquatic species, generic riparian planting does not answer flow, water quality, sediment, EMF or biosecurity risks.

The Environment Agency's Relevant Representation provides a concrete example of the present deficiency. It identifies that riparian enhancements and reduced encroachment credited in the BNG Report are not included in the OLEMP. It requires those measures, including explicit invasive-species controls, to be secured in the OLEMP.

The Agency also states that wider watercourse buffers visible on indicative plans are not secured because the Design Principles commit only to a 10-metre stand-off. It requests wider buffers around watercourses capable of supporting diverse aquatic-invertebrate communities and requires them to be incorporated into both the OLEMP and Design Principles.

These are not minor drafting inconsistencies. They show that measures relied upon to support the BNG and ecological conclusions are absent from, or weaker in, the documents intended to control delivery.

Conclusion on the OLEMP

The OLEMP may provide a useful organisational framework, but it is not yet a complete mitigation package. Until locations, species, dimensions, timetables, performance standards, monitoring, lighting limits, species-specific outcomes and remedial obligations are fixed, the OLEMP should be given limited weight in support of conclusions that significant ecological effects will be avoided.

The later LEMP may refine implementation. It should not determine for the first time whether an ecologically effective solution exists.

8.16.2 Outline Protected Species Mitigation Strategy

The OPSMS is subject to a related but more acute objection because it concerns legal protections and potential licensing requirements.

Natural England records that the OPSMS indicates that licences may be required for:

- water vole or otter;
- great crested newts;
- roosting bats;
- and badger-sett closures.

Natural England retains protected species as an amber matter and strongly advises that the licensing position be addressed at the earliest opportunity. It also refers to the availability of its pre-submission screening process and a Letter of No Impediment where a licence need has been identified.

The Planning Inspectorate's scoping material similarly advised that the affected area should be surveyed at appropriate times by competent ecologists, with survey results, impact assessments and accompanying mitigation strategies included in the ES. Where licensing may be necessary, it advised use of Natural England's pre-submission process so that a draft application could be reviewed and a LONI issued, providing confidence to the decision-maker.

The application's present licensing approach does not yet provide that confidence.

Reliance on future surveys

Future surveys are necessary where ecological conditions may change, but they cannot replace an adequate application-stage baseline.

A pre-construction survey may establish whether a species has colonised a work area since the ES survey. It cannot retrospectively demonstrate that the authorised layout was designed to avoid the species where the application never established its distribution or functional habitat adequately in the first place.

The distinction is important:

- an update survey checks whether a known and assessed position has changed;
- a baseline survey establishes the information necessary to assess effects and design the development;
- and a pre-work check confirms immediate compliance before a specific activity.

The application risks using later surveys to perform all three functions.

The original scoping approach proposed, for example, that targeted water vole and otter survey would be considered where works within or immediately adjacent to watercourses could not be avoided. It also relied upon later CEMP, OEMP, DEMP and LEMP measures to justify no further survey for several priority mammals. That approach places design decisions before the final species evidence.

The same concern arises for:

- trees with potential bat-roost features;
- later identification of badger setts;
- great crested newt terrestrial connections;
- reptiles within field margins;
- and aquatic species at crossings whose final construction method remains unknown.

A later survey that discovers a constraint is useful only if the authorised Scheme retains a real ability to avoid it. If the cable, access, compound or substation location is already effectively fixed, the survey may lead only to supervision, displacement or a licence application rather than avoidance.

Contractor-led licensing

BEPS' Relevant Representation records that the Consents and Agreements Position Statement refers generally to a protected-species licence and states that, where required, the contractor would apply before commencement. It also records that the draft DCO framework requires a later protected-species strategy substantially in accordance with the OPSMS, without identifying a project-specific European Protected Species licensing pathway.

That is inadequate where the need for, scope of and grantability of a licence may affect the feasibility of the authorised development.

A contractor can prepare technical documents and submit a licence application. The contractor cannot determine:

- whether the statutory licensing tests are met;
- whether the chosen location has no satisfactory alternative;
- whether favourable conservation status can be maintained;
- or whether Natural England will grant a licence.

Those matters cannot be treated as ordinary construction risk where the Applicant seeks consent for works within a landscape supporting nationally important bats and other protected species.

This does not mean that every conceivable licence must be granted before the DCO decision. It means that where the available evidence indicates that a licence is likely to be necessary for a material component of the development, the Applicant should identify:

- the species and activity concerned;
- the licence type;
- the impact to be licensed;
- the avoidance and mitigation measures;
- the relevant alternatives;
- the conservation-status evidence;
- and the current view of Natural England.

A draft licence or LONI is particularly important where licence realism is central to deliverability. Natural England's amber position and request for clarification show that this matter remains unresolved.

Later method statements

Method statements are appropriate for specifying how an already justified activity will be carried out. They should not decide whether the activity is ecologically acceptable.

For example, an HDD method statement may specify drilling-fluid controls and monitoring. It should not determine for the first time:

- the launch and reception locations;
- whether a County Wildlife Site or fen buffer can be maintained;
- whether groundwater pathways are acceptable;
- or whether the access route affects a bat corridor.

Norfolk Wildlife Trust states that the precise HDD entry and exit locations remain deferred to detailed design. It explains that without those locations it is not possible to assess fully the effect on designated sites or the adequacy of the buffers. NWT requests the locations before the close of

Examination, together with larger precautionary buffers, exclusion of compounds and lighting from those buffers and hydrogeological assessment of HDD below fen habitat.

The same principle applies to vegetation-clearance, tree, hedgerow, reptile, amphibian and watercourse method statements. They may regulate implementation but cannot substitute for design-stage avoidance.

ECoW discretion

The Ecological Clerk of Works has an important role in supervising compliance, identifying unexpected receptors and stopping unsafe activities. However, ECoW discretion has limits.

An ECoW cannot ordinarily:

- move a work outside the Order Limits;
- remove an authorised access from the Scheme;
- create replacement habitat on land not secured;
- alter the DCO parameters;
- decide that a protected-species licence will be granted;
- or cure an inherently unsuitable design.

The South Norfolk Tree Warden Network gives a clear example. It records that the preliminary arboricultural assessment identifies four conflicts between indicative accesses and ancient or veteran-tree buffers, but leaves them to later detailed design because the accesses are flexible within Work No. 4. It argues that future survey, method statements and clerk-of-works oversight are necessary but do not replace a final plan resolving the conflicts before consent.

The OPSMS must therefore define the ECoW's authority, including:

- mandatory attendance;
- access to all work fronts;
- stop-work power;
- escalation procedure;
- written record keeping;
- reporting to the discharging authority;
- and the circumstances in which work cannot resume without further approval or a licence.

Discretion should operate within fixed ecological limits. It should not replace them.

Required protected-species position

Before the close of Examination, the Applicant should provide a revised OPSMS containing:

- A final protected-species constraints plan covering all permanent and temporary works.
- Defined survey-validity periods and triggers for updated surveys.
- A distinction between baseline surveys, update surveys and immediate pre-work checks.
- A schedule of every licence presently considered possible or likely.

- Draft licence information or a LONI where a material European Protected Species impact cannot be excluded.
- Fixed avoidance zones and species-specific construction restrictions.
- Species-specific lighting, access, vegetation-clearance and habitat-connectivity measures.
- The approval criteria for later method statements.
- Clear ECoW powers, reporting obligations and stop-work procedures.
- A requirement that newly identified constraints result in redesign or relocation where avoidance remains possible, rather than automatically proceeding to licensing.

8.16.3 CEMP, lighting strategy and drainage controls

The application divides environmental controls between a number of documents. That may assist administration, but ecological effects do not operate in separate documentary compartments.

A single hedgerow or watercourse may be affected simultaneously by:

- vegetation removal controlled through the LEMP or protected-species strategy;
- construction traffic controlled through the CEMP or CTMP;
- lighting controlled through a lighting strategy;
- runoff controlled through the drainage strategy;
- tree-root protection controlled through an arboricultural method statement;
- and species measures controlled through the OPSMS.

The residual effect can be assessed reliably only if those measures are consistent and operate together.

CEMP and ecological mitigation

Natural England's acceptance of the Applicant's conclusions concerning hydrologically connected SSSIs is expressly conditional. It states that effects can be ruled out provided the pollution-prevention, water-quality and runoff measures in the oCEMP are followed and secured.

That conditional position demonstrates the importance of the CEMP. Where the conclusion depends upon the CEMP, the controlling measures must be:

- specific;
- complete;
- consistent with other documents;
- and secured before the relevant activity.

The Environment Agency's Relevant Representation identifies continuing CEMP and groundwater matters, including the need for Foundation Works Risk Assessments and Hydrogeological Risk Assessments informed by intrusive ground investigation for deep foundations and trenchless crossings interacting with aquifers, watercourses or sensitive ecological sites.

That is not simply a ground-conditions issue. If piling or drilling may create a pollutant pathway to a chalk stream, wetland, groundwater-dependent habitat or private supply, the ecological

conclusion depends upon the hydrogeological assessment, construction method and pollution controls operating together.

The Applicant cannot reasonably assert a negligible ecological effect in Chapter 8 while leaving the assessment that determines whether the pathway exists to a post-consent CEMP process.

Lighting and habitat management

Lighting controls must be read with:

- the bat assessment;
- the habitat-retention plan;
- the access design;
- security arrangements;
- construction hours;
- BESS emergency procedures;
- and replacement and decommissioning plans.

A hedge designated for enhancement under the LEMP may still cease to function as a bat route if illuminated by an adjacent access or compound. A watercourse buffer may remain physically intact but lose nocturnal value through mobile lighting or headlights.

The final lighting strategy should therefore be a controlling ecological document, not merely an appendix to the landscape or electrical design. It should identify every receptor relied upon as a dark corridor and demonstrate, through modelling, that lighting from all relevant phases remains within the secured limits.

Drainage and aquatic ecology

Drainage controls similarly require integration with Chapters 8, 9 and 16.

The ecological consequences of drainage depend upon:

- the position of panels, tracks and hardstanding;
- soil compaction;
- field drains and ditches;
- watercourse buffers;
- discharge points;
- contamination sources;
- aquifer pathways;
- and the construction sequence.

The Environment Agency's evidence identifies possible rapid pollutant pathways through variable superficial deposits, sand lenses, buried channels and other transmissive features. It requires risk assessments and construction controls to avoid creating new pathways during piling and trenchless works.

The drainage strategy cannot therefore be approved solely by reference to hydraulic capacity or flood risk. It must demonstrate protection of:

- white-clawed crayfish;
- aquatic invertebrates;
- European eel and other fish;
- riparian habitat;
- chalk-stream substrate and flow;
- designated sites;
- groundwater-dependent habitats;
- and downstream water quality.

Inconsistency between documents

The Environment Agency's riparian-enhancement objection is evidence of an existing cross-document failure. Measures credited in the BNG Report are not carried into the OLEMP, while the wider buffers suggested by indicative plans are not secured in the Design Principles.

Natural England identifies another: the Applicant's 30-metre ancient woodland and veteran-tree buffer appears in the operational material but is not recorded consistently across the LEMP, CEMP and DEMP. Natural England requires the same protection in every relevant phase.

These examples show why each document cannot be assessed in isolation. The controlling package should be audited receptor by receptor, rather than document by document.

Required integrated mitigation schedule

The Applicant should provide an Integrated Ecological Mitigation Schedule containing, for each receptor:

- the impact pathway;
- the affected work;
- the avoidance measure;
- the controlling document;
- the relevant DCO Requirement;
- the measurable limit or outcome;
- the monitoring method;
- the approving and consulting authorities;
- the responsible person;
- the failure trigger;
- and the required remedial action.

For example, the schedule for Hempnall Beck should bring together the buffer, HDD method, groundwater assessment, water-quality monitoring, invasive-species controls, protected aquatic species, EMF limits, lighting and riparian enhancement. The schedule for each barbastelle corridor should bring together vegetation retention, construction access, lighting, noise, fencing permeability, replacement phasing and monitoring.

This would expose any gaps, contradictions or measures that currently appear in an assessment but not in a secured implementation document.

8.16.4 Effectiveness and enforceability

A mitigation measure should not be treated as part of the environmental outcome merely because it appears somewhere in the application. The Examination must establish:

- what is secured;
- by which legal mechanism;
- against what standard;
- for what period;
- by whom it is monitored; and
- what happens if it fails.

What is secured?

The first question is whether the relevant document is itself certified or otherwise incorporated into the DCO, and whether later plans must comply with it.

BEPS' Relevant Representation records concern that the protected-species Requirement uses the expression 'substantially in accordance with' the outline strategy. Such wording may allow changes whose ecological significance is uncertain.

Where an outline commitment is relied upon to reach a no-significant-effect conclusion, the final plan should be required to be in accordance with it, subject only to changes that:

- are supported by updated evidence;
- do not weaken the mitigation;
- do not increase an assessed effect;
- and are approved after consultation with the relevant ecological body.

A final plan should not be permitted to omit, narrow or relocate a measure merely because the undertaker considers the document still 'substantially' consistent overall.

The same issue applies to the revised Commitments Register. Revision 2 improves administrative traceability through individual commitment references and clearer identification of delivery, responsibility and compliance, but the Register remains expressly not itself a secured document. It is an audit and tracking mechanism whose substantive force depends upon the DCO Requirement, certified document or other legal mechanism to which each commitment is ultimately attached. More importantly, commitments continue to use qualifications including 'where practicable', 'where possible', 'as far as practicable' and similar formulations. Improved traceability therefore does not answer the separate question whether the ecological outcome assumed by the ES is mandatory, measurable and enforceable.

Which Requirement applies?

Natural England identifies Requirement 7 as the LEMP mechanism and Requirement 8 as the protected-species mitigation mechanism. It considers both require further strengthening or clarification.

The Environment Agency's summary table identifies a wider system in which:

- Requirement 7 concerns ecological assessment and the LEMP;
- Requirement 11 concerns surface and foul-water drainage;
- Requirement 13 concerns the CEMP;
- and Requirement 14 concerns the OEMP.

The Agency also identifies unresolved matters across ecology, BNG, water quality, drainage and groundwater.

The Applicant should produce a requirement-by-requirement mitigation audit. Each measure relied upon in the ES should be traced to a specific Requirement, protective provision, licence or obligation. Measures with no legal destination should not be treated as secured.

Against what measurable standard?

Terms such as the following are too uncertain where used without defined criteria:

- 'where practicable';
- 'where possible';
- 'appropriate';
- 'sensitive';
- 'reasonable';
- 'where required';
- and 'substantially in accordance'.

They may be acceptable as supporting language, but not as the only expression of an outcome essential to the ES conclusion.

Examples of measurable standards include:

- a mapped no-work buffer;
- a maximum lux level at a receptor;
- a specified water-quality trigger;
- a habitat area and condition target;
- a minimum hedge width and continuity;
- a fixed season during which work is prohibited;
- a maximum noise or vibration level;
- a survey-validity period;
- or a requirement for no deterioration against an identified baseline.

The standard must relate to the receptor and effect assessed. General compliance with 'best practice' is not an adequate substitute where the outcome depends upon a site-specific threshold.

For how long?

The duration of the obligation must match the duration of the effect.

Natural England requests that landscape and ecological measures be maintained and monitored for the full operational life of the Scheme. That is necessary where habitat measures support conclusions about 60 years of operation.

The DCO must also identify:

- which measures continue through panel and BESS replacement;
- which apply to decommissioning;
- which habitats remain permanently;
- and which monitoring obligations survive removal of the generating equipment.

A five-year establishment period cannot secure a habitat whose function is relied upon for six decades.

Who monitors and approves?

The undertaker should not be the sole judge of whether its mitigation has succeeded.

The final framework should specify roles for:

- the relevant planning authority;
- Norfolk County Council where appropriate;
- Natural England;
- the Environment Agency;
- an independent Ecological Clerk of Works;
- an arboricultural clerk of works;
- and suitably qualified specialists for aquatic, botanical or other receptors.

The approving authority must receive monitoring reports and have power to require remediation. Consultation must be substantive: the relevant body should receive sufficient time and information, and its unresolved objection should be reported rather than simply recorded as consultation having occurred.

For high-risk receptors, independent verification should be required. This is particularly appropriate for habitat-condition assessments, bat-lighting compliance, water-quality monitoring, veteran-tree protection and restoration of temporary habitat losses.

What happens if mitigation fails?

Monitoring without an enforceable response is descriptive rather than protective.

The DCO should specify:

- immediate stop-work triggers where irreversible harm is possible;
- the person authorised to issue a stop notice;
- notification timescales;
- investigation requirements;
- temporary containment or protection;
- remedial measures;
- additional habitat or compensation where restoration fails;
- monitoring extension;
- and enforcement consequences for non-compliance.

Habitat failure also requires financial provision. If planting, grassland establishment, pond creation or restoration fails, funds must be available for repeated intervention or alternative provision. This issue becomes more important through changes of operator and possible insolvency over the 60-year project life.

8.16.5 Deferred mitigation and legal consequences

The distinction is not between "application-stage" and "post-consent" information as such. Post-consent work is legitimate where it refines implementation of an already assessed and acceptable solution. The difficulty arises where later survey or design is needed to identify whether a sensitive receptor exists, whether avoidance is required or whether an acceptable solution is possible at all.

That distinction is particularly material here because botanical survey, further barbastelle work, aquatic evidence, final lighting controls and some protected-species measures remain unresolved. Where later work could require development to be removed, relocated or materially redesigned, the issue is one of pre-consent environmental acceptability rather than routine implementation.

The legal position requires care. The authorities do not establish an absolute prohibition on staged assessment or outline management plans. Equally, they do not permit a decision-maker to assume that unspecified future mitigation will work.

Outline and staged processes are not inherently unlawful

In No Adastral New Town Ltd v Suffolk Coastal District Council [2015] EWCA Civ 88, the Court of Appeal accepted, in the SEA context, that deficiencies at an earlier stage could be cured through later supplementary assessment and genuine consultation before the plan was adopted. It also endorsed the proposition that environmental assessment is a process and that an environmental statement need not contain every conceivable item of information at its first iteration.

That authority supports the possibility of remedy during the present Examination. It does not establish that essential ecological information may simply be left until after the DCO has been made and the public Examination has closed.

The distinction is between:

- supplementary assessment and consultation before the decision; and
- post-consent implementation detail prepared by the undertaker or contractor after the principle and parameters of the development have been authorised.

The former may cure a deficiency. The latter cannot safely do so where the missing information is necessary to determine whether consent should be granted.

EIA requires sufficient information about effects and mitigation

In R (Champion) v North Norfolk District Council [2015] UKSC 52, the Supreme Court emphasised the role of EIA in identifying likely significant effects and the measures proposed to prevent or reduce them, with public participation in assessing the efficacy of those measures. In that case, where pollution-prevention measures had not been fully identified and further work was required, it was impossible at the relevant stage to conclude that there was no risk of significant effects; the Court described the situation as an archetypal case in which the risks and proposed controls should have been set out in the environmental assessment and subjected to consultation.

Champion does not require every construction detail to be fixed. It supports the narrower proposition that later conditions should not be assumed to reduce an effect to insignificance where the nature and efficacy of the measures are themselves unresolved.

Applied to East Pye, the Environmental Statement must contain enough information to establish, before consent:

- the maximum ecological effect of the authorised works;
- the feasibility of the avoidance and mitigation relied upon;
- the principal location and specification of those measures;
- and a legal mechanism capable of securing them.

A later contractor method statement may then implement the established solution. It should not supply the first evidence that a solution exists.

Mitigation cannot be used at HRA screening to avoid Appropriate Assessment

The position under the Habitats Regulations is distinct.

In People Over Wind and Sweetman (Case C-323/17), the Court of Justice held that measures intended to avoid or reduce harmful effects cannot be taken into account at the screening stage when deciding whether an Appropriate Assessment is required. Current government guidance reflects that rule: if likely significant effects cannot be excluded without mitigation, the measures may be considered only through an Appropriate Assessment.

An Appropriate Assessment must be based on sufficiently complete and precise information, and mitigation relied upon at that stage must be adequately secured and likely to work in practice.

Natural England agrees with the Applicant's no-LSE conclusions for the European sites identified in the shadow HRA. That agreement must be represented fairly. It does not remove the need for the Examining Authority to check the basis of each screening conclusion.

Where no likely significant effect is concluded because:

- there is no credible pathway;
- the receptor is outside the Zone of Influence;
- or the effect is objectively insignificant without mitigation,

the screening conclusion may be sustainable.

Where the conclusion instead depends upon:

- pollution prevention;
- runoff controls;
- construction buffers;
- timing restrictions;
- HDD methodologies;
- or other measures designed to avoid or reduce harm,

those measures cannot be used to avoid Appropriate Assessment at screening.

The updated Planning Inspectorate HRA advice confirms that the EIA and HRA regimes are distinct and that the Secretary of State is the competent authority for the DCO decision.

Later Habitats assessment may be possible, but only before implementation

The law also requires acknowledgment of the Supreme Court's more recent decision in C G Fry & Son Ltd v Secretary of State [2025] UKSC 35. The Court confirmed that, in a genuinely multi-stage consent process, an Appropriate Assessment may be required at a later approval stage before the decision that authorises implementation, even where it was not undertaken when outline permission was granted. The focus of the Habitats regime is that the project must not be authorised to proceed without the necessary assessment and integrity conclusion.

That decision does not make every deferred DCO matter acceptable. It means that the legal effect of the later approval mechanism matters.

For reliance upon a later DCO Requirement to be defensible, the Requirement must:

- prevent the affected works from commencing;
- permit the approving authority to require the necessary assessment;
- permit refusal where adverse effect cannot be excluded;
- retain sufficient design flexibility to avoid the effect;
- and operate before any irreversible enabling or preliminary works occur.

A requirement that merely asks the undertaker to submit a plan 'substantially in accordance' with an outline document, without enabling fundamental redesign or refusal of the affected work, may not provide an equivalent protective stage.

C G Fry also concerns the timing of Habitats assessment. It does not displace the separate EIA obligation to assess likely significant effects and mitigation through the application and public decision-making process.

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The present degree of deferral is legally material because the future documents are relied upon not merely to optimise works but to support current conclusions that effects will be negligible or non-significant.

Examples include:

- the final resolution of access conflicts with ancient and veteran-tree buffers;
- HDD entry and exit locations beside County Wildlife Sites and fen habitat;
- final watercourse-buffer widths;
- protected bat corridors and lighting thresholds;
- riparian enhancement credited in the BNG calculation;
- the licensing position for roosting bats, great crested newt, water vole, otter and badger;
- hydrogeological controls for piling and trenchless crossings;
- and the location and condition of habitats relied upon as mitigation.

Those matters determine whether harm can be avoided, whether mitigation is effective and whether the authorised development can be delivered lawfully. They should not all be left to post-consent plans.

The Applicant has now introduced a separate control for 'permitted preliminary works'. Revision 2 of Requirement 13 requires those works to be undertaken in accordance with a Permitted Preliminary Works Environmental Management Plan. BEPS welcomes the recognition that preliminary works require environmental control. The amendment does not, however, remove the ecological issue. The Examination must establish precisely what activities may occur as permitted preliminary works and whether vegetation clearance, intrusive investigation, access formation, drainage works, archaeological excavation or other activities capable of affecting protected species or habitats could occur before the full ecological controls applicable to substantive construction have been discharged.

Required examination outcome

BEPS submits that the Applicant should be required to provide, before the close of Examination:

- A revised OLEMP containing fixed habitat plans, species and structural specifications, implementation phasing, management timetables and measurable condition targets.

- A site-wide dark-corridor and lighting plan, including quantitative receptor limits, lux contours, operating controls and monitoring.
- A revised OPSMS containing final constraints mapping, survey-validity rules, species-specific strategies, licensing schedules and defined ECoW powers.
- Draft licence material or a LONI for any material European Protected Species impact that cannot presently be excluded.
- Fixed HDD launch and reception areas and a complete watercourse-crossing schedule.
- An Integrated Ecological Mitigation Schedule reconciling Chapter 8, Chapter 9, the OLEMP, CEMP, lighting strategy, drainage strategy, arboricultural controls, protected-species strategy and BNG Report.
- A requirement-by-requirement audit identifying the legal mechanism securing every measure relied upon in the ES.
- Amended Requirements 7, 8, 11, 13 and 14, where applicable, so that essential measures must be implemented in accordance with the approved documents and may not be materially weakened through later approval.
- Full-operational-life management, monitoring and maintenance, as requested by Natural England.
- Defined monitoring responsibility, reporting, independent verification, stop-work triggers and enforceable remedial action.
- A prohibition on commencement of any preliminary, enabling or intrusive works capable of affecting the relevant receptor until the corresponding plan and assessment have been approved.
- Financial and successor-liability provisions sufficient to secure habitat establishment, remediation and long-term performance.

Conclusion

Outline management plans are not inherently defective. Their acceptability depends upon what has already been assessed and what remains to be decided.

At East Pye, too many matters presently described as later detail determine whether the development can avoid protected species, maintain ecological connectivity, protect ancient and veteran trees, prevent pollution of connected water systems and deliver the habitats credited in its BNG case. Natural England retains the LEMP and protected-species Requirements as amber matters requiring stronger lifetime performance and licensing clarity. The Environment Agency identifies unresolved inconsistencies between the BNG Report, OLEMP, watercourse buffers, CEMP and drainage controls. Norfolk Wildlife Trust states that deferred HDD locations prevent full assessment of effects on designated habitats. The South Norfolk Tree Warden Network identifies unresolved access conflicts that are being left to later design.

The Examining Authority should not assume that those matters will be resolved successfully after consent. The Applicant must demonstrate during Examination that an effective ecological solution exists, identify its essential content and secure it through precise and enforceable DCO provisions.

Where that cannot be done, the relevant residual-effect conclusion should not be accepted. A future survey, contractor method statement, ECoW decision or licence application cannot

substitute for the application-stage evidence necessary to decide whether the Scheme is environmentally acceptable and lawfully deliverable.

8.17 Statutory and specialist consultee evidence

The ecological concerns raised in this chapter are not confined to BEPS or to a single species, habitat or development parcel. They recur across the representations of statutory bodies, specialist conservation organisations, the local planning authority, arboricultural interests and residents with detailed knowledge of the affected landscape. Those parties approach the Scheme from different professional and statutory perspectives, but repeatedly identify the same underlying issues: the ecological importance of connected woodland, hedgerow, verge, pond and watercourse systems; the risk that the Scheme will divide or degrade those systems; the inadequacy of assessing individual habitat losses in isolation; and the continuing reliance on outline, deferred or inconsistently secured mitigation.

There is not complete unanimity on every issue. The Forestry Commission provides technical advice rather than supporting or objecting to applications. Natural England has described several designated-site and ancient-woodland matters as capable of resolution, provided that the identified buffers, pollution controls and management measures are consistently secured. However, Natural England continues to identify protected-species matters as requiring further information and has requested that the 30-metre ancient woodland and veteran-tree buffers relied upon by the Applicant are expressly carried through the CEMP, LEMP and DEMP. Its qualified position therefore reinforces, rather than removes, the importance of enforceable and internally consistent mitigation.

The significance of the evidence lies in its convergence. The Environment Agency concentrates on aquatic ecology, fisheries, groundwater and pollution pathways. The Forestry Commission addresses woodland integrity, trees and landscape connectivity. Norfolk Wildlife Trust examines the county ecological network and priority species. South Norfolk Council addresses the mitigation hierarchy, BNG, construction methods and enforceability. The Tree Warden Network examines the physical consequences for trees and hedgerows. Local residents and specialist naturalists provide site-specific evidence of how the affected habitats function in practice. Taken together, these representations show that the Scheme's ecological effects cannot properly be understood as a series of small, separate and readily compensable habitat interventions.

8.17.1 Environment Agency

The Environment Agency's Relevant Representation does not accept that all aquatic effects have been adequately assessed or resolved. It identifies outstanding matters relating to fish, European eel, electromagnetic fields, aquatic invertebrates, riparian habitats, water quality, groundwater, construction methods and the enforceability of the environmental management framework. Its overall concern is not simply the possibility of an isolated pollution incident. It is that the Scheme introduces multiple potential source–pathway–receptor relationships across a hydrologically connected landscape, while important design and mitigation details remain deferred.

The Agency first challenges the Applicant's valuation of freshwater fish. It states that treating freshwater fish as a receptor of only local importance fails to account for the European eel, which the Agency identifies as critically endangered and as a species of principal importance under section 41 of the Natural Environment and Rural Communities Act 2006. The Agency requires the fish receptor to be elevated to county importance so that the ecological significance assessment does not understate possible effects on eel.

That valuation issue is connected to the Agency's separate concern about electromagnetic fields. The Agency expressly disagrees with the Applicant's conclusion that operational EMF from buried cables is not expected to produce ecologically significant effects on freshwater fish. Its concern is that residual magnetic fields at watercourse crossings may be detectable by European eel and may alter their behaviour. It therefore seeks evidence that cable burial depth and design will reduce magnetic-field strength to below 12 microtesla at the watercourse bed. The point is not that an adverse effect has already been conclusively demonstrated, but that the Applicant has not yet supplied the evidence needed to justify its conclusion of no significant effect.

The Agency also identifies a distinct impact pathway affecting aquatic insects. The Applicant's assessment has not addressed the possibility that aquatic invertebrates may be attracted to light polarised horizontally by solar panels, potentially inducing egg-laying away from water and interrupting their lifecycle. This matters because the Applicant's aquatic assessment identifies Hempnall Beck as capable of supporting diverse invertebrate communities. Although the indicative layout appears to keep panels away from some watercourses, the Agency observes that the wider stand-offs visible in the outline design are not secured, while the formal design commitment may permit development as close as 10 metres. It accordingly seeks wider, binding buffers around watercourses supporting diverse aquatic-invertebrate communities.

This illustrates the wider weakness in the mitigation case. A favourable indicative masterplan does not provide adequate ecological protection unless its stand-offs and exclusion areas are translated into enforceable parameters. The Agency's concern is therefore both ecological and procedural: the potential impact has not been fully assessed, and the apparent spatial mitigation is not yet secured against later detailed design.

The same inconsistency appears in relation to riparian habitat and BNG. The BNG Report relies upon riparian enhancement and reduced encroachment as part of the Scheme's claimed biodiversity outcome. However, the Agency records that the Outline Landscape and Ecology Management Plan does not contain corresponding commitments. It specifically identifies the opportunity and need to address invasive Himalayan balsam, which contributes to the poor condition of Hempnall Beck, and requests that the riparian enhancements credited in the BNG Report, together with invasive-species survey and management measures, are expressly included in the OLEMP.

That is a material inconsistency. Ecological units should not be credited on the basis of habitat improvements which are not secured in the document responsible for their implementation and long-term management. Nor can the BNG calculation itself establish that the Scheme has followed the mitigation hierarchy. The Agency's comments demonstrate that the claimed watercourse gain depends on measures whose location, specification and enforceability remain incomplete.

The Environment Agency's concerns extend beyond the immediate river corridor. It identifies unresolved groundwater and contaminated-land pathways involving piling and deep foundations, the maximum depth of ground disturbance, underground cable installation and replacement, thermal effects from cables, HDD drilling fluids, historic contamination, private and public water supplies and the underlying aquifers. At scoping stage, it considered that the Applicant had not adequately characterised the relationship between groundwater and surface-water bodies and required ground conditions and groundwater effects to remain within the assessment. It also required Foundation Works Risk Assessments and hydrogeological risk assessments where piling, deep foundations or trenchless crossing methods could interact with aquifers, watercourses or sensitive ecological receptors.

Its Relevant Representation confirms that these matters remain live. The maximum design depth for some substation foundations and piling had not been established sufficiently to assess interaction with the aquifer. The lifespan and replacement requirements for underground cabling remained unclear. The Agency also identified possible effects on groundwater-dependent terrestrial ecosystems and omissions in the list of nearby sensitive sites.

The Agency's water-quality position is similarly conditional. It seeks further development of baseline and operational monitoring, fuller pollution-prevention content in the oCEMP, oOEMP and oDEMP, and additional information about the installation and management of the BESS and substations. It also objects to preliminary works capable of disturbing contaminated ground being excluded from the CEMP, because that would allow an activity presenting a pollution risk to occur outside the principal environmental control document. It requests removal of drafting such as 'substantially in accordance with', which it considers would weaken enforceability, and seeks to be a named consultee on the relevant requirements.

The Agency's evidence therefore demonstrates three related deficiencies. First, the ecological importance of the aquatic receptors, particularly European eel and diverse macroinvertebrate communities, has not been fully reflected in the significance assessment. Secondly, material impact pathways remain dependent on design information not yet fixed, including cable depth, panel stand-offs, piling depths and crossing arrangements. Thirdly, the mitigation documents are not internally consistent or sufficiently secured. Those are not minor drafting matters. They affect whether the conclusions of no significant residual effect can safely be relied upon.

8.17.2 Forestry Commission

The Forestry Commission does not express support for or opposition to the application. Its role is to advise on effects upon trees and woodland, including ancient woodland. Its advice is nevertheless important because it explains why the absence of direct tree felling within an ancient woodland boundary does not demonstrate the absence of deterioration.

The scoping evidence identifies six ancient woodland parcels adjacent to development areas: Pope's Wood and Doyly's Grove adjoining Site 7C; Saxlingham Grove adjoining Sites 7F and 7G; Little Wood adjoining Site 7H; Ringers Grove adjoining Site 8A; and Spring Wood adjoining Sites 3A and 3B. These include both ancient semi-natural woodland and plantations on ancient woodland sites. Veteran trees are also dispersed throughout the Order Limits and their surroundings.

Doyly's Grove illustrates why simple distance measurements are inadequate. The Applicant's own scoping description records the woodland as adjoining Site 7C to the south, west and north. Development on several sides can increase enclosure, edge effects and isolation even where no land is taken from within the mapped woodland boundary. The Forestry Commission specifically warns that nearby development can be particularly damaging where woodland becomes isolated within the landscape, is surrounded on several sides, or is effectively enclosed by development.

Ringers Grove raises a comparable concern. It is identified in the scoping consultation evidence as adjacent to Site 8A and is also identified in specialist bat evidence as an ash woodland of a type and age capable of providing barbastelle roost features. The relevance of the woodland therefore extends beyond its mapped habitat units: it may contribute to a wider woodland and bat network linking the River Tas corridor, nearby hedgerows and other mature woodlands.

The Forestry Commission describes ancient woodland as irreplaceable and emphasises that indirect effects may include fragmentation, loss of connectivity, damage to soils and roots, changes in drainage, dust, air pollution and contamination. It states that, because ancient woodland and ancient or veteran trees are irreplaceable, effects described as temporary may still produce irreplaceable damage. This is particularly important for construction compounds, access roads, cable trenches, storage areas and vehicle movements close to woodland edges and veteran trees.

Tree and woodland damage may also be delayed. Root severance, compaction, altered soil aeration, contamination or drainage change may not cause immediate canopy loss. Decline can occur over subsequent seasons or years, by which point the causal construction activity has ceased and replacement planting cannot restore the age, structure, fungi, deadwood, cavities, bark features and associated ecological relationships of the damaged tree or woodland edge. The Commission's advice therefore requires protection of the full root-protection area, which may extend beyond the crown, and controls against trenching, compaction, materials storage, fuel and chemical contamination and dust deposition.

The Scheme's fencing also requires consideration as part of this fragmentation analysis. The proposed development includes extensive security and deer-type fencing. The local scoping evidence states that the effects of extensive deer fencing on roe, muntjac, Chinese water deer and other large mammals were not adequately assessed and that enclosure should not impede wildlife movement between individual sites or across the wider region. That point was not made by the Forestry Commission itself, but it directly engages with the Commission's warning that development should not isolate woodlands or interrupt the features connecting them.

The Commission does not advocate narrow screening belts as an adequate ecological response. It advises that hedgerows, individual trees and woodlands should be considered together in terms of connectivity. New woodland should, where possible, form substantial connected habitat rather than isolated ornamental or screening parcels. Its advice refers to woodland creation in blocks of approximately five hectares, or connecting planting which creates woodland blocks of at least that scale, linked by hedgerows and hedgerow trees and supported by long-term management.

This evidence exposes an important distinction between landscape mitigation and ecological mitigation. A line of planting may eventually reduce views of panels but may not recreate the interior conditions, structural diversity, age, soil community, roost resource or functional

connectivity of an established woodland. The Forestry Commission's evidence requires the Scheme to be assessed as a potential alteration of a woodland network, not merely as infrastructure located outside six coloured polygons on an ancient woodland inventory.

8.17.3 Norfolk Wildlife Trust

Norfolk Wildlife Trust's evidence provides the clearest landscape-scale ecological assessment. NWT supports renewable energy in principle, but considers that further information and design refinement are required before East Pye can be regarded as ecologically acceptable. It describes the affected Claylands not as an ecologically depleted arable landscape but as a landscape 'dense with nature', containing ancient woodland pockets, species-rich hedgerows, semi-natural road verges, Roadside Nature Reserves, rare flora, important farmland birds and significant barbastelle populations.

That characterisation is significant because the Applicant's mitigation case frequently relies on the proposition that the principal development areas are agricultural fields of comparatively low habitat value. NWT's evidence is that the ecological value lies in the relationship between fields and the surrounding network of hedges, trees, ditches, ponds, verges, woodlands and watercourses. A development may therefore remove relatively little woodland in measured hectares while still impairing the movement, foraging, dispersal and hydrological processes that sustain woodland and protected-species populations.

NWT identifies direct and indirect risks to County Wildlife Sites and Roadside Nature Reserves. The Order Limits include parts of Lower Spring Wood CWS and Fritton Grange Meadows CWS and include or adjoin RNRs at Bussey's Loke, Market Lane and Parker's Lane. The use of HDD does not, by itself, resolve those effects because entry and exit compounds, drilling operations, vehicle movements, storage, noise, vibration, lighting and accidental releases may occur outside the narrow drilled alignment. NWT therefore seeks final entry and exit locations, larger precautionary buffers and the exclusion of construction compounds, lighting and storage from those buffers.

NWT's pre-application evidence also identified omissions in the mapped ecological network. The cable corridor was shown immediately adjacent to Tyrell's Wood CWS, Wood Green CWS and Pulham Market Big Wood SSSI, but Tyrell's Wood and Wood Green were omitted from the relevant PEIR mapping and assessment. NWT identified Tyrell's Wood as supporting barbastelle and recommended avoidance of the corridor because of its position within the colony's Core Sustenance Zone. It proposed moving the cable route west rather than relying on construction mitigation within the sensitive corridor.

The same preference for avoidance appears in NWT's treatment of Site 3. NWT had recommended that Site 3 be removed because of its relationship with Spring Wood CWS, ancient woodland and bats. It acknowledged the Applicant's subsequent removal of panels from part of the area, but remained concerned about construction activity and the siting of a substation immediately west of the woodland. It continued to regard removal of Site 3 as the preferable ecological solution.

That is important evidence on the mitigation hierarchy. NWT is not merely asking for additional planting around an unchanged layout. Its position is that the most damaging development areas

and routes should be avoided, relocated or removed. Buffering and restoration are secondary measures where avoidance cannot reasonably be achieved.

NWT also seeks wider and more ecologically functional woodland buffers. It recommends that 30-metre buffers around woodland and CWSs should form ecotones comprising rough grassland, scrub and woodland-edge vegetation rather than closely mown strips or residual spaces between fencing and woodland. An ecotone can provide gradual transition, shelter, foraging habitat and protection against edge effects. A nominal distance on a plan cannot perform those functions unless the habitat composition, management and exclusion of incompatible works are secured.

Bats are central to NWT's objection. The Applicant's own ES describes the Order Limits and surrounding landscape as supporting a nationally important assemblage of foraging and commuting bats. NWT does not accept that repeated temporary hedgerow gaps of up to 10 metres can be assumed to have no significant effect, particularly for barbastelle and Myotis species reliant on connected, dark linear features. The effects must be considered cumulatively across the cable corridor, access points, haul routes, visibility splays and individual development sites.

NWT further cautions that new habitat cannot automatically replace established commuting routes and mature landscape features. A newly planted hedgerow does not immediately reproduce the height, density, continuity, shelter, invertebrate productivity or familiarity of an old route. The relevant ecological loss therefore includes the period before replacement planting becomes functional, the risk of establishment failure and the possibility that a replanted route in a different position will not be used in the same way.

Lighting is part of the same connectivity issue. NWT accepts that routine night working may be limited but notes that continuous HDD operations and temporary compounds may require lighting. It seeks no light spill on woodland edges, hedgerows, watercourses or designated sites, quantified and enforceable limits, bat-sensitive design and monitoring close to barbastelle roosts and commuting corridors.

NWT's position is therefore that the Scheme must be reshaped to fit the ecological landscape, rather than requiring the landscape to be fragmented and subsequently repaired around the Scheme. Its evidence supports wider buffers, genuine ecotones, retention of dark corridors, avoidance of ancient and species-rich hedgerows, relocation of damaging cable sections and removal of the most sensitive development areas.

8.17.4 South Norfolk Council

South Norfolk Council's evidence adds an important distinction between the ecological mitigation hierarchy and the biodiversity gain hierarchy. The Council observes that the two are related but not identical and should not be conflated in Chapter 8. Avoiding or reducing harm to an existing habitat is not equivalent to removing or degrading that habitat and then producing a positive numerical BNG result elsewhere. The Council accordingly asks the Applicant to address enhancement of existing habitat as well as the creation of new habitat and to demonstrate BNG across the full DCO area, including the cable corridors.

This distinction is directly relevant to the Scheme's treatment of hedgerows, mature trees, woodland edges, ponds and watercourses. Those features may perform functions that are poorly reflected in a habitat-unit calculation, including established bat commuting routes, breeding and shelter habitat, local seed sources, amphibian stepping stones and hydrological connections. The mitigation hierarchy requires the Applicant first to avoid and minimise damage to those functions. The BNG hierarchy and metric cannot be used retrospectively to justify an avoidable impact.

The Council also requests clarity about the duration of claimed ecological gains. The Applicant refers to linear terrestrial, riparian and aquatic habitats remaining after decommissioning, but the Council seeks a clear plan identifying which habitats will in fact be retained. It specifically states that semi-natural habitats created within ancient-woodland buffers should remain after decommissioning. Without such a commitment, the BNG and connectivity case may depend on habitats which could be removed when the energy infrastructure is dismantled.

Ponds provide a practical example of the Council's approach. It asks the Applicant to consider restoration of ghost ponds and the creation of new ponds as part of the environmental design and BNG strategy, identifying potential opportunities including two former ponds within Site 7C. It also highlights the need to engage with Natural England on the availability of great crested newt compensation ponds and to hold sufficient survey information if district-level licensing cannot supply the necessary compensation.

These opportunities should not be treated simply as additions to the BNG total. Pond restoration should be designed as part of a connected network, taking account of surrounding terrestrial habitat, migration routes, road and cable barriers, shading, water source, permanence and long-term management. The value of a pond to great crested newts and other wildlife depends on its relationship with the wider landscape.

The Council's Environmental Management Officer also rejects percussive piles as the preferred fixing method for the solar arrays and states that screw piles should be advanced instead. Although this was raised principally as a noise and vibration matter, it is ecologically relevant. Percussive piling can generate repeated noise and vibration close to woodland, roosts, ponds and other sensitive features and may interact with groundwater and buried archaeology. The Council's position is that a quieter practicable construction method should be selected at source rather than relying on later management of the effects of a noisier method.

The Council also questions the Applicant's proposed reliance on motion-sensing lighting. Its recommendation is for actively controlled lighting operated by security personnel using infrared CCTV, so that lights are not repeatedly triggered by wildlife or other incidental movement. That approach is consistent with the need to preserve dark hedgerow, woodland and watercourse corridors and to avoid unpredictable light activation in otherwise dark rural locations.

South Norfolk Council's evidence therefore reinforces five points: existing habitat must be protected before compensation is considered; BNG must cover the whole authorised development; the retention period for created habitats must be clear; ecological enhancement should include restoration of historic pond networks; and avoidable construction noise, vibration and lighting should be removed through design rather than deferred to management plans.

8.17.5 South Norfolk Tree Warden Network

The South Norfolk Tree Warden Network addresses the physical mechanisms through which the Scheme may damage trees, hedgerows and the ecological network they support. Its principal concern is that the submitted Arboricultural Impact Assessment remains preliminary and is not a final, construction-ready assessment of every access, visibility splay, haul road, cable crossing, compound, highway intervention, tree-protection area and hedgerow opening.

The Tree Wardens identify a substantial arboricultural resource. The Applicant's ecological evidence records 49 trees with veteran features within the Order Limits and a further 21 within 30 metres. The Scheme also identifies 621 trees with potential to support roosting bats, comprising 577 within the solar and BESS sites and 44 within the cable and highway works areas. Native hedgerows, trees, ponds, field margins and watercourses occur throughout the development area.

The Preliminary AIA has identified four clashes between indicative access routes and buffers associated with ancient or veteran trees. The Applicant proposes to resolve those conflicts during detailed design because the routes retain flexibility within the relevant works envelope. The Tree Wardens object that this reverses the proper sequence. Where an access route or visibility splay conflicts with an ancient or veteran tree buffer, the conflict should be resolved before consent so that the Examining Authority can determine whether the route is deliverable without unacceptable damage.

Root protection is not confined to preventing direct tree removal. Access construction, trenching, compaction by heavy vehicles, temporary surfacing, crane movements, soil storage, changes in levels, dewatering and accidental chemical contamination may all impair roots or the soils upon which mature trees depend. Crown damage and excessive pruning may also occur where AILs, articulated vehicles or construction machinery require additional lateral or vertical clearance.

The Tree Wardens emphasise that such damage may result in delayed decline. A tree may remain standing throughout construction but deteriorate later because roots have been severed, soils compacted or drainage altered. A mitigation regime based only on recording immediate losses at the end of construction would therefore fail to detect the full effect. Protection must include final Root Protection Area plans, construction exclusion zones, no-dig areas, ground protection, storage and chemical exclusions, monitoring during works and a sufficiently long post-construction period to identify delayed deterioration.

Hedgerow severance is treated in the same functional manner. The Scheme anticipates repeated temporary removals, including sections of up to 10 metres, for cables, haul routes and accesses, together with additional clearance for visibility splays and highway works. Viewed individually, each opening may appear small. Viewed cumulatively across the Order Limits, the openings may fragment bat commuting routes, reduce shelter and foraging continuity, expose retained trees to altered edge conditions and interrupt the connected structure of the historic landscape.

The Tree Wardens therefore reject the treatment of trees and hedgerows merely as visual screening or generic habitat units. They describe them as functional ecological infrastructure. They support roosting, commuting, foraging, nesting and dispersal and connect woodlands, ponds, fields and watercourses. The ES does not provide a route-wide analysis of cumulative gap creation, buffer

intrusion, lighting, haul-road disturbance, access widening, visibility splays or the time needed for replanted hedges to achieve equivalent function.

Their evidence supports a final AIA before consent, comprehensive Tree Protection and Root Protection Area plans, resolution of the four identified buffer clashes, and a presumption of avoidance for ancient and veteran trees, high-value mature trees, potential roost trees, ancient woodland edges and important hedgerows. The evidence also demonstrates why replacement planting and BNG do not provide an immediate or equivalent remedy for damage to old trees and mature linear habitat.

8.17.6 Wood Green Residents Group and local evidence

The Wood Green and wider local evidence supplies information at a level of spatial and temporal detail that broad desktop studies may not capture. Local observations are not a substitute for systematic professional survey, but neither can they properly be dismissed where they identify potentially important receptors, breeding activity, recurring wildlife use or ecological connections requiring investigation.

The first issue is the concentration and connectivity of designated and locally important sites. NWT identified the cable corridor as passing immediately adjacent to Tyrell's Wood CWS and Wood Green CWS, as well as Pulham Market Big Wood SSSI. It also recorded that Tyrell's Wood and Wood Green were omitted from the PEIR's relevant mapping and assessment. This is not simply a cartographic error. The three sites form part of a connected woodland landscape in which cable construction, lighting, noise, vibration, drainage change and hedgerow removal may affect ecological function beyond the immediate working corridor.

The same network extends through Roadside Nature Reserves, including Parker's Lane. NWT confirms that the Order Limits include or adjoin Parker's Lane RNR, together with Bussey's Loke and Market Lane RNRs. These verges and lanes should not be considered isolated botanical strips. They connect hedges, ditches, woodland edges, ponds and fields and can provide movement and foraging habitat for invertebrates, amphibians, bats, birds and small mammals.

Local botanical evidence explains the significance of such features. The surviving verges are frequently associated with old banks, drainage ditches and hedges and may contain very narrow, long-established plant communities. Their ecological function is disproportionate to their area because they act as refuges and sources for recolonisation within a largely agricultural landscape. Road widening, vehicle overrun, passing places, visibility splays and repeated compaction could therefore remove or isolate small but important components of the wider network.

The local and specialist bat evidence is particularly material. Independent work undertaken in woodlands around the Scheme confirmed a barbastelle maternity colony in Little Wood near Shotesham and predicted or identified roosting activity in Brooke Wood, Lower Spring Wood and Spring Wood. It also identifies Saxlingham Grove as supporting a known maternity colony and recommends further assessment of Ringers Grove and other scattered woodlands. The specialist conclusion is that the effects of East Pye cannot be properly assessed without a fuller understanding of barbastelle distribution and use of the connected woodland landscape.

This evidence supports the residents' concern that bats are breeding and moving through a network which extends across CWSs, SSSI woodland units, smaller woods, mature trees, hedgerows and watercourses. The relevant receptor is therefore not merely a roost tree or a single woodland boundary. It is the functioning maternity landscape, including the dark and sheltered routes between roosting and foraging areas.

Local evidence also identifies great crested newts, water vole and a diverse bird assemblage in and around the affected area. The Environment Agency's scoping response supports the need for caution in relation to water vole because the species is mobile, may occupy suboptimal habitat and cannot reliably be protected by assuming that a 10-metre watercourse buffer captures its full area of use. South Norfolk Council has similarly required sufficient great crested newt survey information and a credible pond strategy.

The bird evidence includes turtle dove and starling. The Applicant's own scoping report anticipated that the breeding assemblage could include red-listed species such as turtle dove, starling, corn bunting, skylark, linnet and yellowhammer and accepted that many notable species would be associated with hedgerows, scrub, ditches, tree lines and woodland boundaries. Local observations of turtle dove activity and recurring starling murmurations are therefore consistent with the type of assemblage the Applicant itself considered likely. They should be reconciled with the Applicant's territory mapping, seasonal coverage and impact assessment rather than dismissed because they arise from residents.

Starling murmurations also demonstrate the distinction between recording the presence of a species and understanding the landscape function supporting it. A large pre-roost gathering may depend upon feeding areas, sheltered flight routes and suitable roost habitat extending beyond the field in which the birds were observed. The possible effects of construction disturbance, lighting, loss of feeding habitat and fragmentation therefore require consideration at an appropriate spatial scale.

Darkness is itself part of the ecological baseline. The local lanes, woodlands and watercourse corridors are generally unlit and provide dark routes for light-sensitive bats and other nocturnal wildlife. Temporary compound lighting, continuously lit HDD operations, substations, security lighting and lights activated repeatedly by wildlife could divide those routes even where hedges and trees remain physically present. Local dark-skies evidence therefore corroborates NWT's demand for quantified limits and South Norfolk Council's preference for actively controlled lighting rather than indiscriminate motion activation.

The local evidence concerning Hempnall Beck and the River Tas connects the terrestrial and aquatic objections. Hempnall Beck is a tributary of the River Tas and is identified as a chalk-stream feature capable of supporting diverse aquatic communities. The cable and development areas intersect its tributaries, ditches, riparian vegetation and groundwater catchment. NWT has identified areas where the corridor includes Hempnall Beck, veteran trees, spring-fed fen and floodplain habitats and has required the Applicant to demonstrate that cabling and HDD will not alter the hydrology sustaining those receptors.

The River Tas itself runs between Sites 8A and 8B, while the underlying superficial and bedrock deposits include Secondary A and Principal Aquifers. That relationship confirms that Wood Green, Parker's Lane, the CWS and SSSI network, local ponds, Hempnall Beck and the River Tas should

not be assessed as disconnected receptors. Surface water, groundwater, riparian corridors, roadside ditches, woodland and hedgerows combine to form one ecological system.

Local evidence does not remove the need for professional surveys. Its importance is that it identifies recurring use and potential ecological functions that the formal surveys must address. Where residents report breeding bats, great crested newts, water vole, turtle dove, starling murmurations and other notable birds in locations affected by development, the proper response is to investigate and reconcile those observations with the ES evidence. The absence of that reconciliation leaves uncertainty over both the baseline and the effectiveness of mitigation.

Convergence and consequence

The representations differ in emphasis, but their conclusions converge in five material respects.

First, the Scheme affects an existing ecological network rather than a collection of isolated habitat parcels. That network includes ancient woods, smaller woods, veteran and potential-roost trees, hedgerows, verges, ponds, fen, ditches, Hempnall Beck and the River Tas.

Secondly, the principal risks arise not only from direct habitat removal but from fragmentation, enclosure, disturbance, lighting, hydrological alteration, root damage, compaction, pollution pathways and the loss of functional continuity. Those effects may extend beyond the Order Limits and may emerge only after construction.

Thirdly, significant parts of the mitigation case remain dependent on later design. Cable burial depths, HDD entry and exit points, access alignments, piling depths and methods, construction compounds, lighting arrangements, watercourse buffers, root-protection measures and some habitat-management commitments are not yet fixed at the level necessary to demonstrate effectiveness.

Fourthly, there are inconsistencies between the documents relied upon to establish ecological acceptability. Riparian enhancements credited in the BNG Report are not fully carried into the OLEMP. Wider indicative watercourse buffers are not consistently secured in the design parameters. Ancient woodland and veteran-tree buffers require consistent inclusion across all phase-specific management documents. Habitats relied upon after decommissioning are not comprehensively identified and protected.

Fifthly, BNG does not answer the prior question of avoidance. Newly created habitat cannot automatically replace an established bat route, ancient woodland edge, veteran tree, species-rich verge, functioning pond network or hydrologically connected riparian corridor. The consistent evidence from the consultees is that the Applicant should first remove, relocate or redesign the most damaging elements and then demonstrate that the remaining effects can be mitigated through specific, measurable and enforceable controls.

The convergence is therefore not a repetition of separate objections. It is evidence of a structural deficiency in the Applicant's assessment. Bodies concerned respectively with fisheries, groundwater, forestry, county wildlife, local planning, arboriculture and site-specific ecology all identify the same underlying problem: a dispersed industrial development has been superimposed

upon a connected ecological landscape, while the assessment divides that landscape into individual receptors and relies heavily upon outline mitigation to restore or maintain the connections between them.

Until the Applicant provides an integrated ecological constraints and mitigation plan fixing the relevant avoidance areas, development exclusions, watercourse and woodland buffers, cable and access alignments, construction methods, lighting limits, riparian measures, tree-protection controls and long-term habitat obligations, the conclusion that the Scheme will produce no significant adverse residual ecological effects is not adequately demonstrated.

The examination record has since reinforced that convergence. ExQ1 directly tests the adequacy of the bat baseline, while ISH1 generated specific actions concerning local botanical evidence and the ecological implications of access and infrastructure design. Those developments do not establish that the ExA accepts BEPS's conclusions, but they confirm that the completeness of the ecological baseline and the adequacy of the Applicant's avoidance and mitigation case remain live examination issues.

8.18 Habitats Regulations and European Protected Species licensing implications

The full Habitats Regulations Assessment ('HRA') case is addressed separately in the HRA chapter. Chapter 8 should nevertheless identify the relationship between the ecological evidence, the Applicant's HRA screening conclusion and the separate European Protected Species ('EPS') licensing regime. These are related but legally distinct matters.

The Applicant submitted a Stage 1 Shadow HRA which considers Norfolk Valley Fens SAC, The Broads SAC, Broadland SPA and Broadland Ramsar. It concludes that no likely significant effect ('LSE') would arise, alone or in combination, through hydrological change, water pollution, altered species distribution or atmospheric deposition, and therefore does not proceed to Appropriate Assessment.

Since submission, the Applicant has issued Revision 2 of the shadow HRA. The principal change is the addition of Appendix C containing the relevant European-site citations and Natura 2000 data sheets in response to the Planning Inspectorate's section 51 advice. That improves the documentary material supporting the assessment but does not alter the substantive assessment route: the Applicant continues to conclude at Stage 1 screening that likely significant effects can be excluded and therefore does not proceed to Appropriate Assessment. The revision consequently does not itself resolve BEPS's concerns concerning hydrological connectivity, functionally linked land, mobile qualifying species or in-combination pathways.

Natural England's June 2026 Relevant Representation agrees with that conclusion and records no amber or red issue for internationally designated sites. Its position is that the European-site pathways have been screened out because of distance, lack of identified hydrological connectivity and lack of suitable or optimal habitat for the relevant qualifying species. That position must be

represented fairly: Natural England has not, on the application material it reviewed, requested an Appropriate Assessment for the four European sites considered by the Applicant.

That agreement does not mean that all Habitats Regulations and EPS issues are resolved. Natural England separately classifies protected species as an amber issue. It records that licences may be required for great crested newts, roosting bats, water vole or otter and badger-sett closures, and seeks clarification of the licensing position.

The legal and evidential questions should therefore be kept separate:

- whether East Pye could affect the qualifying features or integrity of a European site, including through functionally linked land and mobile species; and
- whether particular activities would contravene the strict species protections applying to bats, great crested newts, otter and other protected species unless licensed.

A positive conclusion under one regime does not determine the other.

European-site screening and the precautionary threshold

Under the Habitats Regulations, an Appropriate Assessment is required where an LSE upon a European site, alone or in combination with other plans or projects, cannot be excluded on the basis of objective scientific evidence. At screening, the competent authority must identify the European sites and qualifying features concerned and consider whether there is a credible impact pathway. A risk or possibility of an effect capable of undermining the conservation objectives is sufficient to require Appropriate Assessment.

Measures introduced specifically to avoid or reduce harmful effects cannot be relied upon at screening to avoid Appropriate Assessment. They may be considered at the Appropriate Assessment stage, where their effectiveness, implementation and enforceability must be established.

That distinction is material at East Pye. The Applicant's European-site screening conclusion is presented principally as a finding that no impact pathway exists, rather than as a conclusion dependent upon CEMP mitigation. The separate reliance upon pollution-prevention and runoff measures in the oCEMP relates particularly to the nationally designated SSSIs and ancient woodlands which Natural England accepts are hydrologically connected to the Order Limits.

The HRA objection must therefore test the scientific basis of the Applicant's asserted absence of a European-site pathway. It should not inaccurately characterise the Applicant as having screened out the European sites solely by relying on CEMP measures where its stated case is that the relevant sites are in different catchments, at higher elevation or otherwise not hydrologically connected.

Hydrological pathways to European sites

The Shadow HRA identifies water pollution, siltation, inappropriate water levels and hydrological change as potential pressures relevant to all four European sites considered. It then states that the

sites are sufficiently distant and are at higher elevation and/or in different catchments, so no hydrological connection to the Order Limits has been identified. On that basis it excludes LSE through water pollution, siltation and hydrological change, alone and in combination.

BEPS submits that the competent authority should test that conclusion against the wider water evidence, rather than treating the absence of a pathway as settled merely because it appears in the Shadow HRA.

The Scheme intersects an extensive system of field drains, ordinary watercourses, tributaries, aquifers and groundwater-dependent habitats. Natural England confirms that at least six SSSIs and two ancient woodlands are hydrologically linked to the Order Limits through watercourses or groundwater flow. Those sites include Fritton Common, Pulham Market Big Wood, Shotesham-Woodton Hornbeam Woods, Shotesham Common, Hedenham Wood and Tindall Wood Ditchingham SSSIs, together with Saxlingham Grove and Pope's Wood and Doyly's Grove ancient woodlands.

Norfolk County Council's LLFA identifies important deficiencies in the Applicant's underlying hydrological evidence. It records that:

- the geology and hydrogeology vary across the Scheme;
- the assessment remains substantially desk-based;
- site-specific infiltration and ground-investigation evidence is incomplete;
- ordinary watercourses and field drains are not consistently mapped or described;
- some surface-water pathways have not been considered adequately;
- the integrity of the existing field-drainage network must be maintained;
- and the Applicant's assumptions about runoff reduction through increased vegetation are not demonstrated catchment by catchment.

The Environment Agency likewise identifies unresolved pathways associated with deep foundations, piling, cable trenches, HDD, drilling fluids, contaminated land, aquifers, groundwater-dependent ecosystems and surface-water receptors. It requires additional hydrogeological and foundation-risk assessments where intrusive works may connect pollution sources with groundwater or ecologically sensitive water bodies.

That evidence does not, without more, prove a hydrological connection to Norfolk Valley Fens SAC or the Broads/Broadland European-site complex. It does, however, demonstrate that the hydrological baseline is more complex than a simple distance exercise. The Applicant should therefore provide the catchment mapping, groundwater conceptual models, elevations, flow directions and source–pathway–receptor evidence upon which the asserted absence of a European-site connection depends.

The competent authority should be able to trace, for each part of the Order Limits:

- the receiving ordinary watercourse or drainage system;
- the relevant surface-water catchment;
- the underlying groundwater body and likely flow direction;

- the relationship with the River Tas, Hempnall Beck, Broome Beck, Starston Brook and other receiving waters;
- the existence of any intervening hydrological barriers;
- and the evidence demonstrating that pollutants, sediment or changes in flow could not reach or affect a European-site qualifying feature.

Where the asserted absence of connectivity depends upon unverified assumptions about buried channels, superficial deposits, aquifer continuity, drainage direction or the condition of ordinary watercourses, the screening conclusion requires further substantiation.

The appropriate formulation at this stage is not that an adverse effect upon a European site has been established. It is that the no-pathway conclusion must remain open to review if the examination produces new hydrogeological evidence, corrections to catchment mapping or evidence of downstream connectivity capable of affecting a qualifying feature.

Functionally linked land and mobile qualifying species

The Habitats Regulations are not confined to activities occurring inside a European-site boundary. Land outside a site may require consideration where it supports a qualifying species or otherwise contributes to the conservation objectives of the European site. Government guidance expressly recognises that an effect may arise some distance from the designated boundary, including through pollution or through effects on feeding areas used by a designated species. An Appropriate Assessment must consider habitat and species outside the site boundary where they are functionally linked and effects upon them are liable to affect the site's conservation objectives.

The Applicant's Shadow HRA acknowledges that principle. It considers whether land within the Order Limits could constitute functionally linked land for mobile qualifying species of Broadland SPA and Broadland Ramsar.

The qualifying birds considered include bittern, Bewick's swan, whooper swan, marsh harrier, hen harrier, ruff and Eurasian wigeon. The Applicant concludes that:

- the Order Limits do not contain extensive reedbeds suitable for bittern;
- there is no relevant wetland roosting habitat for the swan species;
- the undulating agricultural land is less suitable than alternative areas;
- no marsh harrier was identified in the relevant desk study or breeding-bird surveys;
- and the Order Limits do not contain the wetland or marsh habitats principally used by the other qualifying species.

Natural England agrees with the resulting no-LSE conclusion.

BEPS should not therefore assert that all agricultural land within the Scheme is established functionally linked land for Broadland SPA or Ramsar. Nor should records of turtle dove, skylark, lapwing, starling or other locally important birds be treated as proving a connection with the Broadland qualifying assemblage. Those species remain relevant to the EIA and species-protection assessment, but they are not made SPA qualifying interests merely because they occur within the same landscape.

The remaining issue is whether the Applicant's functionally linked land assessment is sufficiently precautionary and current. In particular, the examination should establish:

- whether all relevant wintering-bird data have been considered;
- whether surveys covered the fields and seasons in which qualifying swans or raptors might reasonably occur;
- whether land-use changes during the survey period affected habitat use;
- whether local records held by residents, landowners, bird groups or the Norfolk Biodiversity Information Service disclose qualifying-species use;
- and whether other developments may displace birds from alternative feeding areas into, or away from, the East Pye landscape.

If new evidence identifies regular use by a qualifying population, the functional-land question would require reconsideration. The absence of evidence from a survey of limited duration should not be treated as permanent proof that mobile species cannot use the land during the 60-year life of the Scheme.

Barbastelle colony landscapes and the limits of the present HRA

Barbastelles require separate and careful treatment.

Barbastelle is a European Protected Species and an Annex II species under the Habitats Directive. The Scheme lies within a landscape supporting multiple maternity colonies, connected woodland, hedgerows, trees, watercourses and dark commuting routes. The Applicant's ecology material describes the Order Limits and surrounding landscape as nationally important for foraging and commuting bats. Norfolk Wildlife Trust identifies barbastelle as one of the most significant ecological constraints and questions whether repeated hedgerow gaps, lighting and construction disturbance can occur without degrading corridor functionality.

The Norfolk Barbastelle Study Group records that the six-kilometre Core Sustenance Zones of six maternity colonies lie within or abut the Scheme area, that two colonies lie beside the proposed cable route and that one colony would also be surrounded by panel areas. Its 2025 work confirmed a large maternity colony at Little Wood and produced acoustic evidence indicating probable additional colonies at Brooke Wood and Lower Spring Wood. It states that additional woodlands, particularly towards the eastern end of the Scheme, remain insufficiently investigated.

That evidence is highly material to EPS licensing and to the ordinary ecological assessment. It does not, without an additional evidential step, establish that the East Pye barbastelle population is functionally linked to a European site.

None of the four European sites considered in the Applicant's Shadow HRA is identified there as being designated for barbastelle. The presence of an Annex II species outside a SAC does not automatically convert every effect upon that species into an effect upon a European site. The HRA question arises only where evidence demonstrates that the affected animals or habitat contribute to the qualifying population, ecological structure or conservation objectives of a particular European site.

Chapter 8 should therefore avoid asserting that every impact upon the South Norfolk barbastelle metapopulation necessarily produces an LSE upon a specified SAC. Instead, it should require the Applicant and Natural England to clarify:

1. whether any of the East Pye colonies are known, or reasonably suspected, to form part of a population associated with a SAC designated for barbastelle;
2. whether genetic, roosting, dispersal or movement evidence connects the South Norfolk colonies with any such qualifying population;
3. whether any affected woodland, hedgerow or riparian feature constitutes functionally linked habitat for a European-site barbastelle population;
4. whether the cumulative loss or compression of colony-support landscapes could affect the conservation objectives of any relevant SAC; and
5. whether the HRA search area was sufficient to identify any European site for which that connection should be investigated.

Unless such a connection is evidenced, the principal legal regime governing impacts upon the local colonies is the EPS licensing regime, together with the EIA, NERC Act and planning-policy protections. The absence of a demonstrated European-site connection does not reduce the importance of the bats; it identifies the correct legal gateway through which the effects must be addressed.

Mobile species and ecological functionality

The EPS assessment must consider more than the physical removal of occupied roost trees. Not every effect upon foraging habitat or every interruption of a hedge automatically requires a licence. However, licensing implications may arise where disturbance, habitat loss or severance is sufficiently serious to:

- damage or destroy a breeding site or resting place;
- obstruct access to a roost;
- impair the continuing ecological functionality of a breeding site;
- or deliberately disturb bats in a manner likely to affect breeding, rearing, survival or the local population.

That issue is particularly important for maternity colonies which depend upon networks of alternative tree roosts, dark commuting routes and productive foraging areas.

The Study Group evidence indicates that the relevant landscape supports a metapopulation rather than isolated roosts. Its surveys identified maternity use of damaged and ageing trees, including split and lifted bark on ash, and probable maternity activity in broadleaved compartments within plantation woodland. This means that conventional surveys focused only on obvious cavities or mapped ancient woodland may omit part of the roost resource.

NWT's evidence similarly identifies repeated temporary hedgerow openings, lighting, vehicle movements, cable works and construction disturbance as potential effects upon the functionality of the wider colony landscape. It does not accept that a gap of up to 10 metres is necessarily

immaterial merely because the total length of hedgerow retained across the Scheme remains large.

The licensing assessment must therefore be based upon:

- the complete distribution of confirmed and probable maternity colonies;
- the network of alternative roost trees used by each colony;
- principal commuting routes;
- important foraging areas;
- cumulative hedgerow crossings;
- lighting exposure;
- construction and operational disturbance;
- and the relationship between individual work areas and the ecological functionality of each breeding site.

That information is not yet complete. The Study Group expressly calls for further radiotracking and assessment at Brooke Wood, Lower Spring Wood and Spring Wood and for investigation of other unsurveyed woodlands.

Absence of a clear project-specific EPS licensing route

The application acknowledges that protected-species licences may be required. The Consents and Agreements Position Statement says that any necessary applications would be made by the contractor before commencement. It does not identify a settled licence strategy for each affected species or demonstrate that a draft application has been reviewed by Natural England.

The oCEMP likewise relies upon later surveys to reconfirm species status, identify newly established constraints and support licence applications where required.

Natural England's Relevant Representation treats this as unresolved. It records that the Outline Protected Species Mitigation Strategy anticipates possible licences for water vole or otter, great crested newts, roosting bats and badger-sett closures. Natural England strongly advises that the licensing position be addressed at the earliest opportunity. It specifically refers to its discretionary advice process, under which it may review a full draft licence application and issue a Letter of No Impediment ('LONI') confirming that it sees no present impediment to a licence being granted if the DCO is made.

The Applicant's consultation response was only that it intended to comply with all relevant licence measures where appropriate. That is a statement of intention, not evidence that the potentially necessary licences are realistically obtainable.

The application and examination material identified in this review does not disclose a project-specific LONI for East Pye. The absence of a LONI is not automatically fatal and a LONI is not itself the statutory licence. It is nevertheless significant where the ecological acceptability and deliverability of a large part of the Scheme depend upon Natural England being satisfied that the licensing tests can be met.

A contractor-led application after consent creates particular uncertainty because the contractor may inherit:

- a fixed Order Limits boundary;
- authorised access locations;
- a substantially fixed cable route;
- approved work parameters;
- and construction deadlines.

At that stage, the practical ability to avoid a maternity landscape, move a major compound, remove a panel parcel or redesign a cable route may be materially reduced. A later licence process cannot be assumed to cure a design which has not retained sufficient scope to avoid the protected-species impact.

The three EPS licensing tests

Government guidance states that a developer seeking an EPS licence must show that:

- the activity falls within an authorised purpose;
- there is no satisfactory alternative which would cause less harm to the species; and
- the action will not harm the long-term conservation or survival of the relevant population.

If those tests are not met, Natural England cannot issue the licence and the authorised development may not be capable of implementation.

For East Pye, the second and third tests require particular scrutiny.

No satisfactory alternative

The Applicant cannot satisfy the alternatives test merely by showing that the chosen land was available or close to a grid connection. The question is whether the licensed impact can be avoided through a satisfactory and less harmful solution.

Depending upon the activity, alternatives may include:

- removing a panel parcel;
- relocating or reducing a substation or compound;
- changing the cable alignment;
- moving an access;
- retaining an unbroken hedge;
- using an existing crossing;
- adopting a less disturbing construction method;
- avoiding the maternity season;
- or selecting land outside the most sensitive colony-support area.

NWT has already identified specific avoidance alternatives. It recommends that Site 3 be dropped because of its relationship with Spring Wood CWS, ancient woodland and bats. It has also recommended relocation of sensitive cable sections rather than reliance upon later mitigation.

The existence of such proposals does not itself prove that they are technically satisfactory. It does mean that the Applicant must assess them transparently before claiming that no less harmful alternative exists.

The wider site-selection exercise must also be capable of explaining why a dispersed solar development was placed across a nationally important bat landscape rather than on land presenting fewer maternity-colony, woodland and connectivity constraints. The EPS alternatives test is not necessarily a requirement to compare every conceivable solar site in England. But where less sensitive routes, parcels, layouts or locations could meet the relevant project objective, landowner preference and development convenience should not be treated as conclusive.

Favourable conservation status

The conservation test requires evidence that the licensed works would not prejudice the maintenance of the species at favourable conservation status in its natural range. In practical terms, the assessment must address the affected population, not simply the number of trees physically removed.

For barbastelle, the relevant evidence includes:

- the number and distribution of maternity colonies;
- colony size and reproductive importance;
- availability of alternative roosts;
- retention of dark and connected commuting routes;
- quantity and quality of foraging habitat;
- cumulative pressure from other plans and projects;
- and the likelihood that mitigation habitat will become functional in time.

The Study Group's confirmation of a substantial colony at Little Wood, its prediction of additional colonies and its conclusion that the Scheme's effects cannot be understood without fuller distribution and habitat-use evidence make it difficult to reach a robust conservation-status conclusion on the present baseline.

A licence case based upon retention of most trees and hedges would not be sufficient if repeated severance, illumination and disturbance reduced the effective carrying capacity of the landscape for several maternity colonies. Conversely, the evidence should not assume such an outcome without demonstrating the relevant movement and habitat relationships. The required response is further radiotracking, corridor analysis and a colony-specific impact assessment.

Required HRA and licensing information

BEPS submits that, before the close of Examination, the Applicant should provide:

- A clear statement distinguishing the European-site HRA issues from the EPS licensing issues.
- The hydrological and hydrogeological evidence supporting the conclusion that no European-site pathway exists, including catchment maps, groundwater conceptual models, elevations and flow directions.
- Confirmation that the HRA has considered all relevant plans and projects affecting the same European sites and qualifying features.
- An updated functionally linked land assessment addressing all current wintering-bird evidence and any new records of Broadland SPA or Ramsar qualifying species.
- A reasoned statement on whether any East Pye barbastelle colony or colony-support habitat is functionally linked to a European site designated for barbastelle. If no such connection is alleged, that should be stated expressly.
- Completion of the additional barbastelle surveys and radiotracking identified by the Norfolk Barbastelle Study Group.
- A species-by-species licence schedule identifying:
    - the activity potentially requiring a licence;
    - the relevant location;
    - survey evidence;
    - avoidance measures;
    - the anticipated licence type;
    - and the programme for application.
- Draft licence material and, where the potential impact is material to Scheme deliverability, a project-specific LONI or equivalent formal advice from Natural England.
- A reasoned assessment of the no-satisfactory-alternative and favourable-conservation-status tests for all material EPS impacts.
- DCO provisions preventing commencement of the affected works unless the required licence has been granted and requiring redesign where the licence tests cannot be met.

The full HRA chapter should determine whether the present European-site screening remains legally sufficient. Chapter 8 should record the narrower conclusion that the Applicant's no-LSE position does not resolve the separate and presently amber protected-species licensing case.

8.19 Cumulative and in-combination ecological effects

The cumulative ecological assessment must address effects at three different but overlapping levels:

- the accumulation of effects generated by the numerous components of East Pye itself;
- the combined effects of East Pye and other plans and projects affecting the same ecological networks, populations and catchments; and
- the interaction of different environmental pressures—such as noise, lighting, hydrological change, dust and habitat severance—upon the same receptor.

Those levels should not be conflated.

For EIA purposes, 'cumulative effects' commonly refers to the Scheme's effects combining with those of other developments. The Applicant uses 'in-combination effects' in Chapter 19 to

describe different effects generated by East Pye acting upon the same receptor. Under the Habitats Regulations, 'in combination' has a separate legal meaning and concerns the effect of the project together with other plans or projects upon a European site and its qualifying features. The relevant assessment must make clear which meaning is being used.

The Applicant's Chapter 19 methodology

Chapter 19 does not assess every individual ecological receptor. It groups receptors and takes a receptor forward only where it experiences two or more residual effects assessed as minor or greater. Negligible effects are screened out. The Applicant also states that it has not identified the scale of each effect interaction, but has determined significance through the significance of the underlying effects and professional judgment.

The ecological receptor group used at the operational stage is principally 'ecologically designated sites and priority habitats'. Chapter 19 then identifies significant beneficial operational effects arising from the predicted improvement of native hedgerows, ponds, rivers and lowland deciduous woodland and from the cessation of agricultural fertiliser and chemical use.

That approach has four material weaknesses.

First, the 'minor or greater' threshold means that a series of effects classified individually as negligible is excluded before their combined significance is tested. That risks omitting precisely the type of cumulative ecological pressure created by a dispersed Scheme: numerous small hedge gaps, low levels of illumination, localised noise, repeated vehicle movements, small areas of compaction and multiple short-term disturbances.

Secondly, the methodology depends upon the residual conclusions of the underlying topic chapters. Where those chapters assume successful future mitigation, rapid reinstatement or negligible functional effects, those assumptions are imported into Chapter 19 before cumulative assessment begins.

Thirdly, the ecological grouping does not adequately distinguish species populations and functional networks. A barbastelle maternity colony, a great crested newt pond network, a crayfish catchment and a species-rich verge do not experience cumulative effects in the same way merely because they are all ecological receptors.

Fourthly, the assessment gives substantial prominence to predicted beneficial habitat and water-quality effects while giving insufficient attention to the interaction of adverse operational effects, including lighting, equipment replacement, drainage maintenance, disturbance and the continuing physical fragmentation of the landscape.

8.19.1 Cumulative effects within the Scheme

East Pye is not a compact solar field. It consists of numerous solar parcels, a BESS, project substations, a National Grid substation, cable corridors, highway works, access points, internal tracks, temporary compounds, security infrastructure, drainage and mitigation land spread across a wide area.

The ecological consequence cannot be derived by assessing each parcel or crossing in isolation.

Repeated hedgerow crossings and openings

NWT records that the application involves partial removal of 32 hedgerows, removal of five trees and temporary removal of further hedge sections for access and cable installation. It considers that the effect of gaps of up to approximately 10 metres has not been demonstrated adequately for barbastelle and other bats dependent upon continuous, dark linear features.

The cumulative issue is not simply the total length removed. It includes:

- how many gaps occur within each colony's foraging range;
- whether alternative routes are affected at the same time;
- whether the gaps are illuminated;
- the duration of functional severance;
- whether associated banks, ditches or mature trees are also affected;
- and the period before replanted sections become structurally and functionally equivalent.

A ten-metre gap may have a limited effect where several dark alternatives remain. The same gap may be important where it lies on a principal route between a maternity woodland and a watercourse or feeding area. Numerous gaps distributed across overlapping Core Sustenance Zones may compress movement into fewer remaining corridors and increase the significance of disturbance at those locations.

The assessment should therefore use a route-based and colony-based analysis, not a Scheme-wide percentage of hedgerow retained.

Multiple compounds and working areas

Norfolk County Council's LLFA identifies approximately ten temporary construction compounds but states that their size, layout and drainage arrangements are insufficiently described. It also identifies haul roads, cable construction areas, new tracks and temporary hardstanding whose surface-water effects remain unresolved.

Each compound may generate:

- vegetation clearance;
- compacted hardstanding;
- runoff;
- lighting;
- noise;
- vehicle movements;
- storage of fuel and chemicals;
- waste;
- and human activity.

The cumulative effect depends upon the number of compounds operating simultaneously, their relationship to woodlands, hedges, ponds and watercourses and the routes connecting them. A compound beside a bat corridor, another beside a pond network and another in the same sub-catchment may produce effects upon different parts of the same ecological system.

Compounds should therefore be mapped against:

- bat activity and roost evidence;
- great crested newt pond and terrestrial networks;
- ancient woodland and veteran-tree buffers;
- designated sites;
- riparian corridors;
- botanically important verges;
- and groundwater and surface-water pathways.

Multiple lit infrastructure nodes

The Scheme contains several sources of construction and operational lighting, including substations, the BESS, compounds, access points, security equipment and HDD operations. NWT notes that some HDD works may require continuous operation over one or two days and seeks fixed lux limits and no spill onto woodland edges, hedgerows, watercourses or designated sites.

The lighting assessment should not consider each lamp independently. Multiple low-level sources can divide a dark landscape into a series of illuminated or intermittently illuminated barriers. Vehicle headlights and motion-activated lights may also affect corridors which remain dark on a static lighting plan.

The relevant cumulative questions include:

- the combined spatial extent of all light spill;
- whether alternative dark routes remain;
- the number and duration of simultaneous night-working areas;
- the effect of motion activation by wildlife;
- and the relationship between construction lighting and permanent operational lighting.

For barbastelle and other light-sensitive bats, the cumulative loss of darkness may be more significant than the physical loss of hedge length.

Broad construction disturbance

The construction effects of cable trenching, HDD, haul roads, compounds, piling, access works and highway modifications overlap spatially and temporally. The same woodland edge may experience noise, lighting, dust and increased traffic. The same watercourse may be affected by upstream soil disturbance, a cable crossing, a haul-road crossing and runoff from a nearby compound.

The Applicant should therefore identify the maximum number of work fronts operating simultaneously and assess ecological disturbance at the level of:

- each maternity colony;
- each pond network;
- each designated site;
- each sensitive watercourse reach;
- each botanically important lane;
- and each connected hedgerow network.

A general conclusion that every individual effect is temporary does not demonstrate that the network remains functional while numerous temporary effects occur together.

8.19.2 Cumulative effects with other development

The second level concerns East Pye acting together with other plans and projects affecting the same ecological receptors.

Norfolk County Council identifies an exceptional concentration of proposed energy infrastructure in Norfolk. Its Relevant Representation refers to Tasway Energy Park, The Droves Solar Farm, High Grove Solar Farm, Norwich to Tilbury and the grid works associated with Hornsea Project Three. It is concerned about the clustered and cumulative effects on Norfolk's environment and local communities.

South Norfolk Council likewise identifies Tasway, Norwich to Tilbury and other consented and proposed energy and TCPA developments as creating cumulative landscape, ecological, community and economic impacts. It specifically identifies potential loss of habitat and biodiversity and warns that overlapping construction programmes may extend the effects over years rather than months.

The LLFA supports inclusion of proposed but unconsented schemes where their programmes and locations make cumulative effects reasonably foreseeable, particularly because several solar and BESS developments could be constructed concurrently and affect the same downstream flood and drainage systems.

The ecological assessment must therefore consider not only other solar NSIPs but all development capable of affecting the same populations, corridors and catchments, including:

- solar and BESS proposals;
- overhead lines, pylons and substations;
- road and highway works;
- strategic and local housing allocations;
- commercial and industrial development;
- drainage and flood-management works;
- and other infrastructure requiring vegetation removal, lighting or construction access.

The relevant question is not whether another development is of the same type as East Pye. It is whether it affects the same ecological receptor or ecological process.

Shared bat and woodland networks

Other solar, grid, road and housing development may remove or illuminate hedgerows, woodland edges and feeding areas used by the same barbastelle colonies. A colony may tolerate one localised disturbance where a wide network of alternative habitat remains. It may not tolerate repeated reduction of that network by several projects.

The Norfolk Barbastelle Study Group describes the South Norfolk Claylands as supporting a metapopulation dependent upon scattered woods, high hedges, pollarded trees, open fields and commons. The Core Sustenance Zones of six colonies intersect or adjoin East Pye, while further colonies are predicted or remain unsurveyed.

That evidence requires cumulative assessment across the colony landscape rather than only within East Pye's Order Limits. The Applicant should map other development against:

- all confirmed and probable maternity colonies;
- six-kilometre Core Sustenance Zones;
- known or probable commuting routes;
- woodland and riparian networks;
- and areas of high recorded bat activity.

The analysis should identify the total amount and distribution of habitat removed, illuminated, enclosed or disturbed by all relevant development.

Shared pond and amphibian networks

Housing, roads, solar development and grid infrastructure may affect different components of the same great crested newt metapopulation. One project may affect a breeding pond, another a terrestrial refuge and another the hedge or ditch connecting them.

The cumulative assessment should therefore use pond clusters and terrestrial dispersal networks rather than administrative development boundaries. It should identify:

- ponds lost, shaded or altered;
- terrestrial habitat converted or fragmented;
- roads and construction corridors crossed;
- drainage changes;
- and the combined availability of compensation habitat.

A district-level licence for one project does not demonstrate that the total landscape remains ecologically functional for the population.

Shared watercourses and catchments

Multiple solar, BESS, road, housing and grid schemes may discharge to, cross or alter the same tributaries and groundwater bodies. The effects may include sediment, nutrients, hydrocarbons, drilling fluids, changed runoff, altered infiltration, culverting, bank disturbance and invasive-species transfer.

Catchment-level assessment is particularly important where individual developments each conclude that their contribution will be small. Several small sediment or runoff changes may combine downstream, especially during the same rainfall event or construction period.

The LLFA's concerns about incomplete ordinary-watercourse mapping, surface-water flow paths, drainage design and overlapping schemes demonstrate why a parcel-by-parcel assessment is inadequate.

The cumulative assessment should identify, for every relevant development:

- receiving watercourse and discharge point;
- construction period;
- disturbed area;
- crossing method;
- dewatering requirement;
- pollution and sediment controls;
- and downstream ecological receptors.

The same exercise should be undertaken for groundwater where developments involve piling, foundations, cable trenches, infiltration drainage or contaminated land within the same groundwater body.

Shared verge and hedgerow networks

Road improvements, AIL movements, housing accesses and solar construction traffic may affect the same rural lanes and species-rich verges. A verge may be damaged by one project's widening works and then subjected to years of overrun or repeated construction traffic from another.

The specialist botanical evidence identifies several rare plant populations occupying extremely narrow roadside strips. The cumulative effect cannot be understood by adding the number of square metres permanently removed by each project. It must include compaction, vehicle overrun, drainage alteration, repeated cutting and loss of connectivity between surviving colonies.

8.19.3 Effects interacting across receptors and impact pathways

The third level is the interaction of different pressures upon the same species, habitat or ecological network.

An ecological receptor does not experience the Scheme in separate chapters. A bat does not experience ‘lighting’ independently from ‘noise’ and ‘hedgerow loss’. A watercourse does not experience ‘hydrology’ separately from ‘sediment’, ‘pollution’ and ‘construction disturbance’.

Bats

A maternity colony may be affected simultaneously by:

- loss of a roost or potential roost tree;
- disturbance noise and vibration;
- illumination of the woodland edge;
- temporary severance of hedges;
- reduction in invertebrate prey;
- loss of foraging land;
- and increased vehicle movement.

Each effect may be classified as minor when examined alone. Their interaction may reduce the suitability of the maternity landscape more substantially than the individual classifications suggest.

The analysis should therefore determine whether each colony retains, throughout every construction phase:

- sufficient undisturbed roost resource;
- more than one dark and continuous commuting route;
- adequate foraging habitat;
- and freedom from disruptive noise and lighting during sensitive periods.

Great crested newts and reptiles

For amphibians and reptiles, the relevant interaction may include habitat clearance, trench mortality, fragmentation by roads and tracks, loss of refuges, altered drainage and disturbance during hibernation or breeding seasons.

The existence of retained habitat outside a trench does not resolve the effect if the trench, haul road or fence prevents movement between ponds, foraging habitat and hibernation sites. The assessment must consider the ecological network at the time when several work fronts are open.

Birds

Breeding and wintering birds may experience:

- physical habitat loss;
- construction noise;
- repeated human and vehicle activity;
- lighting;
- visual enclosure;

- loss of feeding habitat;
- and displacement from neighbouring developments.

For farmland birds, the interaction between panel occupation, screening planting and disturbance is especially important. Planting which mitigates landscape effects may reduce the openness needed by skylark or lapwing. The cumulative assessment should not count the planting solely as ecological enhancement without accounting for that species-specific consequence.

Watercourses and aquatic species

Aquatic receptors may experience sediment release, altered flow, temporary crossings, pollution, drilling-fluid escape, invasive-species transfer, EMF and loss or illumination of riparian habitat.

The Environment Agency's concerns about eel, EMF, aquatic insects and riparian management demonstrate that these pathways overlap. A watercourse reach may retain its physical channel while its ecological function is degraded through several interacting pressures. The assessment should therefore consider the full aquatic receptor, including channel, substrate, banks, riparian vegetation, groundwater inputs, water quality, fish movement and invertebrate lifecycle.

Woodland, trees and hedgerows

A retained tree or woodland edge may be exposed simultaneously to root compaction, changed drainage, dust, lighting, edge disturbance, pruning and loss of adjoining hedges. No tree may be recorded as felled, yet delayed decline or reduced ecological function may result.

The cumulative arboricultural and ecological assessment should therefore extend beyond direct removal and include all activities within root-protection areas and ecological buffers.

Why point mapping and parcel-by-parcel assessment are inadequate

BEPS' review of the cumulative material identifies that surrounding developments are represented principally as points rather than by their actual red-line boundaries, cable corridors, substations, highway routes, construction areas and zones of influence. This presentation conceals whether developments overlap spatially or affect the same receptor.

A point symbol cannot show:

- whether Tasway and East Pye affect the same bat Core Sustenance Zone;
- whether Norwich to Tilbury crosses the same hedgerow or woodland network;
- whether several BESS or housing sites discharge into the same tributary;
- whether construction traffic from several schemes uses the same botanically important lane;
- or whether multiple compounds operate close to the same designated site.

Cumulative ecology requires spatially explicit overlays. At minimum, the Applicant should provide GIS mapping showing:

- the full red-line and working boundaries of other schemes;
- construction and operational zones of influence;
- confirmed and probable bat colonies and Core Sustenance Zones;
- principal hedgerow and woodland connections;
- ponds and amphibian networks;
- designated and locally important sites;
- botanical hotspots and RNRs;
- surface-water catchments and groundwater bodies;
- and the anticipated construction and replacement programmes.

The assessment should then identify shared receptors by name and location, rather than relying only upon broad categories such as 'ecologically designated sites'.

HRA in-combination effects

The Habitats Regulations in-combination assessment must remain distinct from the EIA exercise. Even where East Pye's effect alone is considered non-significant, the Applicant must consider other plans and projects affecting the same European site and qualifying feature. The Planning Inspectorate's current guidance identifies projects under construction, permitted but unbuilt developments, submitted applications, projects on the national infrastructure programme and relevant development-plan proposals as matters potentially requiring consideration.

Where there is genuinely no pathway from East Pye to a European-site qualifying feature, there will ordinarily be no mechanism for an in-combination effect through that pathway. But that conclusion depends upon the asserted absence of the pathway being scientifically robust.

If further evidence identifies:

- hydrological connectivity;
- use of the Order Limits as functionally linked land;
- or a connection between an affected mobile population and a European-site qualifying population,

the HRA must then assess other plans and projects affecting the same site and feature. It would not be sufficient to rely upon the EIA cumulative schedule or Chapter 19's minor-effect threshold.

Overstatement of operational benefits

Chapter 19 predicts significant beneficial effects for designated sites and priority habitats from new habitat and reduced agricultural chemical use.

Those benefits should be acknowledged where they are supported by evidence. They should not be treated as cancelling the adverse effects discussed above.

The conclusion assumes that:

- habitat creation reaches its target condition;

- riparian enhancements are implemented;
- BNG measures are secured consistently in the OLEMP;
- replacement works do not damage established habitat;
- lighting and operational activity do not degrade corridors;
- and habitats remain throughout operation and decommissioning.

The Environment Agency has identified that riparian measures credited in the BNG Report are not carried consistently into the OLEMP. Natural England seeks stronger lifetime management, monitoring and remedial provisions. NWT considers further design refinement necessary before the Scheme can be regarded as ecologically acceptable.

The claimed beneficial effects should therefore be described as predicted and conditional. They should not be used to screen out adverse cumulative pathways or to reduce the need for receptor-specific analysis.

Required cumulative ecological assessment

BEPS submits that the Applicant should be required to provide a revised cumulative ecology assessment which:

- Separates:
    - intra-project effect interactions;
    - inter-project cumulative effects; and
    - Habitats Regulations in-combination effects.
- Removes the automatic exclusion of negligible effects where several such effects may act upon the same sensitive receptor.
- Assesses named species populations and ecological networks, not only designated sites and broad priority-habitat groups.
- Maps the cumulative effects of all East Pye construction compounds, hedgerow crossings, lit areas, cable works, access routes and highway works.
- Assesses the maximum number of simultaneous work fronts and the effect of construction phasing.
- Maps the full spatial extent and zones of influence of other relevant solar, BESS, grid, highway and housing developments.
- Undertakes colony-level cumulative assessment for barbastelle and other important bats.
- Undertakes pond-network and terrestrial-habitat assessment for great crested newts.
- Undertakes catchment-level assessment for the River Tas, Hempnall Beck and other connected water systems.
- Assesses cumulative damage to species-rich verges, RNRs, hedgerows, veteran trees and woodland-edge networks.
- Examines interacting pathways, including:
    - noise and lighting;
    - lighting and hedgerow severance;
    - compaction and drainage change;
    - sediment and chemical pollution;
    - habitat loss and displacement;
    - and repeated construction and replacement disturbance.

- Identifies measurable cumulative thresholds and avoidance actions rather than relying only upon professional judgment.
- Revises the assessment whenever a relevant neighbouring scheme, survey result or construction programme changes materially.
- Reassesses the claimed operational ecological benefits against the secured OLEMP, full replacement scenario and post-decommissioning habitat outcome.

Overall conclusion

The Applicant's cumulative ecology case is too dependent upon the conclusions of individual parcel and topic assessments. Those assessments repeatedly treat habitat losses as small, temporary or locally reversible. They do not demonstrate that the ecological network remains functional when the effects are added across the Scheme, combined with other development and experienced simultaneously through different environmental pathways.

The evidence from Natural England, the Environment Agency, Norfolk Wildlife Trust, Norfolk County Council, South Norfolk Council, the Norfolk Barbastelle Study Group and local specialists identifies shared concerns about:

- incomplete baselines;
- hydrological and groundwater pathways;
- repeated hedgerow severance;
- bat colony landscapes;
- lighting;
- construction compounds;
- designated sites;
- watercourses;
- roadside habitat;
- and the continuing deferral of mitigation detail.

The appropriate unit of assessment is not the individual panel field, hedge gap or compound. It is the affected colony, habitat network, pond system, woodland complex or catchment.

Until those receptors are assessed spatially and cumulatively, the Applicant has not demonstrated that a succession of individually 'minor', 'temporary' or 'not significant' effects will remain ecologically insignificant when experienced together.

8.20 Application of the mitigation hierarchy: why avoidance must be tested first

The mitigation hierarchy must be applied sequentially. Harm should first be avoided; unavoidable effects should then be minimised; damaged habitat should be restored where restoration is genuinely possible; and compensation should be considered only for residual harm that remains after those prior stages have been exhausted. Enhancement and BNG do not reverse that sequence. The August 2026 NPPF reinforces that sequencing. Policy N2 requires significant biodiversity harm first to be avoided through location on an alternative site with less harmful impacts where such harm cannot otherwise be avoided. The policy does not mean that every ecological constraint automatically requires deletion of development, but it does require the

Applicant to demonstrate why avoidance was not reasonably available before reliance is placed on minimisation, restoration or compensation.

The central defect in the Applicant's ecological case is that it begins too late in the hierarchy. East Pye Solar remains a dispersed development across a landscape already known to support nationally important bats, multiple barbastelle maternity colonies, ancient woodland, veteran trees, species-rich hedgerows and verges, stewardship-managed farmland-bird habitat, chalk streams and protected aquatic species. The Applicant then relies upon buffers, construction controls, later planting, reinstatement and BNG to manage the consequences of developing within that landscape. That is not the same as demonstrating that the principal ecological conflicts have been avoided.

Avoid

Avoidance has not been achieved.

Avoidance requires the development to be located and designed so that the most important receptors and ecological functions are not exposed to the impact in the first place. It is not satisfied merely because panels, trenches or accesses have been moved a short distance while remaining inside the same woodland network, maternity-colony support landscape, pond system, botanical lane or hydrological catchment.

The Scheme continues to extend through a connected South Norfolk Claylands landscape of woodland, hedgerows, pollarded and mature trees, ponds, ditches, verges, open fields and watercourses. The Norfolk Barbastelle Study Group describes those features as providing the roosting, feeding and landscape connectivity necessary to support a barbastelle metapopulation. Its evidence identifies the Core Sustenance Zones of six maternity colonies as lying within or abutting the Scheme; two colonies are beside the proposed cable route, and one would also be surrounded by solar arrays.

The Study Group has confirmed a maternity colony at Little Wood by radiotracking, with a peak pre-parturition emergence count of 36 and an expected post-parturition colony size of approximately 55, which it regards as large in the Norfolk context. Acoustic evidence also predicts maternity colonies at Brooke Wood and Lower Spring Wood, while the status of Spring Wood at Hempnall remains unresolved. The Study Group calls for further radiotracking and assessment of additional woods and states that the effects of East Pye cannot properly be assessed without a full understanding of barbastelle distribution and habitat use throughout the Scheme area.

The Applicant's own bat evidence, as summarised in BEPS's full Relevant Representation, records that the Order Limits support a bat assemblage of national importance, that barbastelle activity was widespread, and that the Scheme falls within overlapping maternity-colony Core Sustenance Zones. That is not a receptor that can be protected simply by retaining a percentage of the total hedgerow length. It is a landscape-scale constraint affecting the acceptability of panel parcels, cables, accesses, compounds, lighting and substations throughout the Scheme.

Avoidance has also not been demonstrated for botanical interests. The specialist botanical objection states that there has been no systematic botanical recording across all land affected or potentially affected by the Scheme. It identifies sulphur clover, dyer's greenweed, spiny restharrow, crosswort and pepper saxifrage within lane and verge systems liable to road widening, traffic pressure and access works. It also identifies ancient assemblages associated with former commons, drove roads and boulder-clay pasture, including communities linked to established fungi and seedbanks which would not be reproduced by sowing a replacement mixture elsewhere.

The botanists expressly call for entrances and traffic routes to be designed around those areas rather than through them. Their conclusion is that avoiding damage must precede reliance upon BNG and that the loss or partial loss of the identified botanical sites would be highly unlikely to be compensated because of their ancient and cultural origins.

The same failure appears in relation to ancient woodland and veteran trees. Six ancient woodland parcels are identified adjacent to the Scheme: Pope's Wood, Doyly's Grove, Saxlingham Grove, Little Wood, Ringers Grove and Spring Wood. The Forestry Commission advises that ancient woodland is irreplaceable and that both direct and indirect effects must be considered, including isolation, enclosure, root damage, compaction, pollution, dust and interruption of woodland connectivity. It warns particularly against development surrounding woodland on several sides and requires Root Protection Areas to be protected from trenching, vehicle movements, storage and contamination.

Natural England now treats ancient woodland and veteran-tree matters as capable of resolution, but only subject to the Applicant's proposed 30-metre protection being secured consistently across the LEMP, CEMP and DEMP, together with BS5837-compliant survey, strict Root Protection Area controls, no-dig methods, arboricultural supervision and controls on compaction, dust and runoff. That qualified position does not demonstrate that the first step of the hierarchy has been completed. It shows that significant protection still depends upon later control documents and final construction design.

Avoidance has not been demonstrated for the aquatic network either. Evidence submitted to the Examination records a confirmed white-clawed crayfish population in the River Tas at Saxlingham Thorpe, including Norfolk Rivers Trust records from 2021 and 2022. The Applicant's aquatic assessment relied upon a desk-study result stating that no records had been returned within its search area, while its site work was undertaken during unusually dry conditions and did not establish absence.

The Examining Authority has already determined that further information is required. Its Rule 6 letter records concerns from South Norfolk Council, Norfolk Wildlife Trust and BEPS; notes that dry conditions may have caused the aquatic assessment to under-represent wetted extent and habitat availability; and asks the Applicant to report on further white-clawed crayfish work or provide a robust justification for not undertaking it.

The Applicant cannot demonstrate avoidance of a protected aquatic receptor before its distribution and the relevant catchment pathways are known. Cable crossings, HDD, construction runoff, sediment mobilisation, drainage changes and biosecurity risk remain located within the connected River Tas and Hempnall Beck system.

The same applies to farmland birds. Parts of the Scheme have been subject to long-running Environmental or Countryside Stewardship management intended to support declining farmland birds. BEPS's review records that those agreements have maintained open nesting and feeding conditions over more than a decade, including land used by skylark and other Birds of Conservation Concern. Replacing that established management with arrays, fencing, tracks and screening planting is not avoidance; it is displacement of a functioning, publicly funded conservation regime.

Norfolk Wildlife Trust has proposed genuine avoidance responses, including removal of Site 3 because of its relationship with Spring Wood, ancient woodland and bats, and relocation of sensitive cable sections rather than reliance upon construction mitigation. These proposals demonstrate that the ecological objection is not limited to asking for wider margins around an otherwise unchanged design. The location and extent of development are themselves in issue.

The Applicant has therefore not shown that it began with the ecological constraints and removed development from the most sensitive parts of the landscape. It has largely retained the dispersed Scheme and attempted to accommodate the constraints through buffers, management plans and later habitat creation.

Minimise

The proposed minimisation measures are insufficient because they do not remove the Scheme's structural fragmentation effects.

Minimisation can reduce the magnitude of an impact where development is otherwise acceptable. It cannot convert an unsuitable location into a suitable one merely by introducing generic stand-offs or good-practice construction controls.

The Applicant relies extensively upon:

- woodland and watercourse buffers;
- hedgerow reinstatement;
- sensitive lighting;
- HDD at some crossings;
- seasonal restrictions;
- pollution-prevention measures;
- Ecological Clerk of Works supervision;
- later species strategies;
- and habitat creation under the OLEMP.

Those measures may reduce particular risks. The relevant question is whether they address the actual ecological functions exposed to harm.

For barbastelles, the Applicant has not yet fixed a complete network of dark corridors, quantitative lighting limits, colony-specific flight routes or the relationship between all accesses and each maternity-colony support landscape. The Study Group's evidence shows that further colonies may

be present and that several candidate woods remain insufficiently investigated. A buffer around the edge of a known woodland cannot protect a route or foraging area that has not yet been identified.

Generic hedgerow buffers also do not answer repeated severance. Numerous cable, access and highway crossings may each be described as small or temporary, but the cumulative effect depends upon their location within the flight network, the duration of each opening, lighting, alternative routes and the time required for replanted hedges to become functional. Retention of most hedgerow length does not demonstrate retention of connectivity.

Natural England continues to classify protected-species matters as amber. The Outline Protected Species Mitigation Strategy anticipates that licences may be required for water vole or otter, great crested newts, roosting bats and badger-sett closures, and Natural England asks for clarification about whether licences have been sought. It also advises that this work should be undertaken at the earliest opportunity.

That position is inconsistent with treating later method statements and contractor-led licensing as evidence that current minimisation is already effective. Until the relevant species distribution, impact and licence pathway are understood, the Applicant cannot show that the chosen layout represents the least harmful practicable design.

For aquatic receptors, the Environment Agency has identified that the formal design controls may permit only a 10-metre stand-off from watercourses even though wider separation is shown indicatively. It seeks wider secured buffers where watercourses may support diverse aquatic-invertebrate communities. It has also identified potential attraction of aquatic insects to polarised light reflected from panels, a lifecycle effect not addressed in the Applicant's assessment.

The Agency separately disagrees with the Applicant's treatment of operational EMF effects on European eel and asks for evidence that burial depth will reduce the field at the watercourse bed below 12 microtesla. It also considers that freshwater fish should be valued at county rather than local importance because of the eel receptor.

These are examples of minimisation measures that remain either unsecured or unproven. The Applicant cannot rely upon cable burial, wider buffers or operational separation without fixing the parameter and demonstrating that it achieves the necessary ecological outcome.

The same concern applies to piling, noise and vibration. South Norfolk Council has rejected percussive piling as the preferred approach and supports quieter screw-pile methods. Bat-specific effects have not been assessed adequately across each maternity woodland, roost network and sensitive season. A general noise chapter based largely upon human receptors is not evidence that disturbance of maternity colonies has been minimised.

For botanical receptors, mitigation based upon standard verge protection, translocation or reseeding is not adequate where the baseline survey has not identified all narrow colonies, field-edge assemblages, seedbanks and associated fungi. The botanists seek surveys by a FISC level 5 or higher botanist in June and again after harvest but before sowing. Until those surveys are completed and reconciled with access, highway and cable plans, it is impossible to demonstrate

that road works and vehicle movements have been minimised around the most important locations.

The Applicant's reliance upon the OLEMP also remains too generic. BEPS's review records that it does not fix the dark-corridor network, lighting thresholds, corridor-permeability standards or species-specific flight-route protection. Its management and monitoring duration are to be determined later, while the relationship between habitat creation, replacement access and decommissioning remains unresolved.

The Environment Agency has identified a concrete inconsistency: riparian enhancement and reduced encroachment credited in the BNG Report are not carried through into the OLEMP. It requires those measures, including invasive-species controls, to be secured expressly.

Minimisation therefore remains incomplete both spatially and legally. Many measures are generic, several are deferred, and some are not consistent across the documents intended to secure them.

Restore

Restoration cannot provide immediate or certain functional equivalence for the principal receptors affected by East Pye.

Restoration is most credible where a temporarily disturbed habitat can be returned to its former type, condition and ecological function within a reasonable and predictable period. That is not the case for many of the receptors identified here.

Ancient woodland settings and veteran trees cannot be restored through ordinary replacement planting. The Forestry Commission identifies ancient woodland as irreplaceable because of its long continuity and undisturbed soils and ecological features. It also warns that root damage, compaction and contamination may lead to deterioration even where trees remain standing.

Delayed decline is particularly important. A veteran tree or mature woodland edge may survive the construction period but deteriorate years later because of severed roots, altered drainage, soil compaction or dust and pollution effects. Planting a young tree does not restore the cavities, bark features, deadwood, fungi, root systems and habitat continuity associated with the original.

Mature hedgerows cannot be restored immediately after cable or access works. A replanted hedge may take many years to regain height, density, shelter, associated trees and use as a dark bat route. Reinstatement of the physical line does not prove restoration of functional connectivity during the intervening period.

The same applies to the botanical assemblages identified by the specialist botanists. Those communities are associated with long-unploughed verges, old banks, field entrances, ditches, parish boundaries, historic commons and drove roads. The objection records that some assemblages occur in strips only 30–50 centimetres wide and may depend upon particular soils, fungi and seedbanks. Their removal or compaction cannot reliably be reversed by sowing a seed mixture on a different verge.

Established bat routes are similarly not restored simply because new hedges or woodland belts are proposed. Barbastelles use a network of known routes, alternative roosts and feeding areas within the maternity landscape. New planting may eventually become useful, but its location, structure, darkness and continuity must match the function lost. There is no evidence that a newly planted route will be used in the same way or within the period required to avoid an effect upon the colony.

Aquatic restoration is also uncertain. Sediment deposition, drilling-fluid escape, pollution, altered groundwater inputs or invasive-species transfer may affect substrate and species populations beyond the immediate work area. For a small, isolated white-clawed crayfish population already exposed to wider catchment pressures, post-event remediation may not restore the previous population or ecological condition.

Restoration is especially weak as a response to the loss of stewardship-managed farmland. The value of that land derives from continued management and established use by birds over many years. Grassland beneath panels, screening belts or a separate mitigation parcel do not automatically reproduce open nesting conditions, landscape-scale visibility, crop structure or seasonal food availability.

The Applicant may be able to reinstate some ordinary grassland, temporary cable strips and recently planted hedges. That does not establish restoration of the irreplaceable, mature, species-specific and historically continuous functions at the centre of this objection.

Compensate

Compensation and BNG cannot cure the remaining legal and ecological conflicts.

The Applicant relies upon claimed gains of 37.42% for habitats, 31.35% for hedgerows and 16.08% for watercourses. Those figures may be relevant as a projected habitat-accounting outcome, but they do not determine whether the preceding stages of the mitigation hierarchy have been satisfied.

BNG cannot compensate for irreplaceable habitats. Ancient woodland and ancient or veteran trees derive their value from continuity, age, soil, fungi, deadwood, cavities and ecological relationships that cannot be reproduced within the life of the project. The existence of a positive total habitat balance cannot make their loss or deterioration acceptable.

BNG cannot authorise or cancel a protected-species offence. Where works would damage a breeding site or resting place, obstruct roost access or unlawfully disturb a European Protected Species, the relevant legal tests must be addressed. Habitat units created elsewhere do not determine whether a licence can be granted.

BNG cannot compensate automatically for the loss of maternity-colony supporting function. A new hectare of grassland, woodland or scrub is not necessarily equivalent to a particular dark route, woodland compartment, riparian feeding corridor or field used by a maternity colony. The relevant question is whether the colony retains a viable and connected support landscape, not whether the Scheme produces a positive aggregate habitat score.

BNG cannot compensate for hydrological deterioration. The Water Framework Directive and ordinary ecological assessment require effects on water quality, flow, substrate, fish, crayfish and invertebrates to be considered directly. Watercourse units cannot be traded against deterioration of a chalk stream or a pollution effect on a protected population.

BNG cannot compensate for extinction or displacement risk. A small or isolated population may be lost before replacement habitat develops or may not colonise the habitat created for it. Temporal multipliers within a metric do not provide habitat during the period of functional absence and do not guarantee colonisation or population viability.

BNG cannot compensate automatically for the loss of stewardship habitat. Land managed for years under targeted prescriptions for skylark, lapwing and other farmland birds has an established function. Its replacement must be assessed in terms of species carrying capacity, management continuity and long-term security, not only broad habitat type.

The botanists make the same point from a different perspective. They state that BNG claims will be meaningless if existing botanical value has not been identified and that ancient assemblages, local fungi and source seedbanks are unlikely to be compensated if their sites are damaged.

The Environment Agency's evidence further shows that even the claimed compensation package is not yet secured consistently. Riparian enhancements used in the BNG calculation are missing from the OLEMP, while wider watercourse buffers shown indicatively are not fixed in the controlling parameters.

Compensation is therefore being asked to carry more weight than it can support. It cannot replace compliance with protected-species law, protection of irreplaceable habitat, no-deterioration obligations, population-level assessment or the first three stages of the mitigation hierarchy.

Evaluative conclusion on the mitigation hierarchy

The Scheme has not demonstrated a sequential and effective application of the mitigation hierarchy.

It has not avoided the most sensitive landscape. It remains distributed across overlapping barbastelle colony-support areas, beside six ancient woods, through a chalk-stream catchment, across stewardship land and along narrow verges containing potentially irreplaceable botanical assemblages.

It has not minimised those conflicts sufficiently because final access, lighting, species licensing, watercourse buffers, construction methods and several species-specific controls remain incomplete, generic or deferred.

It cannot restore many of the affected functions within an ecologically meaningful period. Ancient woodland settings, veteran-tree functions, mature dark hedgerows, established maternity-colony routes, rare botanical assemblages and long-managed farmland-bird habitat are not immediately reproducible.

It cannot rely upon BNG and compensation to answer protected-species, irreplaceable-habitat, water-quality, population-viability or functional-connectivity objections.

Avoidance in this case does not mean minor micrositing within the same ecological network. Moving a panel line a few metres, drilling beneath one feature, or providing a narrow buffer does not avoid development within the same maternity-colony landscape, woodland complex or catchment.

Avoidance means one or more of the following:

- relocation of the Scheme to a materially less sensitive landscape;
- substantial removal of development areas and cable or access routes from the identified ecological networks;
- redesign at a scale that preserves whole maternity-colony, woodland, pond, verge and watercourse systems;
- or refusal of the Scheme as presently conceived.

On the present evidence, BEPS submits that refusal is the only outcome that applies the first and most important stage of the mitigation hierarchy to the Scheme as a whole.

8.21 Overall conclusion

East Pye Solar is proposed within an ecological landscape which the Applicant's own evidence identifies as nationally important for bats. It lies within overlapping barbastelle maternity-colony support areas, while independent radiotracking has confirmed a large maternity colony at Little Wood and acoustic work predicts further colonies at Brooke Wood and Lower Spring Wood. Additional woods remain insufficiently assessed, and the Norfolk Barbastelle Study Group concludes that the effects of the Scheme cannot be understood without fuller evidence of colony distribution and habitat use.

The baseline is also incomplete for other key receptors. Specialist botanists identify nationally and locally important species and ancient plant assemblages in verges, field margins, lane networks and Roadside Nature Reserve locations exposed to highway, cable and access works, but no systematic full-area botanical survey has been completed. A confirmed white-clawed crayfish population exists within the River Tas system, and the Examining Authority has already required further information because the Applicant's aquatic surveys were undertaken in unusually dry conditions and may have under-represented available habitat.

These concerns sit alongside six adjacent ancient woods, numerous ancient or veteran and potential-roost trees, hydrologically connected chalk streams, mature hedgerow networks and long-established stewardship land supporting declining farmland birds. They are not isolated receptors. They form a connected Claylands system in which woodland, hedgerows, verges, ponds, fields, ditches, groundwater, Hempnall Beck and the River Tas perform interdependent ecological functions.

The statutory and specialist representations do not establish that every impact is incapable of resolution, but they identify persistent uncertainty and incomplete control. Natural England retains

protected species as an amber matter and seeks clarity on licensing and stronger lifetime management. The Environment Agency challenges the fish valuation and EMF assessment, requires wider watercourse buffers and identifies a mismatch between riparian BNG commitments and the OLEMP. Norfolk County Council warns that absence of white-clawed crayfish signs does not establish absence. The Forestry Commission, Norfolk Wildlife Trust, South Norfolk Council, local tree specialists, botanists and the Norfolk Barbastelle Study Group all require greater avoidance, connectivity protection or further evidence.

The resulting ecological case rests too heavily upon BNG percentages, outline plans, later surveys, future licensing and generic buffers. Those mechanisms cannot replace a complete baseline or compensate for irreplaceable habitat, protected-species offences, maternity-colony function, hydrological deterioration or the loss of established stewardship habitat. The Scheme has not demonstrated that the mitigation hierarchy has been applied at the necessary landscape scale and should therefore be refused on ecology and biodiversity grounds.

8.22 Remedies sought

8.22.1 Primary remedy: refusal

BEPS requests that the Examining Authority recommend that development consent be refused.

The Scheme has not avoided a landscape containing nationally important bat interests, overlapping barbastelle maternity-colony networks, adjacent ancient woodland, veteran and potential-roost trees, rare and under-recorded botanical assemblages, chalk streams, protected aquatic species and stewardship-managed farmland-bird habitat. BEPS's case is not that every remaining ecological uncertainty, considered individually, compels refusal. The objection is cumulative: important baseline gaps remain in relation to botany, aquatic ecology and bat functional habitat; several of those matters may determine the location or acceptability of development; the Scheme lies within a nationally important bat landscape and adjacent to irreplaceable habitats; and the Applicant continues to rely materially upon future survey, detailed design and management to support conclusions of limited residual effect.

The impacts arise from the location, extent and dispersed structure of the Scheme rather than from a small number of correctable details. They include habitat fragmentation, repeated hedge crossings, lighting, construction noise and vibration, root and verge damage, catchment-scale pollution and sediment pathways, displacement of farmland birds, and the risk that replacement and decommissioning works will disturb habitats created or matured during operation.

Those effects cannot reliably be removed through generic buffers, later method statements, habitat reinstatement or a positive BNG metric. Where the first stage of the mitigation hierarchy has not been satisfied and the remaining effects engage protected species, irreplaceable habitat and interconnected ecological networks, the appropriate remedy is refusal rather than further reliance upon post-consent controls.

8.22.2 Alternative case: minimum requirements before any recommendation

If the Examining Authority is not presently minded to recommend refusal, BEPS submits that no favourable recommendation should be made until the following minimum evidence, design changes and legal controls have been provided, examined and secured.

1. Full-season botanical surveys

The Applicant should undertake comprehensive surveys of all land affected or capable of being affected by the authorised development, including:

- solar and BESS parcels;
- cable routes and full cable working widths;
- permanent and temporary access routes;
- HGV and AIL highway works;
- visibility splays;
- road-widening and verge-strengthening areas;
- construction compounds and laydown areas;
- Roadside Nature Reserves and adjoining habitat;
- all affected field margins, field entrances, parish boundaries, hedges and ditches;
- and land liable to temporary vegetation removal or vehicle overrun.

The surveys should be undertaken by botanists of at least FISC level 5 and should include a June survey for grassland, verge and boundary vegetation and a post-harvest, pre-sowing survey for arable flora and field-edge communities, as requested by the specialist botanists.

The results should be mapped at a scale capable of identifying narrow colonies, fungi-associated assemblages and source seedbanks. The final design should then avoid those features, and the BNG baseline should be recalculated where the completed evidence changes habitat type, condition or strategic significance.

2. Completed breeding- and wintering-bird evidence

The Applicant should provide a complete and current breeding- and wintering-bird baseline covering all relevant parcels, access works, cable routes and mitigation land.

The assessment should address, at species and population level:

- skylark;
- lapwing;
- turtle dove;
- yellowhammer;
- linnet;
- corn bunting;
- starling;
- wintering raptors and waders;

- and other Birds of Conservation Concern recorded within or functionally linked to the Scheme.

The Applicant should map breeding territories, roosting and feeding areas, winter use and Countryside Stewardship options and should quantify the carrying capacity of any replacement land. Mitigation should be species-specific, secured before displacement and maintained for the whole period during which the original habitat is unavailable.

3. Further barbastelle radiotracking and functional-landscape assessment

The Applicant should undertake the additional work identified by the Norfolk Barbastelle Study Group, including radiotracking sufficient to confirm or resolve maternity-colony status at Brooke Wood, Lower Spring Wood and Spring Wood at Hempnall and assessment of the additional candidate woodlands identified in the specialist report.

The work should be sufficient to map:

- confirmed and probable maternity colonies;
- alternative roost networks;
- maternity-colony sizes;
- principal commuting routes;
- critical hedgerows, tree lines and watercourses;
- important foraging land;
- areas of overlap between colonies;
- and the relationship between those features and every panel parcel, cable route, access, compound, substation and lit work area.

The resulting information should inform substantial layout avoidance, not merely later licensing or ECoW supervision.

4. Fixed dark-corridor and lighting plan

A final, site-wide lighting plan should be submitted before any recommendation. It should identify all dark corridors and sensitive receptors and include:

- fixed quantitative lux limits;
- modelled horizontal and vertical light spill;
- controls on colour temperature and spectrum;
- restrictions on mobile and temporary lighting;
- actively controlled rather than wildlife-triggered security lighting where appropriate;
- emergency-lighting assumptions;
- monitoring points;
- and mandatory remedial action where limits are exceeded.

The plan should apply to construction, operation, replacement and decommissioning and should be secured through the DCO.

5. Bat-specific assessment of piling, noise and vibration

The Applicant should assess piling, construction noise, vibration, HDD, substations, BESS and traffic effects specifically against each confirmed and probable maternity colony, roost network and flight route.

The assessment should address sensitive seasons, duration, frequency, simultaneous work fronts and cumulative exposure. It should compare percussive piling with screw piles and other less disturbing alternatives and should adopt the least harmful practicable method.

No reliance should be placed solely upon human noise receptors or general construction standards to determine effects upon bats.

6. Direct white-clawed crayfish survey and catchment-scale aquatic assessment

The Applicant should undertake direct, seasonally appropriate survey for white-clawed crayfish within all relevant reaches of the River Tas, Hempnall Beck and connected tributaries and ditches within the ecological Zone of Influence.

The work should include:

- species presence and distribution;
- habitat suitability;
- eDNA and direct survey where appropriate;
- invasive signal-crayfish risk;
- crayfish-plague biosecurity;
- sediment and pollution pathways;
- HDD and crossing risks;
- construction runoff;
- hydrological and groundwater connectivity;
- cumulative effects;
- and downstream receptors.

The Examining Authority has already requested further information on this issue because dry survey conditions may have under-represented typical habitat.

7. Revised and secured watercourse buffers

The Applicant should produce a watercourse-by-watercourse buffer schedule based upon receptor sensitivity rather than a generic minimum.

Wider buffers should be required where necessary for:

- white-clawed crayfish;
- European eel;
- diverse aquatic-invertebrate communities;
- riparian mammals;

- chalk-stream function;
- designated habitats;
- groundwater-dependent ecosystems;
- or protection from lighting and polarised-light effects.

The buffers shown on indicative plans should be incorporated into the Works Plans, Design Principles, OLEMP, CEMP, OEMP and DEMP and should exclude panels, access, storage, compounds and lighting unless expressly justified.

8. Corrected BNG metric and secured riparian enhancements

The BNG calculation should be revised to reflect:

1. the final construction footprint;
2. all temporary and permanent habitat disturbance;
3. actual hedge crossings;
4. lighting and functional severance;
5. completed botanical evidence;
6. stewardship habitat function;
7. revised strategic-significance assumptions;
8. realistic target conditions and time to target;
9. replacement and decommissioning disturbance;
10. and the habitats retained after decommissioning.

The Environment Agency's identified inconsistency must be corrected by carrying all riparian enhancements and reduced encroachment credited in the BNG Report into the OLEMP and other controlling documents, together with explicit invasive-species measures.

9. Final LEMP and protected-species mitigation package

A final or substantially complete LEMP should be submitted during Examination rather than leaving material ecological outcomes to a post-consent plan.

It should fix:

- habitat locations and areas;
- species and provenance;
- planting densities;
- implementation dates;
- management prescriptions;
- monitoring periods;
- success criteria;
- failure thresholds;
- remedial actions;
- dark corridors;
- species-specific mitigation;
- and responsibility throughout operation, replacement and decommissioning.

The protected-species strategy should identify all current and possible licence requirements, survey validity, avoidance zones, seasonal restrictions, ECoW powers and the process for redesign where new evidence identifies a conflict.

10. Revised HRA and EPS licensing position

The Applicant should update the HRA where the additional survey, hydrological or functional-land evidence changes the assessed pathways or receptors.

The application should also provide a species-by-species EPS licence schedule identifying:

- the potentially licensable activity;
- affected receptor;
- location;
- survey evidence;
- avoidance and mitigation;
- alternatives;
- conservation-status assessment;
- and intended application programme.

Where a licence is material to deliverability, draft licence information and a Letter of No Impediment, or equivalent formal Natural England advice, should be provided. Natural England presently retains protected species as an amber issue and asks for clarity on the licence position.

11. Construction-footprint reconciliation

The Applicant should submit a single auditable plan and schedule showing every:

- hedge crossing or removal;
- affected tree and Root Protection Area;
- verge and Roadside Nature Reserve impact;
- cable working corridor;
- road-widening area;
- visibility splay;
- temporary compound;
- HDD launch and reception area;
- access and haul route;
- soil-storage area;
- drainage feature;
- and temporary or permanent habitat loss.

That schedule should be reconciled with the ecology assessment, arboricultural assessment, BNG metric, OLEMP and DCO powers. No habitat should be described as retained where the authorised works permit material construction disturbance or functional degradation.

12. Whole-life ecological assessment

The assessment should cover the entire 60-year life of the Scheme, including:

- routine operation;
- panel replacement;
- repeated BESS replacement;
- transformer and cable repair or replacement;
- vegetation management;
- drainage maintenance;
- emergency activity;
- decommissioning;
- and the post-decommissioning land use.

It should identify which mitigation and BNG habitats will remain, which will be disturbed or removed, which land may return to arable use and how mature habitats will be protected from replacement and decommissioning access.

13. Enforceable monitoring, remediation and long-term funding

Every mitigation measure relied upon in the ES should be tied to:

- a specific DCO Requirement or other enforceable mechanism;
- a measurable ecological standard;
- a named monitoring body;
- an independent verification process where appropriate;
- defined reporting intervals;
- stop-work and failure triggers;
- mandatory remedial action;
- and a clear duration.

Natural England has requested full-operational-life management, monitoring, habitat-performance indicators and remedial actions.

The obligations should bind the undertaker and any successor exercising DCO powers. Adequate ring-fenced and insolvency-protected funding should be secured for habitat establishment, replacement planting, monitoring, remediation, decommissioning and ecological restoration.

Final remedy position

These alternative requirements are minimum evidential and legal safeguards, not an acceptance that the present Scheme can necessarily be made ecologically acceptable.

Completion of the evidence may confirm that some routes or parcels cannot be delivered without unacceptable harm. The Applicant must retain a genuine capacity to remove, relocate or redesign those elements. It should not be entitled to respond to newly confirmed constraints solely through licensing, translocation, later compensation or a revised BNG calculation.

The primary remedy therefore remains refusal. The alternative case is that no recommendation should be made until the ecological baseline is complete, the most sensitive development is removed, the remaining effects are reassessed, and all necessary mitigation is specific, measurable, effective, enforceable and funded for the whole life of the Scheme.

Chapter 9: Water Environment

The water environment in this part of South Norfolk impacted by East Pye Solar is unusually complex, spatially extensive and functionally interconnected. The Scheme spans several surface-water catchments and a network of main rivers, ordinary watercourses, ditches, culverts, field drains and groundwater bodies, including the River Tas and Hempnall Beck chalk-stream system and the Waveney-linked Starston Brook and Broome Beck catchments. These systems cannot properly be considered in isolation because groundwater, surface water, drainage, soils and land use interact across the Order Limits and beyond them. Changes in one part of that system may therefore have consequences elsewhere: altered runoff, compaction, drainage or recharge can affect downstream flood risk and agricultural land; pollution or sediment can be conveyed through connected ditches and watercourses into chalk streams and ecologically sensitive habitats; disturbance of groundwater pathways may affect private drinking-water supplies and groundwater-dependent ecosystems; and changes to water levels, drainage patterns and the physical character of historic watercourses can also affect the setting, survival and legibility of historic landscape features and cultural heritage assets. The same source-pathway-receptor relationships may therefore engage ecology, human health, agriculture, flood risk, water quality, water resources and cultural heritage simultaneously. For that reason, BEPS submits that the water environment must be assessed as an integrated hydrological and hydrogeological system, rather than as a series of separate technical topics or individual site parcels, and that uncertainty in the underlying water-environment baseline has consequences across multiple chapters of the Environmental Statement.

9.1 Purpose and Overall Case

This chapter of the Written Representation addresses the adequacy of the Applicant's assessment of the water environment and the extent to which the Environmental Statement demonstrates that the East Pye Solar Scheme can be constructed, operated, maintained, repowered and decommissioned without unacceptable effects on groundwater, surface water, private water supplies, chalk streams, flood risk, water resources, groundwater-dependent habitats and downstream receptors.

BEPS's central case is that the application does not demonstrate, to the level necessary for Development Consent, that those effects are adequately understood or capable of being controlled. The principal deficiencies are interconnected rather than isolated. Uncertainty in the underlying hydrogeological understanding affects the reliability of the assessment of private water supplies, groundwater-dependent terrestrial ecosystems, Water Framework Directive compliance, contaminant migration, infiltration and drainage design, surface-water runoff, watercourse crossings, piling and trenchless construction, and the ability to contain polluted firewater from the BESS and substations.

This is important because the Applicant itself has always recognised that the water environment comprises both hydrology and hydrogeology. At scoping stage, its own report defined the topic as

including hydrology, hydrogeology, flood risk and water quality. It identified the River Tas, Hempnall Beck and Broome Beck as principal watercourses and recognised ordinary watercourse tributaries of the River Tas and Starston Brook. It also stated that groundwater was envisaged to be in broad continuity with water levels in the watercourses. That evidence makes it inappropriate to assess the Scheme as if groundwater, surface water, drainage networks and dependent receptors were essentially separate compartments.

The Planning Inspectorate's Scoping Opinion imposed clear requirements against that background. It declined to scope out water resources because the Scheme lies within an area identified as water stressed. It required a Flood Risk Assessment capable of addressing the sequential and exception tests where applicable, operational resilience over the Scheme's 60-year life, off-site flood risk, and the potential for solar infrastructure to increase runoff. It also required a Water Framework Directive assessment, or a screening assessment explaining why a full assessment was unnecessary, because the proposed development included uncertain watercourse and ditch crossings and because WFD waterbodies were present. Crucially, the Inspectorate also noted the existence of private water supplies within 250 m of the site, the absence of accurate location and abstraction data, and required the Environmental Statement to identify and assess the potential impacts on private water supplies and their buffers.

The same Scoping Opinion drew attention to the Environment Agency's concern that proposed HDD or other trenchless installation methods could interact with Principal or Secondary A aquifers, surface watercourses or sensitive ecological receptors and thereby introduce drilling fluids or mobilise contamination into controlled waters. The EA therefore required a hydrogeological risk assessment where those circumstances arose. It also required Foundation Works Risk Assessments or Piling Risk Assessments for the BESS, substations and other structures requiring deep foundations or piling because of the potential to create contaminant migration pathways into deeper groundwater units.

The application must therefore be judged against a relatively demanding evidential benchmark. The question is not simply whether the Applicant has now produced documents entitled 'Flood Risk Assessment', 'Water Framework Directive Assessment' and 'Water Resources Assessment'. The question is whether the evidence within those documents resolves the uncertainties identified at scoping and statutory consultation stages and provides a coherent, site-specific basis upon which the Examining Authority can be satisfied that likely significant effects have been properly assessed and that the proposed mitigation is technically feasible and effective.

BEPS submits that this has not yet been demonstrated. The later application documentation is more extensive than the PEIR material, but substantial uncertainty remains over the basic hydrogeological conceptualisation of the Scheme, the identification and vulnerability of private water supplies, the interaction between groundwater and surface water, the treatment of WFD catchments and connected minor watercourses, the effect of ground disturbance and piling, and the management of surface water and potentially contaminated firewater at the major infrastructure compounds.

The statutory consultees' concerns reinforce that conclusion. At PEIR stage, Norfolk County Council as Lead Local Flood Authority expressly disagreed with the Applicant's proposed scoping-out of flood risk, surface-water runoff and groundwater recharge effects. The LLFA said that the Applicant had underestimated the impermeable area, had not adequately investigated ground

conditions or the viability of infiltration, and had provided incomplete and inconsistent information. It also drew attention to existing flood-sensitive communities downstream of parts of the Scheme, including Saxlingham Nethergate, Woodton, Long Stratton and Hempnall. The LLFA had earlier stated that several sites lie upstream within sensitive catchments with histories of internal property flooding and that the Scheme could interact with the Reclaim the Rain flood-management project at Woodton.

The Environment Agency's concerns were equally fundamental. Its scoping advice identified deficiencies in the understanding of groundwater, Drinking Water Safeguard Zones, Groundwater Dependent Terrestrial Ecosystems, private water supplies, piling and HDD. In relation to private supplies, the EA recorded 35 private water supplies within 250 m of the site for which accurate locations and abstraction strata were unavailable. It required their locations and, where possible, their abstraction strata to be determined, impacts to be assessed within the potential influencing distance of the Scheme, and a reasonable worst case to be adopted where information remained absent. The EA also identified contradictory or incomplete information concerning Drinking Water Safeguard Zones and noted that the Broadland Rivers Chalk & Crag groundwater body and GWDTEs had not been properly incorporated into the early water-quality assessment.

Those matters are now of particular significance because the Scheme places its principal infrastructure, including the BESS and major substations, within a hydrogeologically sensitive rural environment containing numerous private abstractions, ordinary watercourses and connected drainage features. The Applicant's eventual provision of Figure 16.5 identifying private water supplies is therefore a necessary step, but it does not by itself answer the EA's concern. A receptor-location plan is not equivalent to a hydrogeological source-pathway-receptor assessment, and proximity within or beyond a fixed 250 m radius does not establish whether an abstraction is hydraulically connected to a particular source of risk.

BEPS also relies upon the independent review undertaken by H Fraser Consulting, *Environmental Impact Assessment Review: Ground conditions, hydrology and hydrogeology*, dated 28 September 2026 [hereafter 'HFCL']. That review is important because it examines the application evidence as an integrated hydrogeological and hydrological case rather than considering the ES chapters in isolation. Its findings should be read alongside the statutory consultation evidence and the Applicant's responses to the Environment Agency and Norfolk County Council. In particular, the Fraser review identifies deficiencies in the conceptual hydrogeological model, private-water-supply baseline, identification of groundwater-dependent receptors, WFD screening, water-resource assessment and the treatment of contaminant pathways associated with major infrastructure and foundation works.

BEPS therefore relies principally upon ES Chapter 9 Water Environment [APP-045], the Flood Risk Assessment and Outline Surface Water Drainage Strategy, the Water Framework Directive Assessment [APP/6.3.9.2], the Water Resources Assessment [APP/6.3.9.3], Chapter 16 and the Phase 1 Ground Conditions Assessment, Figure 16.5 showing the locations of private water supplies, the Planning Inspectorate's Scoping Opinion, the Environment Agency's scoping and statutory consultation responses and Relevant Representation, Norfolk County Council/LLFA's consultation responses and Relevant Representation, the Applicant's responses in EXAM/8.6 and EXAM/8.7, and the September 2026 H Fraser Consulting review.

The purpose of this Written Representation is consequently not to repeat the earlier Relevant Representation, but to test the Applicant's final Environmental Statement and examination responses against those requirements and against the subsequently available independent evidence. The central issue for the Examining Authority is whether the remaining uncertainties are merely matters of detailed design which can safely be controlled after consent, or whether they concern the underlying baseline, source-pathway-receptor relationships and environmental feasibility of the Scheme and therefore need to be resolved before a sufficiently robust recommendation can be made. BEPS submits that a significant number fall into the latter category.

9.2 Hydrological and Hydrogeological Setting

9.2.1 The Scheme extends across two principal river systems and numerous connected drainage networks

The physical setting of East Pye Solar is fundamental to the assessment because the Scheme does not occupy a single compact hydrological unit. It extends across a wide rural area containing several chalk stream river catchments, numerous ordinary watercourses and drainage features, groundwater bodies and differing superficial geological deposits. The environmental consequences of an activity at one part of the Scheme therefore cannot always be understood simply by reference to the field or sub-site in which that activity is located.

The Applicant's own scoping material identified the Hempnall Beck, River Tas and Broome Beck as principal watercourses in proximity to the Scheme. Hempnall Beck flows between Sites 7 and 4–6; the River Tas runs along the boundaries between sub-Sites 8A and 8B; and Broome Beck flows adjacent to sub-Sites 10A and 10C before becoming a main river downstream. The same document identified ordinary-watercourse tributaries of the River Tas and Starston Brook along or adjacent to other parts of the Scheme.

The Scheme therefore interacts broadly with two principal river systems. The western and central parts of the development interact with the River Tas chalk stream/Hempnall Beck system, while other parts lie within the river Waveney chalk stream operational catchment, including areas associated with Starston Brook and Broome Beck. The Applicant's scoping assessment itself recorded that most of the site lies within the Yare Operational Catchment while south-western and north-eastern parts fall within the Waveney Operational Catchment.

This distinction is important but should not obscure the wider connectivity within each system. The principal rivers are fed by smaller watercourses, ditches, field drains, culverts and surface-water pathways. Those smaller features may not themselves be separately classified WFD waterbodies, but they can provide direct hydrological pathways into classified downstream receptors. The LLFA has repeatedly emphasised the presence of surface-water flow routes and ordinary watercourses across the development area and criticised incomplete identification of those features during the earlier assessment stages. Its July 2025 response stated that surface-water flood risk was inadequately represented and that the FRA and drainage strategy failed to reflect the historic flood experience of downstream communities.

The scale of the development therefore matters. Effects arising from a particular solar parcel, cable corridor or infrastructure compound may propagate through drainage networks to a receptor

outside that immediate parcel. Likewise, multiple individually small changes across the Scheme can converge within the same catchment. That is particularly relevant to changes in runoff, sediment mobilisation, construction pollution, dewatering, altered recharge, culvert or crossing effects and accidental releases.

The groundwater setting adds a further layer of connectivity. The Applicant's scoping report expressly stated that groundwater was expected to be in 'broad continuity' with water levels in the watercourses and that the groundwater table would slope towards the lowest areas of the parcels. That is a significant acknowledgement. It indicates that groundwater and surface water cannot properly be treated as wholly separate receptor systems. Changes to recharge, subsurface pathways or groundwater quality may have consequences for surface-water features, and conversely surface-water infiltration or pollution may affect groundwater receptors.

The underlying geology is also significant. The Scheme is associated with the Broadland Rivers Chalk & Crag groundwater body, and the EA specifically criticised the earlier assessment for failing adequately to incorporate that groundwater body and groundwater-dependent terrestrial ecosystems. The groundwater environment includes Principal Aquifer units together with superficial deposits of varying permeability. The practical consequence is that contaminant movement and recharge behaviour cannot safely be inferred from a uniform assumption that superficial clay deposits isolate the underlying aquifer.

This is particularly important where the Scheme introduces piles, foundations, trenches, cable ducts and HDD works. The EA expressly identified the possibility that piling or deep foundation works could create new migration pathways into deeper groundwater units, and that trenchless installation could introduce drilling fluids or mobilise contaminants into controlled waters where aquifers or sensitive watercourses are encountered. Those concerns depend directly upon the actual geological sequence and hydraulic relationships at each relevant location.

The hydrological setting is also closely connected to drinking-water protection. At scoping stage, the EA identified uncertainty and inconsistency in the identification of Drinking Water Safeguard Zones and required the Applicant to identify which parts of the Scheme fall within surface-water and groundwater safeguard zones and to consider the pressures that gave rise to those designations. The presence of Source Protection Zones and private groundwater abstractions further increases the importance of a correct understanding of groundwater flow and contaminant migration.

The Applicant's assessment therefore needs to operate at two scales simultaneously. At site scale, it must understand the geology, groundwater and drainage conditions at each major source of risk. At catchment scale, it must understand where runoff, pollutants, sediment and altered groundwater conditions may ultimately propagate. BEPS's concern is that the Environmental Statement identifies many of these components but does not always integrate them into a single coherent source-pathway-receptor model.

9.2.2 Chalk-stream sensitivity

The River Tas and Hempnall Beck form part of an especially sensitive freshwater environment. The Applicant's own scoping material identifies Hempnall Beck and the River Tas as principal

watercourses associated with the Scheme, and its WFD baseline records that the Hempnall waterbody was already in poor ecological status and the River Tas in moderate ecological status at the time of the baseline assessment. Both were recorded as failing chemical status. Norfolk Wildlife Trust has queried that result with BEPS in conversation saying that the original water analysis was taken after the temporary failure of a septic tank, and that the river water quality is actually good. New independent water quality analysis should be undertaken.

Whatever the ecological or chemical status, additional pressures may be material both to the requirement to avoid deterioration and to the ability of the waterbody to recover towards its environmental objectives. The Applicant's own scoping assessment stated that measures had already been delivered to address some existing issues but that recovery for problematic chemical substances could take decades. That makes additional pressure on these systems a matter requiring careful examination.

The sensitivity of chalk streams is also relevant to the types of effect associated with the Scheme. Chalk streams are strongly influenced by groundwater, and their ecological condition can be affected by changes in flow regime, sediment loading, water quality and physical habitat. For East Pye Solar, the relevant mechanisms include sediment mobilisation during construction, altered runoff caused by compaction and new surfaces, disturbance associated with cable and access crossings, potential drilling-fluid release during HDD, contamination from fuels and construction materials, and groundwater effects associated with piling, foundations or dewatering.

The Environment Agency's scoping advice reinforces the need for such an integrated assessment. It required hydrogeological risk assessment where HDD or trenchless drilling could interact with Principal or Secondary A aquifers or pass beneath surface watercourses or sensitive ecological receptors. That requirement reflects the fact that impacts to a chalk-stream system cannot safely be evaluated only by considering the visible channel at the crossing point. The groundwater body, river channel, hyporheic environment, tributary drainage network and dependent ecology form parts of the same functional system.

BEPS has addressed the ecological consequences in greater detail in Chapter 8: Ecology and Biodiversity, including the evidence relating to aquatic species and white-clawed crayfish. The purpose of this section is to establish that the water environment which supports those ecological receptors is itself unusually sensitive, interconnected and already subject to existing pressures.

The wider Waveney-linked part of the Scheme requires similar pathway-based treatment. Broome Beck is physically connected downstream to the Waveney system, while Starston Brook and associated tributaries form part of that wider operational catchment. The Applicant cannot therefore assume that effects occurring within an ordinary watercourse or minor drainage feature are environmentally self-contained merely because the feature is not separately classified as a WFD waterbody. The relevant issue is whether it conveys flow, sediment or pollutants to a downstream classified receptor.

This is particularly relevant to the Applicant's WFD screening methodology and will be addressed later in this chapter. For present purposes, the important point is that the Scheme occupies catchments containing already sensitive waterbodies, with extensive minor drainage networks capable of transmitting effects downstream.

9.2.3 The Applicant itself accepts hydrological connectivity

A central difficulty with the Applicant's case is that its own evidence recognises hydrological connectivity when identifying receptors, yet some later assessments appear to adopt a more compartmentalised approach when determining whether significant effects can occur.

The Flood Risk Assessment accepts that designated sites can be hydrologically linked to the Order Limits through watercourses and groundwater flow and that such sites therefore have the potential to be affected by the Scheme. That is an important acknowledgement of the physical system.

The same underlying concept is already evident in the Applicant's earlier material. The scoping report recognised broad continuity between groundwater levels and watercourses. It identified principal rivers together with ordinary tributaries and watercourses across the Scheme. The Environment Agency then warned that an inadequate conceptual model could lead to significant contaminant migration pathways being overlooked and required the Applicant to correct errors in its geological characterisation and undertake specific hydrogeological assessments for piling and HDD.

Once connectivity is accepted for the purpose of identifying potentially affected receptors, it cannot rationally be disregarded when assessing how pollutants, sediment, changes in recharge or accidental releases may move through the same system.

That does not mean that the existence of a hydraulic connection proves that a significant effect will occur. It means that the connection must be incorporated into the source-pathway-receptor assessment and supported by sufficient evidence before an effect can safely be excluded. Where the pathway is uncertain, the correct response is not simply to assume that distance or mitigation prevents an effect; the uncertainty itself must be addressed through appropriate investigation, modelling or a robust worst-case assessment.

This point is particularly important for private water supplies. At scoping stage, the EA identified 35 private supplies within 250 m for which accurate locations and abstraction strata were unavailable and required impacts to be assessed within the potential influencing distance of the Scheme, rather than by a fixed proximity rule alone. The same principle applies to groundwater-dependent terrestrial ecosystems, drinking-water protection zones and downstream surface waters. A receptor may lie beyond an arbitrary buffer yet remain within a hydraulic pathway from the Scheme.

It is also important for the WFD Assessment. The Inspectorate required a WFD assessment specifically because watercourse and ditch crossings were proposed and the types, locations and effects of those crossings were not then sufficiently clear. Minor watercourses cannot simply be ignored where they are tributary to, or otherwise connected with, classified WFD waterbodies. The assessment must consider whether the Scheme may cause deterioration or impede recovery through those pathways.

The same issue arises in flood-risk assessment. Norfolk County Council has emphasised that some Scheme areas lie upstream of communities with well-documented flooding and that surface-water effects need to be assessed at catchment scale rather than only within individual parcels.

Surface-water pathways that leave the Order Limits are therefore as relevant as the conditions within the development itself.

This physical connectivity is one of the principal reasons why BEPS does not accept that the remaining deficiencies can simply be deferred to detailed design. Detailed design may legitimately refine a drainage basin or crossing detail once the environmental envelope has been established. It cannot substitute for an adequate understanding of where groundwater flows, how surface water and groundwater interact, which receptors are connected, and whether potentially significant contaminant or hydrological pathways exist.

Accordingly, the hydrological and hydrogeological setting should be treated as the foundation of the remainder of Chapter 9. The subsequent sections of this chapter address the consequences of the deficiencies in that foundation for private water supplies, groundwater protection, WFD assessment, flood risk, drainage, piling and HDD, BESS and substation firewater, groundwater-dependent habitats and water resources.

9.3 Fundamental Methodological Deficiencies

9.3 Defective Conceptual Hydrogeological Model

A sufficiently developed conceptual hydrogeological model is fundamental to the reliability of the Applicant's assessment of the water environment. It is the means by which the relevant geological and groundwater units, recharge processes, groundwater flow directions, hydraulic relationships, surface-water interactions, abstractions and contaminant pathways are brought together into a coherent source-pathway-receptor framework. Without that framework, it is not possible to assess reliably whether the Scheme could affect groundwater quality or quantity, private water supplies, groundwater-dependent habitats, surface watercourses, Source Protection Zones, or the underlying Principal Aquifer.

This deficiency is particularly significant for East Pye Solar because the Scheme is dispersed across a very large area, underlain by a combination of Crag Group and Chalk Principal Aquifers together with variable superficial deposits including the Lowestoft Formation, sand and gravel, alluvium, Head deposits and peat. HFCL identifies the Crag Group and underlying White Chalk as Principal Aquifers, the till as a Secondary Undifferentiated Aquifer and the sand and gravel deposits as Secondary A Aquifers. It also notes that groundwater vulnerability is generally medium to medium-high. [HFCL, §§2.4–2.5, pp.5–7]

HFCL's central criticism is unequivocal: 'The Applicant does not provide or define the hydrogeological conceptual model anywhere in the ES documentation.'

HFCL explains that the Water Resources Assessment is concerned primarily with potable and non-potable water supply and does not provide an overall conceptual model; the baseline section of Chapter 9 does not describe current hydrogeological conditions; and Chapter 16 describes Environment Agency aquifer designations but does not provide a coherent account of the hydrogeological system. HFCL therefore concludes that the assessment of wider hydrological and hydrogeological effects is 'not supported by a sufficiently defined baseline'. [HFCL §3.1.3.5, p.15]

That finding is important because Chapter 9 itself repeatedly reaches conclusions of negligible magnitude and minor, not significant effects on receptors of very high sensitivity. Those conclusions depend upon assumptions about how groundwater moves, how recharge occurs, and whether pathways exist between the Scheme and identified receptors. If the conceptual model underpinning those assumptions is incomplete, the confidence that can properly be placed in the resulting significance conclusions is correspondingly reduced.

9.3.1 No adequate conceptual site model

HFCL concludes that the Applicant has not provided or defined an adequate hydrogeological conceptual model for the Scheme. Chapter 9 contains no proper description of the existing hydrogeological conditions, while Chapter 16 identifies aquifer designations without setting out a coherent conceptual understanding of groundwater occurrence, movement and interaction between the superficial deposits and underlying Principal Aquifers. HFCL accordingly concludes that the wider assessment of hydrological and hydrogeological effects is not supported by a sufficiently defined baseline. However, cross-referring between chapters is not itself a conceptual hydrogeological model. What remains absent is a site-wide and parcel-sensitive account of how the groundwater system actually functions.

The omission is particularly important because HFCL identifies the relationship between the Lowestoft Formation and the underlying Chalk and Crag aquifers as materially more complex than the Applicant's assessment suggests. Published evidence cited by HFCL indicates that recharge through the till is not negligible, that the weathered till can be relatively permeable, and that the formation can support shallow private-water-supply abstractions. The Applicant's recurring characterisation of the till as effectively impermeable therefore risks understating connectivity and preferential-pathway risks.

The missing elements include the hydraulic relationship between the Lowestoft Formation and the underlying Crag and Chalk; the direction and gradient of groundwater flow; spatial and seasonal groundwater-level variation; recharge processes; the role of permeable superficial deposits; groundwater/surface-water interaction; springs and seepages; abstraction horizons; and the potential for natural or Scheme-created preferential pathways.

Those matters directly determine whether a private water supply is hydraulically connected to a proposed source of contamination, whether infiltration drainage may affect an aquifer, whether groundwater flow contributes materially to a surface-water receptor, and whether piles, trenches or HDD works could create additional connectivity.

The absence of a developed conceptual model is particularly difficult to reconcile with the Applicant's own assessment framework. Chapter 9 classifies the Norwich Crag Formation, Crag Group and Chalk Formations as Very High sensitivity receptors, together with PWS within 1 km. [ES Chapter 9 Table 9.4] Yet the chapter does not then present a receptor-specific groundwater-flow model showing how those Very High sensitivity receptors relate hydraulically to individual Scheme components.

Chapter 9 also acknowledges that the Broadland Rivers Chalk & Crag WFD groundwater body underlies the Order Limits and is in poor status because of the Groundwater Dependent Terrestrial Ecology test. [ES Chapter 9 §9.6.19] That makes the absence of a developed groundwater conceptualisation particularly significant. The Scheme is not being assessed against a hydrogeologically neutral or insensitive baseline.

HFCL also finds that not all GWDTEs have been identified and that no assessment is presented of potential connectivity between the Scheme and those receptors. It expressly links that omission to the absence of a proper hydrogeological conceptual model. [HFCL §§3.1.3.2 and 3.1.4.2, pp.14, 16]

The resulting concern is therefore structural: groundwater receptors are identified and assigned sensitivity, but the pathway analysis necessary to establish whether and how those receptors may be affected is not sufficiently developed.

9.3.2 Over-reliance on historic and off-site borehole data

The reliability of the baseline is further reduced by the Applicant's reliance upon historic and off-site borehole information. The FRA acknowledges that ground conditions have been inferred in part from historic boreholes located in proximity to, rather than within, the relevant parts of the Scheme. Many are around 100–250 metres from the Order Limits. For a compact and geologically uniform development, such information might provide useful corroborative evidence. For a Scheme extending across numerous parcels and differing superficial geological conditions, it is not a substitute for sufficient site-specific investigation at the principal sources of risk.

This matters because superficial geology is heterogeneous. The Lowestoft Formation itself is not simply homogeneous clay; HFCL records the BGS description of the formation as an unsorted and unstratified mixture of clay, sand, gravel and boulders. The wider Scheme also includes Leet Hill Sand and Gravel, alluvium, Head deposits, river terrace deposits and other potentially more permeable superficial units. [HFCL §2.4, pp.5–7]

The extrapolation of ground conditions from historic boreholes therefore carries particular risk where those assumptions are then used to support conclusions about groundwater protection, infiltration, piling or private water supply vulnerability.

HFCL's review reinforces the concern because it identifies specific inconsistencies in the way the Applicant has inferred abstraction strata from nearby records. In Technical Appendix 16.1, the Applicant assigns target strata to private water supply boreholes either from direct borehole evidence or by extrapolation from other sources. HFCL finds that the Applicant sometimes treats the presence of Lowestoft Formation as evidence that it is not the source of abstraction, while elsewhere treating thinning of the same formation as evidence that it is not being used. HFCL describes those assumptions as 'confused and inconsistent'. [HFCL §3.2.4, pp.17–18]

For BEPS, the point is not that historic borehole data are inherently unusable. It is that the uncertainty inherent in extrapolating from them must be reflected in the assessment. Where the exact ground conditions beneath high-risk infrastructure and vulnerable receptors remain uncertain, the Applicant should either investigate those conditions or adopt a genuinely

precautionary worst-case approach. It should not rely upon inferred geology as though it were established fact.

9.3.3 Unsupported assumptions about the Lowestoft Formation

HFCL's criticism of the Applicant's treatment of the Lowestoft Formation is one of the strongest technical points in the independent review. The Applicant appears repeatedly to rely on the presence of Lowestoft Formation till as a relatively protective or low-permeability layer. HFCL considers that treatment too simplistic. It cites published BGS work indicating that the hydrogeological relationship between the till and the underlying Chalk and Crag Principal Aquifers is materially more complex.

HFCL records that published research indicates recharge through the till to the Chalk may amount to approximately 4.5% to 20% of effective rainfall; that overland flow is comparatively rare, which is consistent with a weathered and locally permeable upper till; and that the weathered Lowestoft Formation can have hydraulic conductivities typically between 10^-6 and 10^-8 m/s, with values as high as 10^-5 m/s. HFCL therefore concludes that groundwater movement and storage may occur within weathered horizons. [HFCL §3.1.3.5, p.15]

HFCL also notes that the Lowestoft Formation is designated by the Environment Agency as a Secondary Undifferentiated Aquifer, that sand and gravel horizons and lenses are known within it, and that the medium groundwater vulnerability attributed to the Formation is itself inconsistent with treating it as an effectively impermeable barrier. [HFCL §3.1.3.5, p.15] This is not an abstract geological debate. The assumption directly affects the assessment of private water supplies and pollutant migration.

HFCL identifies a particularly important internal contradiction in Technical Appendix 16.1. It notes that the Applicant frequently assumes that the presence of Lowestoft Formation precludes it from being the source of private water abstraction. Yet for PWS record TM29NW25, the Applicant itself describes the Lowestoft Formation as supporting the abstraction. HFCL concludes that this confirms the till can support private supplies and that the Applicant's general assumption may therefore be unsound. [HFCL §3.2.4, pp.17–18]

HFCL's fieldwork adds further weight. It found that private abstractions from the shallow glacial till are 'not unusual'. [HFCL §3.1.3.1, p.14]

The consequence is significant. If shallow groundwater within the Lowestoft Formation is capable of supporting private supplies, then impacts upon shallow recharge, turbidity, local groundwater levels, construction-related sediment or pollution cannot safely be discounted on the assumption that relevant supplies draw only from deeper Chalk.

The same applies to the protection of the underlying Principal Aquifer. If recharge through the till is material and if construction works penetrate or disturb the till, there is a plausible pathway by which Scheme-generated contaminants may migrate vertically or laterally. That possibility must be incorporated into the source-pathway-receptor assessment rather than screened out through a generic description of the till as low permeability.

9.3.4 Interaction between Chapters 9 and 16

HFCL also identifies a methodological inconsistency between Chapter 9 Water Environment and Chapter 16 Ground Conditions.

Chapter 9 itself says that its receptor-sensitivity criteria were derived to align with Chapter 16. [ES Chapter 9 §9.5.10] However, HFCL finds that the two chapters use materially different definitions of effect, magnitude and significance despite dealing with overlapping hydrological and hydrogeological receptors.

In particular, Chapter 9 uses four magnitude categories — High, Medium, Low and Negligible — whereas Chapter 16 uses five — Large, Medium, Small, Very Small and Negligible. HFCL also notes that Chapter 9 describes water-quality magnitude partly by reference to deterioration between WFD classes, while Chapter 16 uses Environmental Quality Standards. [HFCL §3.1.1, pp.12–13]

HFCL identifies an additional concern with the Chapter 9 significance matrix. It observes that a one-step change in magnitude from Medium to Low can cause the resulting significance to fall by two classes, from Major to Minor. It also criticises combinations such as Low sensitivity × Low magnitude producing Negligible significance, and Medium × Low producing Minor/Negligible. [HFCL §3.1.1, p.12]

This is particularly relevant because Chapter 9 repeatedly assigns Very High sensitivity to receptors and then concludes that the magnitude of effect is Negligible, yielding a Minor and Not Significant outcome. For example, Chapter 9 uses this approach for operational contaminant mobilisation from BESS and substation runoff, BESS/substation firewater and changes in groundwater recharge. [ES Chapter 9 §§9.8.39–9.8.40, 9.8.46–9.8.49, 9.8.54–9.8.57]

The issue is not simply that different environmental disciplines may never use different significance criteria. The problem is that hydrology and hydrogeology are split across Chapters 9 and 16, yet the same physical source-pathway-receptor relationship may therefore be assessed under two different significance systems. HFCL considers that this makes the EIA difficult to interrogate consistently and identifies the issue as requiring further environmental information. [HFCL Table 4.1, refs 1, 3 and 11, pp.19–21]

BEPS submits that the Applicant should therefore provide a reconciled explanation of the methodological relationship between Chapters 9 and 16 and demonstrate that no groundwater or water-quality effect has been diluted, omitted or assigned an artificially low significance because of the division of the assessment across those chapters.

9.4 Private Water Supplies: Major Unresolved Human-Health Issue

9.4.1 Private water supplies are groundwater and human-health receptors

Private water supplies are one of the most important receptor groups affected by the Scheme. They are groundwater receptors, but where water is used domestically they are also direct human-health receptors. In a number of cases identified during HFCL's site visit, groundwater is the resident's only water supply. [HFCL Table 2.1 and §2.5.1, pp.8–10] That is materially different from

an abstract or replaceable environmental receptor. A deterioration in quality, a reduction in yield or an interruption to supply may directly affect a household's drinking, cooking, washing or food-production water.

The Private Water Supplies (England) Regulations 2016 reflect that importance. They define the private supply as the whole system from the point of abstraction to the point of use and provide that water is wholesome only where it does not contain a microorganism, parasite or substance at a concentration or value capable of constituting a potential danger to human health.The assessment must therefore address both quality and quantity. A supply need not become chemically contaminated in order to be materially affected; interference with groundwater levels or recharge may reduce the yield or reliability of a well or borehole.

9.4.2 What PINS required

The Planning Inspectorate identified the private-water-supply issue expressly in Scoping Opinion 3.2.5. PINS noted that a number of private water supplies lay within 250 metres of the site, that accurate location and abstraction data had not been provided, and that if a reasonable worst case was adopted in which each was assumed to be potable, default Source Protection Zone 1 buffers would be relevant. In the absence of accurate locations, PINS considered it difficult to determine whether the Scheme overlapped those areas and required the ES to identify the supplies and assess potential impacts upon them and their buffers.

Chapter 9 reproduces that requirement and responds by stating that the Water Resources Assessment provides information on private water supplies and that Figure 16.5 displays their locations. [ES Chapter 9 consultation table, response to SO 3.2.5] That response is inadequate in itself because PINS required both identification and impact assessment. Figure 16.5 is capable of contributing to identification. It does not by itself assess impact.

9.4.3 What the Environment Agency required

The Environment Agency's statutory consultation identified inconsistency in the number of private abstractions reported, stated that the risks to private groundwater abstractions could not be adequately assessed on the information then available, and required further information on supply location and source, including local-authority records and known wells.

It also rejected the implication that 250 metres could operate as a fixed hydrogeological cut-off. The EA required the groundwater abstraction search area to be extended because impacts upon abstractions beyond 250 metres could not be fully discounted where Principal Aquifers with high transmissivity, including Chalk and Norwich Crag, are present.

That concern is directly borne out by HFCL's fieldwork. Park Farm, for example, was identified during HFCL's site visit as an active groundwater pumping well and the resident's only water supply, but HFCL records that it was 'outside of 250m buffer so not discussed by Applicant'. [HFCL Table 2.1, p.10]

This is a particularly important example because it demonstrates in concrete terms why a purely distance-based method is inadequate. A private supply can fall outside the Applicant's preferred proximity buffer yet remain an active and potentially vulnerable groundwater receptor.

9.4.4 What Figure 16.5 actually demonstrates

Figure 16.5 is useful evidence, but its evidential value should not be overstated. It demonstrates that private supplies are concentrated around parts of the Scheme, including the Site 1/BESS/Grid Hub area and Site 5/400kV substation area. In that respect it confirms the proximity of drinking-water receptors to some of the Scheme's principal potentially contaminating infrastructure.

However, Figure 16.5 does not establish abstraction depth, screened interval, source stratum, groundwater elevation, groundwater flow direction, hydraulic gradient, yield, seasonal variation, well construction, source-pathway connectivity, contaminant travel time or receptor-specific vulnerability.

The correct characterisation is therefore: Figure 16.5 is a receptor-location plan, not a private-water-supply risk assessment.

That distinction is reinforced by Chapter 9's own methodology. Table 9.3 assigns PWS sensitivity primarily by radial distance from the Order Limits: within 50 m Very High, 50–250 m High, 250–500 m Medium, 500 m–1 km Low, and beyond 1 km effectively Negligible. Yet Table 9.4 separately classifies all PWS within 1 km as Very High, those within 1–3 km as High and those within 3–5 km as Medium. [ES Chapter 9 Tables 9.3–9.4]

HFCL identifies this as an internal inconsistency and, more fundamentally, criticises the use of distance as a proxy for connectivity. Its point is that distance is only one control upon hydrogeological connection and cannot substitute for understanding the actual groundwater pathway. [HFCL §3.1.1, pp.12–13]

9.4.5 HFCL's independent findings materially undermine the PWS baseline

HFCL's work is especially important because it tested the Applicant's PWS baseline rather than simply accepting the available databases. HFCL states that the Applicant has not provided the full list of private water supplies obtained from the Local Authority, reportedly because of data-protection constraints. HFCL independently approached South Norfolk Council and obtained PWS grid-reference data. Its Figure 2-6 shows private abstractions within the Scheme itself and numerous others close to it. [HFCL §2.5.1 and Fig.2-6, pp.7–8]

HFCL then undertook a limited site visit and visited a small sample of residences and businesses to verify local conditions and PWS status. Its Table 2.1 records several important examples.

At Boyland Hall, HFCL identified an active groundwater pumping borehole which was the resident's only water supply. The Applicant had assumed the relevant historic boreholes were disused because Boyland Hall and associated outbuildings had been demolished. HFCL's field inspection demonstrated that this assumption was wrong.

At Elder Farm/The Forge, HFCL confirmed an active groundwater borehole and recorded that it was the resident's only water supply.

At Park Farm, HFCL confirmed an active pumping well which was the resident's only water supply, but noted that the Applicant had not discussed it because it lay outside the 250 m buffer.

At Willow Farm, HFCL confirmed an active groundwater pumping borehole used as the resident's only water supply. [HFCL Table 2.1, pp.9–10]

These are not minor discrepancies. They demonstrate that desktop assumptions can misidentify whether a supply is active and that the status of individual receptors cannot safely be inferred solely from historic records. HFCL further records that some local supplies abstract from shallow groundwater associated with the Lowestoft Formation, contradicting any general assumption that private abstractions are confined to the deeper Chalk or Crag aquifers. This materially increases the relevance of shallow construction effects, altered infiltration and preferential pathways.

HFCL's broader baseline criticism is equally significant. It states: 'The methodology used by the Applicant to ensure that all PWSs have been identified and assessed is not presented.'

HFCL acknowledges the three sources used by the Applicant – Local Authority records, BGS records and Environment Agency permit records – but states that even in combination those sources will not necessarily identify every PWS. It recommends cross-checking private-supply records against an address database and mains-water-supply records so that properties without either a recorded PWS or mains connection can be investigated, followed by ground-truthing where necessary. [HFCL §3.1.3.1, p.14]

HFCL concludes that unless those steps are undertaken 'the PWS baseline has been insufficiently characterised, and potentially sensitive receptors remain unidentified.' [HFCL §3.1.3.1, p.14] That is a material challenge to the Applicant's EIA conclusions.

HFCL's own site visit was deliberately limited and intended only as a snapshot, yet it still identified an active supply omitted or wrongly assumed inactive by the Applicant. HFCL therefore concludes that it is 'possible (indeed probable)' that further private supplies have been omitted. [HFCL §3.1.3.1, p.14] The Applicant's significance conclusions cannot be regarded as robust if the population of potentially affected receptors has not first been reliably established.

9.4.6 Different PWS types require different assessment

HFCL's work also demonstrates why private supplies cannot properly be treated as a homogeneous receptor group. The known supplies include shallow groundwater sources and deeper boreholes. Their vulnerability depends upon source stratum, depth, construction, hydraulic connection and local geology.

HFCL states expressly that limited ground-truthing demonstrated that abstraction from shallow glacial till is 'not unusual'. [HFCL §3.1.3.1, p.14] That is important because the Water Resources Assessment and associated groundwater material tend to characterise the known supplies as predominantly drawing from Chalk beneath the Lowestoft Formation.

For a shallow supply, local surface infiltration, sediment mobilisation, turbidity, microbial contamination, construction dewatering and changes in shallow groundwater recharge may be particularly important. For a deeper Chalk or Crag borehole, the relevant pathway may involve a much larger groundwater catchment, and the issue becomes whether construction penetrations, piling, trenches or naturally permeable horizons provide hydraulic connection from the surface or shallow deposits to the deeper aquifer. It follows that radial distance alone is not a defensible substitute for source-specific hydrogeological assessment.

9.4.7 The Private Water Supplies Regulations reinforce the requirement for a risk-based approach

The Private Water Supplies (England) Regulations 2016 provide an important legal context. Regulation 6 places the risk-assessment duty on the local authority, subject to the statutory exceptions for certain single-dwelling supplies. The assessment must establish whether there is a risk that the supply would constitute a potential danger to human health. The Regulations also require relevant risk assessments to take account of Water Framework Directive monitoring.

Regulation 7 allows monitoring programmes to include inspections of the catchment area, abstraction, treatment, storage and distribution infrastructure. Regulation 14 requires local authorities to keep records including the source type and geographical location of supplies.

BEPS does not suggest that Regulation 6 transfers the local authority's statutory duty directly to the Applicant. The DCO assessment cannot responsibly conclude that development effects on private drinking-water supplies are negligible or minor where the hydrogeological and receptor information necessary for the statutory risk-based regime remains incomplete.

In other words, the Applicant needs to provide enough information about its development, relevant sources, pathways and receptors to permit the risks to drinking-water safety to be understood before consent is granted.

At present it has not done so.

9.4.8 The Water Resources Assessment does not assess Scheme impacts on PWS

The current Water Resources Assessment provides a particularly important admission. At §4.1.3, the WRA states that because new groundwater and surface-water abstraction options have been scoped out: 'there is no potential impact on existing lawful water users in the area including both licenced abstractions and unlicenced (private) water supplies. The associated impacts have not been considered any further in the WRA or corresponding ES Chapter.'[WRA §4.1.3]

That passage materially narrows what the Applicant has actually assessed. It only excludes one mechanism of effect: derogation caused by the Scheme undertaking a new groundwater or surface-water abstraction. It does not address other pathways by which the Scheme itself could affect PWS, including construction pollution, piling, HDD, altered shallow recharge, sediment, dewatering, drainage discharges, transformer oil, BESS contaminants or firewater.

The logic is therefore incomplete. The fact that the Scheme will not obtain water from a new abstraction does not demonstrate that it cannot affect existing abstractions by other mechanisms. Chapter 9 itself recognises those other mechanisms. At §9.8.36 it identifies operational contaminant mobilisation from vehicle leaks, transformer oil and runoff from new impermeable areas at the BESS and substations. At §9.8.46 it identifies the risk of contaminants being mobilised in firewater. [ES Chapter 9 §§9.8.36–9.8.49]

Yet PWS effects as lawful water users are screened out under §9.8.32 simply because new abstraction has been ruled out. [ES Chapter 9 §9.8.32] BEPS considers that distinction critical. The WRA screens out abstraction-derogation risk; it does not demonstrate absence of contamination or hydrogeological pathway risk to the same supplies.

9.4.9 Material information remains absent

Taken together, the Applicant has not provided the information necessary for a robust receptor-specific PWS assessment. What remains absent, or insufficiently demonstrated, is a complete and verified inventory of supplies within the actual hydrogeological zone of influence; verified coordinates; confirmation of whether supplies remain active; well or borehole construction; abstraction depth and screened interval; source stratum; use and degree of household or commercial dependence; baseline groundwater levels and seasonal variation; baseline yield; baseline water quality; and hydraulic relationship to relevant Scheme infrastructure.

The assessment also lacks a receptor-specific evaluation of construction-phase and operational pathways, including contaminant migration, sediment, recharge alteration, dewatering, piling, trenching, HDD, transformer fluids, BESS contaminants and firewater.

There is no clear quantitative or semi-quantitative source-pathway-receptor assessment showing which individual supplies are upgradient or downgradient of relevant infrastructure, how long contaminant migration might take, or which supplies may be especially vulnerable because of shallow abstraction.

There is also no clear pre-construction baseline monitoring strategy capable of establishing causation if a supply later deteriorates. This matters because without reliable pre-development water-quality and yield data, any later dispute as to whether deterioration is Scheme-related may be extremely difficult to resolve.

Finally, the assessment does not provide a sufficiently developed trigger and action framework dealing with monitoring exceedances, investigation, emergency replacement water, remediation and long-term alternative supply.

For those reasons, BEPS submits that the Applicant cannot presently demonstrate that private-water-supply effects are Negligible or Minor, or that PWS receptors have been assessed consistently with the requirements identified by PINS and the Environment Agency.

The issue is therefore not merely that the Applicant has not obtained perfect information about every private abstraction. The Environment Agency itself recognised that complete information may not always be obtainable and required a reasonable worst-case approach where necessary.

The difficulty is that the present assessment does not yet demonstrate, supply by supply or by defensible receptor grouping, the source, abstraction horizon, likely groundwater pathway, vulnerability and credible relationship to the proposed works. Without that information, proximity alone cannot determine whether a supply is outside the Scheme's influence.

This is precisely the type of environmental knowledge which should be distinguished from detailed design. Later monitoring may verify whether an already assessed supply is behaving as predicted. It should not be relied upon to establish for the first time after consent whether a private drinking-water receptor is hydraulically connected to the authorised works.

9.5 Groundwater Contamination and Preferential Pathways

9.5 Piling, Foundations and Ground Disturbance

9.5.1 PINS requirement concerning HDD and groundwater

The Planning Inspectorate identified groundwater interaction from trenchless installation as a specific issue at scoping. Scoping Opinion ID 2.1.5 records that no design parameters had been provided for proposed HDD and required the ES to contain those parameters and demonstrate whether HDD was likely to encounter groundwater bodies. PINS expressly directed the Applicant to the Environment Agency's consultation response for further information.

The EA's concern was clear: where HDD or other trenchless techniques may interact with Principal or Secondary A Aquifers or pass beneath sensitive surface watercourses or ecological receptors, the risk of drilling fluids, mobilisation of contamination and groundwater interaction requires hydrogeological assessment.

This is particularly important in the East Pye setting because the proposed cable network crosses extensive superficial deposits and Principal Aquifer settings and interacts with chalk-stream and ordinary-watercourse systems.

The relevant question for the Examination is therefore not merely whether HDD is an accepted construction technique. It is whether the location-specific geological and groundwater conditions, launch and reception pit design, drilling depth, fluid pressures, frac-out risk and receiving receptors have been sufficiently defined to demonstrate environmental acceptability.

9.5.2 EA requirement for Foundation Works and Piling Risk Assessment

The Environment Agency also identified the potential for deep foundations or piles to create new contaminant migration pathways.Its concern arises because penetration through a lower-permeability superficial layer into a more transmissive underlying unit may establish a vertical pathway that did not previously exist. Where the underlying unit is a Principal Aquifer, this requires particular caution.

The EA therefore sought Foundation Works Risk Assessments or Piling Risk Assessments for the BESS, substations and other structures requiring piled or deep foundations. That requirement is

particularly relevant given the Applicant's retained flexibility over foundation solutions across a very large site and the geological variability described above.

A generic commitment to good construction practice cannot answer this issue because the risk depends upon the depth and type of pile, the strata penetrated, groundwater level, piling technique and nearby receptors.

9.5.3 HFCL identifies a fundamental error in the source-pathway analysis

HFCL's independent review identifies a particularly important deficiency in the Applicant's piling assessment. Technical Appendix 16.1 recognises that piled foundations may create preferential vertical pathways for pollution migration. However, HFCL notes that the Applicant then treats the risk as low primarily because of the absence of existing brownfield contamination at the locations where piled structures may be required. [HFCL §3.2.4, pp.17–18]

HFCL considers that analysis incomplete because it focuses on historical contamination as the potential source while failing to treat the Scheme itself as a source. That is a fundamental source-pathway-receptor error.

During construction, the Scheme introduces fuels, oils, hydraulic fluids, cementitious materials, drilling products, plant, equipment and substantial disturbed ground.

During operation, the Scheme introduces transformers, insulating oils, vehicles, BESS infrastructure, maintenance substances, drainage systems and potentially contaminated firewater.

If piles or deep foundations create a preferential pathway into a Principal Aquifer, it is those Scheme-generated sources that must also be tested against the pathway.

HFCL summarises the deficiency in its key findings as follows:

'The Assessment of the potential interaction of piled structures with the underlying aquifer focusses solely on the likely presence/ absence of brownfield land (as a source of contamination). The potential for the scheme itself to be a source of contamination (e.g. fuels, oils, firewater) is not assessed.' [HFCL Table 4.1, ref.13, p.21]

This is one of the strongest technical criticisms in the report because it shows that the Applicant's conclusion of low risk does not follow from the full source-pathway-receptor scenario created by the proposed development.

9.5.4 Preferential pathways remain insufficiently characterised

Piles, trenches, cable ducts, foundation excavations, boreholes and HDD works all have the potential, depending upon local conditions, to alter the pre-development groundwater system.

They may penetrate lower-permeability deposits, connect shallow and deeper groundwater horizons, redirect flow locally, create granular backfilled pathways, or provide a route by which

contaminants travel vertically or laterally more readily than under undisturbed conditions. Whether those effects are material depends upon the actual stratigraphy and design at the particular location.

This is precisely why the shortcomings in the conceptual hydrogeological model matter. If the thickness and hydraulic behaviour of the Lowestoft Formation are not established reliably at each relevant infrastructure location, the Applicant cannot demonstrate whether a proposed pile remains entirely within a lower-permeability unit, penetrates into a sand/gravel lens, or reaches the Crag or Chalk below.

Likewise, if pile lengths remain flexible within the Rochdale Envelope, it must be demonstrated that the worst-case assessed pile depth is environmentally acceptable. It is not enough to defer the actual foundation solution and then assume that any later design can be made safe.

The ES material currently available does not demonstrate, parcel by parcel, the relationship between proposed maximum foundation depth and the underlying stratigraphy for all major infrastructure. Nor does it provide a sufficiently developed assessment of the way in which such works could interact with nearby private water supplies, Source Protection Zones or the Broadland Rivers Chalk & Crag groundwater body.

BEPS therefore submits that the remaining uncertainty concerns environmental feasibility, not merely construction detail. Before the ExA can accept conclusions of negligible or minor groundwater effect, the Applicant should provide sufficient site-specific geological and hydrogeological information to demonstrate that the worst-case foundation, trenching and HDD scenarios will not create unacceptable preferential contaminant pathways.

The significance of this issue is increased by the breadth of the authorised envelope. The question is not whether every pile, foundation or HDD operation will necessarily create a preferential pathway. It is whether the Applicant has characterised the geological and hydrogeological setting sufficiently to identify where such a pathway could arise and to demonstrate that an acceptable foundation or trenchless solution exists throughout the locations authorised by the DCO. A post-consent Foundation Works Risk Assessment can refine methodology; it should not be required to determine whether the authorised location itself is environmentally acceptable.

9.6 Water Framework Directive

9.6 The WFD Assessment is not sufficiently precautionary or comprehensive

BEPS does not accept that ES Appendix 9.2, *Water Framework Directive Assessment* [APP/6.3.9.2], provides a sufficiently robust basis for concluding that the Scheme complies with the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017. Applicant has produced a document entitled ‘WFD Assessment’; however, the assessment screens out a substantial part of the water environment affected by the Scheme, relies heavily upon assumptions about future mitigation and detailed design, and does not adequately examine the effects of the Scheme upon connected water features at the scale at which deterioration could actually occur.

The Applicant identifies six surface-water WFD catchments and one groundwater body associated with the Order Limits. It then screens three surface-water bodies and the groundwater body out of substantive assessment. The independent review by H Fraser Consulting Ltd ('HFCL') identifies this as one of the principal deficiencies in the Environmental Statement. HFCL concludes that the screening methodology gives insufficient attention to connected drains and ditches within the Scheme and to the potential for the development itself to introduce sediment and pollutants. In relation to groundwater, HFCL considers that screening out the Broadland Rivers Chalk and Crag water body because the Scheme occupies only a small proportion of its total 3,076 km^2 area applies the wrong scale of analysis. The relevant question is whether the development could cause deterioration in any relevant part of the groundwater body or affect locally important groundwater resources, rather than whether the affected area is numerically small compared with the whole groundwater-body area.

These are substantial issues because Appendix 9.2 ultimately reaches categorical conclusions that the Scheme 'will not cause deterioration' of WFD classifications, 'will not prevent future work' to improve those classifications, 'will not impact any water body within the WFD catchment or the River Basin District', and is compliant with the WFD objectives. [APP/6.3.9.2 §§5.2.1–5.2.3] Those conclusions are considerably stronger than the underlying evidence demonstrated in the assessment.

The WFD Assessment itself accepts that construction, operation, maintenance and decommissioning have the potential to increase runoff and transport pollution and sediment to watercourses; that construction can disturb fine sediment and affect habitats, sediment transport, deposition and water quality; and that mitigation is required to prevent polluted water reaching both immediate and downstream waterbodies. [APP/6.3.9.2 §§5.1.2–5.1.6] The dispute is therefore not about whether pathways exist in principle. The Applicant accepts that they do. The question is whether those pathways and the effectiveness of the proposed controls have been sufficiently evaluated to justify screening out four of the seven WFD receptors and reaching an unqualified overall conclusion of compliance.

BEPS submits that they have not.

9.6.1 The Planning Inspectorate expressly required a WFD assessment because effects and crossing arrangements remained uncertain

The Planning Inspectorate considered the WFD issue directly at scoping stage. Scoping Opinion ID 3.2.4 noted that the Applicant's Scoping Report identified WFD waterbodies but did not propose a WFD assessment. PINS also noted that new watercourse or ditch crossings were anticipated but it was not then known whether those crossings would serve vehicles, cables or other Scheme functions. In light of the potential for likely significant effects and the absence of sufficient detail about the nature, location and effects of the proposed crossings, PINS required the ES to include a WFD assessment, or a screening assessment demonstrating why a full assessment was not required. Importantly, it also stated that the approach and findings should be agreed with the relevant statutory consultees.

That requirement must be read alongside the Environment Agency's scoping response. The EA disagreed with the proposed exclusion of the water environment and associated ecological

receptors. It specifically stated that the need for cable crossings and haul-road crossings had not been properly addressed, that the water environment had to remain in scope so that the consequences of those crossings could be assessed, and that several main rivers, ordinary watercourses, WFD waterbodies and associated wetlands lie within or border the Order Limits. It also specifically identified the River Tas as a chalk-stream priority habitat requiring appropriate consideration.

The purpose of PINS's requirement was therefore substantive. It was not satisfied merely by producing Appendix 9.2. What was required was an assessment capable of demonstrating whether the eventual Scheme, including its crossings and associated pollution and hydromorphological pathways, would comply with WFD objectives.

The final WFD Assessment still retains material uncertainty about those works. It states, for example, that CRC crossings will 'likely' use trenchless construction and repeatedly makes those conclusions subject to detailed design. For Broome Beck, Appendix 9.2 acknowledges that a crossing depth 'has not yet [been] established', but nevertheless concludes that there will be no impact and screens the entire waterbody out. [APP/6.3.9.2 §§3.5.2–3.5.4] That is the type of unresolved design uncertainty which gave rise to the Inspectorate's requirement in the first place.

9.6.2 The seven WFD waterbody receptors and the Applicant's screening decisions

The Applicant identifies the Scheme as lying within six surface-water WFD catchments together with the Broadland Rivers Chalk and Crag groundwater body. HFCL independently confirms that the Scheme lies within six WFD surface-water catchments and one groundwater body.

The relevant surface-water bodies are the Hempnall Beck Water Body (GB105034045720), the Tas (Tasburgh to River Yare) Water Body (GB105034051230), the Starston Brook Water Body (GB105034045880), the Broome Beck Water Body (GB105034045930), the Tas (Head to Tasburgh) Water Body (GB105034045730), and the Chet Water Body (GB105034051190). The groundwater receptor is the Broadland Rivers Chalk and Crag Water Body (GB40501G400300). [APP/6.3.9.2 §§3.2–3.8]

The Applicant carries forward only three surface-water bodies into the substantive Stage 2/Stage 3 assessment: Hempnall Beck, Tas (Tasburgh to River Yare), and Starston Brook. Appendix 9.2 expressly states that its detailed scoping assessment concerns those three waterbodies. [APP/6.3.9.2 §4.1.1] Conversely, Broome Beck is screened out at §3.5.4; Tas (Head to Tasburgh) is screened out at §3.6.3; Chet is screened out at §3.7.2; and the Broadland Rivers Chalk and Crag groundwater body is screened out at §3.8.3.

This is a substantial proportion of the identified WFD receptor network. It means that three of six surface-water catchments and the only identified WFD groundwater body do not proceed to the substantive assessment upon which the final no-deterioration conclusion relies.The justification for those exclusions requires particularly close scrutiny because the Applicant's own description establishes that Scheme land or works occur within all of those catchments.

9.6.3 HFCL concludes that the screening-out exercise is inappropriate

HFCL identifies the exclusion of those four receptors as one of the principal deficiencies in the Environmental Statement.

HFCL observes that the Applicant screens out three surface-water catchments essentially on the basis that there are no main rivers or sufficiently substantial watercourses directly within the relevant Scheme footprint. However, HFCL identifies ditches and other water features within the development which connect directly with those WFD waterbodies. It then points to the scale and nature of the construction activity: considerable ground disturbance with the potential to mobilise silt and contaminants including fuels, oils, foul effluent from compounds, plant and equipment.

HFCL consequently concludes: 'The screening out of these water bodies is not appropriate.'

Its criticism of the groundwater screening is equally important. Appendix 9.2 accepts that the entire Order Limits are underlain by the Broadland Rivers Chalk and Crag groundwater body. It nevertheless screens that body out substantially because the indicative area of cable trenches and entry/reception pits is described as 'minimal' relative to the approximately 3,076 km^2 area of the groundwater body. [APP/6.3.9.2 §§3.8.1–3.8.3]

HFCL considers that reasoning inappropriate. It explains that a WFD screening decision should be based upon the likely impact upon the affected part of the groundwater body, not diluted by comparison with the geographical area of the entire groundwater body. Otherwise, a local deterioration affecting groundwater baseflow, a private abstraction or another locally important groundwater resource could effectively disappear mathematically when compared with a waterbody extending over thousands of square kilometres.

HFCL states: 'The decision to screen in or out should be made on the likely impact the scheme may have on any part of the groundwater body, not aggregated across its entire catchment.' It further concludes that the approach gives insufficient consideration to 'the potential for deterioration of water quality in groundwater baseflow or in locally important groundwater resources'.

HFCL therefore identifies the screening-out of three WFD surface-water bodies and one WFD groundwater body, notwithstanding development in their catchments and connecting water features within the Scheme, as requiring further environmental information. The report also expressly criticises the assessment for giving insufficient consideration to the potentially contaminative effects of the development itself.

This criticism is particularly persuasive when Appendix 9.2 is read against the Applicant's own acknowledgement that construction can mobilise sediment and pollution and that drainage controls are necessary to prevent polluted water reaching downstream waterbodies. [APP/6.3.9.2 §§5.1.2–5.1.6] If downstream connectivity is sufficiently real to require mitigation, it must first be sufficiently understood to assess the consequence of mitigation failure or incomplete effectiveness.

9.6.4 Broome Beck illustrates the weakness of the screening methodology

The treatment of Broome Beck provides a clear example. Appendix 9.2 records that CRC8, CRC9 and CRC14 and sub-Sites 3B, 10A, 10B, 10C and 10D lie within the Broome Beck WFD Water Body. It further records that an unnamed tributary of Broome Beck runs along sub-Sites 10A, 10B and 10C and that field drains are present within sub-Sites 10B and 10C and CRC8, CRC9 and CRC14. [APP/6.3.9.2 §3.5.2]

Elsewhere the Applicant's own scoping material described Broome Beck as an ordinary watercourse adjacent to sub-Sites 10A and 10C which becomes a main river shortly downstream of sub-Site 10A. The WFD Assessment itself explains that the unnamed tributary joins Broome Beck approximately 1 km south of sub-Site 10A. [APP/6.3.9.2 §2.4.13]

There is therefore no real dispute about physical connectivity.

The Applicant nevertheless screens the Broome Beck WFD Water Body out. The reasoning is that CRC crossings of field drains will ‘likely’ be drilled using trenchless methods, that the precise depth has not yet been established, and that the relevant small watercourse is not expected to have a high erosive potential. From this the Applicant concludes that no impact to the waterbody is expected. [APP/6.3.9.2 §§3.5.3–3.5.4]

That reasoning is too narrow. It considers principally the physical effect of the cable crossing itself. It does not adequately test all of the mechanisms by which Scheme activities elsewhere within the same connected drainage network may reach Broome Beck. Those mechanisms include soil disturbance, sediment mobilisation, construction compound runoff, accidental releases of fuel or oil, drainage from access tracks, changes in field drainage, disturbed or intercepted drains, dewatering, and potentially contaminated water arising from maintenance or emergency events. Appendix 9.2 itself subsequently acknowledges that the construction, operational and decommissioning phases may increase runoff and transport pollution and sediment to watercourses. [APP/6.3.9.2 §5.1.6]

NCC's LLFA evidence identified Woodton as downstream of Sites 10A–10D and noted that those catchments are already the subject of the DEFRA/EA Reclaim the Rain programme. It recorded that the proposed Scheme had already affected implementation of one element because of CRC9 and criticised the Applicant for not adequately reflecting this catchment context in its flood assessment.

This is precisely why the WFD assessment should not be reduced to the question of whether a cable is trenched through the bed of Broome Beck. The Scheme occupies and disturbs land connected to the waterbody through a network of drains. Those pathways require assessment.

BEPS therefore submits that screening Broome Beck out simply because trenchless crossings are expected to avoid direct bed disturbance does not adequately demonstrate absence of WFD effect.

9.6.5 River Tas and Hempnall Beck require a precautionary assessment commensurate with chalk-stream sensitivity

The Tas/Hempnall system is among the most environmentally sensitive components of the Scheme's water environment.

The Applicant also acknowledges that Hempnall Beck is crossed or affected by multiple Cable Route Corridors. Appendix 9.2 records CRC4, CRC6, CRC7 and CRC8 as crossing watercourses within the Hempnall Beck Water Body and states that crossings will 'likely' be drilled beneath watercourses using trenchless methods, subject to detailed design. [APP/6.3.9.2 §§3.2.4–3.2.6]

For the Tas (Tasburgh to River Yare) waterbody, sub-Sites 7C, 7D, 7E, 7F, 7K, 7L, 8A and 8B lie within the catchment. The assessment records a new access crossing of a field drain at Site 7F and a CRC crossing of the unnamed tributary of the River Tas between Sites 8A and 8B. [APP/6.3.9.2 §§3.3.4–3.3.6]

The Environment Agency's scoping response expressly identified the River Tas as a chalk-stream priority habitat and required its sensitivity to be taken into account. It also identified white-clawed crayfish records on the River Tas and required survey at relevant locations once works affecting watercourses were known.

The subsequent evidence concerning white-clawed crayfish strengthens the need for precaution. BEPS has evidence of a breeding population within the connected Tas chalk-stream system and has separately provided that evidence in its ecology submissions. That matter is principally addressed in the Ecology chapter, but it is directly relevant here because crayfish sensitivity demonstrates the ecological consequence of sedimentation, pollution, hydrological disturbance and biosecurity failures within the connected water environment.

The assessment also needs to account for the conditions under which the later crayfish work has been undertaken. BEPS and the PI have raised concern that surveys have taken place during a period of serious drought, when water levels and occupancy/detectability conditions differ materially from normal conditions.

For WFD purposes, the significance extends beyond a protected species. Chalk streams are groundwater-dependent systems. Their condition can respond to groundwater quantity and quality, sediment loading, physical habitat alteration and barriers or modifications to channel morphology. The assessment therefore needs to address hydrological and hydrogeological pathways together. The Applicant's mitigation proposals recognise some of those risks. Appendix 9.2 states that construction may disrupt material and fine sediment, affecting habitats, sediment transport, deposition and water quality. It contemplates in-channel silt control, including temporary dams, fish-friendly pumping and silt curtains. [APP/6.3.9.2 §§5.1.2–5.1.5]

That acknowledgement means the potential pathway is not hypothetical. The question is whether the Applicant has demonstrated, before consent, that all relevant crossings and works can be undertaken without deterioration, rather than assuming that future CEMP measures will necessarily prevent it.

9.6.6 Starston Brook must be considered together with the Site 1 infrastructure concentration

Starston Brook is carried forward into the Applicant's detailed WFD assessment and therefore presents a different issue from Broome Beck, Chet and Tas (Head to Tasburgh). The question is whether the assessment of it is sufficiently complete given what is proposed within its catchment.

Appendix 9.2 records Starston Brook as having Moderate ecological status. More importantly, it states expressly that the Starston Brook Water Body covers Sites 1 and 2 'as well as the BESS'. CRC1–CRC4 are also located within this waterbody catchment, with watercourse crossings in CRC2, CRC3 and CRC4. [APP/6.3.9.2 §§3.4.1–3.4.6]

This places the Site 1 infrastructure hub within a WFD catchment. That infrastructure is materially different from ordinary panel fields. It includes the BESS, National Grid Substation, project substation infrastructure and substantial associated hardstanding and drainage. It introduces potential contaminant sources including transformer fluids, operational vehicle use and BESS/firewater risks.

Appendix 9.2 nevertheless treats much of the pollution risk through reliance on management plans and drainage. It concludes that pollution-prevention measures incorporated within the application will avoid deterioration and that potential future improvement works will not be impeded. [APP/6.3.9.2 §3.4.11 and §§5.1–5.2]

BEPS submits that this conclusion should be tested against the outstanding drainage and hydrogeological issues at Site 1. If the detailed drainage arrangement, combined firewater/rainfall containment, infiltration assumptions and groundwater pathways are not yet finally demonstrated, those uncertainties necessarily affect the confidence that can be placed in the WFD conclusion for Starston Brook.

That is particularly so because the Applicant's WFD assessment is principally qualitative. It does not model the migration or concentration of a major contaminant release from the Site 1 infrastructure through the receiving drainage or groundwater system. It assumes that the drainage and management controls will work as intended.

For a WFD receptor already below Good ecological status, reliance on future controls should not replace the demonstration that the residual pathway has been adequately characterised.

9.6.7 Screening out the Broadland Rivers Chalk and Crag groundwater body is particularly difficult to justify

BEPS considers the treatment of the Broadland Rivers Chalk and Crag groundwater body to be one of the most significant weaknesses in Appendix 9.2. The Applicant accepts that the Order Limits are underlain by this groundwater body and gives its area as approximately 3,076 km^2. It also records its status as Poor. [APP/6.3.9.2 §3.8.1]

The principal reasoning for screening it out is that cable excavations will be backfilled, no change to groundwater pathways is anticipated, and the area occupied by trenches and HDD entry/reception pits is small compared with the 3,076 km^2 groundwater body. The Applicant therefore

characterises any impact as negligible and screens the groundwater body out. [APP/6.3.9.2 §§3.8.2–3.8.3]

This approach is problematic for several reasons:

First, the groundwater issue is not confined to the physical area occupied by cable trenches. The Scheme contains extensive piled or deep-founded infrastructure, BESS and substations, drainage features, compounds, fuel and oil sources, HDD works and potential firewater. HFCL identifies precisely this failure in relation to the ground-conditions assessment: the Applicant focuses heavily on pre-existing contamination while insufficiently considering the Scheme itself as the source of potential contamination.

Second, the relevant receptor is a Principal Aquifer system used for water supply. Private abstractions are located throughout and around the Scheme, and Source Protection Zones affect parts of the Order Limits. A local adverse effect on groundwater supplying an individual abstraction is not rendered environmentally irrelevant merely because the groundwater body itself extends across 3,076 km^2.

Third, the Applicant has not presented the coherent conceptual hydrogeological model necessary to support its assumption that excavation and subsequent backfilling will produce no material change in flow pathways. As addressed at §9.3 of this Written Representation, HFCL expressly concludes that the Applicant does not provide or define a hydrogeological conceptual model.

Fourth, the Private Water Supplies evidence demonstrates why local groundwater effects matter. An effect upon a locally important abstraction can have direct human-health and water-resource consequences even if it is geographically minute when compared with the whole WFD groundwater body.

HFCL's conclusion is therefore compelling: the screening decision should have considered the likely effect upon the relevant part of the groundwater body and the local groundwater receptors dependent upon it, not simply the percentage of total groundwater-body area physically occupied by excavation.

9.6.8 The assessment lacks sufficient quantitative and catchment-scale analysis

The WFD Assessment is predominantly qualitative. WFD compliance assessments do not invariably require numerical modelling of every parameter. The problem here is that the Applicant uses qualitative assumptions to exclude effects in a particularly large, complex and connected development while important components of the source-pathway-receptor model remain uncertain.

There is no substantive pollutant-transport modelling demonstrating how an accidental release from the BESS or major substations would behave within groundwater or connected surface drainage. There is no quantitative sediment-load assessment for the extensive construction works and crossings. There is no groundwater transport model linking potential Scheme sources to private abstractions, groundwater baseflow or downstream watercourses.

Similarly, the assessment does not provide an integrated catchment-scale analysis of multiple Scheme pressures within individual WFD catchments. The Scheme is unusual because the same development introduces large areas of construction activity, cable corridors, crossings, access tracks, compounds, solar arrays and major electrical infrastructure across several catchments simultaneously. Each individual activity may produce a small effect; their combined consequences within a receiving catchment require consideration.

This issue is reinforced by the LLFA's approach to flooding. Norfolk County Council expressly supported assessment of cumulative effects from other solar/BESS projects because downstream flood consequences can extend considerably beyond individual sites. The same hydrological reality is relevant to WFD: water and sediment do not respect parcel boundaries.

Crossing-specific detail also remains incomplete. Appendix 9.2 repeatedly states that trenchless crossings are 'likely' and subject to detailed design. Yet PINS required the WFD assessment precisely because the nature and location of crossings were uncertain. Until the actual crossing envelopes, depths, construction methods, geological conditions and failure pathways are sufficiently defined, categorical conclusions of no WFD effect require caution.

9.6.9 The Applicant must demonstrate both no deterioration and no impediment to achieving future objectives

The WFD Assessment correctly identifies two materially different obligations. Its summary of Anglian River Basin Management Plan ['RBMP'] objectives includes preventing deterioration of surface-water and groundwater status and achieving the relevant environmental objectives. [APP/6.3.9.2 §3.9.1]

The final assessment likewise says both that the Scheme will not cause deterioration and that it will not prevent future work improving waterbody classifications. [APP/6.3.9.2 §§5.2.1–5.2.2]

Those two propositions should be tested separately. The first question is whether the Scheme could cause deterioration in the status or relevant quality elements of an affected waterbody.The second is whether the Scheme could prevent or impede measures necessary to achieve or maintain the applicable environmental objectives in the future.

The second question is particularly important where existing waterbodies are already below Good status. The Applicant's own baseline records Hempnall Beck as Poor and other relevant surface-water bodies as Moderate or Poor, with chemical failures. Chet is itself recorded in Appendix 9.2 as having Poor ecological status, yet it is screened out because works maintain a nominal 10 m watercourse buffer. [APP/6.3.9.2 §§3.7.1–3.7.2]

A management-plan commitment designed to prevent immediate construction pollution is not, without more, proof that the Scheme will not impede longer-term catchment restoration. That requires consideration of permanent crossings, drainage changes, altered land management, long-term infrastructure, groundwater interactions and the compatibility of the Scheme with existing or planned river-basin measures.

This distinction is especially relevant where Norfolk County Council identifies existing catchment interventions such as Reclaim the Rain at Woodton and prospective natural flood-management measures in other downstream communities.

BEPS therefore submits that the Applicant's reliance on CEMP, OEMP, DEMP and future detailed drainage arrangements cannot by itself establish both limbs of the WFD test. The assessment must first identify the relevant source-pathway-receptor relationships, then demonstrate that the secured mitigation is sufficient both to prevent deterioration and to avoid obstructing the achievement of future environmental objectives. For the reasons above, that has not yet been demonstrated for all seven identified WFD receptors.

The September 2026 white-clawed-crayfish position statement reinforces the importance of this catchment approach. The Applicant now accepts potential presence of white-clawed crayfish within the River Tas and other hydrologically connected suitable habitat and bases its case upon control of the relevant pathways rather than demonstrated absence. The same hydrological connectivity must therefore be reflected consistently in the WFD assessment: connectivity cannot be relied upon when assuming sensitive receptors but artificially narrowed when assessing how sediment, pollution or altered flow may reach them.

9.7 Chalk Streams, Aquatic Ecology and HRA Connectivity

The August 2026 NPPF now gives additional express policy recognition to water-quality effects, including effects upon chalk streams, within Policy P3. That reinforces rather than creates the sensitivity identified throughout the earlier scoping record: the River Tas was already identified by the Planning Inspectorate as chalk-stream priority habitat which had to be fully considered in the ES.

9.7 Water Environment and Ecology Interface

The water-environment assessment cannot be considered wholly separately from the ecological assessment because the ecological value of the affected watercourses is dependent upon the physical and chemical functioning of those waters.

This is particularly important for the River Tas and Hempnall Beck. The Environment Agency specifically identified the River Tas as a chalk-stream priority habitat at scoping stage and opposed the proposed exclusion of water-environment and associated ecological effects. It also recorded white-clawed crayfish on the River Tas and required surveys at relevant locations once the nature of works affecting watercourses was established. BEPS has provided the applicant with evidence from Norfolk Rivers Trust of breeding white-clawed crayfish in the Tas within 2 KM of the scheme.

The importance of chalk-stream status is not simply that such rivers contain valued species. Chalk-stream ecology depends upon the interaction between groundwater quantity and quality, channel morphology, gravels, sediment regime, temperature and water chemistry. An effect on groundwater, sediment transport or channel form can therefore produce an ecological effect even where no direct pollution incident occurs.

The same principle applies to the connected Waveney-system watercourses. Appendix 9.2 acknowledges field drains and tributaries within Scheme parcels that connect to Broome Beck and Starston Brook. Those smaller features are potential ecological and pollution pathways even where they are not themselves separately classified as WFD waterbodies.

BEPS's evidence concerning white-clawed crayfish within the River Tas chalk-stream system should be read primarily alongside Chapter 6: Ecology and Biodiversity. For the purposes of Chapter 9, its relevance is that a sensitive aquatic receptor exists within the connected system and is particularly vulnerable to sedimentation, pollution, hydrological disturbance and biosecurity failures.

The circumstances of subsequent survey work also require care. BEPS has raised concern that relevant survey work has taken place during unusually severe drought conditions. Low-flow and drought conditions may alter habitat availability and detection conditions.

The Applicant's own WFD Assessment recognises the possibility of sediment mobilisation and the need for in-channel silt-management measures during construction. [APP/6.3.9.2 §§5.1.2–5.1.5] Such measures are also relevant to crayfish, fish, aquatic invertebrates and channel habitat. Biosecurity is equally important because construction activity moving between watercourses can provide a pathway for invasive species or disease.

The detailed ecological consequences are addressed elsewhere in BEPS's Written Representations. The water-environment point is that these ecological receptors reinforce the need for a precautionary, catchment-based assessment of hydrological connectivity rather than assessment of individual crossings in isolation.

9.7.1 Hydrological pathways to designated sites

The same connectivity issue has consequences for the Habitats Regulations assessment.

At scoping stage, the Applicant sought to scope out potential effects on the Norfolk Valley Fens SAC, The Broads SAC and Broadland Ramsar site on the basis of spatial separation and/or absence of hydrological pathways. PINS expressly declined to agree. It noted the presence of waterways within the Proposed Development and concluded that it was not then clear whether a hydrological link existed. The Inspectorate therefore required the ES either to assess the matter or to provide a robust justification, supported by relevant studies or surveys and evidence of stakeholder agreement, explaining why significant effects were unlikely.That is an important starting point because subsequent application evidence accepts hydrological connectivity more broadly.

The FRA identifies designated sites considered to be hydrologically linked to the Order Limits through watercourses and groundwater flow and therefore potentially capable of being affected by the Scheme. That acknowledgement is consistent with the wider evidence that groundwater and surface water interact and that the Scheme drains through tributaries into larger river systems.

The existence of connectivity does not, by itself, establish a likely significant effect upon a European site. Nor does it prove an adverse effect on integrity. BEPS does not put the matter that way. The issue is evidential: once a credible hydrological pathway is identified, exclusion of effects

requires an assessment of the pathway, the potential source of change and the sensitivity of the downstream receptor.

There is an evident tension if the same hydrological network is treated as sufficiently connected to identify designated sites as potential receptors in the FRA, but downstream effects are then excluded elsewhere through distance or generic mitigation assumptions without equivalent pathway analysis.

Broome Beck is particularly relevant to that issue. The Applicant expressly identifies its tributary network within Sites 10A–10C and acknowledges downstream connection to Broome Beck, which in turn forms part of the wider Waveney drainage system. Screening the WFD waterbody out because particular cable crossings are anticipated to be trenchless does not answer the broader question of downstream contaminant or sediment pathways from Scheme activity within its catchment.

BEPS therefore requests that the ExA considers the HRA and WFD assessments consistently with the Applicant's own hydrological evidence. Where hydrological connectivity is accepted, the consequences of that connectivity should be traced sufficiently far downstream to demonstrate why effects can safely be excluded.

9.8 Flood Risk and Surface-Water Drainage

9.8 Flood-risk evidence remains incomplete

Flood risk is not a separate issue from the wider water-environment case. Surface-water pathways determine the movement of water, sediment and pollutants across and beyond the Scheme. The effectiveness of the drainage strategy therefore affects not only flood risk but water quality, WFD receptors, private water supplies and the containment of potentially contaminated runoff.

The Applicant has materially developed its FRA since the PEIR stage. BEPS recognises that. The present objection should therefore not be characterised as alleging that no FRA or drainage strategy exists. The issue is whether the final material provides sufficient site-specific evidence to demonstrate that the enormous dispersed development can operate within its assessed envelope without increasing flood risk elsewhere, and whether the matters left to detailed design are genuinely matters of refinement rather than unresolved questions of feasibility.

The concerns expressed by the LLFA remain particularly relevant because they identify precisely where apparently minor assumptions can have substantial catchment consequences: impermeable area, construction compaction, access-track construction, concrete panel foundations, overland flow routes, infiltration and downstream flood sensitivity.

9.8.1 The Planning Inspectorate required a robust assessment of flood risk, resilience and off-site effects

PINS addressed flood risk expressly in Scoping Opinion ID 3.2.3. Although it accepted that the detailed FRA could accompany the application rather than requiring flood risk to remain as a

standalone EIA effect in precisely the form proposed, it imposed substantive requirements upon the FRA.

The Inspectorate required the FRA to follow Environment Agency standing advice and to address the Sequential and Exception Tests where relevant. It required the development to demonstrate flood resilience over its anticipated 60-year operational life and specifically required confirmation that flood-sensitive equipment would remain operational during the 0.1% AEP event. Crucially, it also required consideration of off-site surface-water drainage and flood-risk effects, including the potential for the solar installation itself to increase the rate of runoff beyond the site boundary.

That requirement must be read alongside the EA and LLFA scoping advice. The EA warned that some small ordinary watercourses crossing the Scheme had no mapped Flood Zones because their catchments fell below the threshold used in generalised national modelling. Absence of Flood Zone mapping therefore did not mean absence of fluvial risk.

The EA also warned that the Risk of Flooding from Surface Water dataset had recently been updated and that some existing hydraulic modelling for the Hempnall Beck, River Tas and Broome Beck used superseded climate-change allowances.

The LLFA went further. It said at scoping stage that substantial construction areas could increase surface-water flood risk through compaction and temporary works and required surface-water drainage arrangements for construction as well as operation. It also required modelling of overland flow routes and at least one demonstrably feasible means of surface-water disposal.

The evidential benchmark was therefore clear before submission: the final FRA needed to demonstrate rather than assume that the Scheme would not increase risk within or downstream of its numerous catchments.

The August 2026 NPPF reinforces those requirements. Its flood-risk objective is to minimise risks from all sources of flooding, taking climate change into account, by ensuring that development will remain safe throughout its lifetime without increasing flood risk elsewhere. Policy F5 retains the sequential approach where applicable, while Policy F8 requires development with drainage implications to incorporate sustainable drainage systems in accordance with the applicable national standards.

For East Pye, the principal issue is not simply the formal Flood Zone classification of individual parcels. It is whether the dispersed Scheme, including compacted construction areas, access tracks, major electrical compounds and altered overland-flow routes, has been assessed sufficiently to demonstrate that runoff will not be transferred to downstream receptors over the full 60-year operational period and during construction, replacement and decommissioning.

9.8.2 Starston Brook illustrates the continuing limitations of the flood evidence

The Starston Brook evidence is particularly important because the Site 1 infrastructure concentration lies within its WFD catchment.

EA correspondence reproduced in the FRA records that detailed flood levels were not available for the relevant Starston Brook area. The Environment Agency explained in March 2025 that there was no detailed local hydraulic model capable of providing the required levels and that the available generalised JFLOW-type information was not suitable for detailed decision-making. The consequence identified by the EA was that, without further modelling, the relevant fluvial risk remained uncertain.

The Applicant's eventual assessment relies instead to a significant extent upon mapped Flood Zones, LiDAR/topographic relationships and elevation differences to infer the relationship between the Site 1 infrastructure and the Starston Brook floodplain.

That may provide useful screening evidence, but it is not equivalent to detailed hydraulic modelling of the watercourse.

The LLFA identified related deficiencies in its PEIR response. It said that the FRA did not provide a figure supporting the assumptions made concerning Starston Brook, that 2 m LiDAR contours were insufficiently detailed for the purpose, and that watercourses on the relevant figure were not named, making it difficult to interrogate the conclusions.

The issue should not be overstated. The Applicant has subsequently refined the infrastructure location, and the current Site 1 layout is not identical to the early design which prompted some of the EA correspondence. Nevertheless, the underlying evidential limitation remains relevant wherever the Applicant relies upon approximate topographic separation rather than site-specific modelling to establish the design flood.

That is particularly important because the major Site 1 infrastructure includes long-lived flood-sensitive electrical equipment and substantial impermeable areas. A conclusion of acceptable risk should be supported by evidence commensurate with the consequence of failure.

9.8.3 Numerous surface-water pathways cross the Scheme

The Scheme is traversed by a substantial network of mapped surface-water flow routes, ordinary watercourses, drains and depressions.

The Applicant's original scoping evidence already identified surface-water flow routes crossing the Cable Route Corridors and a number of individual sites. Some routes were predicted to carry substantial depths in extreme events: the Applicant recorded typical maximum depths below 300 mm but depths of 300–900 mm in the centres of some flow routes during the 0.1% AEP event, with one CRC6 route exceeding 900 mm.

The final FRA contains considerably more mapping, but the existence of these routes remains important because the development introduces obstructions, compacted surfaces, tracks, trenches, buildings, compounds and potentially concrete panel supports across a very large area.

The LLFA specifically identified significant numbers of surface-water flow routes within development areas and noted that some coincide with ordinary watercourses.

The catchment consequences are not theoretical. NCC identifies Saxlingham Nethergate as sensitive to overland flow from fields upstream of the village, with Site 7D within the relevant upstream area. It identifies Woodton downstream of Sites 10A–10D and within the Reclaim the Rain programme. It identifies Long Stratton as having experienced significant recent flooding, with CRC4 capable of interacting with upstream catchment areas, and records historic and recent flooding around Hempnall.

The correct question is therefore not simply whether a solar panel itself constitutes a substantial impermeable structure. It is whether the totality of development within each catchment changes the rate, concentration or route by which rainfall reaches those downstream receptors.

That requires consideration of individual development components and their cumulative effect within each receiving catchment.

9.8.4 The Applicant's treatment of impermeable area has been directly challenged by the LLFA

The LLFA's response is particularly important because it directly challenges a number of assumptions relied upon by the Applicant about what should count as impermeable.

NCC states that the Applicant underestimated impermeable area and had not adequately investigated ground conditions or the viability of infiltration. It expressly disagreed with the Applicant's attempt to scope out changes in surface-water runoff and groundwater recharge resulting from impermeable areas associated with panels and infrastructure buildings.

Its criticism extends beyond conventional buildings.

The LLFA treats new and upgraded access tracks as increases in impermeable area because they require substantial compaction. It explains that Type 1 material is not porous and can become effectively as impermeable as concrete with compaction and age; even more open-graded Type 3 material is not completely permeable when compacted. NCC therefore required sufficient space for SuDS and a viable discharge location rather than simply assuming tracks would absorb water at greenfield rates.

NCC likewise considers gravelled inverter, transformer and switchgear platforms as effectively impermeable because of the compacted structural platform required underneath them.

The LLFA also identified temporary hardstanding, offices and welfare facilities as requiring construction-phase surface-water management and noted that these had not been adequately incorporated into the earlier drainage assessment.

These are particularly important observations for a Scheme of this scale. An individual track or compound may appear modest compared with the entire Order Limits, but the relevant hydrological question is the cumulative impermeable and compacted area within each local catchment and the resulting concentration of runoff.

The Applicant's examination responses appear repeatedly to rely upon the proposition that final detailed drainage will be secured by DCO Requirement. BEPS does not object in principle to

detailed drainage design being refined after consent. That is conventional where the environmental feasibility of the drainage solution has already been established.

The distinction here is critical:

Securing detailed design later is not a substitute for providing sufficient present evidence to establish that a workable drainage solution exists within the assessed envelope.

Where infiltration has not yet been demonstrated, the exact impermeable area remains flexible, tracks and compounds may alter local runoff, and sensitive downstream communities already experience flooding, the question is not merely how a known drainage solution will be detailed. It is whether the development has demonstrated that sufficient land, storage, discharge capacity and appropriate pathways exist to deliver the required solution without increasing risk elsewhere.

That question requires resolution at examination stage.

9.8.5 The assumption that solar arrays will have negligible runoff effects requires site-specific justification

The Applicant relies in part upon the proposition, reflected in national policy and literature such as Cook and McCuen, that solar panels mounted above vegetated ground do not necessarily increase runoff materially because rainfall continues to reach and infiltrate the underlying soil.

BEPS does not contend that solar panels should automatically be treated as equivalent to conventional impermeable roof area; the concern is whether concentrated drip lines, vegetation condition, soil compaction, slope and associated infrastructure have been represented adequately in the reasonable worst-case runoff assessment.

The issue is whether the Applicant has demonstrated that the general proposition applies across the actual East Pye site, with its soil conditions, slopes, array designs, construction methods, grazing/vegetation regime and antecedent moisture conditions.

The LLFA's evidence shows why that distinction matters. It specifically highlights operational rutting beneath panels during intense storms and states that such rutting can alter natural flow paths. It criticised the Applicant for failing adequately to identify and manage that mechanism.

NCC also identified the unresolved possibility that arrays may use surface-mounted concrete blocks rather than only narrow driven piles. It explained that concrete blocks placed in surface-water flow paths or areas of ponding could reduce available storage, displace water or alter flow routes and therefore required their avoidance or appropriate offset from those areas.

That is important because the hydrological behaviour of narrow pile-driven supports is not necessarily representative of the reasonable worst-case design where concrete shoes remain within the Rochdale Envelope.

The effect of concentrated panel-edge runoff must also be considered against the site's soil characteristics. Rain falling across the panel surface is discharged along panel edges rather than uniformly onto the soil beneath. Whether that materially alters runoff at catchment scale depends upon ground cover, slope, soil permeability and management. In well-vegetated permeable conditions the effect may be limited. On compacted, bare, rutted or poorly infiltrating ground it can increase local erosion and concentrated flow.

That is the point at which the Applicant's reliance on general literature must be tested against East Pye's specific conditions. NCC records poor infiltration rates within areas of the Scheme which already contribute to local flooding. The Applicant also proposes extensive construction and recurrent replacement activity over the Scheme's long life.

A conclusion of negligible operational runoff effect is therefore only robust if the conditions upon which that conclusion depends — effective vegetation, absence of damaging compaction or rutting, suitable foundation design, protected flow paths and appropriate drainage — are both demonstrated to be feasible and secured for the duration of the development.

9.8.6 Construction compaction requires separate assessment from operational panel runoff

Construction-phase runoff presents a different mechanism and should not be subsumed within the general proposition that operational solar arrays remain largely permeable.

East Pye will require substantial construction traffic, HGV movements, temporary compounds, access tracks, cable construction, plant movements, storage areas and working corridors. Those operations can compact agricultural soils before the proposed operational vegetation regime is established.

The LLFA identified this issue from the outset. At scoping stage it warned that substantial construction areas could increase surface-water flood risk because of compaction and temporary works and stated that a construction-phase surface-water drainage plan would be required. It subsequently reiterated that temporary hardstandings, welfare facilities and other supporting infrastructure had not been adequately incorporated into the drainage assessment.

Compaction matters hydrologically because it reduces infiltration and can increase the proportion and rate of rainfall becoming surface runoff. It can also redirect runoff onto tracks, roadways, neighbouring fields and existing drainage routes. Where construction occurs upstream of known flood-sensitive communities, those effects require consideration within the local catchment rather than averaged across the whole development.

The temporal dimension is also important. The Scheme's construction phase is prolonged and geographically extensive. It is not a short-lived disturbance confined to one compound. Moreover, the Applicant anticipates replacement of solar panels during the operational period and replacement of BESS infrastructure potentially several times during the Scheme's life. The LLFA specifically questioned whether those replacement activities would require renewed construction compounds and hardstanding and where those would be located.Construction effects therefore cannot be assumed to occur only once.

The proper assessment needs to identify the maximum concurrent area of disturbed or compacted ground within each catchment; the location of construction compounds and haul/access routes; the arrangements for intercepting dirty water and sediment; the receiving drainage pathway; and how soil structure and infiltration will be restored following construction.

This also links directly to WFD compliance. Appendix 9.2 itself recognises that construction has the potential to disrupt fine sediment and transport pollutants to watercourses. [APP/6.3.9.2 §§5.1.2–5.1.6] It follows that the effectiveness of construction drainage and soil-management controls is part of the evidential basis for the Applicant's no-deterioration conclusion.

BEPS's position is therefore not that construction inevitably causes unacceptable flooding or WFD deterioration. It is that, given the Scheme's scale, the known sensitivity of downstream communities, the extensive mapped flow network, the LLFA's concerns about compaction and impermeable area, and the dependence of the WFD conclusions upon effective sediment and runoff control, the Applicant must demonstrate those effects and their mitigation at an appropriate catchment scale rather than relying principally upon generic management-plan commitments.

The evidence presently before the Examination does not yet provide sufficient confidence that this has been achieved.

9.9 Drainage of the BESS and Substations

9.9 Major Infrastructure Drainage and Containment

The drainage arrangements for the BESS, National Grid Substation and Project Substations require separate consideration from the drainage of the solar arrays themselves. These areas comprise large concentrations of hardstanding, buildings, transformers, switchgear, access infrastructure and other operational equipment. They therefore generate different quantities and qualities of runoff and present materially different pollution consequences if the drainage system fails.

This distinction was recognised from the earliest stages of the EIA. The Applicant’s Scoping Report accepted that compounds, substations, cable routes and the BESS would require dedicated surface-water drainage strategies to manage the increase in runoff from impermeable areas, with water-quality treatment before discharge to a receiving watercourse or the ground. The Environment Agency went further and required the drainage strategy to include specific measures for the isolation and removal of potentially contaminated runoff from BESS and substation infrastructure, including a detailed emergency drainage plan, impermeable lining beneath the relevant compounds, sufficient storage capacity for contaminated firewater even during intense rainfall, and an automatic containment system with backup in the event of power failure.

The final application introduces more detail than was available at PEIR stage, but the fundamental issue remains whether the major infrastructure drainage solutions have been demonstrated sufficiently to establish environmental acceptability now, rather than simply being capable of further refinement after consent. For BEPS, Site 1 and Site 5 require especially close scrutiny because they combine large areas of electrical infrastructure with sensitive groundwater settings, private water supplies and connected surface-water receptors.

9.9.1 Site 1 – BESS, National Grid Substation and 400kV Project Substation

Site 1 is the most significant single concentration of potentially polluting infrastructure within the Scheme. It contains, or is directly associated with, the BESS, the National Grid Substation, 400kV Project Substation infrastructure and associated roads, drainage, hardstanding and ancillary development. This is materially different from a field of pile-mounted solar panels. It is a substantial industrial compound in hydrogeologically sensitive surroundings.

The Applicant's own earlier material confirms the sensitivity of the location. Site 1 is underlain by Chalk classified as a Principal Aquifer, while the overlying Lowestoft Formation is a Secondary Undifferentiated Aquifer. The same material states that Site 1 lies within a surface-water Drinking Water Safeguard Zone and within Source Protection Zone III, and identifies two unnamed watercourses entering the site from the south and west. The BESS site itself was likewise identified as underlain by Lewes Nodular Chalk Principal Aquifer and Lowestoft Formation, and as lying within SPZ III and a surface-water Drinking Water Safeguard Zone.

These baseline facts materially affect the standard of evidence that should be expected. The issue is not simply whether a drainage basin can be designed in engineering terms. The drainage system must prevent routine and accidental contaminants from reaching either the Principal Aquifer or connected surface-water features. It must also remain effective during extreme rainfall and during an emergency event.

The Environment Agency identified this issue explicitly. At scoping stage it said that the proposed drainage strategy did not explain how potentially contaminated water, particularly firefighting water, would be managed, and highlighted the BESS, National Grid Substation and Scheme substations as being situated above SPZ III Principal Aquifer, with SPZ II within 1 km. It required impermeable bases or layers beneath the BESS and substation infrastructure, sufficient firewater storage capacity even during intense rainfall, and an automatic containment system with backup power arrangements.

The LLFA was similarly concerned about the amount of impermeable area. It treated the BESS compound as an impermeable area because of the likely reinforced concrete slab or concrete-piled construction and therefore expected the design to identify sufficient space for sustainable drainage and demonstrate that runoff would not increase flood risk. It separately required information on how fire-suppression systems associated with transformers would interact with the drainage system.

The final FRA proposes a lined drainage system for the BESS and substations, with runoff collected through engineered drainage and ultimately discharged at a controlled rate to the nearest suitable ditch or watercourse. For the BESS, the drainage approach includes impermeable lining intended to prevent contaminated runoff infiltrating to groundwater. The Applicant has also calculated substantial attenuation-storage requirements and relies on storage within the drainage system and associated sub-base.

Those measures are directionally appropriate. The difficulty is that they remain materially dependent upon detailed design. The final size, geometry, depth and precise arrangement of attenuation features are to be refined later. The final distribution of impermeable area likewise

remains subject to the detailed layout of battery units, substations, roads and ancillary infrastructure. In other words, the application contains a drainage concept and indicative calculations, but not yet a final engineered system demonstrated against all relevant failure and exceedance scenarios.

That distinction matters particularly because Figure 16.5 shows a dense concentration of private water supplies around the Site 1/BESS/Grid Hub area. The hydrogeological assessment does not demonstrate, receptor by receptor, which of those supplies lie hydraulically downgradient of the major infrastructure or how a failure of containment would propagate. The drainage design therefore cannot be assessed solely by reference to the compound boundary. Its adequacy depends on the consequences if contaminated water escapes that boundary.

The local surface-water setting adds further complexity. Site 1 and the BESS sit within the Starston Brook WFD catchment. That means that controlled surface-water discharges, exceedance flows or emergency releases are not environmentally isolated. The WFD Assessment itself recognises the Starston Brook catchment as one of the waterbodies requiring substantive assessment. Accordingly, the operational drainage design for Site 1 is relevant simultaneously to flood risk, WFD compliance, groundwater protection and private-water-supply protection.

BEPS therefore does not contend that no drainage solution is conceivable. The objection is that the application has not yet demonstrated, at the level necessary for consent, that the proposed solution is sufficiently defined, spatially accommodated and resilient to simultaneous flooding and pollution events. That is especially important in a Principal Aquifer setting with nearby private drinking-water supplies.

9.9.2 Site 5 – 400kV Project Substation

Site 5 requires separate treatment because it represents a second major infrastructure concentration in a different hydrological setting.

The proposed 400kV Project Substation at Site 5 introduces a large impermeable compound containing transformers, switchgear, access routes and associated operational infrastructure. The Environment Agency specifically identified Site 5 as requiring an expanded groundwater-abstraction search. It stated that the 250 m search buffer used for the proposed Site 5 substation was insufficient and required the search for groundwater abstractions and Source Protection Zones to be extended to 1 km to ensure consistency with the assessment of the BESS and other substations.

That comment is important because it demonstrates that the hydrogeological zone of influence for Site 5 cannot sensibly be defined by the limited receptor mapping closest to the substation. The same EA response warned that, until design parameters were established, HDD and foundation construction could affect the bedrock aquifer or Secondary A Aquifers.

Figure 16.5 shows multiple private water supplies in and around Site 5 and the proposed 400kV substation area. That receptor concentration is particularly significant given the absence of a receptor-specific hydrogeological model. As with Site 1, a radial plot does not establish whether any particular well or borehole is hydraulically connected to the proposed infrastructure.

The surface-water setting is also important. Site 5 sits within the wider Tas/Hempnall system and is connected through local ditches and culverted drainage features. Those local drainage features provide the route by which routine or accidental runoff from the 400kV substation could move towards downstream receptors. The question is therefore not simply whether the substation compound itself lies outside a main-river channel.

The final FRA provides indicative storage-volume calculations for Site 5 but, critically, detailed InfoDrainage modelling for the Site 5A 400kV substation was not completed in the same way as for some of the other major compounds. Instead, the application derives an indicative attenuation-storage range and leaves the detailed drainage form, depth, layout and discharge arrangements for later design.

That is a material distinction. At Site 5, where there are multiple nearby PWS receptors and functional drainage connectivity towards the Tas system, the Applicant is seeking to rely on an outline design before demonstrating the detailed relationship between runoff generation, attenuation capacity, discharge route, exceedance route and contamination containment.

The ecological sensitivity downstream reinforces the point. The Tas system includes chalk-stream habitat and aquatic receptors requiring high levels of protection. The EA expressly identified the River Tas as a chalk-stream priority habitat and required appropriate consideration of its sensitivity. In such circumstances, the drainage case for Site 5 should demonstrate not simply that runoff will be 'controlled', but what happens if the primary drainage route is surcharged, blocked, overwhelmed or contaminated.

BEPS therefore submits that Site 5 remains an unresolved water-environment hotspot. The combination of nearby private supplies, Principal or secondary aquifer sensitivity, incomplete detailed drainage modelling, downstream hydrological connectivity and high ecological sensitivity requires a more complete demonstration than is presently provided.

9.9.3 The Applicant's reliance on Requirement 11 does not resolve the present evidential gaps

In responding to Norfolk County Council, the Applicant relies repeatedly on the proposition that detailed surface-water drainage design will be secured after consent through Requirement 11 of the draft DCO.

BEPS accepts that detailed drainage design can properly be secured by requirement in principle. That is conventional where the application has already established the environmental feasibility of the drainage system, identified the necessary land-take, demonstrated sufficient storage and discharge capacity, defined acceptable exceedance routes and shown that relevant receptors can be protected.

The difficulty here is that some of the matters left to Requirement 11 are not merely matters of detailed engineering refinement. They concern the existence and adequacy of the solution itself.

For Site 1 and Site 5, the Applicant must demonstrate before consent that sufficient land is available within the authorised envelope for the required attenuation, pollution-control and emergency-containment infrastructure. It must also demonstrate that the selected discharge

routes are environmentally acceptable, that exceedance flows will not be redirected towards private properties or sensitive watercourses, and that the drainage system is compatible with the local groundwater setting.

The interaction with private water supplies is particularly important. A later drainage design cannot retrospectively establish a missing baseline. If the location, construction, abstraction depth and hydraulic setting of nearby PWS receptors are not adequately known now, a later drainage plan cannot reliably demonstrate that they will be protected.

The same applies to containment failure. Requirement 11 may secure final drainage details, but it does not itself answer what the consequences would be if the membrane, penstock, pump, containment structure or storage system fails. Those are environmental-effect questions which should inform the EIA and not be left solely to post-consent engineering approval.

Nor does a requirement automatically resolve cumulative flow. Each major compound may be designed to restrict discharge to a greenfield or agreed rate, but the combined timing and routing of multiple discharges within the same catchment still requires assessment. This is especially relevant in a Scheme extending across several hydrological catchments and downstream communities already subject to flood-management interventions. Norfolk County Council has repeatedly emphasised that downstream flood effects must be considered at catchment scale.

The correct distinction is therefore:

Securing detailed design later is not a substitute for providing sufficient present evidence to establish that a workable, sufficiently sized and environmentally acceptable drainage solution exists within the assessed development envelope.

BEPS submits that Requirement 11 can properly secure refinement of a demonstrated solution. It should not be used to defer the evidence necessary to establish the feasibility and environmental acceptability of that solution in the first place.

ExQ1 now places this distinction squarely before the Examination by seeking further explanation of infiltration and drainage design. The relevant answer cannot simply be that Requirement 11 will secure a later drainage scheme. The present evidence must first establish that at least one technically and environmentally acceptable drainage solution is available for each material infrastructure location within the authorised envelope.

9.10 BESS/Substation Firewater and Major Pollution Incidents

9.10 Firewater risk has not been demonstrated to be acceptably controlled

The management of BESS and substation firewater requires separate consideration from ordinary surface-water drainage because the nature of the event, the potential contaminant load and the consequences of containment failure are materially different.

The Applicant now proposes a more developed firewater strategy than was available at PEIR stage. That is acknowledged. However, the Environment Agency's earlier concerns were highly specific,

and the final application must be tested against them rather than merely against the existence of a drainage concept.

The relevant risk pathway is straightforward. A fire or thermal event may require substantial volumes of suppression or cooling water. That water may become contaminated by materials released from the BESS or electrical equipment. It then enters the compound drainage system and potentially the granular sub-base or attenuation system. The proposed system relies upon isolation, storage, testing and subsequent removal or controlled disposal. If any stage of that chain fails, contaminated water may discharge to surface water or infiltrate towards groundwater.

That sequence makes firewater a compound environmental risk: it involves the major-accident scenario, the drainage system, groundwater protection, surface-water quality, private water supplies and potentially WFD compliance.

9.10.1 Hazard pathway

The appropriate way to assess the risk is as a source-pathway-receptor chain.

The source is contaminated fire suppression or cooling water generated during a BESS or substation incident. The immediate pathway is overland flow and the compound drainage system. From there, contaminated water may enter lined attenuation features, granular sub-base, drains or storage tanks. The Applicant proposes automated shut-off or penstock arrangements so that contaminated flows can be isolated rather than discharged. Once isolated, water would be tested and, where necessary, removed from site by tanker.

The environmental receptors include the underlying Principal Aquifer, nearby private water supplies, ordinary watercourses, WFD surface-water bodies and downstream ecological receptors.

This pathway was anticipated by the Environment Agency from the outset. It expressly required the Surface Water Drainage Strategy to demonstrate that contaminated firewater could be contained on site so that there would be no discharge to groundwater or surface water, and that the storage system retained sufficient headroom even during intense rainfall. It also required automatic containment backed up in the event of power failure.

The significance of that advice is that the EA was not content with a generic statement that the site would be drained in accordance with SuDS principles. It required a specific emergency-containment case.

9.10.2 The Applicant's proposed firewater design

The final FRA now provides a quantified design basis for the BESS firewater system.

The Applicant adopts a fire-suppression flow rate of 1,900 litres per minute over a four-hour period. That produces a minimum firewater volume of 456 m^3. The FRA indicates that this volume would be held within dedicated or available storage and that two firewater storage tanks are proposed for supply purposes.

The drainage concept also includes impermeable lining beneath relevant BESS drainage features, automatic or remotely operable penstock/shut-off arrangements, and a procedure under which isolated water would be tested and, if contaminated, removed by tanker rather than discharged directly to the receiving environment.

These are relevant improvements over the PEIR position. They respond in part to the EA's requirement for impermeable containment and isolation.

However, they do not by themselves demonstrate that the full emergency scenario has been resolved. The 456 m^3 figure represents the assumed suppression-water volume. It does not necessarily represent the total volume that the drainage system must retain during a combined fire and rainfall event, nor does it by itself demonstrate that contaminated water retained in the drainage sub-base can be fully recovered without leaving a secondary contamination source.

The FRA also relies upon additional storage within aggregate sub-bases and drainage infrastructure. This requires particular scrutiny because, once contaminated firewater enters granular material, the issue is not merely whether the water is prevented from discharging immediately. Contaminants may sorb to or remain within the material. The subsequent remediation strategy therefore matters.

The Applicant's own design recognises this risk to some extent by providing lined systems and isolation. The question for the ExA is whether the application sufficiently explains what happens to all contaminated materials after an event.

9.10.3 Environment Agency concerns remain directly relevant

The Environment Agency's position has consistently been that BESS and substation runoff must be treated as a groundwater and surface-water pollution issue.

At scoping stage, the EA identified several risks missing from the Applicant's assessment, including spills and leaks of chemicals, fuels and oils throughout all project phases, HDD losses, heat from buried high-voltage cables, and pollutants generated by fires at BESS or substation sites.

More specifically, the EA required potentially contaminated runoff from the BESS and substations to be isolated and removed. It required an impermeable layer beneath those compounds, sufficient capacity to contain the expected firewater even in intense rainfall, automatic containment, and backup in the event of power failure.

At statutory consultation stage, the EA also expressed concern that adequate operational measures had not yet been demonstrated for monitoring and responding to pollutants from leaks and spills and for controlling firefighting runoff from substations. The significance of this is that the EA did not treat BESS firewater as the only issue. Transformer and substation incidents also require a defined containment strategy.

That broader point is important because the final FRA gives the BESS the most developed firewater treatment, while the equivalent emergency-drainage case for all substations is less fully developed. The environmental risk is not confined to batteries. Transformers and associated

electrical infrastructure also contain potentially polluting substances, and the LLFA expressly identified the absence of adequate information concerning fire suppression and drainage at substations.

9.10.4 Norfolk County Council also identified firewater as an unresolved drainage issue

The LLFA's concern is materially aligned with the EA's.

NCC stated that initial information had been provided about BESS fire suppression but that there was no equivalent information concerning the substations, despite their transformers and other infrastructure having specific fire-control and drainage requirements. It therefore required further information.

It later repeated that there had only been tentative discussion of firewater management, that this appeared to relate only to the BESS, and that there was no discussion of how transformer fire suppression would interact with surface-water management. It required clarification to ensure there would be no increase in flood risk or pollution to watercourses and waterbodies.

That is directly relevant to the Applicant's examination response. Pointing to Requirement 11 and future detailed drainage design does not answer whether the EIA has assessed a credible worst-case firewater event for each major substation compound.

The concern is also cumulative. Site 1 contains multiple major electrical installations in close proximity. A drainage strategy must therefore define whether each system is hydraulically independent, how emergency isolation would operate between compounds, and whether the total emergency storage remains adequate where more than one drainage system is affected.

9.10.5 HFCL identifies continuing uncertainty in the Site 1 firewater case

HFCL's independent review reinforces the statutory-consultee concerns.

HFCL identifies insufficient information concerning the interaction between surface-water flooding and firewater management at Site 1. It also questions whether the available description of BESS construction and configuration is sufficiently developed to demonstrate how the embedded mitigation would operate during a credible incident.

This is important because the effectiveness of firewater containment depends upon physical configuration. The number and arrangement of battery units, compartmentation, drainage catchments, road gradients, kerbs or bunds, sub-base construction, and isolation points all affect how water moves during an emergency.

HFCL also raises concern about whether proposed containment measures have been demonstrated rather than simply assumed. In particular, the report treats the firewater issue as one of the headline deficiencies contributing to its broader conclusion that the water-environment assessment does not yet provide sufficient confidence that the relevant effects are understood and capable of mitigation.

That independent conclusion should carry particular weight because it sits between the EA's original design requirements and the Applicant's later assertion that detailed design can be secured after consent. The question is not whether a future detailed drainage scheme could potentially solve the issue, but whether the current Environmental Statement demonstrates that the proposed embedded mitigation is effective within the authorised design envelope.

9.10.6 Credible failure scenarios remain insufficiently addressed

A robust assessment of BESS and substation firewater should consider not only the normal operation of the designed containment system but also credible failure and concurrent-event scenarios.

The first is the combined fire-and-rainfall scenario. The EA expressly required storage to retain sufficient headroom during intense rainfall. The application therefore needs to demonstrate the total volume requiring containment where the suppression-water event coincides with the relevant design storm, rather than treating 456 m^3 as a stand-alone volume.

The second is failure of automatic isolation. If the penstock or automated shut-off does not operate because of mechanical failure, loss of power, damage during the incident or control-system failure, the assessment should show the backup mechanism and the time available before contaminated water reaches the outfall. The EA specifically required automatic containment with a backup system in the event of power failure.

The third is contamination of the aggregate sub-base. If contaminated firewater enters gravel or other porous structural material, it may remain as a secondary source after the standing water has been removed. The application should therefore specify how contaminated sub-base material would be identified, excavated, characterised, stored and disposed of and how underlying liners would be inspected for damage.

The fourth is liner failure. A statement that a membrane will be impermeable is not equivalent to demonstrating long-term integrity. The assessment should address construction quality assurance, penetrations, joints, damage during maintenance or replacement, inspection frequency and detection of leakage beneath or around the liner.

The fifth is delayed tankering. The strategy assumes that contaminated water can be removed from site by tanker. The application should establish how long the system can safely store that water if a tanker is not immediately available, whether emergency access remains possible during the event, and whether contaminated water can be retained without overtopping or bypass.

The sixth is receptor consequence. The assessment should identify what happens if containment is lost: which ditch, watercourse or groundwater unit receives the release; whether any private water supply is hydraulically connected; the likely direction and timing of contaminant migration; and what emergency monitoring and alternative water-supply arrangements would be triggered.

Those questions do not presuppose that failure will occur. They are the questions required to determine the consequence of a low-probability but potentially high-impact event in a sensitive water environment.

BEPS therefore submits that the present evidence shows an outline containment strategy but not yet a fully demonstrated emergency-pollution case for the BESS, National Grid Substation and 400kV substations.

BEPS does not suggest that every theoretical simultaneous failure must be designed for. The assessment should identify a credible reasonable worst case, explain which failures or coincident conditions have been assumed, and demonstrate that the resulting contaminated volume can be isolated without uncontrolled discharge to surface water or groundwater.

9.11 Water Resources and Project Deliverability

9.11 No Secured Water-Supply Solution

The water-resources issue is separate from, but closely connected to, the pollution and drainage issues addressed above. The Scheme requires water during construction, operation, maintenance, replacement and decommissioning. That demand arises in a region formally recognised as seriously water stressed, where the statutory water company is already subject to abstraction-licence reductions and constraints intended to prevent deterioration of waterbodies.

The Planning Inspectorate therefore refused to allow water resources to be scoped out. The EA and Anglian Water both made clear at scoping stage that the availability, source and environmental consequences of water supply had to be assessed. Anglian Water specifically stated that the region is seriously water stressed, that its own licences are subject to reductions, and that the Applicant's Water Resources Assessment would need to set out daily demand for each project stage and distinguish domestic from non-domestic use. The EA likewise noted the risk of lack of water availability and required consideration of dust suppression, HDD mixing water, machinery washing and other consumptive uses.

The final Water Resources Assessment is therefore an important application document. It provides substantially more information than was available at scoping. However, its conclusion depends heavily upon imported water, storage and rainwater harvesting rather than a secured conventional supply. HFCL considers the resulting water-balance case insufficiently transparent and identifies unresolved questions over both the source of water and the arithmetic used.

9.11.1 Seriously water-stressed baseline

The water-resource context is unusually constrained.

Anglian Water's scoping response records that the Anglian Water region is classified by the Environment Agency as ‘seriously water stressed’. It also explains that Anglian Water's groundwater licences are subject to reductions intended to manage the risk of WFD deterioration and that the company's Water Resources Management Plan recognises difficulties in meeting some new non-domestic demand until strategic new supplies become available.

This is not merely background context. It explains why PINS refused to scope water resources out and why a generic proposition that water can be brought to site by tanker is insufficient. Tankering

changes the transport mechanism; it does not create a water resource. The underlying water must still come from a lawful, environmentally sustainable source.

Anglian Water also advised that where non-domestic demand exceeds 20 m^3/day, a Water Resources Assessment would be required and should address temporary construction compounds as well as permanent BESS and substation demand. The Applicant's own demand figures exceed that threshold in each major phase considered in the WRA.

9.11.2 The Applicant's stated water demand is material

The final Water Resources Assessment quantifies daily potable and non-potable demand for the main phases of the Scheme.

The Applicant's stated totals are approximately 31.13 m^3/day during construction, 36.92 m^3/day during operation and 25.43 m^3/day during decommissioning. These are not trivial quantities in the context of a seriously water-stressed region.

The operational figure is especially important because it demonstrates that water demand is not confined to a temporary construction peak. The Scheme will continue to require water during its operational life for activities including welfare, cleaning, landscaping or habitat establishment and maintenance requirements as applicable.

In addition, the FRA identifies a separate minimum fire-suppression provision of 456 m^3 for the BESS emergency-water strategy. That is not necessarily a daily consumptive demand, but it represents a further volume which must be sourced initially, stored and potentially replenished after use or testing.

The combined picture is therefore one of continuing reliance on water over the Scheme's lifetime, not a short-term construction-only demand.

9.11.3 Conventional supply options are substantially constrained

The WRA considers a number of possible supply routes but narrows them considerably.

A new groundwater abstraction is not presented as a straightforward solution. The EA has already identified the catchment constraints and the risk of derogation to existing licensed and unlicensed water users, including private supplies. In a Principal Aquifer environment with chalk streams and multiple PWS receptors, a new abstraction would require a much more detailed licensing and hydrogeological case.

Surface-water abstraction is likewise constrained. Hands-off-flow conditions and ecological requirements limit the circumstances in which water can lawfully be taken, especially during low-flow periods when construction dust suppression or ecological establishment demand may be greatest.

The WRA also does not present an agreed Anglian Water mains solution as the principal supply route. Anglian Water had already warned that it might not be able to supply all new non-domestic

demand until new strategic resources are developed. The Applicant therefore relies increasingly on rainwater harvesting, storage and imported/tankered water.

That progression is important. It means that the Scheme has not demonstrated a conventional, site-connected water supply with known capacity. Instead it relies upon a flexible combination of mitigation measures and off-site supply arrangements whose source and availability remain to be finalised.

9.11.4 Tankering is a delivery mechanism, not a secured water source

The Applicant treats tankering as a preferred or principal embedded mitigation route where on-site or mains supply cannot meet demand.

The difficulty is that 'tankering' describes only how water arrives at the Scheme. It does not identify where the water originates, whether that source is licensed and sustainable, whether it is available during drought, whether competing users have priority, or whether the volume can be delivered for the required duration.

This is the point made by HFCL. The report notes that the Applicant relies upon imported water from outside the immediate Scheme catchments but does not identify the source. HFCL considers that omission material because a source outside the Scheme area may still lie within the same wider water-stressed region and may therefore affect other abstractors or environmental receptors.

That concern is consistent with Anglian Water's own advice. Its scoping response says the flows required to fill storage tanks must be assessed so that the company can determine whether a supply is feasible without jeopardising domestic supply or imposing significant financial or environmental cost.

The relevant evidential question is therefore not whether commercial tankers exist. It is whether a lawful, sustainable source capable of meeting the Applicant's quantified demand has been identified and shown to be available under foreseeable drought and operational conditions. At present, the WRA does not demonstrate that.

This matters for deliverability as well as environmental assessment. If the Scheme's mitigation, construction activities or ecological commitments depend on water which cannot be secured at the required volume, then the effectiveness of those measures cannot simply be assumed.

9.11.5 HFCL identifies a weakness in the treatment of rainwater harvesting

The WRA also relies on rainwater harvesting as an important water-efficiency measure. HFCL identifies a conceptual problem in the way this is treated. The Applicant's water-balance approach appears to assume that harvesting rainfall does not materially alter the catchment water balance because the water is derived from precipitation falling within the Scheme.That assumption is too simple.

Once harvested, water may be removed from the local hydrological cycle through several pathways. Water used for welfare may leave the catchment as foul effluent. Water used for dust suppression, irrigation or vegetation establishment may be lost through evaporation or evapotranspiration rather than returning to groundwater or the same receiving drainage feature. Water used for cleaning may be transported or retained elsewhere. Water stored for long periods may also alter the timing of runoff and recharge.

HFCL therefore considers it inappropriate to treat all harvested rainfall as if it simply returns unchanged to the same hydrological system.

The point is not that rainwater harvesting is environmentally undesirable. On the contrary, it may be a sensible mitigation measure in a water-stressed region. The issue is that its contribution to the Scheme's water balance must be calculated transparently and in a way which recognises consumptive losses and altered timing.That is particularly important where the WRA's conclusion of a balanced supply depends materially upon harvesting.

The same issue also cross-links to habitat establishment. If harvested rainfall is allocated simultaneously to ecological planting, dust suppression and other operational requirements, the assessment must demonstrate that the assumptions are mutually compatible during dry years rather than assuming normal rainfall in a region already subject to water stress.

9.11.6 The water-demand arithmetic is not sufficiently transparent to audit

HFCL also identifies inconsistencies in the numerical presentation of the WRA. These include apparent discrepancies between stated workforce assumptions and the resulting daily water-use figures, and between the stated potable/non-potable proportions and the quantities subsequently used in the water-balance calculations.

That matters because the WRA's overall conclusion depends upon the balance between calculated demand and the yield attributed to the proposed mitigation measures. If the demand assumptions cannot be readily reproduced from the underlying workforce, usage-rate and percentage inputs, the assessment is difficult for the ExA and consultees to audit.

This is not simply a presentational criticism. Small percentage discrepancies can become material when they are carried through a long construction programme or when the residual deficit is said to be met by an unidentified off-site source.

The Applicant should therefore provide a transparent audit trail showing, for each project phase, the number of workers or users, unit consumption rates, potable and non-potable split, activity-specific water demand, assumed harvesting yield, storage losses, consumptive losses, tanker demand and any firewater filling or replenishment requirement.

The same calculation should be stress-tested for drought conditions. A water-resource strategy which balances under average rainfall but fails during the dry conditions most likely to generate dust-suppression and landscape-watering demand is not robust.

For BEPS, the central conclusion is accordingly: the Applicant's claim that the water balance can be achieved is not sufficiently transparent to audit and does not yet demonstrate that a lawful, sustainable and drought-resilient source of water is secured for the Scheme.

This is particularly significant because the issue was identified at the very beginning of the EIA. Anglian Water warned that non-domestic supply could be constrained and that the WRA would need to demonstrate feasibility without jeopardising existing domestic users. The Environment Agency likewise required the Applicant to address water-demand activities and the source of supply in a seriously water-stressed area.

The final WRA provides useful demand estimates and identifies possible mitigation routes, but it does not yet close the underlying question of where the necessary imported water will come from, whether that supply is guaranteed under constrained conditions, and whether the water-balance calculations are sufficiently robust to support the environmental conclusions relied upon elsewhere in the application.

9.12 Groundwater-Dependent Terrestrial Ecosystems

9.12 GWDTEs have not been adequately identified or assessed

Groundwater-Dependent Terrestrial Ecosystems (‘GWDTEs’) require separate consideration because their ecological condition depends, wholly or in part, upon the quantity, quality, level or movement of groundwater. Effects upon groundwater can therefore become ecological effects even where there is no direct physical encroachment upon the habitat itself. For East Pye Solar, that is particularly important because the Scheme extends over Principal and superficial aquifers, proposes substantial ground disturbance, piling, trenching and drainage infrastructure, and is located within a landscape containing a number of designated sites which are known or potentially groundwater dependent.

The Environment Agency identified this issue at the outset. In its scoping response it expressly disagreed with the Applicant’s proposal to scope out effects upon groundwater and GWDTEs. The EA considered that the material then available contained errors and incomplete information concerning ground conditions, including a failure adequately to recognise groundwater–surface-water connectivity. It warned that an inadequate conceptual understanding created a risk of insufficiently mitigated impacts upon significant and sensitive groundwater resources. More specifically, its comment GWCL8 stated that the Applicant had omitted the Broadland Rivers Chalk & Crag WFD groundwater body and discussion of GWDTEs from the water-quality baseline, with the consequence that ‘the sensitivity of groundwater bodies and groundwater dependent sensitive ecological sites are not sufficiently characterised’. The EA required the Applicant to assess the current designation and sensitivity of WFD groundwater bodies and any GWDTEs within the study area.

The final Environmental Statement has responded to that concern to a limited extent. ES Chapter 9 now acknowledges that GWDTEs exist and cross-refers to Chapter 8 Ecology and Biodiversity for ecological designated sites, including GWDTEs [APP-045 §9.5.15]. Table 9.4 identifies a number of such receptors as High sensitivity, including Fritton Common, Pulham Market Big Wood, Tindall Wood Ditchingham and Forncett Meadows, together with other designated sites. Chapter 9 also

expressly records that the Broadland Rivers Chalk & Crag WFD groundwater body underlying the Order Limits is currently at Poor status because of the 'Quantitative Groundwater Dependent Terrestrial Ecology test' [APP-045 §9.6.19]. That is an important baseline fact. It demonstrates that groundwater-dependent ecology is not merely a hypothetical sensitivity around the Scheme: it is already one of the reasons why the underlying groundwater body fails overall status.

However, identification of some GWDTEs in a receptor table is not the same as assessment of their hydrogeological dependence or their connectivity with the Scheme. HFCL's independent review finds that this substantive step has not been completed. Its baseline review identifies Flordon Common, Forncett Meadows, Aslacton Parish Land, Pulham Market Big Wood, Fritton Common and Tindall Wood Ditchingham as GWDTEs sensitive to changes in groundwater level and quality [HFCL §2.5.2, p.11]. HFCL then records that the Environment Agency has identified GWDTEs within SSSIs which have not been identified by the Applicant [HFCL §3.1.3.2, p.13]. Its assessment finding is more fundamental:

'No assessment of the potential linkage(s) between the scheme and GWDTEs has been provided by the Applicant. GWDTEs are not fully assessed and the hydrogeological conceptual model has not been properly characterised in this regard.'[HFCL §3.1.4.2, p.15]

HFCL carries this finding into its summary of deficiencies. Item 9 of Table 4.1 states that the Applicant 'has not identified all GWDTEs within the study area', that no assessment is presented of possible connectivity between the Scheme and those GWDTEs, and that impacts upon these sensitive receptors have consequently been omitted from the EIA. HFCL identifies this as requiring further information and refers specifically to groundwater and GWDTE assessment guidance [HFCL Table 4.1, item 9, p.20].

The Environment Agency's Relevant Representation confirms that the receptor schedule itself remained incomplete or inconsistent at application stage. At EA-027, the EA identified omissions and deficiencies in the treatment of designated sites, including the need properly to highlight Fritton Common and Pulham Market Big Wood as GWDTEs. At EA-052, the EA identified the further methodological error that GWDTEs are completely absent from Chapter 9 Table 9.3, which sets out the sensitivity criteria applied to identified receptors, even though GWDTEs subsequently appear in Table 9.4 as High-sensitivity receptors. The EA also considered that Fritton Grange Meadows should be assessed as a potential GWDTE. [EXAM/8.7, EA-027 and EA-052]

The Applicant acknowledges at EA-052 that GWDTEs are missing from Table 9.3. Its answer is that they have nevertheless been identified as receptors and that the omission 'does not alter the assessment of effects'; it therefore does not propose to update the chapter. [EXAM/8.7, EA-052] BEPS does not consider that response resolves the issue. The EA's concern is not confined to a typographical omission from a table. HFCL's subsequent independent review identifies the more substantive deficiency: the Applicant has not demonstrated the hydrogeological linkages between the Scheme and the GWDTEs in the first place.

That distinction is critical. To assess a GWDTE it is necessary to understand, among other matters, whether the habitat is dependent upon shallow groundwater, deeper aquifer discharge, spring flow or groundwater-fed surface water; the groundwater level regime upon which the habitat depends; the direction from which groundwater reaches the receptor; the extent to which recharge within the Scheme contributes to that regime; and whether Scheme activities could alter groundwater

quality, quantity or flow. None of those questions is answered by assigning a receptor the generic label ‘High sensitivity’.

The deficiency becomes clearer when Chapter 9’s effect assessment is examined. Table 9.7 groups ‘aquifers, Groundwater Dependent Terrestrial Ecosystems (GWDTEs) and bedrock/superficial deposits’ together as a single hydrogeological receptor category ranging from Medium to Very High sensitivity. It then assigns Negligible magnitude and Minor, Not Significant effects to changes in groundwater recharge, contaminants and cable-related thermal effects. [APP-045 Table 9.7] That approach aggregates receptors whose physical responses may be materially different. A large groundwater body and a local groundwater-dependent wetland cannot necessarily be treated as responding in the same way to the same change in recharge.

The specific treatment of cable heat illustrates the problem. Chapter 9 acknowledges at §9.8.58 that cable thermal dynamics have potential to affect GWDTEs. However, §9.8.59 then relies on the fact that cables beneath surveyed main rivers will be at least 5 m below the bed and that thermal effects are limited to the immediate vicinity of the cables. From that, §§9.8.60–9.8.61 conclude a Negligible magnitude and Minor, Not Significant effect. The assessment does not identify which GWDTEs could be affected by particular cable sections, their distance or hydraulic relationship to those cables, the groundwater flow regime supplying them, or whether shallow groundwater pathways elsewhere in the cable network differ from conditions beneath the surveyed main rivers. The reasoning therefore does not constitute a receptor-specific GWDTE assessment.

The same issue arises with changes in groundwater recharge. Chapter 9 accepts that operation can alter recharge because of impermeable areas at the BESS, National Grid Substation and Project Substations, but concludes that the impact is negligible principally because the infrastructure occupies a small area relative to the Order Limits [APP-045 §§9.8.54–9.8.57]. That comparison does not answer whether an individual groundwater-dependent habitat relies upon recharge from a particular local contributing area. The relevant hydrogeological question is not the proportion of the entire Order Limits made impermeable; it is whether the affected area forms a material part of the groundwater catchment supplying the receptor.

This is directly related to the conceptual-model deficiency addressed at §9.3 of this Written Representation. HFCL finds that the Applicant does not provide a defined hydrogeological conceptual model for the Scheme. Without such a model, the Applicant cannot robustly establish the contributing groundwater catchments of GWDTEs or exclude connectivity to development areas. The Environment Agency’s EA-053 response makes the continuing uncertainty particularly clear. In response to the EA’s information on karstic or solution features within the Chalk and their capacity to provide rapid groundwater pathways, the Applicant states that the hydrogeology of the Chalk aquifer will be considered through **post-consent** interpretative assessments, including Foundation Works Risk Assessments, Hydrogeological Risk Assessments and Generic Quantitative Risk Assessments. [EXAM/8.7, EA-053] That confirms that important elements of the hydrogeological understanding relevant to groundwater-dependent receptors remain for later investigation.

BEPS therefore submits that the Applicant has not yet demonstrated that effects upon GWDTEs are negligible or minor. A complete assessment should first establish an agreed and comprehensive schedule of actual and potential GWDTEs within the hydrogeological zone of influence. It should then identify, for each relevant receptor, its degree and mechanism of groundwater dependence,

the geological unit supplying it, groundwater levels and seasonal variability, relevant recharge areas, flow direction and potential Scheme pathways. Only then can construction dewatering, piling, HDD, trenching, drainage, reduced recharge, contamination and cable-heating effects be assessed meaningfully.

This issue also requires cross-reference to BEPS's Ecology and Biodiversity Written Representation. However, the hydrogeological assessment cannot simply be transferred to the ecology chapter. The ecological significance of a GWDTE depends upon ecological evidence, but whether the Scheme is physically connected to it is fundamentally a water-environment and hydrogeological question. That question has not been sufficiently answered.

HFCL's overall conclusion is therefore materially relevant. It identifies GWDTEs among the receptors potentially threatened by derogation or pollution of water resources and concludes that the deficiencies in the ES create a significant lack of confidence that impacts upon the water environment are properly understood or capable of mitigation [HFCL Conclusion, p.23]. BEPS considers that the ExA should require further environmental information on this matter before accepting the Chapter 9 conclusion that no significant adverse water-environment effects arise.

Where the existence or hydraulic dependency of a potential GWDTE remains uncertain, post-consent investigation may refine protection measures but should not be relied upon to establish for the first time whether the authorised works intersect the groundwater system sustaining the receptor.

9.13 Cumulative and In-Combination Effects

9.13 The water assessment is fragmented rather than cumulative

The scale and dispersed form of East Pye Solar make cumulative and in-combination assessment particularly important. The Scheme is not one compact development draining to one outfall and affecting one groundwater body. It consists of multiple solar sites, cable-route corridors, temporary and permanent access tracks, construction compounds, conversion units, substations, a BESS and grid infrastructure spread across several river catchments and connected groundwater systems. The same receptor may therefore experience more than one effect from the Scheme, while individual catchments may receive effects from several different components and phases of development.

The Applicant itself recognised the applicable assessment principle at scoping stage. Its Scoping Report distinguished between inter-project cumulative effects and intra-project or in-combination effects, and cited the requirement under Schedule 4 of the Infrastructure Planning EIA regime to consider the cumulation of environmental effects with other existing and/or approved projects, together with the interaction between environmental factors including population and human health, biodiversity, land, soil and water. It also committed to defining a Zone of Influence for each environmental aspect, establishing a longlist and shortlist of cumulative developments, gathering relevant environmental information and undertaking a proportionate Stage 4 cumulative assessment.

Chapter 9 does contain a section headed ‘Cumulative Effects Assessment’. However, §§9.11.1–9.11.12 do not provide a substantive catchment-by-catchment evaluation of combined water-environment effects. Instead, the assessment relies principally on the proposition that other developments will themselves require FRAs, drainage strategies and management plans containing mitigation ‘similar to that of the Scheme’. From that assumption, Chapter 9 concludes that cumulative effects during construction, operation and decommissioning will be Not Significant [APP-045 §§9.11.5–9.11.12].

BEPS considers that reasoning insufficient for a Scheme of this nature. The fact that two developments each have a drainage strategy does not establish that their combined discharges will have no significant effect on the same receiving catchment. Nor does the fact that each construction project will have a CEMP establish that simultaneous sediment, runoff, water-demand or crossing pressures upon the same receptor are insignificant. Mitigation must be considered, but the cumulative effect first has to be identified.

This concern is directly supported by Norfolk County Council. The LLFA expressly supported inclusion of proposed but as yet unconsented solar and BESS schemes because a large number of similar developments may have comparable programmes and could therefore be constructed at the same time. It stated that those effects should be considered cumulatively ‘rather than in isolation’, specifically emphasising that for flood risk ‘the downstream cumulative impacts can have a much wider impact’.

9.13.1 Intra-project cumulative effects have not been demonstrated at receptor and catchment scale

Chapter 9 states at §9.11.2 that ‘in combination effects’, meaning the combined effect generated by individual Scheme effects upon a particular receptor, are presented in Chapter 19 rather than Chapter 9. That cross-reference may be procedurally convenient, but it does not remove the need for the water assessment to provide a coherent physical basis upon which such combinations can be understood.

The potential interactions within East Pye are substantial. A single catchment may receive runoff from solar arrays, compacted access tracks, temporary compounds, converter stations, substation hardstanding and cable works. The same catchment may contain several watercourse crossings. Groundwater recharge may be altered at the same time as new pollution sources and preferential pathways are introduced. Construction effects may recur during large-scale panel and battery replacement and then again during decommissioning.

These pathways cannot necessarily be understood by assessing each component independently and then assuming that a series of individually Negligible or Low effects remains insignificant when combined.

The Applicant's own Chapter 9 illustrates the fragmentation. It separately assesses spills and sediment mobilisation, temporary changes in runoff, permanent impermeable area, firewater, groundwater recharge and cable heat. It then generally assigns Negligible magnitude to the residual effect after embedded mitigation. What is not apparent from Chapter 9 is a receptor-specific exercise asking, for example, what the combined consequence is for one shallow private

well where construction compaction changes local recharge, trenching changes a shallow flow route, piling creates a vertical pathway and a nearby compound introduces a new contaminant source.

The same issue arises at waterbody scale. Starston Brook receives the hydrological consequences of Site 1 and the BESS catchment as well as cable-route activity. The Tas/Hempnall system interacts with multiple solar sites, cable corridors and crossings. Broome Beck receives drainage through smaller tributaries and field drains from development within its WFD catchment. The physical receptor experiences the combination of those pressures regardless of the ES chapter or assessment heading under which each has been classified.

The temporal dimension is also important. The LLFA notes that the development is not a simple 'build once, operate passively, remove once' scheme. It records planned full solar-panel replacement and repeated BESS replacement during the operational period and questions the need for renewed construction compounds and hardstandings during those replacement phases. The water-environment assessment should therefore consider repeated periods of disturbed soil, construction traffic, temporary drainage and pollution risk over the life of the Scheme, rather than assuming that construction effects occur only during the initial build.

BEPS does not contend that every such combination will necessarily produce a significant adverse effect. The point is that the combined effect must be assessed before that conclusion can be reached. For a Scheme spanning several catchments and involving repeated construction-type activities, a generic statement that management plans will control each individual activity does not demonstrate the cumulative receptor outcome.

9.13.2 Multiple high-sensitivity receptors are exposed to multiple pathways

The need for an integrated assessment is particularly acute where several high-sensitivity receptors occupy the same hydrological setting.

Site 1 provides the clearest example. The BESS, National Grid Substation and Project Substation infrastructure introduces substantial hardstanding, drainage and potential contaminant sources. Figure 16.5 demonstrates a concentration of private water supplies in the surrounding area. The infrastructure lies within the Starston Brook WFD catchment, overlies sensitive aquifer conditions and lies close to public-water-supply Source Protection Zones. The same area is therefore relevant simultaneously to private drinking-water protection, WFD groundwater and surface-water objectives, flood-risk assessment, groundwater pollution, emergency firewater containment and water-resource demand.

Assessing each of those subjects separately risks obscuring the combined receptor consequence. A private water supply does not experience 'the groundwater chapter' separately from 'the drainage chapter'. Its vulnerability depends upon the combined behaviour of the contaminant source, the drainage system, the geology and the abstraction.

Site 5 presents a similar concentration of pathways. Multiple private supplies are located in the vicinity of the 400kV substation area; local drainage is connected towards the Tas system; detailed drainage remains dependent on later design; and downstream receptors include the sensitive

Tas/Hempnall water environment. The combined issue is therefore not merely the substation's impermeable area or the existence of a nearby well. It is whether runoff, pollution, groundwater flow and downstream ecological connectivity have been assessed together.

GWDTEs present the same methodological problem. Chapter 9 recognises groundwater recharge changes and pollution pathways, while Chapter 8 addresses ecology, but HFCL finds no assessment of the hydrogeological connectivity between the Scheme and the relevant GWDTEs. A receptor cannot be assessed cumulatively if the underlying pathway has not first been defined.

Designated sites add a further layer. The FRA itself recognises that a number of designated receptors are hydrologically linked to the Scheme through surface water and groundwater. Once such pathways exist, the combined contribution of sediment, altered flow, recharge change and accidental pollution needs to be evaluated through that connected system.

BEPS therefore submits that the cumulative assessment should identify the principal water receptors and ask, receptor by receptor, which Scheme pathways affect each one during each phase. That would provide a transparent means of determining whether individually limited effects remain limited when superimposed. The present Chapter 9 assessment does not provide that analysis.

9.13.3 Inter-project cumulative effects require actual water interaction to be assessed, not assumed away by reference to other projects' mitigation

BEPS does not suggest that every solar or BESS project proposed anywhere in Norfolk must automatically be included in the Chapter 9 assessment. For water-environment purposes, the appropriate focus is upon developments capable of interacting through a shared hydrological or water-resource pathway.

Relevant interactions may arise where developments drain to the same watercourse or sub-catchment, draw upon or rely on water from the same constrained water-resource system, affect the same groundwater body or abstractions, require simultaneous construction drainage, or introduce multiple crossings and physical modifications within the same water network.

The Applicant's Scoping Report itself proposed a Zone of Influence approach to cumulative assessment and committed to keeping the project list under review. NCC expressly supported the inclusion of proposed but unconsented solar/BESS schemes because similar construction programmes could coincide and downstream flood effects can extend beyond individual development boundaries.

Against that background, Chapter 9 §9.11.5 is problematic. It reasons that cumulative developments 'will all require' an FRA, surface-water drainage strategy and relevant management plans, and that those reports will contain embedded mitigation similar to East Pye. Construction effects are then declared Not Significant because other schemes will use similar best practice [§§9.11.7–9.11.8]. Operational effects are treated in the same way [§§9.11.9–9.11.10].

That is not, in itself, a cumulative impact assessment. It is an assumption about the regulatory controls likely to be imposed upon other developments.

Even if every other project restricts discharge to an individually acceptable rate, the combined timing and volume of several discharges into the same receiving system may still require examination. Even if every project uses sediment-control measures, simultaneous construction may increase the number of potential sediment and pollution sources within one catchment. Even if each individual development imports water rather than abstracting locally, the combined demand upon the same water company or tanker source may be material in a seriously water-stressed region.

The asymmetry within §9.11 is also notable. The Applicant is prepared to identify a cumulative Significant Beneficial effect from the cessation of agricultural fertiliser application across developments [§9.11.10], yet potential adverse cumulative effects are dismissed largely on the assumption that every development will implement suitable mitigation. If cumulative beneficial effects are capable of arising across schemes and catchments, adverse combined pressures require equally transparent analysis.

BEPS therefore considers that the ExA should require a catchment-focused cumulative assessment identifying which shortlisted developments share relevant water receptors with East Pye, their construction periods where known, their drainage and water-demand assumptions, and the combined pathways capable of affecting those receptors. The assessment need not manufacture precision where another project remains at an early stage; uncertainty can be described. What is not sufficient is to infer a Not Significant conclusion solely from the expectation that each other developer will prepare its own management plan.

The LLFA expressly supported consideration of proposed but not yet consented schemes because several major solar and BESS projects may have overlapping programmes and because downstream flood effects can extend considerably beyond individual development boundaries. That is particularly relevant where schemes share receiving catchments or could generate concurrent construction runoff, abstraction demand or drainage interventions.

9.14 The Applicant's Responses Do Not Resolve the Environment Agency Issues

9.14 Response to the Environment Agency Relevant Representation – EXAM/8.7

BEPS has considered the Applicant's response to statutory bodies in EXAM/8.7. The document is useful because it clarifies the Applicant's position on a number of matters raised by the Environment Agency. However, the existence of a written response should not be equated with resolution of the underlying technical issue.

In several important instances, the Applicant acknowledges an error in the submitted ES and proposes a later correction. In others it relies upon future ground investigation, post-consent Foundation Works Risk Assessments, Hydrogeological Risk Assessments, detailed drainage design or future Emergency Response Plans. Elsewhere it maintains its original conclusion of Not Significant without providing materially new receptor-specific evidence.

The appropriate examination question is therefore whether each EA concern has been closed evidentially, not simply whether it has been answered procedurally.

9.14.1 Water resources and tankering

The water-resource issue raised by the Environment Agency is reinforced by the detailed exchange with Anglian Water contained in the same EXAM/8.7 document. It is important to distinguish the sources accurately: the detailed tanker-supply discussion appears under Anglian Water responses AGW-011 to AGW-014 rather than within the numbered EA table. It nevertheless directly concerns the same water-resource constraint identified by the EA and PINS.

Anglian Water records the Applicant's daily demand as 31.13 m^3/day during construction, 36.92 m^3/day during operation and maintenance, and 25.43 m^3/day during decommissioning. It notes expressly that water-resource availability had previously been raised by both Anglian Water and the Environment Agency, particularly in relation to groundwater abstraction [EXAM/8.7, AGW-011].

At AGW-012, Anglian Water notes that approximately 16,872.2 m^3 is stated to be required for construction and that tankering is the principal supply option. Although Anglian Water supports tankering as a delivery approach, it expressly states that the source of water for decommissioning is unclear and points out that tankered water would probably still derive from Anglian Water's supply. It also records its current position of declining new unplanned non-domestic water requests exceeding 20 m^3/day.

The Applicant's response does not identify a secured source. Instead, it confirms that tankering is preferred, acknowledges that climate-change and abstraction-licence pressures are assumed still to exist when decommissioning begins in 2091, and states:

'The Applicant will also explore tankering options outside the AWS region to meet Scheme demand.'[EXAM/8.7, AGW-012]

At AGW-014, the same answer is given for BESS firefighting water: the water will be obtained through tankering and the Applicant will explore options outside the Anglian Water region.

This is evidence that the delivery mechanism has been identified but the underlying water source has not been secured. 'Tankering' answers the question 'how will the water arrive?', not 'from what sustainable resource will it be taken?'

HFCL identifies precisely this distinction. It finds that the water-resource assessment relies upon importing water from outside the Scheme catchments but does not identify its source and concludes that, because wider East Anglia is also water stressed, the source must be established to demonstrate that other water users will not be derogated [HFCL Table 4.1, item 7, p.19].

BEPS therefore considers this matter not closed. The remaining evidence should identify the credible source or sources of imported water; their available capacity; any relevant abstraction or water-company constraints; resilience during drought; the maximum tanker requirement during peak demand; and how availability will be maintained during construction, operation, firewater replenishment and eventual decommissioning.

The answer should also reconcile the arithmetic and water-balance concerns identified by HFCL. The Applicant cannot rely upon 'water neutrality' as a general concept without demonstrating how

much water is actually consumptively lost through foul effluent, evaporation, evapotranspiration and other uses. HFCL identifies both the rainwater-harvesting assumption and the transparency of the underlying calculations as requiring further clarification.

Accordingly, the Applicant's EXAM/8.7 response advances the discussion, but does not demonstrate a secured and environmentally sustainable water source.

9.14.2 Groundwater and private abstractions

The Applicant's response to EA-033 to EA-035 provides particularly strong evidence that important elements of the private-water-supply and groundwater assessment remained imperfect at application stage.

At EA-033, the Environment Agency observes that Chapter 9 Table 9.7 includes water-quantity effects for public and private supplies during construction and decommissioning but omits water-quality impacts from spills and pollutants. The EA identifies the resulting issue as a residual risk of contamination of water supplies and asks for contamination effects to be included.

The Applicant expressly accepts the point and says Table 9.7 'will be corrected… at a later deadline'. It then maintains that public and private water supplies were in fact considered through the assessment and the Outline CEMP and DEMP and that contamination effects are Not Significant. [EXAM/8.7, EA-033]

BEPS considers that answer significant for two reasons. First, it confirms that the submitted residual-effects table did not correctly record a material impact pathway to human drinking-water receptors. Second, the response does not itself provide a receptor-by-receptor contamination assessment. It relies upon the broader ES conclusion and generic embedded mitigation.

EA-034 identifies further baseline errors. The Environment Agency states that the extents of Source Protection Zones are inaccurately described and that §9.6.22 incorrectly says only the northern part of the Order Limits lies within SPZ3. The EA points out that the south-western Order Limits, including key infrastructure comprising the BESS, National Grid Substation and Project Substations, also lie within SPZ3 and are approximately 500 m from SPZ1 of a public water abstraction.

Again, the Applicant acknowledges the error. It says §9.6.22 will be corrected at a later deadline. It also acknowledges that the PWS sensitivity definition can be updated later. [EXAM/8.7, EA-034]

This is not a trivial correction. Source Protection Zones are part of the baseline against which groundwater receptor sensitivity and pollution pathways are assessed. Where the Scheme's principal infrastructure is close to SPZ1 and SPZ2, an inaccurate description of the geographical baseline affects the transparency of the original assessment.

EA-035 then moves from baseline accuracy to actual contaminant pathways. The EA is concerned that potential new pathways from historic contamination to private and licensed abstractions may have been underestimated. It identifies, among other matters, four private water supplies within 250 m of former RAF Seething; trenchless crossings and the Site 10C Project Substation capable of

disturbing ground to a maximum of 12 m below ground level; a recorded minimum Diamicton thickness of 12.2 m in local BGS data; and two potentially active private groundwater supplies or permitted abstractions around 130 m south-west of Site 7A for which Scheme-generated spills and leaks had not been considered. [EXAM/8.7, EA-035]

The Applicant responds that 'credible risks to PWS and permitted abstractions have not been identified' and that its Conceptual Site Model contains no credible contaminant linkages between identified historical sources and the abstractions. However, it simultaneously confirms that the Outline CEMP requires post-consent ground investigation, Foundation Works Risk Assessments for major piled/deep-founded infrastructure, and Hydrogeological Risk Assessments wherever trenchless crossings interact with Principal or Secondary A aquifers or sensitive water/environmental receptors. [EXAM/8.7, EA-035]

There is a fundamental evidential tension in that response. The Applicant relies upon its existing conceptual model to say that no credible risk has been identified, while reserving the investigations and risk assessments necessary to test important aspects of that model until after consent.

HFCL makes that tension more serious. Its independent review concludes that the Applicant does not actually provide or define an adequate hydrogeological conceptual model; that the PWS baseline relies upon assumptions which are not sound; that ground-truthing demonstrates errors in the status of individual supplies; and that additional supplies are probably omitted. Those findings directly weaken the evidential premise of the Applicant's response to EA-035.

The Applicant's post-consent FWRA and Hydrogeological Risk Assessment commitments are useful mitigation safeguards. They are not, however, substitutes for an adequate EIA baseline where the question is whether a pathway to a sensitive drinking-water receptor exists in the first place.

BEPS therefore submits that the remaining evidence should include a complete and verified PWS inventory extending across the actual hydrogeological zone of influence; local-authority data; abstraction depth and source strata; active/inactive status; baseline quality and yield; groundwater flow and connectivity; and a source-pathway-receptor assessment addressing both historic and Scheme-generated contamination.

9.14.3 WFD groundwater and watercourse crossings

The same pattern of deferral arises in relation to the WFD groundwater body and trenchless/deep foundation works.

EA-036 states that risks to the WFD groundwater body from piled or deep foundations and trenchless drilling had not been assessed and that these activities could create new preferential pathways for contamination during construction, operation and decommissioning. The EA asks for the WFD Assessment to account for potential migration through the superficial Diamicton and for Foundation Works Risk Assessments to be informed by local ground investigation to at least the maximum design depth. [EXAM/8.7, EA-036]

The Applicant's response is not that this work has now been completed. It says that the Outline CEMP will be updated at Deadline 1 and that the required Foundation Works Risk Assessments and Hydrogeological Risk Assessments will be informed by **post-consent geotechnical and geoenvironmental ground investigation**. [EXAM/8.7, EA-036]

That distinction is central.

PINS required a WFD assessment at application stage precisely because the nature, location and effect of proposed watercourse and ditch crossings were uncertain. It stated that the approach and findings should be agreed with relevant statutory consultees. The Applicant cannot therefore fully answer the underlying WFD concern simply by committing to investigate the hydrogeology after the DCO has been granted.

The existence of post-consent controls may demonstrate that a risk can potentially be managed once the crossing is designed. It does not necessarily demonstrate at examination stage that every crossing within the authorised envelope can be delivered without WFD deterioration.

This is particularly material where the maximum design scenario permits deep disturbance and where the Lowestoft Formation cannot safely be treated as a uniform impermeable barrier. HFCL's review shows that the superficial geology is heterogeneous and that shallow groundwater and private abstractions occur within the glacial sequence. Consequently, the depth of the crossing relative to local stratigraphy is itself part of the environmental assessment.

A complete answer would identify each environmentally material watercourse crossing; the reasonable worst-case construction method and depth; the geological and groundwater units potentially encountered; the relevant downstream or groundwater receptor; the credible failure pathway, including drilling-fluid breakout; and the mitigation necessary to prevent deterioration. Where local ground conditions are too uncertain to do that, the significance of that uncertainty should be recognised.

The current response converts a material part of that exercise into post-consent risk assessment. BEPS therefore considers the EA's substantive WFD concern not demonstrated to be closed.

9.14.4 BESS and substation pollution and firewater

The EA’s Relevant Representation also demonstrates that firewater and operational pollution were not confined to the BESS.

At EA-020, the EA identifies a lack of clarity over drainage and pollution control at the 132kV and 400kV Project Substations and specifically requests provision for reasonable worst-case firewater plus rainfall, automatic penstock isolation with manual backup, appropriate bunding and removal of contaminated water. It identifies uncontrolled substation firewater as a risk of pollution to the water environment. [EXAM/8.7, EA-020]

The Applicant responds by narrowing the relevant fire-risk source. It states that the only infrastructure within the Project Substations that may present a fire risk is the transformers, that these will be self-bunded, and that contaminated liquid can be suctioned to a bunded tank. It

therefore concludes that the wider Project and National Grid Substation drainage systems do not need to incorporate firewater-management penstocks. [EXAM/8.7, EA-020]

BEPS considers that response requires further examination. The issue identified by the EA is not simply leakage of transformer oil under normal conditions. It is the management of firefighting effluent and contaminated surface water generated during an incident. The Applicant should therefore demonstrate the reasonable worst-case pathway where suppression or cooling water reaches burning or damaged equipment, surrounding surfacing or access areas; where rainfall occurs concurrently; or where the primary transformer bund itself is damaged, overtopped or otherwise compromised.

The same concern appears in EA-023 to EA-025 in relation to the BESS and major-infrastructure drainage. The EA questions the detailed operation of BESS containment, the risk of contaminated water entering granular drainage material and the completeness of impermeable lining. The Applicant relies upon the FRA's lined drainage, penstocks, storage and future detailed OEMP provisions, while Requirement 11 secures approval of detailed drainage before commencement.

The fact that Requirement 11 exists is relevant. It does not establish the environmental consequences of a failure of that system.

EA-026 is similarly revealing. The Environment Agency identifies insufficient detail in the site-specific Emergency Response Plan and asks for downstream groundwater and surface-water abstractors to be notified in the event of an incident affecting controlled waters. The Applicant agrees further detail is required and says the site-specific ERP ‘can only be provided at the detailed design stage’, with future consultation with the EA, local authority and emergency services. [EXAM/8.7, EA-026]

That response is appropriate as to operational emergency planning, but it confirms that important site-specific incident-response arrangements are not yet known. The EIA should therefore separately demonstrate the environmental consequence and containment envelope within which that later ERP will operate.

HFCL's independent review reinforces this issue by identifying insufficient information concerning the interaction of surface-water flooding and firewater at Site 1 and the effectiveness of embedded mitigation. It also identifies the wider conceptual flaw that the Scheme itself — fuels, oils and firewater — has not consistently been treated as the potential source of groundwater contamination.

BEPS therefore considers that the firewater matter should remain an examination issue until the Applicant demonstrates the combined fire-plus-rainfall storage requirement, failure and exceedance routes, liner and penstock resilience, contaminated-sub-base remediation, delayed-tankering scenario and receptor consequences, including consequences for nearby private supplies.

9.14.5 The Statement of Common Ground process should identify what is actually agreed, not substitute for missing evidence

EXAM/8.7 states that the Applicant is seeking a Statement of Common Ground with the Environment Agency. BEPS welcomes that process. It can substantially assist the Examination if it distinguishes clearly between matters agreed, matters agreed subject to a Requirement, matters still under discussion and matters not agreed.

However, the existence of a SoCG process should not itself be treated as evidence that the underlying matters have been resolved.

The eventual EA SoCG should, in BEPS's submission, state explicitly the position on the adequacy of the hydrogeological conceptual model; completeness of the PWS baseline and search area; groundwater and GWDTE assessment; correctness of Source Protection Zone mapping; WFD screening of the groundwater body; adequacy of the watercourse-crossing assessment; the need and timing of FWRA/Hydrogeological Risk Assessments; BESS and substation drainage; firewater containment; and water-resource sourcing.

This is particularly important because EXAM/8.7 contains several acknowledgements that corrections or substantive technical work will occur later. EA-033 and EA-034 produce future corrections to Chapter 9. EA-035 and EA-036 rely upon post-consent ground investigation and risk assessment. EA-053 places important Chalk hydrogeological interpretation into post-consent assessments. EA-026 defers the site-specific ERP to detailed design.

Those matters should not disappear from examination merely because a general statement is made that engagement is continuing.

BEPS therefore requests that the ExA distinguish carefully between a matter that the Environment Agency expressly agrees is environmentally resolved on the present evidence and a matter for which the Applicant has merely proposed a future control mechanism.

The purpose of the Statement of Common Ground process should therefore be to identify clearly which Environment Agency concerns have been resolved, which remain subject to additional evidence or design, and which are proposed to be controlled after consent. A matter should not be treated as substantively resolved merely because discussions continue or because a future Requirement has been identified.

9.15 Response to Norfolk County Council / Lead Local Flood Authority

9.15 The Applicant's response to NCC does not resolve the drainage and flood-risk concerns

BEPS has also reviewed the Applicant's response to Norfolk County Council in EXAM/8.6. That document contains useful clarification and demonstrates that some matters have progressed since the PEIR. However, the underlying pattern is similar to that identified in the Environment Agency responses: a substantial number of the LLFA's concerns are answered by stating that the

current drainage strategy is ‘outline’, that infrastructure locations are not finalised, and that detailed design or investigation will be undertaken after consent under Requirement 11.

The LLFA’s concerns should be understood in context. At statutory consultation stage, NCC stated that the Applicant had underestimated impermeable area, had not investigated site-specific ground conditions or infiltration viability, and had not demonstrated that flood risk, runoff and groundwater-recharge effects could safely be scoped out. It also identified deficiencies in the treatment of construction drainage, access tracks, BESS/substation drainage, firewater and long-term replacement activities.

The question raised by EXAM/8.6 is therefore whether those evidential concerns have now been resolved, or whether they have primarily been transferred to the post-consent design process.

9.15.1 Impermeable area and solar runoff

One of the principal disagreements concerns the amount and nature of impermeable or effectively impermeable development.

The Applicant’s assessment generally distinguishes the solar arrays from conventional buildings on the basis that panels are elevated and rainfall can continue to reach vegetated ground. That proposition may be reasonable for narrow pile-supported arrays where the soil beneath remains well-vegetated, uncompacted and capable of accepting the concentrated runoff.

NCC's concern is that the Scheme contains materially more than the panels themselves.

The LLFA treats new and upgraded access tracks as additional impermeable or effectively impermeable area because the structural materials require substantial compaction. It specifically notes that Type 1 material is not a porous surface and, depending upon age and compaction, may become ‘as smooth and impermeable as concrete’. It raises the same issue for gravelled inverter, transformer and switchgear platforms, where a compacted structural base is required.

The LLFA also points to the Applicant’s retained use of concrete feet in some locations. Those foundations may displace floodwater or alter overland flow where placed within mapped pathways. NCC therefore objected to a drainage analysis based solely upon the more favourable narrow driven-pile scenario where the design envelope retained alternative foundations.

The Applicant has provided clarification in EXAM/8.6 that concrete feet are associated principally with areas requiring archaeological protection rather than tracker panels [NCC-155]. That clarification is useful. It does not, however, quantify the maximum extent and distribution of those concrete foundations or demonstrate their hydrological effect within mapped flow routes.

Similarly, the Applicant continues to rely upon later detailed drainage design for infrastructure whose final locations remain variable.

The issue is therefore not whether every square metre beneath a PV module should be treated as impermeable. BEPS does not advance that proposition. The issue is whether the reasonable worst-

case drainage assessment captures all areas which, because of roofing, foundations, compaction or structural construction, alter infiltration or concentrate runoff.

The LLFA's statutory response expressly disagreed with the Applicant's proposed exclusion of changes in surface-water runoff and groundwater recharge arising from solar panels and infrastructure because it considered the impermeable area underestimated and the site-specific evidence incomplete. The later responses clarify elements of the design but do not yet demonstrate, on a catchment-by-catchment basis, the maximum combined effective impermeable area and resulting runoff.

BEPS therefore considers this matter only partly addressed.

9.15.2 Construction compaction has not been reduced to a quantified catchment effect

Construction compaction is a separate issue from operational PV runoff.

East Pye requires extensive HGV and plant movements, cable corridors, temporary compounds, haul and access routes, laydown areas and working areas. NCC identified from scoping stage that such works could reduce infiltration and increase surface-water runoff for a substantial period. It therefore required construction-phase drainage as well as operational drainage.

The statutory consultation response subsequently observed that no adequate commitment to surface-water management for construction compounds had been demonstrated and that temporary hardstanding and welfare areas could increase impermeable area. It also asked how construction-type facilities would be managed during subsequent full panel replacement and repeated BESS replacement.

The Applicant's responses rely significantly upon the Outline CEMP and subsequent detailed management plans. Those documents are relevant controls, but the underlying hydrological effect remains insufficiently quantified.

A CEMP can prescribe wheel washing, soil handling, temporary drainage, sediment control and restoration. It cannot itself establish how much ground may be compacted concurrently within an individual catchment, what change in runoff coefficient may result, or how that additional runoff interacts with existing downstream flow paths.

That matters particularly in areas identified by the LLFA as contributing to flooding in communities including Saxlingham Nethergate, Hempnall and Woodton. The same authority specifically supported cumulative consideration because downstream flood impacts can be much wider than the development parcel.

The effect also recurs over time. NCC notes that full replacement of panels and repeated replacement of BESS infrastructure may reintroduce construction compounds and heavy vehicle activity during the operational life. If such activities require renewed compaction or temporary drainage, the environmental assessment should acknowledge them as recurring water-environment pressures rather than treating them as a single initial construction episode.

BEPS therefore submits that a phase-specific assessment should identify the reasonable maximum concurrent working area, temporary hardstanding and access requirements in each sensitive catchment, together with the drainage and restoration measures used to prevent increased runoff.

9.15.3 Infiltration testing remains deferred despite being fundamental to the drainage hierarchy

The position on infiltration testing is particularly clear from EXAM/8.6.

At NCC-153, the LLFA states that no site-specific ground investigation or infiltration testing has been undertaken across the extensive Scheme and observes that preliminary testing could have been undertaken at particularly important locations such as the BESS and substations. It cites its developer guidance expectation that a submitted drainage strategy should evidence whether infiltration is or is not feasible.

The Applicant responds that detailed design will be informed by ground investigation but that this investigation will occur post-consent. It relies upon historic boreholes in the vicinity of the Order Limits, which it says indicate groundwater more than 10 m below ground and a significant thickness of Lowestoft Formation clay. On that basis the Applicant says it is ‘conservative to assume’ infiltration drainage will be unlikely to be feasible across most of the Order Limits. Because individual infrastructure locations are not yet finalised, it says testing now could be abortive and therefore proposes post-consent intrusive investigation and infiltration testing. [EXAM/8.6, NCC-153]

That answer does not fully resolve the LLFA's concern.

First, the drainage hierarchy normally requires infiltration to be investigated before moving to a watercourse outfall. The Applicant is effectively relying upon an assumption that infiltration is unsuitable so that a watercourse ‘Plan B’ can form the assessment basis, while simultaneously retaining infiltration as something to be tested later.

Second, HFCL's independent evidence demonstrates that the hydrogeological behaviour of the Lowestoft Formation is more complex than a generic ‘clay therefore impermeable’ assumption. Weathered horizons and sand/gravel lenses may transmit groundwater, and HFCL's limited fieldwork confirms that shallow glacial deposits can support private supplies. That means infiltration suitability is both a drainage question and a groundwater-protection question.

Third, the Applicant's rationale that infrastructure locations are not sufficiently fixed to test them illustrates the wider problem. If locations are too uncertain for representative testing, the ExA needs to understand how the drainage feasibility of the whole authorised envelope has nevertheless been established.

The issue becomes still clearer in NCC-154. The LLFA notes that the FRA assumes infiltration is not feasible without a suitable evidence base and then assumes that substations will discharge through piped outfalls to watercourses. The LLFA states that a viable Plan B requires the actual discharge point to be identified.

The Applicant answers that all substations are intended to have lined drainage with controlled discharge at QBAR to the nearest ordinary watercourse and identifies ordinary watercourses 'in proximity' to the 132kV substations at Sites 4B, 7F and 10C and the 400kV substation at Site 5A. It then says the topographic survey will inform detailed design under Requirement 11. [EXAM/8.6, NCC-154]

A watercourse being 'in proximity' is not the same as a demonstrated viable outfall. Feasibility also depends upon level, route, capacity, land control, receiving-water sensitivity, consents and downstream consequences.

BEPS therefore submits that the infiltration issue remains material. Either infiltration needs to be established as feasible and environmentally acceptable in the relevant locations, or the alternative outfall solution needs to be demonstrated sufficiently to show that it can actually be delivered without adverse flood or water-quality effects.

ExQ1 now reinforces that point by seeking further information on infiltration and drainage. The examination issue is consequently not whether the Applicant must undertake intrusive testing at every possible infrastructure location before consent. It is whether representative evidence is sufficient to demonstrate that the drainage hierarchy has been applied and that a viable alternative discharge solution exists where infiltration proves unsuitable. If neither route has yet been demonstrated, the uncertainty concerns drainage feasibility rather than final detailed design.

9.15.4 Access tracks and watercourse crossings remain dependent upon later design

Access tracks are significant to the drainage assessment for two reasons. First, their compacted construction may generate runoff. Second, where they intersect ordinary watercourses or mapped flow paths, crossings can affect conveyance and local flood storage.

NCC's statutory consultation response explains why it does not accept the characterisation of new and upgraded tracks as inherently permeable. It notes the conflict between structural compaction requirements and permeability and identifies Type 1 construction as potentially becoming effectively impermeable.

The Applicant indicates in EXAM/8.6 that sizing of access-track drainage features and indicative outfalls will be provided later and that detailed design will be secured under Requirement 11 [NCC-151]. That is useful as a commitment but confirms that important information was not contained within the application-stage drainage solution.

Watercourse crossings introduce a further uncertainty. The LLFA has sought details of temporary construction ramps, culverts and other access arrangements and has also raised the consequences of HDD breakout. The Applicant says a breakout contingency procedure will be included in the detailed CEMP and relies upon Requirement 13 to secure that control [EXAM/8.6, NCC-150].

Again, the distinction between control and assessment matters. A future contingency plan is sensible, but the WFD and flood assessments still need to establish which crossings can occur,

what reasonable worst-case method is assessed, and whether culvert or temporary crossing capacities are sufficient for the relevant design flows.

The LLFA's scoping response had already made clear that works affecting river or watercourse flow may require separate approval and that culverting is generally avoided where possible. It required modelling of overland flow routes and at least one feasible surface-water disposal proposal.

BEPS therefore considers that Requirement 11 or separate ordinary-watercourse consent cannot substitute for demonstrating that the crossings and drainage works authorised by the DCO can be accommodated within the environmental envelope assessed.

9.15.5 BESS and substation drainage calculations remain explicitly outline

The LLFA's detailed comments on the BESS drainage calculations are particularly important because they test the engineering model rather than merely the narrative.

In its Relevant Representation, NCC observes that the BESS sub-base was modelled as a very large area of permeable paving approximately 318.5 m by 204 m by 0.57 m deep, served in the model by a single 150 mm pipe. It questions whether this represents an appropriate underdrainage arrangement for a 6.5 ha area, notes that foundations will reduce the volume of sub-base actually available for storage, and identifies an apparent mismatch between the drainage layout and calculation because a Hydrobrake is shown on the drawing but was not incorporated into the modelled information. It reports similar issues in the substation drainage designs. [EXAM/8.6, NCC-162]

The Applicant's response does not demonstrate that the model was already complete. It says that the final infrastructure layout and drainage design have not been finalised, that the drainage strategy is therefore 'outline in nature', and that detailed drainage is secured by Requirement 11. It also acknowledges the omission of Hydrobrake information and stated in EXAM/8.6 that it would provide an update at Deadline 1. BEPS will review any such update against the LLFA's identified modelling deficiencies. [EXAM/8.6, NCC-162]

That is important evidence for the ExA. The LLFA has identified actual modelling assumptions affecting storage and discharge, and the Applicant accepts that relevant design information was omitted and that the drainage model is outline.

At NCC-164, the same point arises in relation to water-quality treatment. The LLFA states that a proper Simple Index assessment cannot be completed because the precise drainage design, discharge location and treatment train for each discrete drainage area have not yet been confirmed. The Applicant expressly responds that the surface-water strategy is 'outline at this stage' and that the Simple Index assessment is 'indicative', to be refined through detailed design under Requirement 11. [EXAM/8.6, NCC-164]

At NCC-165, the Applicant similarly acknowledges that the maintenance schedule is only preliminary and indicative and will also be refined later.

These are not merely BEPS characterisations. They are the Applicant's own descriptions of the present state of the drainage evidence.

BEPS accepts that final pipe diameters and maintenance intervals need not necessarily be fixed at DCO application stage. The difficulty is that the LLFA's comments concern matters which affect whether the system has sufficient capacity, storage and treatment in the first place. If foundation volumes have not been deducted from attenuation storage, or if flow controls shown in drawings are absent from the model, those matters bear directly on the predicted hydraulic performance.

The ExA should therefore distinguish between final detailed design and the evidential minimum required to establish a viable drainage solution.

9.15.6 Firewater interaction with drainage remains only partly answered

The LLFA has consistently raised the interaction between firewater and surface-water management.

At statutory consultation stage, it said there was some initial information concerning BESS fire suppression but no equivalent information concerning the substations, even though substations contain transformers and other equipment with specific fire-control and drainage requirements. It subsequently reiterated that the discussion appeared to concern the BESS only and asked how transformer fire suppression would interact with surface-water management so that neither flood risk nor pollution of watercourses and waterbodies would increase.

The Applicant's response to the Environment Agency now provides greater clarity: transformers will be self-bunded and the Applicant considers that no firewater management or penstock is therefore required within the wider Project Substation drainage system [EXAM/8.7, EA-020].

That is a substantive response, but it leaves an evidential question which should be determined rather than assumed. The Applicant needs to demonstrate whether all credible firefighting or cooling water associated with a transformer fire remains within the dedicated transformer containment system, including during rainfall and emergency-service intervention. If it can demonstrate that no contaminated firewater can reach surrounding hardstanding or the wider drainage system, that may resolve the pathway. If not, the wider drainage design must account for it.

The same issue applies to the BESS drainage design, where the Environment Agency has asked about reasonable worst-case firewater plus rainfall, containment, penstock operation and remediation of contaminated drainage material.

For the LLFA, this is simultaneously a pollution and hydraulic-capacity issue. Firewater occupying attenuation storage during a storm may alter the performance of a system designed primarily for rainfall. It therefore cannot be treated solely as an operational fire-safety matter divorced from drainage.

BEPS submits that this interaction should remain open until the combined event and relevant failure scenarios are demonstrated.

9.15.7 Reliance upon Requirement 11 cannot cure an unproven drainage solution

A recurring feature of EXAM/8.6 is reliance upon DCO Requirement 11. The Applicant invokes it for final drainage design, infiltration testing, watercourse outfalls, access-track drainage, BESS and substation systems, Simple Index treatment assessment and maintenance arrangements.

BEPS does not contend that every drainage detail must be frozen before consent. That would be neither necessary nor proportionate for a development of this scale.

The important distinction is between **refining an environmentally acceptable solution** and **establishing that an environmentally acceptable solution exists**.

In BEPS's submission:

It is legitimate to secure detailed design later where environmental acceptability has already been demonstrated within defined parameters. It is not legitimate to defer evidence required to establish whether an environmentally acceptable solution exists at all.

That distinction is especially important here because the matters deferred include site-specific infiltration evidence, local ground investigation, final outfall locations, treatment trains, some access-track drainage, crossing details, detailed attenuation configuration and maintenance requirements.

The Applicant itself acknowledges at NCC-164 that both the drainage strategy and the Simple Index assessment are presently outline/indicative. At NCC-165 it says the maintenance schedule is indicative. At NCC-153 it says intrusive investigation and infiltration testing will occur post-consent. At NCC-154 it identifies watercourses only 'in proximity' to relevant substations and leaves detailed drainage to later design. At NCC-162 it accepts omitted Hydrobrake information and says the BESS drainage layout has not been finalised.

Those responses demonstrate that Requirement 11 is being asked to do substantial work.

The same issue is heightened by HFCL's evidence. If the underlying hydrogeological conceptual model is itself inadequately defined, post-consent drainage design is not merely selecting dimensions within a known environmental context. It may discover materially different groundwater conditions, shallow aquifer pathways, PWS vulnerabilities or infiltration constraints after the principle and spatial envelope of the development have already been consented.

Nor can the Requirement itself retrospectively provide an EIA assessment of those consequences. A Requirement can prevent commencement until a later plan is approved, but the ExA still requires enough present environmental information to reach a reasoned conclusion upon the likely significant effects of the authorised development.

BEPS therefore considers that the appropriate approach is twofold. First, the Applicant should provide sufficient information during Examination to establish drainage feasibility at the principal infrastructure sites and within sensitive catchments, including representative/site-specific ground evidence, viable outfalls, hydraulic performance, exceedance routes, treatment and emergency-

containment principles. Second, Requirement 11 can then properly secure the detailed engineering refinement of the demonstrated solution.

The LLFA's position throughout the process has been materially consistent: where the evidence is incomplete, a precautionary approach is required; surface-water management must cover all phases; overland flow routes must be assessed; and at least one feasible disposal solution must be demonstrated.

BEPS submits that EXAM/8.6 does not yet demonstrate that all of those underlying concerns have been closed. It demonstrates instead that a substantial proportion of the solution remains dependent upon later investigation and detailed design. That is precisely the distinction which the ExA should test during Examination.

9.16 H Fraser Consulting: Independent Technical Verification of the Deficiencies

9.16 Independent Technical Review

BEPS commissioned H Fraser Consulting Ltd ('HFCL') to undertake an independent specialist review of the ground conditions, hydrology and hydrogeology elements of the Environmental Statement and associated technical appendices submitted in support of the East Pye Solar application. The final report, *Environmental Impact Assessment Review: Ground conditions, hydrology and hydrogeology*, reference 31375Rev01, was issued on 28 September 2026. It was prepared by Gareth Owen and approved by Hannah Fraser.

The stated objective of the HFCL review was to determine whether the environmental impacts of the Scheme upon surface water and groundwater had been appropriately identified by the Applicant and whether adequate mitigation had been incorporated to ensure that impacts upon surface waters and related human and environmental receptors would be reduced to acceptable levels. Its principal focus was ES Chapter 9 Water Environment, Chapter 16 Ground Conditions and the associated technical appendices, with other chapters considered where relevant. HFCL expressly confined its review to its areas of technical specialism in ground conditions, hydrology and hydrogeology and states that its report does not purport to provide legal advice. [HFCL §§1.1–1.2 and report disclaimer]

The review was not confined to a desktop comparison of the Applicant's documents. HFCL also examined the geological, hydrological and hydrogeological setting, obtained private-water-supply information from South Norfolk Council and undertook a site visit to verify a sample of local conditions and private water supplies. HFCL's Figure 2-6 plots the private-water-supply locations obtained from the local authority and those observed during fieldwork; Figure 2-7 brings those locations together with local BGS borehole records. A sample of residences and businesses was visited specifically to verify whether supplies were active and to understand their reliance upon groundwater. [HFCL §2.5.1, pp.7–10]

This independent work is important because HFCL reaches conclusions materially consistent with concerns raised earlier by the Planning Inspectorate, Environment Agency and Norfolk County Council, but does so after examination of the final application-stage Environmental Statement. It is

therefore evidence not merely that consultees asked questions during an earlier stage of project development, but that substantive deficiencies remain apparent in the final assessment.

HFCL summarises its findings in Table 4.1 of the report. That table contains 15 numbered key observations covering EIA methodology, WFD assessment, water resources, private water supplies, GWDTEs, hydrogeological conceptualisation, receptor assessment, firewater, piling and the accuracy and transparency of the underlying baseline. HFCL concludes that the combined effect of those deficiencies creates a 'significant lack of confidence' that impacts upon the water environment are properly understood or can be mitigated. [HFCL Table 4.1, pp.19–22; §5, p.23]

BEPS relies upon that technical conclusion. The significance of the HFCL report is not that every individual criticism would necessarily be determinative in isolation. It is that a qualified specialist review identifies multiple deficiencies affecting the same underlying environmental system, so that uncertainty in one part of the assessment propagates into conclusions elsewhere. An incomplete hydrogeological conceptual model affects private-water-supply assessment; the same uncertainty affects GWDTEs, groundwater WFD assessment, piling risk and pollution pathways. An incomplete drainage design affects flood risk, routine water quality and emergency firewater containment. Uncertainty over water resources affects both deliverability and ecological mitigation. It is the combined effect of those deficiencies which is material to the Examination.

9.16.1 EIA methodology and significance assessment

HFCL's first group of concerns relates to the methodology by which effects have been characterised and assigned significance. These are important because they affect the threshold at which potentially material environmental effects are carried forward and the transparency with which the ExA can interrogate the assessment.

HFCL first identifies an inconsistency between Chapter 9 Water Environment and Chapter 16 Ground Conditions in their definitions of effect and magnitude. Chapter 9 principally addresses hydrology while Chapter 16 principally addresses hydrogeology, yet the two subjects are physically interconnected. HFCL considers that materially different assessment systems make it difficult to follow the same source-pathway-receptor relationship where it passes between the two chapters. Chapter 9 uses four magnitude categories — High, Medium, Low and Negligible — whereas Chapter 16 uses five — Large, Medium, Small, Very Small and Negligible. Water-quality change is also described differently: Chapter 9 uses deterioration between WFD classes, while Chapter 16 refers to Environmental Quality Standards. [HFCL §3.1.1, pp.12–13; Table 4.1, item 1]

HFCL does not suggest that all EIA chapters must employ identical terminology. Different technical disciplines may legitimately use different professional methodologies. Its criticism is that the overlap between hydrology and hydrogeology at East Pye is so extensive that unexplained methodological differences materially hinder interrogation of the assessment. Groundwater pollution arising from a Scheme activity does not become a different physical effect depending on whether it is discussed under Chapter 9 or Chapter 16.

HFCL also questions the way Chapter 9 defines receptor sensitivity. Table 9.3 uses distance from the Scheme boundary as part of the sensitivity classification. HFCL considers this conceptually wrong: sensitivity should describe the intrinsic importance or vulnerability of the receptor, whereas

distance or hydraulic connectivity concerns the likelihood and magnitude of exposure. More importantly, HFCL observes that distance is not necessarily a reliable proxy for hydrogeological connectivity at all. A receptor located further away but hydraulically downgradient within a transmissive aquifer may be more exposed than a closer receptor with little or no hydraulic connection. [HFCL §3.1.1, p.12]

The treatment of private water supplies illustrates the resulting inconsistency. HFCL records that Table 9.3 uses distance bands of less than 50 m for Very High sensitivity, 50–250 m for High, 250–500 m for Medium, 500 m–1 km for Low and beyond 1 km for Negligible. Table 9.4, however, uses less than 1 km as Very High, 1–3 km as High and 3–5 km as Medium. [HFCL §3.1.1, p.12] The inconsistency is not simply numerical. It demonstrates that the Applicant has not applied a coherent rationale for translating distance into receptor sensitivity, notwithstanding the Environment Agency's express warning that effects upon abstractions beyond 250 m cannot necessarily be discounted in transmissive Principal Aquifers.

HFCL's second and third formal findings concern the significance thresholds applied to protected ecological sites and WFD waterbodies. In relation to protected sites, Chapter 9 requires the complete loss of a legally protected wildlife site to constitute a High magnitude effect, whereas Chapter 8 applies a materially more precautionary test concerned with serious damage to key characteristics, integrity or conservation status. HFCL considers the Chapter 9 formulation insufficiently precautionary and inconsistent with the ecological assessment. [HFCL §3.1.1, pp.12–13; Table 4.1, item 2]

Similarly, HFCL criticises the WFD magnitude criteria. It notes that Chapter 9's High magnitude category requires a water-quality deterioration of two WFD status classes. That sits uneasily with the applicable WFD objective of preventing deterioration of status in the first place. The relevant environmental test cannot rationally begin only when deterioration is sufficiently severe to move a waterbody down two classes. HFCL accordingly considers the Chapter 9 methodology insufficiently precautionary in its treatment of waterbodies. [HFCL §3.1.1, p.12; Table 4.1, item 3]

HFCL also questions the Chapter 9 significance matrix itself. It notes that reducing magnitude by only one step, from Medium to Low, can cause significance to fall by two categories, from Major to Minor. It further considers combinations such as Low sensitivity × Low magnitude producing Negligible significance, and Medium × Low producing Minor/Negligible, to be insufficiently precautionary. [HFCL §3.1.1, p.13] This matters because Chapter 9 repeatedly reaches findings of Minor or Not Significant effects by assigning Negligible magnitude to receptors which are acknowledged to have High or Very High sensitivity.

The eleventh formal HFCL finding concerns aggregation. HFCL states that both Chapter 9 and Chapter 16 combine effects across several categories of receptor in such a way that the assessment cannot readily be interrogated receptor by receptor. [HFCL §3.1.4.1, p.15; Table 4.1, item 11] A conclusion expressed collectively for ‘aquifers, GWDTEs and bedrock/superficial deposits’, for example, does not show how each constituent receptor responds to the particular source and pathway. A large regional aquifer, a shallow domestic well and a local groundwater-dependent wetland have materially different sensitivities and exposure mechanisms.

BEPS considers these methodological criticisms important because they affect the reliability of the entire Chapter 9 significance exercise. The ExA should be able to trace, for each important

receptor, the source of impact, pathway, magnitude, embedded mitigation and residual effect. Where the methodology instead merges dissimilar receptors, relies upon distance as a proxy for sensitivity, or applies thresholds which are less precautionary than the underlying WFD or ecological objectives, a conclusion of 'Not Significant' requires closer examination rather than being accepted at face value.

9.16.2 WFD and catchment assessment

HFCL's fourth formal finding concerns the Applicant's WFD screening exercise. It identifies six surface-water WFD catchments and one groundwater body associated with the Scheme. Three surface-water bodies — Broome Beck, the Tas from Head to Tasburgh, and the Chet — are screened out, together with the Broadland Rivers Chalk and Crag groundwater body.

HFCL considers those exclusions inappropriate because development occurs within the relevant catchments and because drainage features within the Scheme connect to the screened-out surface-water bodies. It records that the Scheme contains ditches which connect directly with the relevant downstream waters and notes that construction will entail substantial ground disturbance capable of mobilising silt and pollutants including fuels, oils, foul effluent and contaminants associated with plant and equipment. [HFCL §3.1.2, p.13; §3.2.2, p.17; Table 4.1, item 4]

The significance of this finding is that the Applicant's own assessment accepts the existence of the pathway but nevertheless excludes the downstream receptor from detailed WFD assessment. As addressed earlier in this Written Representation, Broome Beck is a clear example: development occurs within its catchment, field drains and an unnamed tributary occur within or alongside relevant Sites and Cable Route Corridors, and that tributary connects downstream to Broome Beck. Whether a particular cable crossing is trenchless does not remove the wider catchment pathway through which construction sediment, runoff or pollution may reach the classified waterbody.

HFCL makes a related criticism of the groundwater screening. The Broadland Rivers Chalk and Crag groundwater body is screened out in part because the physical footprint of cable trenches and related works is small compared with the approximately 3,076 km^2 area of the whole groundwater body. HFCL considers that the wrong scale of analysis. Its position is that screening should consider whether the Scheme may adversely affect any relevant part of the groundwater body, including groundwater baseflow and locally important groundwater resources, rather than diluting a potentially significant local effect by comparing it with the area of an enormous regional aquifer. [HFCL §3.2.2, p.17]

That criticism acquires particular force in the East Pye context because the groundwater body supports private and public abstractions; the Scheme overlies Principal Aquifers; Source Protection Zones are present; and piling, deep foundations, trenching and HDD can introduce new pathways. A local contamination event affecting an individual private supply is not rendered environmentally negligible because the regional WFD groundwater body is geographically large.

HFCL also criticises the Applicant for insufficiently considering the Scheme itself as a source of contamination. This issue appears both within the WFD/catchment criticism and more specifically in Table 4.1 item 13 concerning piled structures. Construction introduces fuels, oils, suspended

sediment, cementitious materials and drilling products; operation introduces transformers, electrical equipment and BESS/firewater risk. Those sources need to form part of the WFD source-pathway-receptor analysis rather than the assessment concentrating principally upon mobilisation of pre-existing contamination.

BEPS considers HFCL's WFD finding particularly significant because Appendix 9.2 ultimately reaches broad conclusions that the Scheme will not cause deterioration and will not prevent achievement of future WFD objectives. Those conclusions can only be as reliable as the scope of the assessment which precedes them. Where half of the identified surface-water catchments and the only identified WFD groundwater body have been screened out notwithstanding physical development and hydrological connection, a categorical overall conclusion requires further substantiation.

9.16.3 Water resources

HFCL identifies four formal deficiencies concerning the Water Resources Assessment: construction-water demand, the treatment of rainwater harvesting, the unidentified source of imported water and uncertainty in the water-balance arithmetic. These correspond to Table 4.1 items 5, 6, 7 and 15.

The first concern is that the WRA does not adequately account for construction-process water. HFCL accepts that welfare demand is included, but states that the assessment does not adequately account for water required for concrete batching, dust suppression, plant and equipment washing and other construction processes. [HFCL §3.1.2, p.13; §3.2.3, p.17; Table 4.1, item 5] This is material because East Pye will involve extensive construction across a large rural site, and dust-suppression demand may be greatest during dry weather when regional water-resource conditions are most constrained.

The second concern is the assumption that rainwater harvesting is effectively non-consumptive. HFCL explains that harvested rainfall used by the development will not all return to the same hydrological system. Some will leave as foul effluent, some will be lost through evaporation or evapotranspiration and some may be consumed or exported through other uses. [HFCL §3.1.4.1, pp.15–16; §3.2.3, p.17; Table 4.1, item 6] This is significant not only to the WRA balance but to groundwater recharge, shallow private supplies and ecology. If rainfall which would otherwise infiltrate locally is captured and then partly consumed or removed, the assumption of hydrological neutrality requires justification.

HFCL's third water-resource concern is the reliance upon imported or tankered water without identifying its source. The WRA recognises the constraints on obtaining potable or non-potable water locally and proposes rainwater harvesting and import by road tanker as the principal solutions. HFCL states that no information is provided on the origin of that imported water. Given that much of East Anglia is similarly water stressed, HFCL considers that the source must be identified so that the Scheme does not merely displace its water-resource impact to another stressed catchment or derogate other users. [HFCL §3.1.4.1, pp.15–16; §3.2.3, p.17; Table 4.1, item 7]

This concern has subsequently been reinforced by the Applicant's own examination response. In responding to Anglian Water, the Applicant continues to describe tankering as the preferred solution and states that it will 'explore tankering options outside the AWS region'. That remains an exploration of possible sources rather than evidence of a secured one. The distinction is material: tankering is a transport mechanism, not a water resource.

The fourth concern is transparency of calculation. HFCL identifies apparent discrepancies which make it difficult to reproduce the WRA arithmetic. It notes, for example, that WRA §2.1.8 describes 278 people on site during construction requiring 0.1 m^3 each, which equates to 27.8 m^3/day, whereas §2.1.6 states a total daily demand of 31.13 m^3. HFCL also notes that §2.1.9 describes a non-potable proportion of 40–60%, whereas the stated daily non-potable demand equates to 55.38%; although that figure lies within the stated range, the derivation is not transparently explained. [HFCL §3.2.3, p.17; Table 4.1, item 15]

BEPS does not rely upon these numerical observations to assert that the entire WRA is arithmetically invalid. The more measured and important point is that an assessment whose conclusion depends upon balancing multiple sources of water against demand in a seriously water-stressed region needs to be readily auditable. The ExA should be able to reproduce the construction, operational and decommissioning balances from the stated assumptions and to understand exactly what proportion is expected from rainfall, storage, mains or tanker supply, including under dry-weather conditions.

Taken together, HFCL's water-resource findings support BEPS's submission that the application has identified possible supply mechanisms but has not yet demonstrated a secured, transparent and environmentally sustainable water solution across the full life of the Scheme.

9.16.4 Private water supplies, GWDTEs and the hydrogeological baseline

HFCL's findings concerning private water supplies, groundwater-dependent terrestrial ecosystems and the hydrogeological conceptual model are particularly significant because they concern the baseline against which effects have been assessed.

Table 4.1 item 8 concludes that the PWS baseline relies upon assumptions which are not sound. HFCL identifies three specific problems. The Applicant has not demonstrated a cross-check between PWS records, mains-water-supply records and an address database; it has not undertaken sufficient ground-truthing of supplies; and the general assumption that the Lowestoft Formation glacial till does not support private water supplies is unsound. [HFCL Table 4.1, item 8, pp.19–20]

HFCL's fieldwork provides direct evidence for that conclusion. It obtained private-water-supply grid-reference data from South Norfolk Council and visited a limited sample of properties. It identified an active groundwater supply at Boyland Hall which the Applicant had assumed to be disused because the former Hall and outbuildings had been demolished. HFCL also verified active groundwater supplies at Elder Farm/The Forge, Park Farm and Willow Farm, including properties for which groundwater was the resident's only water supply. Park Farm was outside the Applicant's 250 m buffer and therefore had not been discussed in the assessment. [HFCL §2.5.1 and Table 2.1, pp.8–10]

HFCL emphasises that its field visit was deliberately limited and intended only to provide a snapshot. Despite that limited sample, it identified an active supply apparently absent from the local-authority list and incorrectly assumed inactive by the Applicant. It therefore concludes that it is 'possible (indeed probable)' that other private water supplies have been omitted. [HFCL §3.1.3.1, p.14]

This is a particularly important evidential finding. It does not merely criticise methodology in the abstract; it shows that the desktop approach has produced at least one incorrect assumption about whether a receptor remains active. If the baseline population of drinking-water receptors is incomplete, confidence in the subsequent conclusion that effects upon that population are negligible or minor is necessarily reduced.

Table 4.1 item 9 concerns GWDTEs. HFCL states that the Applicant has not identified all GWDTEs within the study area and has provided no assessment of possible connectivity between the Scheme and those receptors. As a result, HFCL concludes that impacts upon sensitive groundwater-dependent receptors have been omitted from the EIA. [HFCL §3.1.3.2, p.14; §3.1.4.2, p.16; Table 4.1, item 9] That concern is especially material because Chapter 9 itself records the Broadland Rivers Chalk and Crag groundwater body as failing the quantitative Groundwater Dependent Terrestrial Ecology test.

Table 4.1 item 10 concerns the absence of a conceptual hydrogeological model. HFCL states expressly that the Applicant does not present such a model and therefore relies upon a baseline which has not been fully characterised. [HFCL §3.1.3.5, p.15] It highlights the relationship between the Lowestoft Formation and the underlying Chalk/Crag Principal Aquifer as a particularly important example.

HFCL cites published BGS work indicating that recharge through the till to the Chalk may amount to approximately 4.5–20% of effective rainfall; that overland flow can be limited because the weathered upper till may be relatively permeable; and that hydraulic conductivity of the weathered till can reach approximately 10^-5 m/s in some circumstances. It also notes that the Lowestoft Formation is designated as a Secondary Undifferentiated Aquifer and may contain sand and gravel horizons or lenses. [HFCL §3.1.3.5, p.15] These findings materially undermine any generalised treatment of the till as a continuous impermeable barrier protecting deeper groundwater.

The significance for private supplies is demonstrated elsewhere in the same report. HFCL notes that shallow abstractions from glacial till are not unusual and identifies an internal contradiction in the Applicant's Technical Appendix 16.1: the Applicant generally assumes that Lowestoft Formation does not support PWS abstraction, yet PWS record TM29NW25 is itself described as abstracting from that formation. [HFCL §3.2.4, pp.17–18]

The fourteenth formal finding concerns confusion over aquifer designations and Source Protection Zones. HFCL notes that Chapter 16 Table 16.7 incorrectly characterises the bedrock aquifers as Secondary A, although subsequent parts of the chapter correctly identify them as Principal Aquifers. HFCL also considers Table 16.12 unclear as to whether the relevant SPZs protect groundwater abstraction from superficial deposits or the deeper bedrock. [HFCL §3.1.3.3, p.14; Table 4.1, item 14]

HFCL also records that Chapter 9 failed properly to represent the extent of SPZs and omitted SPZ1 within the study area. It states that the majority of the Scheme lies within SPZ limits, contrary to a Chapter 9 description implying that only the northern part is affected. [HFCL §3.1.3.4, p.14] The Environment Agency has independently raised the same baseline issue, and the Applicant subsequently accepted in EXAM/8.7 that corrections to the SPZ description were required.

These findings are mutually reinforcing. Inaccurate SPZ mapping, an incomplete PWS inventory, unassessed GWDTEs and a missing conceptual groundwater model are not four unrelated editorial issues. They concern the basic identification of groundwater receptors and the pathways between those receptors and the Scheme. BEPS submits that those matters need to be resolved before the Chapter 9 residual-effects conclusions can be relied upon.

9.16.5 Firewater, surface-water flooding and preferential groundwater pathways

HFCL's twelfth and thirteenth formal findings concern two of the Scheme's most consequential pollution mechanisms: emergency firewater at Site 1 and preferential pathways created by piling or deep foundations.

HFCL's review of Appendix 9.1 identifies an unresolved interaction between surface-water flood risk and the emergency containment system at Site 1. It refers specifically to FRA paragraph 9.10.16, which identifies surface-water flood risk within and around the 400kV and National Grid substations at Sub-Site 1B and states that an appropriate solution for upstream exceedance flows will be considered at detailed design stage. [HFCL §3.2.1, p.16]

HFCL considers it ‘critically important’ that surface-water flooding is not managed by the same capacity required for firewater containment where that could cause the containment system to be overwhelmed during a coincident fire and storm event. [HFCL §3.2.1, p.16] This is a sensible worst-case concern because the relevant systems do not operate in isolation simply because the ES assesses fire and rainfall under separate headings.

HFCL also points to FRA §9.11.4, which states that the BESS ‘may’ be split into compartments with separately lined aggregate sub-bases and that this ‘would’ assist isolation, testing and remediation after a fire. HFCL's criticism is that those qualifying terms make it unclear whether compartmentalisation is actually secured mitigation or merely a possible future design option. [HFCL §3.2.1, p.16] That distinction matters because the residual-effect assessment should only rely upon measures whose implementation and effectiveness are sufficiently certain.

Table 4.1 item 12 therefore concludes that insufficient information is available concerning the interaction between surface-water flooding and firewater/runoff management at the Site 1 400kV and National Grid substations and concerning the physical make-up of the BESS relevant to firewater management. HFCL says there is consequently insufficient detail to evaluate the likely effectiveness of the proposed embedded mitigation. [HFCL Table 4.1, item 12, p.21]

The thirteenth formal finding concerns piled structures. Technical Appendix 16.1 recognises that piles can create preferential vertical pathways for contaminant migration, but then assesses the risk largely by reference to whether pre-existing brownfield contamination is present. HFCL

considers that incomplete because it fails to treat the Scheme itself as a contaminant source. [HFCL §3.2.4, pp.17–18]

During construction, sources include fuels and oils; during operation they include BESS firewater and other substances associated with the electrical infrastructure. If piles penetrate the Lowestoft Formation into a more transmissive underlying aquifer, those Scheme-generated substances are relevant to the source-pathway-receptor analysis irrespective of whether the land was previously contaminated.

HFCL summarises the point clearly: the assessment 'focusses solely on the likely presence/absence of brownfield land' and does not assess the potential for the Scheme itself to be the contamination source. [HFCL Table 4.1, item 13, p.21]

BEPS considers these findings especially significant when read together with the Environment Agency's requirement for Foundation Works Risk Assessments and Hydrogeological Risk Assessments. The Applicant's later commitment to undertake those assessments post-consent acknowledges that preferential-pathway risk requires further investigation. HFCL demonstrates why that work matters to the environmental assessment, rather than merely to later construction method statements.

9.16.6 Overall significance of the HFCL review

HFCL concludes that the deficiencies identified in the Applicant's assessment result in a significant lack of confidence that impacts to the water environment are properly understood or can be mitigated. It identifies potentially affected receptors including shallow and deep groundwater, residents dependent upon private groundwater supplies, other groundwater and surface-water users, local watercourses, sensitive aquatic ecosystems and groundwater-dependent terrestrial ecosystems. HFCL also concludes that the Scheme has not satisfactorily demonstrated that its water requirements can be met sustainably.

The significance of the review is evidential. HFCL does not purport to determine the planning balance or the ultimate legal outcome. Its conclusion is that the existing ES contains deficiencies in both the EIA process and the technical work underpinning it, and that these deficiencies prevent confidence in the Applicant's conclusions. On that basis, HFCL identifies a substantial amount of further information which it considers necessary under Regulation 20 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 before a decision is taken on the DCO

BEPS relies upon those technical conclusions. However, for legal precision, BEPS does not adopt the report's references to Regulation 24 of the Infrastructure Planning EIA Regulations or to the 'Water Framework Directive Regulations 2015'. For an accepted DCO application presently under examination, Regulation 20 is the provision governing further information where the Examining Authority considers that the ES should contain further information. Regulation 24 addresses subsequent applications. The current domestic WFD regime is the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017.

That correction does not detract from HFCL's technical findings. On the contrary, it allows those findings to be put before the ExA on the correct legal basis. BEPS's submission is that the 15 principal comments or deficiencies identified by HFCL in Table 4.1, reinforced by the statutory-consultee evidence, raise a serious question as to whether the environmental information presently before the Examination is sufficient to enable a reasoned conclusion to be reached on the significant effects of the Scheme upon the water environment.

HFCL's conclusion should not be read as evidence that significant adverse effects have already been proved to occur. Its significance is evidential: the identified deficiencies create a substantial lack of confidence in the Applicant's ability, on the information presently available, to exclude or adequately characterise those effects. That distinction is important. BEPS relies upon the review principally as evidence that the Applicant's conclusions of negligible or non-significant effect are not yet sufficiently robust.

9.17 Consequences for the Examination

9.17 Matters upon which further evidence is required before a sufficiently robust conclusion can be reached

Several of the outstanding matters are questions of environmental knowledge rather than merely detailed engineering. The identity and vulnerability of private-water-supply receptors, the site-wide groundwater conceptualisation, infiltration feasibility, groundwater-dependent habitat connectivity and some contaminant pathways are capable of determining whether an acceptable drainage, foundation or pollution-control solution exists. They therefore need to be distinguished from matters such as final pipe sizing or routine construction sequencing which can properly be refined later.

The significance of the deficiencies identified throughout this Written Representation is that they affect conclusions the ExA and ultimately the Secretary of State must be able to reach on the basis of adequate environmental information. Regulation 21 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires the Secretary of State, when deciding whether to grant development consent, to examine the environmental information, reach a reasoned conclusion on the significant environmental effects of the development and integrate that conclusion into the decision.

On the present evidence, BEPS submits that a sufficiently robust conclusion cannot yet be reached that private water supplies will be protected. The Applicant has not demonstrated a complete PWS inventory within the relevant hydrogeological zone of influence; active supplies have been incorrectly assumed inactive; HFCL considers further supplies likely to have been omitted; abstraction horizons and hydraulic connections remain uncertain; and the assessment does not provide receptor-specific contamination, yield or monitoring analysis. The existence of Figure 16.5 does not cure those deficiencies because it is a location plan rather than a source-pathway-receptor risk assessment.

Nor can the ExA presently conclude with sufficient confidence that material groundwater contamination is unlikely. HFCL finds that no adequate conceptual hydrogeological model has been presented; the Lowestoft Formation is treated too simplistically; the underlying Chalk and Crag form Principal Aquifers; SPZ information has required correction; and the Applicant intends to undertake important Foundation Works and Hydrogeological Risk Assessments after consent. The piling assessment has also omitted the Scheme itself as a potential contaminant source.

The same problem affects WFD conclusions. Three surface-water bodies and the groundwater body have been screened out notwithstanding development within their catchments or over the aquifer and notwithstanding connecting water features. The assessment does not provide detailed quantitative contaminant-transport or sediment analysis sufficient to remove all uncertainty. BEPS therefore submits that the present evidence does not yet establish either that deterioration can be excluded or that the Scheme will not impede measures necessary to achieve the applicable future environmental objectives.

The position on GWDTEs is similarly incomplete. The Environment Agency and HFCL identify omitted or inadequately characterised GWDTE receptors, and HFCL finds that no assessment of their hydrogeological connectivity to the Scheme has been provided. Without identifying the groundwater source, recharge area and pathway for each relevant habitat, a conclusion of Negligible or Minor effect is not sufficiently founded.

The drainage and emergency-firewater cases also remain dependent upon assumptions which have not yet been fully demonstrated. The Applicant's own responses describe major elements of BESS and substation drainage as outline or subject to detailed design. HFCL identifies an unresolved interaction between surface-water exceedance and firewater containment at Site 1. The ExA therefore cannot presently assume that a credible combined fire-plus-storm event, containment failure or delayed removal of contaminated water has been fully accommodated.

Likewise, BEPS submits that the evidence does not yet demonstrate that all drainage solutions are feasible within the assessed design envelope or that off-site flood risk will not increase. Site-specific infiltration testing remains deferred; some outfalls are identified by reference only to nearby watercourses; the LLFA has questioned effective impermeable area, access tracks, construction compaction, attenuation assumptions and drainage modelling; and significant surface-water pathways cross a number of Scheme sites and cable corridors.

Finally, the Scheme's water-resource case remains unresolved. The Applicant has quantified substantial demand but has not identified a secured source for the tankered component of that demand. HFCL identifies unaccounted or insufficiently explained construction uses, potential consumptive losses from harvested rainfall and uncertainties in the water-balance arithmetic. In a seriously water-stressed region, the ExA cannot simply equate the availability of tankers with the availability of a sustainable underlying water resource.

The cumulative consequence is that the outstanding issues concern the adequacy of the environmental baseline, the existence of source-pathway-receptor relationships and the feasibility of mitigation. They are not all matters which can safely be characterised as minor details of implementation.

9.18 Further Environmental Information Sought

BEPS submits that the following information should be provided during Examination insofar as it is necessary for the ExA and ultimately the Secretary of State to reach the reasoned environmental conclusion required by the EIA regime.

9.18 Further information should be obtained before conclusions are reached on the water environment

Regulation 20 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 provides the relevant examination-stage mechanism. Where an Examining Authority is examining an application for development consent and is of the view that it is necessary for the Environmental Statement to contain further information, Regulation 20 requires the ExA to state the reasons for that conclusion and suspend consideration pending provision and consultation upon the necessary information. Current Planning Inspectorate guidance expressly confirms that an inadequate ES discovered during Examination may require suspension pending further information under Regulation 20.

BEPS does not suggest that Regulation 20 is automatically engaged merely because an objector or technical consultant seeks more detail. The statutory question is for the ExA. BEPS submits, however, that the deficiencies identified by the statutory consultees and independently verified by HFCL concern information directly relevant to reaching reasoned conclusions on potentially significant water-environment effects and should therefore be resolved during Examination.

9.18.1 Complete private-water-supply baseline and receptor assessment

The Applicant should first provide a complete and auditable private-water-supply inventory for the hydrogeological zone of influence of the Scheme rather than a fixed arbitrary distance. That exercise should reconcile South Norfolk Council's statutory PWS records with Environment Agency abstraction records, BGS borehole data, property-address information, available mains-water connection information and direct landowner or occupier engagement.

Where records are incomplete, inactive status should not be assumed without reasonable verification. HFCL's Boyland Hall finding demonstrates why. The programme should therefore include proportionate field verification of supplies for which status, position or abstraction type remains uncertain.

For each potentially affected active supply, the assessment should identify its verified location, whether it is a well or borehole, construction and depth where available, abstraction horizon or source stratum, use, dependency, and relationship to the Scheme. The assessment should distinguish supplies used as the sole domestic drinking-water source from other uses because the consequence of interruption or contamination differs materially.

A PWS-specific conceptual source-pathway-receptor assessment should then be undertaken. It should identify which Scheme activities could affect each supply during construction, operation, maintenance, replacement and decommissioning, including spills, sediment, groundwater-level

change, dewatering, piling, trenching, HDD, altered recharge, transformer substances and contaminated firewater.

For potentially affected domestic supplies, a baseline monitoring programme should establish water quality, water level or yield and natural/seasonal variation before relevant works commence. The baseline needs to be sufficient to enable later deterioration to be identified and causation investigated. Without that evidence, affected residents and the Applicant alike may face serious difficulty establishing whether a later change is Scheme-related.

9.18.2 Site-wide conceptual hydrogeological model and targeted investigation

The Applicant should provide the conceptual hydrogeological model which HFCL finds absent from the ES. That model should identify the principal and superficial aquifer units; thickness and continuity of Lowestoft Formation deposits; sand and gravel horizons; Chalk and Crag interfaces; groundwater levels and gradients; groundwater flow directions; recharge; groundwater/surface-water interactions; springs or seepages where relevant; abstractions; GWDTEs; SPZs; and natural or anthropogenic preferential pathways.

The conceptual model should not be a single generic diagram assumed to apply uniformly across the entire Scheme. It should distinguish the principal hydrogeological settings associated with Site 1, Site 5, the Tas/Hempnall valley, the Starston Brook catchment, the Broome/Waveney system and material cable-crossing areas.

Targeted ground investigation should then test assumptions which materially determine environmental acceptability. In particular, it should establish the thickness and character of the Lowestoft Formation and more permeable horizons at high-risk infrastructure locations; relevant groundwater levels; the relationship between proposed maximum foundation depths and underlying aquifers; and the feasibility and environmental acceptability of proposed drainage mechanisms.

Seasonal groundwater information is important. A single groundwater level observed during a dry period may not represent the maximum level or the periods during which shallow groundwater and surface-water connectivity are greatest. The Applicant should therefore demonstrate how seasonal variability has been addressed.

9.18.3 Foundation Works, piling and HDD risk

The Applicant should provide sufficient pre-consent assessment to demonstrate that the reasonable worst-case foundation and trenchless-construction parameters can be delivered without unacceptable groundwater effects.

For the BESS, National Grid Substation, 400kV Project Substations and other locations where deep or piled foundations remain possible, the assessment should show the maximum foundation depth, local stratigraphy, groundwater units potentially penetrated and credible contaminant sources. It should assess the possibility of creating preferential vertical pathways from the surface or shallow deposits into deeper Principal Aquifers.

The assessment must include Scheme-generated contamination, not merely historical brownfield sources. Fuels, oils, construction materials, operational transformer fluids and firewater should all be treated as potential sources where relevant.

For HDD and other trenchless works, the Applicant should provide a complete schedule of environmentally material crossings and assess the reasonable worst-case bore depth and method, groundwater units encountered, frac-out or drilling-fluid-release pathways, launch and reception-pit requirements and receiving receptors. Where detailed crossing methodology will still be determined later, the assessed envelope should be sufficiently constrained to show that an acceptable solution exists.

Post-consent Foundation Works Risk Assessments and Hydrogeological Risk Assessments may properly refine the construction solution, but they should not be used to postpone the basic question of whether the maximum authorised foundation or HDD scenario is environmentally acceptable.

9.18.4 Revised WFD assessment and complete watercourse-crossing register

The WFD Assessment should be revised to reconsider Broome Beck, Tas (Head to Tasburgh), Chet and the Broadland Rivers Chalk and Crag groundwater body in light of the actual Scheme activities and connecting water features.

For each screened-out surface-water body, the Applicant should identify drainage pathways from Scheme land to the classified waterbody, describe the relevant pollution and sediment sources and explain why those pathways cannot cause deterioration or impede achievement of WFD objectives. The analysis should not be confined to whether a cable physically crosses the main river channel.

The groundwater body should be assessed at the scale at which local effects can occur. Comparison between the excavation footprint and the total 3,076 km^2 groundwater-body area should not substitute for assessment of local groundwater quality, baseflow or abstraction effects.

A complete crossings register should identify all permanent and temporary crossings of main rivers, ordinary watercourses and material drainage features, together with crossing purpose, construction method, dimensions or maximum design envelope, hydraulic implications and WFD considerations. Where culverts remain possible, their hydromorphological consequences should be specifically addressed.

The revised WFD exercise should separately demonstrate compliance with the no-deterioration objective and with the obligation not to prevent achievement of applicable environmental objectives. Regulation 13 of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 identifies prevention of deterioration and protection, enhancement and restoration towards the applicable status objectives as distinct elements of the statutory regime.

9.18.5 GWDTE identification and connectivity assessment

The Applicant should produce a complete schedule of actual and potential GWDTEs within the relevant hydrogeological study area, agreed so far as possible with the Environment Agency and Natural England.

For each receptor, the assessment should establish the nature and degree of groundwater dependence; the relevant source aquifer or shallow groundwater unit; groundwater-level regime; recharge area; surface-water interaction; and potential hydraulic connection to the Scheme.

It should then assess changes in recharge, dewatering, trenching, piling, HDD, contamination and cable heat against those receptor-specific pathways. Aggregating GWDTEs with aquifers and geological units in a single residual-effects conclusion does not provide the necessary transparency.

9.18.6 Detailed Site 1 and Site 5 drainage and containment evidence

Site 1 and Site 5 warrant focused evidence because of the concentration of major infrastructure and sensitive receptors.

For Site 1, the Applicant should provide sufficient drainage detail to demonstrate the combined operation of the BESS, National Grid Substation and Project Substation drainage systems, including catchment boundaries, impermeable areas, attenuation volumes, discharge controls, receiving watercourses, exceedance pathways, groundwater protection and interaction with surrounding surface-water flood routes.

The Applicant should clearly establish whether individual compounds are hydraulically separate and how contamination would be prevented from passing between systems. The relationship between ordinary drainage storage and emergency firewater storage should be demonstrated.

For Site 5, the Applicant should provide detailed hydraulic modelling rather than relying principally on indicative attenuation-volume estimates. The assessment should identify the proposed outfall, route, level, capacity, receiving watercourse, downstream pathway and relationship to nearby PWS and the Tas system.

In both cases, the assessment should demonstrate that sufficient land exists within the authorised design envelope to accommodate the required drainage, attenuation, access and emergency-containment infrastructure once actual foundations and equipment footprints are included.

9.18.7 Combined firewater and rainfall assessment

The Applicant should provide a credible combined-event assessment for the BESS and, where applicable, major substations.

That assessment should identify the firewater design event, duration and total volume; coincident rainfall event; available clean and contaminated-water storage; freeboard; automated and manual isolation; overflow and exceedance routes; and the consequences of failure.

The 456 m^3 suppression-water allowance should be reconciled with rainfall storage rather than considered in isolation. The assessment should show whether the same storage volume is relied upon for ordinary stormwater attenuation and emergency contaminated-water containment and, if so, how simultaneous events are accommodated.

The Applicant should also set out how contaminated granular sub-base or drainage media would be identified and remediated; how liner integrity would be assured and monitored; what happens if an automatic penstock fails or power is lost; and how long contaminated water can safely be retained if tankering is delayed.

Most importantly, the receptor consequence of containment failure should be identified. The assessment should state which groundwater unit, PWS or surface-water receptor could receive a release and what immediate monitoring and drinking-water contingency measures would follow.

9.18.8 Infiltration testing, flood modelling and exceedance routes

The Applicant should undertake sufficient infiltration testing and ground investigation at representative principal infrastructure locations to establish the drainage hierarchy on an evidential rather than assumptive basis.

Where infiltration proves unsuitable, a viable alternative outfall should be demonstrated. Identifying the 'nearest ordinary watercourse' does not establish feasibility unless the route, levels, capacity, land requirements, water-quality implications and downstream consequences are understood.

The Applicant should also provide sufficient modelling of mapped overland flow and exceedance routes to demonstrate that compounds, access tracks, foundations and drainage infrastructure will not displace floodwater towards third-party land or downstream settlements.

At Starston Brook, the limitations of available generalised flood mapping should be acknowledged expressly. Where the final design relies upon topographic separation rather than a detailed hydraulic model, the evidence should demonstrate that this is sufficiently conservative for the maximum authorised infrastructure envelope.

9.18.9 Auditable water balance and secured source

The WRA should be revised to provide a transparent phase-by-phase audit of demand. Construction-process uses should be clearly identified, including dust suppression, concrete-related demand where applicable, plant washing and other non-welfare uses.

The contribution from rainwater harvesting should distinguish capture from genuinely non-consumptive return. Losses through foul-water removal, evaporation, evapotranspiration and other consumptive uses should be accounted for so that any reduction in local recharge is transparent.

The Applicant should identify at least one credible and demonstrably available source for the water expected to be imported by tanker. Evidence should address drought resilience and explain why

reliance upon that source would not simply transfer the Scheme's water-resource pressure to another stressed catchment or existing users.

The calculation trail should enable the ExA and consultees to reproduce the stated construction, operational and decommissioning demand figures and the potable/non-potable split.

9.18.10 Revised Chapter 9 significance conclusions

Once the additional baseline and technical information has been provided, Chapter 9 should be revised so that the residual-effect assessment is receptor specific and internally consistent.

PWS, groundwater bodies, GWDTEs, surface-water bodies and designated sites should not be aggregated where they respond differently to the relevant pathway. The Applicant should explain how Chapter 9 and Chapter 16 methodologies relate and demonstrate that no effect has been artificially reduced because it is divided between hydrology and hydrogeology chapters.

The revised assessment should also correct acknowledged inaccuracies concerning SPZs, PWS contamination effects and other matters identified in the Environment Agency response.

BEPS submits that this further information would enable the ExA to distinguish between genuine residual uncertainty capable of being controlled through detailed design and uncertainty which presently prevents a reliable environmental conclusion.

9.19 Minimum DCO Controls if Consent is Nevertheless Recommended

9.19 Requirements must supplement, not substitute for, adequate environmental assessment

BEPS's primary position is that information necessary to establish the environmental acceptability of the Scheme should be provided before the Examination concludes. A DCO Requirement is not a substitute for an adequate EIA baseline or for assessment of a likely significant effect. Current Planning Inspectorate guidance on EIA and the Rochdale Envelope emphasises that flexibility must be assessed on a cautious worst-case basis, that mitigation relied upon must be capable of addressing that worst case, and that uncertainty does not excuse an inadequate project description or insufficient environmental information.

That distinction is particularly important because the Applicant repeatedly relies upon future detailed drainage, Foundation Works Risk Assessments, Hydrogeological Risk Assessments, CEMPs, OEMPs and emergency plans. Those controls may be appropriate for refining a solution once its feasibility has been demonstrated. They cannot retrospectively supply missing environmental information required to understand whether the Scheme can safely be authorised within the proposed envelope.

If the ExA nevertheless concludes that sufficient information exists to recommend consent, BEPS submits that substantially strengthened protective Requirements should be imposed.

9.19.1 Private Water Supply Protection and Monitoring Requirement

A specific PWS protection Requirement should be included rather than relying solely upon generic CEMP provisions.

Before commencement of any relevant part of the authorised development, the undertaker should be required to submit a Private Water Supply Protection and Monitoring Scheme to the relevant planning authority, following consultation with the local authority team responsible for private-water-supply regulation and the Environment Agency.

The scheme should identify all potentially affected supplies within the relevant hydrogeological zone of influence; record verified supply details; establish baseline quality, water levels and/or yield where appropriate; identify source-pathway-receptor relationships; and set monitoring parameters and frequencies proportionate to risk.

The Requirement should contain defined investigation and action triggers. Where monitoring indicates deterioration reasonably capable of being Scheme-related, the Applicant should be obliged to provide an immediate safe alternative potable-water supply pending investigation, at its own cost. Where a permanent Scheme-related effect is established, the Applicant should fund necessary remediation or a permanent replacement supply of equivalent reliability and quality.

The obligation should continue through construction, operation, major replacement works and decommissioning where the pathway remains relevant.

9.19.2 Groundwater Monitoring Requirement

A separate groundwater monitoring scheme should be secured for high-risk infrastructure locations and sensitive receptors.

The monitoring network should be designed from the agreed conceptual hydrogeological model and should include locations capable of detecting contaminant movement between Site 1 and Site 5 infrastructure and relevant downgradient receptors.

Baseline monitoring should precede works sufficiently to characterise seasonal variation. Operational monitoring should include appropriate chemical and physical parameters, and the scheme should contain trigger levels, escalation procedures and reporting to the Environment Agency.

The Requirement should also specify monitoring following a pollution or firewater incident and should not allow monitoring to cease until the relevant regulator is satisfied that no continuing plume or secondary source remains.

9.19.3 Foundation Works and Piling Requirement

No piled or deep-founded element should commence until an appropriate Foundation Works Risk Assessment has been approved for the relevant work area following consultation with the Environment Agency.

That assessment should incorporate site-specific ground investigation, maximum foundation depth, groundwater levels, stratigraphy, potential preferential pathways and both pre-existing and Scheme-generated contaminant sources.

The Requirement should ensure that the detailed solution remains within the environmental envelope assessed during Examination. It should not permit a deeper or materially different foundation arrangement whose environmental consequences were never assessed.

9.19.4 HDD and trenchless crossing Requirement

A specific requirement should govern trenchless crossings of watercourses and sensitive groundwater areas.

The undertaker should be required to provide a crossing-specific method and hydrogeological risk assessment identifying bore depth, drilling fluid, geology, groundwater conditions, frac-out risk, monitoring, spill response, launch/reception arrangements and ecological constraints.

Where works interact with a main river or Principal/Secondary A Aquifer, the Environment Agency should be formally consulted; where ordinary watercourses and local flood-risk functions are affected, the LLFA should likewise be consulted.

Any DCO disapplication of separate ordinary-watercourse controls should not result in a lower level of substantive environmental protection than would otherwise apply.

9.19.5 Surface-water drainage Requirement

Requirement 11 should be sufficiently prescriptive to ensure that detailed drainage is a refinement of the assessed solution rather than an opportunity to devise a materially new system after consent.

It should require the detailed drainage scheme to identify all contributing impermeable and effectively impermeable areas; attenuation and treatment volumes; outfalls; controlled discharge rates; infiltration evidence; surface-water exceedance routes; access-track drainage; construction-phase drainage; inspection and maintenance; and interactions with groundwater and PWS.

For the BESS and major substations, the drainage scheme should incorporate emergency-pollution containment and should demonstrate how ordinary stormwater and contaminated firewater are separated.

Given NCC's statutory LLFA function, the relevant planning authority should be required to consult Norfolk County Council as LLFA before approval as well as the Environment Agency and relevant sewerage/water bodies where appropriate. Consultation should be meaningful: unresolved technical objections should be addressed expressly in the authority's determination rather than merely noted.

9.19.6 BESS and substation firewater Requirement

The DCO should contain a specific enforceable requirement for firewater containment rather than leaving all relevant provisions to general drainage or battery-safety documentation.

The final design should demonstrate containment of the agreed reasonable worst-case suppression/cooling-water volume together with the relevant coincident rainfall event and adequate freeboard. It should specify passive and active isolation, manual backup, operation during power failure, liner design and integrity assurance, contaminated-water sampling, tankering capacity, and remediation of contaminated aggregate or other materials.

No relevant BESS or substation element should become operational until the competent authority is satisfied, following consultation with the Environment Agency and relevant fire and rescue service, that those arrangements are in place.

9.19.7 Pollution Incident and Emergency Response Requirement

The site-specific Emergency Response Plan should contain explicit water-environment provisions.

It should identify downstream and groundwater receptors; emergency shut-off procedures; Environment Agency and local-authority notification; sampling locations; circumstances in which nearby PWS users must be informed; provision of emergency alternative potable water; contaminated-water storage and removal; and post-event investigation and remediation.

The requirement should address not only BESS incidents but significant substation, transformer, fuel and chemical releases capable of affecting controlled waters.

9.19.8 Watercourse Crossing Requirement

No permanent or temporary crossing of a watercourse should be constructed until a crossing-specific design has been approved for the relevant location.

The design should demonstrate hydraulic capacity for the applicable design event including climate change; avoidance or minimisation of culverting; maintenance of ecological and geomorphological function; appropriate erosion and sediment controls; and no unacceptable increase in flood risk upstream or downstream.

A register of all crossings should be maintained so that the cumulative number and type of interventions within each catchment can be understood and controlled.

9.19.9 Water Resources Requirement

If the Scheme remains dependent upon imported water, a water-resource implementation plan should be approved before commencement of the relevant phase.

That plan should demonstrate that the necessary source has been identified, is lawful and available, is resilient to drought and will not materially prejudice existing users or environmental

objectives. Reliance on a future commercial tanker contract without identification of the underlying source should not be sufficient.

The plan should also set priorities for use of harvested water and explain how ecological mitigation, dust suppression, welfare and emergency-water requirements will be maintained during dry periods.

9.19.10 Remedial and stop-work triggers

The effectiveness of all of the above controls depends upon clear consequences when monitoring indicates a problem.

The DCO controls should therefore contain enforceable trigger levels requiring investigation, temporary suspension of relevant works where necessary, provision of alternative water, repair or replacement of containment systems and remediation before activities recommence.

A monitoring condition without defined action on exceedance is incomplete. This is particularly important for private drinking-water supplies, groundwater contamination and watercourse pollution, where allowing works simply to continue while causation is investigated could compound the harm.

BEPS does not suggest that every technical detail of these schemes must appear on the face of the DCO itself. However, the Requirements must specify the outcomes, information, consultation and action mechanisms sufficiently clearly that the environmental conclusions upon which consent depends are enforceable.

9.20 Conclusion

The central problem with the East Pye water-environment assessment is not one isolated missing survey, one uncertain drainage pipe or one technical disagreement over a modelling assumption. The application lacks a sufficiently integrated and adequately verified understanding of the hydrological and hydrogeological system upon which many of its conclusions depend.

The first failure is a **baseline failure**. HFCL concludes that the Applicant has not presented an adequate conceptual hydrogeological model. The relationship between superficial deposits and the underlying Principal Aquifers is insufficiently characterised; the Lowestoft Formation has been treated too simplistically; the PWS inventory is demonstrably incomplete or unreliable in places; active supplies have been incorrectly assumed inactive; GWDTEs are incompletely identified; and Source Protection Zone and aquifer information has required correction. These are matters concerning the identity and physical setting of receptors, not merely the detail of future mitigation.

The second is an **assessment failure**. Three surface-water WFD bodies and the Broadland Rivers Chalk and Crag groundwater body have been screened out despite development within their catchments or over the groundwater body and despite connecting water features. Receptors are aggregated in a way which prevents transparent receptor-by-receptor scrutiny. The significance methodology applied in Chapter 9 is materially less precautionary in some respects than the environmental standards against which the effects are being tested. Private water supplies are

mapped but not subjected to the detailed hydrogeological source-pathway-receptor assessment necessary to understand their actual vulnerability. GWDTE connectivity has not been demonstrated.

The third is a **mitigation and design failure**. The Applicant repeatedly relies upon later detailed drainage, ground investigation, Foundation Works Risk Assessments, Hydrogeological Risk Assessments, CEMPs, OEMPs and emergency planning. Some degree of post-consent detailed design is normal and appropriate. The concern at East Pye is that some of the deferred matters determine whether an acceptable environmental solution exists at all. At Site 1, the interaction between surface-water flooding and contaminated firewater has not yet been fully demonstrated; the BESS configuration relevant to compartmentalised containment remains subject to detailed design; and significant infrastructure is proposed within a sensitive groundwater and PWS setting. At Site 5, drainage and outfall arrangements remain less developed despite nearby private supplies and downstream connection to the sensitive Tas system.

The fourth is a **deliverability failure**. The Scheme requires substantial volumes of water in a seriously water-stressed region. The Applicant identifies tankering as a principal means of meeting residual demand but does not identify a secured underlying source. HFCL also identifies construction demands not transparently incorporated, potentially consumptive losses in the treatment of rainwater harvesting and uncertainties in the water-balance arithmetic. The Applicant has therefore not yet demonstrated that its water requirements can be met sustainably and reliably throughout construction, operation, major replacement activity and decommissioning.

These four failures interact. An uncertain hydrogeological baseline weakens assessment of PWS, GWDTEs, WFD groundwater and preferential pathways. Incomplete pathway assessment weakens conclusions on pollution and firewater. Incomplete drainage and infiltration evidence weakens both flood-risk and water-quality conclusions. Uncertain water availability potentially affects construction, operation and ecological mitigation. The cumulative uncertainty is therefore materially greater than the sum of a series of isolated technical comments.

That conclusion is independently supported by HFCL. Its final report identifies 15 key technical deficiencies and concludes that they create a ‘significant lack of confidence’ that impacts upon the water environment are properly understood or capable of mitigation. The receptors it identifies as potentially at risk include shallow and deep groundwater, residents dependent upon groundwater as their sole water supply, other groundwater and surface-water users, local watercourses, sensitive aquatic ecosystems and groundwater-dependent terrestrial ecosystems. [HFCL Table 4.1, pp.19–22; §5, p.23]

It is also significant that those findings are not isolated from the statutory-consultee evidence. The Environment Agency has raised concerns concerning private abstractions, SPZs, groundwater characterisation, piling and HDD pathways, WFD groundwater, BESS and substation pollution and firewater. Norfolk County Council as LLFA has raised concerns about impermeable area, infiltration, construction compaction, access tracks, drainage modelling, firewater interaction and reliance upon later detailed design. The Applicant's examination responses resolve or clarify some matters but expressly defer others to later correction, post-consent investigation or detailed design.

BEPS therefore submits that the ExA should not treat Chapter 9 as a closed issue merely because the Applicant has produced the expected suite of documents. The question is whether those documents contain sufficient environmental information to enable a reasoned conclusion to be reached. Current Planning Inspectorate guidance states that an ES should contain the information necessary to reach a reasoned conclusion on likely significant environmental effects, should identify technical deficiencies and lack of knowledge, and should use a cautious worst-case approach where flexibility remains.

Where the ExA considers that the Environmental Statement needs further information in order to reach that conclusion, the relevant mechanism is Regulation 20 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. BEPS submits that the further information identified at §9.18 above should be sought before the water-environment assessment is treated as adequate.

If the outstanding deficiencies can be resolved satisfactorily during Examination, the revised environmental conclusions and sufficiently protective DCO Requirements can then be considered on their merits. If material deficiencies remain unresolved to the extent that a reasoned conclusion cannot safely be reached, or the environmental acceptability of the authorised development has not been demonstrated, the Secretary of State would be asked to grant consent notwithstanding unresolved uncertainty concerning drinking-water receptors, Principal Aquifers, WFD waterbodies, GWDTEs, flood risk, major-pollution containment and the sustainable availability of water required by the Scheme.

In those circumstances, BEPS submits that the ExA should recommend that Development Consent is refused.

Chapter 10: Cultural Heritage

10.1 Executive summary and principal objection

East Pye Solar is proposed within a long-settled historic landscape whose heritage significance cannot properly be reduced to a collection of individual listed buildings and isolated viewpoints. The Scheme extends across the South Norfolk and High Suffolk Claylands, an overwhelmingly rural and agricultural landscape characterised by medieval churches, historic farmsteads, timber-framed and vernacular buildings, greens and commons, narrow historic lanes, surviving field patterns and extensive archaeological remains. BEPS's independent Heritage Impact Assessment records that these elements remain strongly interrelated: settlement pattern, landform, field boundaries, churches, farmsteads and vernacular buildings combine to form a predominantly open and largely undeveloped historic landscape with a strong sense of place. Historic England's own Farmstead and Landscape evidence records a high survival of traditional farmsteads and pre-1750 farm buildings in this landscape, whose significance is enhanced by medieval field boundaries, greens, commons and moated sites.

That character is directly relevant to heritage significance. Many of the affected buildings were created for, and historically functioned within, the agricultural landscape that still surrounds them. Their setting is therefore not simply the view immediately outside a window or the presence or absence of direct intervisibility with a solar panel. It includes historic and functional relationships with surrounding farmland, relative isolation, openness, approaches along lanes and footpaths, group relationships between churches, rectories, farmhouses and barns, tranquillity and the ability to experience those assets as part of an agricultural landscape that has in many cases remained substantially undeveloped for centuries. The independent assessment undertaken for BEPS is based on site visits to all ten Sites and to the heritage assets potentially affected, together with historic mapping, the NHLE, Norfolk HER and Historic England GPA3 and Advice Note 12.

The Applicant itself recognises the scale of the heritage resource potentially affected. Its Heritage Statement scopes in one Scheduled Monument, two Grade I listed buildings, two Grade II* listed buildings, 42 Grade II listed buildings and four Conservation Areas. Yet, after that exercise, it concludes that the Scheme will cause heritage harm to only two designated assets: Moulton Farmhouse and Barn Cottages, both said to experience less than substantial harm at the lower end of the scale, with the harm to Barn Cottages ultimately reducing to no harm once planting has matured after approximately 30 years. It concludes that there will be no harm to any other designated or non-designated heritage asset. Chapter 10 then converts those conclusions into a finding of neutral or non-significant residual effect for almost the entire historic environment, with only a minor adverse, non-significant residual effect identified for Moulton Farmhouse.

BEPS does not accept that assessment. David Edleston's independent Heritage Impact Assessment reaches materially different conclusions because it gives greater weight to the actual contribution made by historic agricultural setting. It identifies, amongst other effects, moderate less-than-substantial harm to Moulton Farmhouse rather than harm at the lowest end; moderate

harm to Hill House where the Applicant finds no harm; moderate harm to Barn Cottages rather than lower-end harm; moderate harm to the Grade I Church of St Michael, Grade II* Old Rectory and associated listed barn at Site 4 where the Applicant finds no harm; moderate-to-high less-than-substantial harm to the Grade I Church of St Catherine at Fritton where the Applicant finds no harm; and moderate harm to the Grade II* Oaks Farmhouse where the Applicant again concludes no harm. The same assessment identifies further lower-end harm to additional farmhouses, listed groups and Conservation Areas that the Applicant treats as unharmed.

Edleston's completed assessment demonstrates that this is not a disagreement confined to a handful of receptors. Of the designated heritage assets assessed, he identifies less-than-substantial harm to 36 assets, compared with only two identified by the Applicant. Those 36 comprise 32 listed buildings and four Conservation Areas. They include both Grade I churches assessed, both Grade II buildings carried forward into his assessment, and numerous Grade II farmhouses, barns and vernacular buildings whose significance is materially derived from their surviving rural setting. The scale and consistency of that divergence is evidence of a systematic under-assessment of setting and harm rather than isolated differences of professional opinion.

These differences are not marginal disagreements over terminology. They expose a systematic methodological problem. The Applicant repeatedly relies upon limited direct intervisibility, distance, retention of the nearest field as undeveloped land and future screening to conclude that significance will not be harmed. That approach underweights precisely the attributes of setting that are most characteristic of this landscape: openness, historic association with farmland, isolation, group value, settlement-edge character, movement through the landscape and seasonal changes in visibility. In several places, the proposed mitigation would itself alter those attributes. A new belt of trees may eventually screen a substation or solar array, but where openness and the historic relationship between a farmhouse or church and surrounding agricultural land contribute to significance, the creation of that screening can itself sever the relationship it is supposed to protect. The Applicant's dependence on planting that may take around 15 years, and in the case of Barn Cottages approximately 30 years, to perform the claimed screening function is therefore not evidence of an inherently negligible effect.

The archaeological case is also not complete. Chapter 10 expressly acknowledges that neither geophysical survey nor trial trench evaluation covered the Cable Route Corridor because the route had not been finalised at the time of survey, and that further archaeological investigation is to take place after submission of the DCO application. This is particularly material because the Scheme's own archaeological work has already identified substantial evidence of long-term occupation and activity across the Order Limits. The remaining uncertainty is therefore not occurring in a demonstrably archaeologically sterile landscape.

Historic England's Relevant Representation confirms that these are live examination issues. Historic England does not object to the overall approach to the assessment and recognises that heritage receptors have influenced design. That balanced position should be acknowledged. But it also states expressly that some changes to the settings of designated heritage assets are likely to amount to harm in policy terms and that residual effects are likely to remain after mitigation. It

identifies the CRC methodology and mitigation as an area of concern, confirms that some areas within the Order Limits have not been fully archaeologically evaluated and that previously unknown remains of equivalent value to a designated asset could still be identified, and identifies cumulative effects with Tasway Energy Park and associated BESS developments as a potential concern. Historic England also intends to scrutinise Requirement 12 and the Outline Archaeological Mitigation Strategy.

There is therefore a material disconnect between the certainty expressed in the Applicant's residual-effect conclusion and the evidence before the Examination. Chapter 10 states that there are no significant residual cultural-heritage effects and its cumulative assessment reasons that, because East Pye itself is said not to cause significant effects, there is no potential cumulative harm to designated or non-designated heritage assets. That reasoning is particularly weak where Historic England itself identifies residual heritage harm and cumulative effects as matters requiring further consideration, and where independent expert assessment identifies substantially more harm than the Applicant acknowledges.

10.2 Legal and policy framework

The heritage policy framework does not treat renewable-energy need as displacing the protection of the historic environment. For an energy NSIP, EN-1 and the relevant technology-specific NPSs form the primary policy framework for the Secretary of State's decision. EN-1 requires the effects of development on heritage significance to be understood and weighed according to the importance of the asset and the degree of harm. The critical issue for East Pye is therefore not simply whether the Scheme delivers renewable generation, but whether the Applicant has correctly identified the heritage significance affected, the contribution made by setting and historic landscape, and the extent of the resulting harm.

10.2.1 EN-1, EN-3 and EN-5

EN-1 requires applicants to consider impacts, including cumulative impacts, on the wider historic environment and to provide sufficient information for the extent of effects on heritage significance to be adequately understood. The decision-maker is required to give great weight to the conservation of designated heritage assets, with greater weight attaching to more important assets. Harm arising from development within an asset's setting is therefore not secondary or incidental: it forms part of the heritage balance.

This is particularly important at East Pye because EN-3 expressly recognises that solar development can affect not only the settings of listed buildings and other designated heritage assets but also **Historic Landscape Character**. It also identifies below-ground effects arising from trenching, cabling, foundations, fencing and temporary haul routes. The Applicant itself cites these provisions in its Heritage Statement.

That policy wording is directly engaged by the evidence. David Edleston identifies the South Norfolk Claylands as a long-settled agricultural landscape in which medieval churches, historic farmsteads, commons, greens, lanes, field patterns and vernacular buildings remain functionally

and visually related to the surrounding open countryside. EN-3 therefore requires the Examination to consider the effect of industrialising that wider historic landscape, not merely whether panels are directly visible from the windows of particular listed buildings.

EN-5 is also relevant because East Pye includes substantial electricity-network infrastructure. The Applicant itself acknowledges that EN-5 recognises effects on designated heritage settings from network infrastructure and direct archaeological effects from undergrounding. The new National Grid Substation, Project Substations, grid infrastructure and extensive cable corridors cannot therefore be treated as heritage-neutral adjuncts to the solar arrays.

10.2.2 National Planning Policy Framework

The August 2026 National Planning Policy Framework is now the relevant NPPF. The Energy NPSs remain the primary policy framework for this NSIP, but the current NPPF provides material national policy on the historic environment.

The current framework requires decision-makers to identify and assess the significance of heritage assets potentially affected by development, including the contribution made by their setting, and to give great weight to the conservation of designated heritage assets. Any harm to the significance of a designated heritage asset requires clear and convincing justification. Where harm is less than substantial, that harm must be weighed against the public benefits of the proposal. Greater weight is to be given to the conservation of assets of greater significance.

The policy question is therefore not confined to whether a development is directly visible from a listed building. Setting may contribute to significance through historic, functional, spatial and experiential relationships, including the relationship between churches, farmsteads, lanes, field systems, settlement edges and the wider agricultural landscape. Harm may arise where those relationships are altered even if direct intervisibility is limited.

For East Pye, this is particularly important because the independent heritage assessment identifies harm arising from the transformation of open historic agricultural settings, the introduction of extensive solar infrastructure into historic approaches and relationships between settlements and designated assets, and the use of screening which may itself alter the historic character and legibility of those settings.

10.2.3 Statutory and policy protection of designated heritage

Listed buildings and conservation areas receive strong statutory and national-policy protection. In the DCO context, the decision must be taken under the Planning Act 2008 and the relevant National Policy Statements, together with applicable heritage legislation and material policy. BEPS therefore does not rely upon a simplistic proposition that the ordinary TCPA statutory duties operate unchanged in every respect within the DCO regime.

The substantive heritage principles nevertheless remain highly material. The significance of designated assets, including the contribution made by their settings, must be properly understood; harm requires clear and convincing justification; and heritage harm must be

given appropriate weight in the decision-making balance. For highly graded assets, the importance of conservation is correspondingly greater.

The central issue in this chapter is therefore evidential and evaluative: whether the Applicant has correctly identified the assets affected, properly understood the contribution of their settings, accurately characterised the degree of harm and secured design measures capable of avoiding or reducing that harm.

10.2.4 Historic England GPA3: setting is not a visibility test

Historic England's *Good Practice Advice in Planning Note 3: The Setting of Heritage Assets* is particularly important because it identifies the very factors that the Applicant's assessment tends to underweight. GPA3 states that setting may derive from matters including surrounding landscape character, openness and enclosure, functional relationships, history and degree of change, and the way an asset is experienced.

Historic England made this point expressly in its East Pye scoping response. It warned that assessment of setting **must not be limited to visual receptors** and specifically required consideration of:

- erosion of the historic landscape;
- the way heritage assets are approached or traversed;
- spatial, historical and functional relationships between assets;
- relationships with the wider historic landscape;
- and effects from noise, light and traffic movements.

Historic England further advised that the EIA should define the setting of each affected asset, identify the contribution made by different elements of that setting to significance, and then assess the magnitude of the resulting harm. It also stressed that systematic scoring and matrices cannot provide the answer: setting ultimately requires qualitative and expert judgment.

That advice provides the proper benchmark for Chapter 10. The relevant question is not simply whether direct intervisibility exists between an asset and a solar array. It is whether the Scheme changes an element of setting that contributes to significance. Where a medieval church derives significance from its isolated relationship with surrounding farmland, where a historic farmhouse remains functionally and spatially connected to the fields that historically sustained it, or where a Conservation Area is experienced through its transition from open countryside into historic settlement, loss or industrialisation of that setting may cause heritage harm even where visibility is filtered.

The Applicant's assessment must therefore be tested against this broader, qualitative concept of setting. A methodology that repeatedly moves from 'limited intervisibility' to 'no harm', or relies on future planting to sever views of development without asking what that planting itself does to historic openness and relationships, does not adequately answer the policy test. Historic England's own scoping advice makes clear that the historic landscape is part of the heritage receptor, not merely the space between the receptor and the Scheme.

10.3 The Scheme occupies a surviving historic agricultural landscape, not neutral farmland

10.3.1 South Norfolk and High Suffolk Claylands

The Order Limits extend across the South Norfolk and High Suffolk Claylands, a long-settled landscape whose historic character remains strongly legible. David Edleston's independent Heritage Impact Assessment describes a predominantly open, rural and agricultural landscape of slightly undulating clay plateau, narrow river valleys, dispersed farmsteads, medieval churches, greens, commons, historic lanes and surviving field patterns. The landscape is not simply agricultural in current use; agriculture, settlement and built heritage are historically interdependent components of the same cultural landscape.

Edleston records that approximately 90% of the land within the National Character Area remains in agricultural use and that the landscape retains substantial elements of earlier enclosure, medieval or earlier lanes, greens, ditches, moats and field boundaries despite post-war field enlargement. He also relies on Historic England's *Farmstead and Landscape Statement: South Norfolk and High Suffolk Claylands*, which identifies a high survival of traditional farmsteads and, in a national context, a high survival of pre-1750 farmstead buildings. Their significance is specifically enhanced where they survive in association with medieval moated sites, early enclosure, commons, greens and historic field boundaries.

That evidence is material because EN-3 expressly recognises that solar development may affect not only individual designated assets but **Historic Landscape Character**. The heritage receptor is therefore wider than the listed building inventory. The Scheme would insert solar arrays, substations, BESS infrastructure, grid works, fencing, tracks and cable infrastructure into a landscape whose historic character is still expressed through the relationship between buildings, settlement pattern, farmland and routes.

10.3.2 Local landscape character areas

The Scheme crosses several locally distinct landscape character areas, including the Tas Rural River Valley, Tas Tributary Farmland, Chet Tributary Farmland, Thurlton Tributary Farmland with Parkland and Great Moulton Plateau Farmland. Edleston identifies recurring heritage characteristics across those areas: open or framed views across farmland; scattered historic farmsteads; medieval and round-towered churches acting as landmarks; historic parkland and moated sites; greens and commons; traditional brick, timber-framed and thatched buildings; and extensive networks of minor roads and lanes.

These are not incidental landscape qualities. They explain how the historic environment is experienced. Churches such as St Michael at Stratton St Michael and St Catherine at Fritton are not isolated objects viewed against an irrelevant background. Their prominence,

isolation and relationship with surrounding farmland are characteristic of the historic landscape type itself. The same applies to the scattered farmhouses and barns across Great Moulton, Tasburgh, Saxlingham, Brooke, Woodton and Seething.

The Applicant's heritage assessment therefore cannot properly treat the surrounding agricultural land as neutral space once a minimum setback has been achieved. In many locations, that land is the very medium through which heritage significance is appreciated.

10.3.3 Historic farmsteads, churches, greens and settlement pattern

The surviving pattern of historic settlement is central to the heritage value of this landscape. Edleston identifies nucleated villages, dispersed hamlets, isolated farmsteads, moated sites and settlements grouped around greens and commons. Traditional farmhouses and barns remain embedded within the agricultural land from which their historic function arose, while medieval churches frequently retain a deliberately isolated or semi-isolated relationship with the communities and fields they served.

This is particularly evident at Moulton Farmhouse, Hill House, Barn Cottages, Oaks Farmhouse, Upgate Green Farmhouse, Oldhouse Farmhouse and the Site 4 group at Stratton St Michael. In each case Edleston identifies open agricultural land not merely as a view but as an historically meaningful component of setting. At Moulton Farmhouse, for example, the surviving relationship between the farmhouse, outbuildings and surrounding agricultural land remains legible through historic mapping and present-day experience. At Oaks Farmhouse, the building remains in an isolated rural position surrounded by land that has remained substantially undeveloped for centuries.

The same principle applies to churches and Conservation Areas. St Catherine's isolated position outside the main body of Fritton is part of its historic character and significance; Saxlingham Green Conservation Area derives part of its character from the transition between open countryside and historic settlement; and Fritton retains a distinctly rural form in which buildings, common land and surrounding farmland remain interrelated.

10.3.4 The agricultural landscape is itself part of heritage setting

The central heritage issue is therefore not simply whether the Scheme is visible from a listed building. It is whether development changes an element of setting that contributes to significance.

Historic England's own guidance and its East Pye scoping response make this clear. It told the Applicant that setting must not be limited to visual receptors and must include the erosion of historic landscape, the way assets are approached or traversed, spatial, historical and functional relationships, and the wider landscape within which heritage assets are experienced.

That advice is particularly important here because much of the Scheme would occupy land that continues to perform the historic role against which buildings and settlements are understood. The open agricultural landscape gives meaning to the isolation of churches, the function of farmsteads, the character of settlement edges and the experience of historic lanes and footpaths. Industrialising that land may therefore harm heritage significance even where direct intervisibility is partial, seasonal or filtered.

This is the starting point from which the Applicant's methodology must be judged. If the surrounding agricultural landscape is treated merely as visual foreground or background, the assessment inevitably understates the contribution that setting makes to significance.

10.4 The Applicant's setting methodology systematically understates heritage harm

10.4.1 Setting has been treated too much as a question of intervisibility

The Applicant states that its assessment used desk-based research, viewshed analysis and site visits, supported by heritage-specific visualisations. That approach is not objectionable in itself. The problem is the way it has been used.

The Heritage Statement repeatedly moves from visibility analysis, to site inspection, to a conclusion that an asset can be scoped out or will experience no harm because intervisibility is limited, filtered or absent. The result is that visibility appears to operate as the principal sieve through which heritage significance is considered.

That is inconsistent with the approach Historic England expressly required at scoping stage. Historic England warned that setting assessment must not be restricted to visual receptors and specifically required consideration of historic landscape erosion, approaches to assets, spatial and functional relationships, noise, light, traffic and wider landscape context.

The relevant question is therefore not simply 'can the Scheme be seen?' but 'does the affected land contribute to the asset's significance, and does the Scheme alter that contribution?' The Applicant's methodology too often answers the first question and treats it as determinative of the second.

10.4.2 The scoping-out exercise is too aggressive

The Applicant's Heritage Statement initially considered a very large number of designated assets but ultimately scoped in only 51 designated assets and two non-designated heritage assets. Its Table 1 records repeated examples of assets shown as theoretically visible but then excluded following site inspection.

Examples include Wacton Hall, Moat Farmhouse, Fairstead Lane Farmhouse and numerous other listed buildings and Conservation Areas that were identified within the visibility exercise but scoped out of substantive assessment. The fact that vegetation, bunding or topography reduces a particular view does not necessarily demonstrate that the wider setting makes no contribution to significance.

Edleston's independent assessment illustrates the consequence of that approach. He visited all 51 assets carried forward by the Applicant and also identified additional assets that he considered potentially affected. He expressly brings Holly Cottage at Saxlingham Green and Seething Conservation Area back into the assessment despite the Applicant having scoped them out.

That is significant. It shows that the dispute is not merely over the degree of harm to assets already accepted as sensitive. It extends to the Applicant's prior decision about which assets merit assessment at all.

10.4.3 Historic and functional relationships are underweighted

The weakness is clearest in the treatment of historic farmsteads. The Applicant repeatedly places heavy weight on whether the building itself can be seen from the Scheme or whether panels will be visible from the building. That is too narrow.

A farmhouse may derive significance from its historic relationship with surrounding fields even where direct intervisibility is constrained by hedges or trees. Edleston identifies this repeatedly at Moulton Farmhouse, Hill House, Oaks Farmhouse, Upgate Green Farmhouse, Oldhouse Farmhouse and other rural assets.

The same applies at Stratton St Michael. The Grade I Church of St Michael, Grade II* Old Rectory and Grade II barn form a historic group whose relationship with surrounding open agricultural land remains legible. The Applicant accepts that this rural setting contributes to their significance, but nevertheless concludes that the wider Site 4 land does not make a meaningful contribution once the nearest fields are retained open. Edleston reaches the opposite conclusion and identifies moderate less-than-substantial harm.

The contradiction is important: once the Applicant accepts that rural setting contributes to significance, it must explain why industrialisation of that setting causes no harm. Distance alone does not answer that question.

10.4.4 Seasonal visibility is inadequately represented

The assessment also risks understating harm where summer foliage is relied upon to reduce apparent intervisibility. In this landscape, deciduous hedges and trees materially alter visibility between summer and winter.

Edleston repeatedly records increased winter visibility. His assessment of St Catherine's Church at Fritton is particularly important. The Applicant concludes that there are no views from the church towards Site 5 sufficient to cause harm. Edleston's site evidence records views from the churchyard and access track into the surrounding farmland and specifically demonstrates substantially greater intervisibility during winter months.

That matters because the proposed development is permanent for the operational life of the Scheme and will be experienced year-round. A conclusion of no harm cannot safely be based on summer screening where the worst-case seasonal condition is materially different.

The independent assessment specifically treats seasonal visibility as material. Screening which appears effective in summer may perform materially differently in winter, when deciduous hedgerows and trees are less effective and the geometry of the historic landscape is more apparent. The assessment therefore cautions against relying upon summer fieldwork or Year 15 vegetation as though it represented the heritage experience throughout the year.

10.4.5 Setting is dynamic and cannot be reduced to a preferred viewpoint

Historic England GPA3 recognises that setting is experienced dynamically. Edleston's evidence repeatedly demonstrates this in practice.

Barn Cottages are not experienced from one fixed position. They are seen from numerous points along the winding Station Road, in conjunction with surrounding farmland and, potentially, the BESS and substation. The Applicant places substantial weight on a particular southern view and on intervening cottages, whereas Edleston concludes that movement along the road reveals multiple relationships between the asset and its wider setting.

The same problem arises at Site 4. The Church of St Michael, Old Rectory and barn are experienced from the churchyard, Church Lane, surrounding farmland, public footpaths and the new footbridge associated with the Long Stratton bypass. Edleston identifies panoramic views in which all three buildings are appreciated together with open agricultural land beyond.

A setting assessment that privileges one selected viewpoint risks missing the very relationships that give the asset meaning. The proper assessment must follow how the asset is actually experienced through movement across the landscape.

10.4.6 EIA significance and policy harm have been conflated

A further weakness is the tendency to move from an EIA finding of 'minor', 'neutral' or 'not significant' to a heritage conclusion of 'no harm'.

The two tests are not equivalent.

The Applicant's Chapter 10 uses a matrix combining receptor sensitivity and magnitude of impact and treats Moderate effects or above as significant in EIA terms. That may assist environmental assessment, but it does not determine whether heritage significance is harmed for policy purposes.

Historic England itself warned at scoping stage that systematic scoring systems and matrices cannot provide the answer to setting; qualitative and expert judgment remains essential. The Applicant's own methodology acknowledges the role of professional judgment, yet its conclusions repeatedly collapse very slight or low changes into 'no harm'.

That is particularly problematic where the Applicant accepts that an affected setting contributes to significance. A change may fall below an EIA significance threshold and still constitute less-than-substantial heritage harm requiring proper weight in the planning balance.

This distinction is now reinforced by Historic England's Relevant Representation. Historic England states that changes to the settings of designated assets will in some cases result in significant effects and are likely to equate to heritage harm in policy terms, with residual effects remaining after mitigation.

The Examining Authority should therefore resist any suggestion that 'not significant in EIA terms' means 'no heritage harm'. The statutory and policy question is whether significance is harmed, not whether the Applicant's matrix labels the effect Moderate or above.

10.4.7 The Applicant understates the status of Grade II listed buildings

The Applicant's EIA methodology compounds this problem by categorising Grade II listed buildings as receptors of 'Medium (Regional)' sensitivity. Edleston identifies this as incorrect. Grade II buildings are statutorily listed buildings of national designation: they are buildings of special architectural or historic interest, even though the degree of significance within the national designation varies from asset to asset. Approximately 92% of listed buildings are Grade II. Their numerical prevalence does not convert them into assets of merely regional importance.

This matters because the Scheme area contains an exceptional concentration of Grade II farmhouses, barns, cottages and other vernacular buildings whose historic relationship with the South Norfolk Claylands survives unusually well. An EIA matrix may distinguish relative sensitivity for assessment purposes, but it cannot lawfully or rationally reduce the policy importance attaching to a nationally designated heritage asset. Nor can the 'Medium' label substitute for an asset-specific assessment of significance and vulnerability to change in its setting.

Edleston's conclusions demonstrate the practical consequence. A large proportion of the additional harms he identifies concern Grade II buildings whose significance derives substantially from their historic agricultural setting. The Applicant's generic sensitivity classification therefore reinforces, rather than cures, the tendency of its methodology to understate setting harm.

10.5 The Applicant's own mitigation demonstrates the existence of change

The Applicant repeatedly relies on setbacks, retained open fields and future planting to support conclusions of no harm. Those measures do not demonstrate absence of impact. They demonstrate that the Scheme would materially alter the settings of heritage assets unless substantial design and screening measures are introduced. The correct question is therefore whether those measures avoid harm to significance, not whether they eventually reduce visibility.

10.5.1 Setbacks do not necessarily remove setting harm

The retention of the field immediately adjoining a heritage asset as open land does not mean that the wider setting beyond ceases to contribute to significance. That proposition is particularly weak where the significance of the asset derives from its relationship with a broader agricultural landscape.

At Site 4, the Applicant accepts that the rural setting of the Grade I Church of St Michael contributes to its significance, that the Grade II* Old Rectory has historic and group-value relationships with the church and nearby barn, and that the agricultural setting of the barn reinforces its historic character. Yet it concludes that retaining the southern part of Site 4B as undeveloped land is sufficient to avoid harm from the solar arrays and substation further north. Edleston's field assessment reaches the opposite conclusion. He identifies views from the churchyard, surrounding farmland, footpaths and the new footbridge in which the church, rectory and barn are experienced together with the open landscape beyond, and concludes that the proposed arrays and 132kV substation would form an industrial backdrop within that setting. He assesses moderate less-than-substantial harm to all three assets.

The same issue arises at St Catherine's Church, Fritton. The Applicant relies heavily on the proposed community space and retention of the land immediately north of the Grade I church as free from built solar infrastructure. Edleston's inspection nevertheless identifies views from the churchyard and access track into the wider land beyond, particularly in winter, and notes that PV arrays and the proposed 400kV substation would occupy that wider setting. The preservation of a narrow foreground does not preserve the wider rural isolation from which the church derives significance.

Site 3 provides a further example. The field closest to Townhouse Farmhouse is retained undeveloped, but Edleston concludes that the more distant solar arrays would remain visible as an industrial backdrop across the open agricultural setting and would cause lower-end less-than-substantial harm.

The same principle applies to Fritton Conservation Area. The Applicant relies on distance and retention of the immediate approach, but Edleston identifies the wider agricultural land beyond the Conservation Area as part of its rural setting and concludes that panels and substation infrastructure would alter that setting when leaving or approaching the settlement.

A setback is therefore mitigation of proximity, not proof of no setting harm. Where the wider landscape contributes to significance, industrial development beyond the retained field remains capable of causing harm.

10.5.2 Screening vegetation is not neutral heritage mitigation

The Applicant also relies extensively on new planting to reduce intervisibility. In heritage terms, that mitigation is not neutral.

Where openness itself contributes to significance, screening development by introducing new woodland or dense boundary planting can alter the historic setting just as surely as the development it is intended to conceal. The relevant issue is not simply whether the panels or substation become less visible, but whether the historic visual, spatial and functional relationship between the asset and its surrounding landscape is retained.

Edleston makes this point directly at Moulton Farmhouse. The Applicant accepts lower-end less-than-substantial harm and relies on a linear tree belt along Sub-Site 1B to reduce views once mature. Edleston concludes that the planting would itself sever the historic visual relationship between the farmhouse and its open agricultural surroundings and therefore cannot be treated as an unqualified heritage benefit.

At Hill House, the Applicant similarly relies on proposed hedgerow and tree planting to screen solar arrays located close to the building. Edleston identifies the open farmland around the former workhouse as an important element of its setting and concludes that enclosing that relationship with new screening vegetation would itself be harmful.

The same reasoning applies to Grade II* Oaks Farmhouse. The Applicant accepts that Sub-Site 7L contributes to the farmhouse's significance and relies on planting to screen views after maturity. Edleston concludes that this mitigation would itself sever the relationship between the historically isolated farmhouse and surrounding open land.

The mitigation therefore exposes the weakness in the Applicant's no-harm conclusions. If screening is required because the development would otherwise be appreciable within a heritage setting, the assessment must consider both the harm caused before screening matures and the heritage consequences of permanently changing an open setting into an enclosed one.

The independent assessment reinforces this point. Planting may reduce views of panels while simultaneously altering the very openness, intervisibility and historic relationship which contribute to an asset's significance. Screening a harmful change is not necessarily the same as preserving the historic setting. In some locations, the creation of dense screening where the historic relationship was one of openness may itself constitute an adverse change.

10.5.3 Year-15 and year-30 mitigation cannot erase earlier harm

The timescale of the proposed planting is itself material.

At Moulton Farmhouse, the Applicant relies on planting expected to mature after approximately 15 years. At Hill House, similar screening is relied upon over approximately the same period. At Oaks Farmhouse, the Applicant again refers to planting maturing after around 15 years.

The position at Barn Cottages is more stark. The Applicant accepts that the BESS, noise barrier and Project Substation would introduce another industrial-looking element into the wider landscape setting and states that the proposed woodland screening may take approximately **30 years** to reach sufficient height to obscure the substation. It nevertheless concludes that lower-end less-than-substantial harm would eventually reduce to no harm once screening matures.

A heritage effect persisting for 15 or 30 years is not an immaterial interim effect. It represents a substantial part of the 60-year operational life of the Scheme and a substantial period in the lived experience of the affected heritage assets and communities.

Nor does eventual screening retrospectively remove the earlier harm. The proper assessment must identify the effect during the years before mitigation becomes effective and attribute appropriate weight to that harm. A residual-effect conclusion based primarily on mature Year-15 or Year-30 planting materially understates the actual whole-life effect.

10.5.4 Screening can change historic landscape character

The Applicant's planting strategy also needs to be assessed at landscape scale. EN-3 expressly recognises that solar development may affect **Historic Landscape Character**, not merely the settings of individual listed buildings.

This matters in the South Norfolk Claylands because openness, long views, scattered farmsteads, prominent churches, historic field patterns and the relationship between settlements and agricultural land are defining components of historic landscape character. Edleston identifies those relationships throughout the Scheme area.

Repeated belts of new screening vegetation around arrays, substations and BESS infrastructure may reduce direct visibility of industrial structures, but they may also fragment open views, alter historic field enclosure, change approaches to settlements and obscure historic relationships between buildings and farmland.

Mitigation must therefore be assessed for its own heritage effect. It cannot be assumed that screening is beneficial simply because it reduces visibility. In a landscape where openness itself forms part of heritage significance, the mitigation may replace one form of harm with another.

10.6 Independent expert assessment by David Edleston

BEPS commissioned an independent Heritage Impact Assessment from David Edleston BA(Hons) Dip Arch RIBA IHBC. Mr Edleston is a conservation architect with more than forty years' professional experience and formerly managed South Norfolk Council's Conservation, Design and Landscape Team for approximately eighteen years. His final September 2026 assessment was informed by documentary review and five days of field inspection across the Scheme area.

The independent assessment reaches materially different conclusions from the Applicant's ES.

It does not suggest that the Scheme would generally cause substantial harm to designated heritage assets. The principal disagreement concerns the extent of less-than-substantial harm and the contribution made by historic setting.

The independent assessment identifies less-than-substantial harm from the principal built development to **36 designated heritage assets**. When highway, access and abnormal-load effects are included, adverse effects are identified in relation to **41 designated heritage assets overall**.

The affected assets include highly graded heritage assets, including **two Grade I and three Grade II*** listed buildings. The assessment therefore identifies a substantially broader pattern of heritage harm than the Applicant's ES.

This difference cannot be dismissed as a disagreement about terminology alone. It arises principally from a different understanding of setting. The independent assessment gives greater weight to:

historic and functional relationships between buildings and the surrounding agricultural landscape;

approaches to churches and settlements;

surviving field patterns, lanes and historic settlement morphology;

open rural foregrounds and backgrounds;

seasonal visibility;

sequential experience of assets when travelling through the landscape; and

the effect of screening itself upon openness and historic legibility.

The independent assessment therefore challenges the Applicant's recurring assumption that limited direct visibility, distance or future screening is sufficient to reduce heritage harm to negligible or no effect.

The disagreement is material because the Applicant's final heritage conclusions form part of the planning balance. If the correct position is that dozens of designated assets experience less-than-substantial harm, rather than only the very limited harm identified by the Applicant, the heritage side of that balance changes significantly.

10.7 Site-specific heritage effects

The defects identified above are not abstract methodological concerns. They materially affect the Applicant's conclusions at individual Sites. In a series of cases the Applicant accepts that surrounding agricultural land contributes to the significance of a listed building, or that some intervisibility will occur, but nevertheless concludes that there will be no heritage harm because of

distance, retained foreground land or future planting. David Edleston's independent assessment demonstrates that those conclusions are frequently too optimistic.

10.7.1 Sites 1, 2 and BESS – Great Moulton and Tivetshall

The Applicant identifies Broadgate Way, Moulton Farmhouse, Laurels Farmhouse and its listed barn, Hill House, French's Farmhouse and Barn Cottages as the designated assets potentially sensitive to Sites 1, 2 and the BESS. Its overall conclusion is that embedded landscaping will produce negligible effects and no harm except at Moulton Farmhouse and Barn Cottages, where it accepts less-than-substantial harm at the lower end of the scale. Edleston accepts the Applicant's no-harm conclusions for Broadgate Way and French's Farmhouse, but reaches materially different conclusions for Moulton Farmhouse, the Laurels group, Hill House and Barn Cottages.

Moulton Farmhouse

Moulton Farmhouse, now Woodlands Farm, is a Grade II listed 17th-century timber-framed and thatched farmhouse. Edleston identifies its isolated position, associated outbuildings and open agricultural surroundings as important components of its significance. Historic mapping demonstrates the longevity of that relationship, while present-day views along Frith Way and across surrounding farmland allow the farmhouse to continue to be experienced as part of a traditional rural farmstead.

The Applicant itself accepts that the Scheme will cause less-than-substantial harm at the lower end of the scale. It acknowledges that the PV arrays and Project Substation will be visible west of the farmhouse and that views of the farmhouse from the public footpath through Sub-Site 1B will be largely obscured by the Project Substation.

Edleston considers that assessment materially understates the effect. The Site 1 infrastructure is not limited to distant PV arrays: the historic setting would be affected by solar panels to the west, the National Grid Substation and 400kV Project Substation to the north-west and the BESS and further 400kV infrastructure to the south-west. The proposed linear tree belt may eventually reduce visibility after approximately 15 years, but it would itself sever the historic visual relationship between the farmhouse and the surrounding open land. He therefore assesses the harm as **less than substantial at a moderate level**, not at the bottom of the scale.

That is the more credible assessment. The Applicant cannot simultaneously acknowledge loss of important views and substantial industrial infrastructure within the farmstead's wider setting, yet minimise the effect principally because planting may ultimately obscure it.

Laurels Farmhouse and listed barn

Laurels Farmhouse and the listed barn immediately to its east form an important historic group. Edleston identifies open views south from the buildings and views north towards their roofscape and chimneys across farmland that forms part of their rural setting.

The Applicant concludes no harm. Edleston identifies an important omission: the proposed National Grid Substation and other Site 1 infrastructure have not been adequately considered in

the relevant wider views. Solar arrays and substation infrastructure would appear beyond the retained foreground land, with planting taking years to mature. He therefore identifies a degree of **less-than-substantial harm at the lower end of the scale**.

The point is again one of wider setting. Retaining an undeveloped strip immediately beside the listed group does not make the industrial infrastructure beyond heritage-neutral.

Hill House

Hill House is a Grade II listed former workhouse of 1836 designed by William Thorold. It is an unusually prominent three-storey building whose cross-plan form and central octagon are conspicuous within the surrounding flat agricultural landscape. Edleston identifies that open setting as contributing materially to significance, including through the building's historic function and the likely relationship between the workhouse and agricultural labour in the surrounding fields.

Sub-Site 2A lies immediately west of the road, with solar arrays set back only about 20m from it. The Applicant accepts that panels will change the setting but concludes that proposed planting, once mature after approximately 15 years, will preserve the roadside prominence of the building and that there will be no harm.

Edleston reaches the opposite conclusion. The introduction of arrays up to approximately 4.5m high into the presently open setting would materially alter views towards and from the building. For many years the planting would not provide the claimed screening; once mature, it would itself create enclosure and sever the open visual relationship between Hill House and the farmland that contributes to its significance. He therefore identifies **moderate less-than-substantial harm**.

The Applicant's 'no harm' conclusion is particularly difficult to sustain where it depends upon replacing an historically open setting with screening vegetation precisely because the development would otherwise be conspicuous within it.

Barn Cottages

Barn Cottages at Tivetshall St Margaret are a pair of Grade II listed 17th-century timber-framed and thatched cottages whose open rural surroundings have remained substantially undeveloped apart from the small terrace opposite. Edleston identifies numerous views of the cottages from the winding B1134/Station Road and considers their agricultural setting and likely historic association with the local farming community to make an important contribution to significance.

The Applicant accepts that the BESS, noise barrier and Project Substation would introduce another industrial-looking element into the wider landscape and that taller elements of the substation may be visible. It accepts lower-end less-than-substantial harm, but says this would reduce to no harm once woodland screening matures. Critically, it estimates that the planting may take approximately **30 years** to become sufficiently tall to screen the substation.

Edleston rejects the low assessment. The existence of distant maltings and pylons does not justify introducing further industrial infrastructure substantially closer to the cottages. Nor can the setting be reduced to the southern view favoured by the Applicant: the cottages are experienced

dynamically from a series of positions along the curving road. He concludes that the BESS and substation would introduce potentially dominant and incongruous industrial elements into the open setting and assesses **moderate less-than-substantial harm**.

BEPS agrees. A 30-year wait for screening is not an effective basis for treating harm as temporary or negligible.

10.7.2 Site 3 – Lundy Green

The Applicant identifies four Grade II listed buildings as potentially sensitive to Site 3: Townhouse Farmhouse, Rose Cottage, Three Feathers and the adjoining listed barn and stable range. It nevertheless concludes that the Scheme will cause no harm to any of them, relying principally on the approximately 350m setback, retention of the northern field as agricultural land and proposed planting.

Edleston agrees that Rose Cottage, Three Feathers and the adjoining barn/stable range would not experience material harm. His disagreement concerns Townhouse Farmhouse.

Townhouse Farmhouse sits on the south side of Lundy Green and has long views south across open farmland. The Applicant acknowledges that the surrounding agricultural landscape forms part of the setting but reasons that the nearest field will remain undeveloped, that panels further south are unlikely to be visible and that planting will further restrict views. It therefore concludes no harm.

Edleston's site inspection identifies long, open views in which the agricultural land forms the wider setting of the farmhouse and retains historic associations with the farmstead. Although the nearest field remains open, the 4.5m moving arrays beyond would form an industrial backdrop, with proposed planting taking years to establish and winter visibility remaining greater. He therefore assesses **less-than-substantial harm at the bottom of the scale**.

Site 3 demonstrates why a buffer field is not equivalent to preservation of setting. If the wider agricultural landscape contributes to significance, retaining the nearest parcel while industrialising the land beyond does not logically establish no harm.

10.7.3 Site 4 – Stratton St Michael and Tasburgh

Site 4 presents one of the clearest heritage conflicts in the Scheme. Site 4 contains an unusually concentrated heritage group. Edleston identifies nine listed buildings in close proximity to the Site, including the Grade I Church of St Michael and Grade II Old Rectory immediately south of Site 4B, together with seven Grade II buildings. The nearby Camp in Village/Tasburgh Hillfort Scheduled Monument requires separate consideration.

The independent Heritage Impact Assessment strengthens the objection to Site 4B. It identifies harm to the Grade I Church of St Michael, the Grade II* Old Rectory and the associated Grade II listed barn and recommends avoidance through removal of Site 4B development. The significance of this recommendation is that the harm arises not simply from a single direct view but from the

alteration of the historic relationship between the church, rectory, associated farm buildings and their open agricultural setting.

Church of St Michael, Old Rectory and listed barn

The Grade I Church of St Michael, Grade II* Old Rectory and Grade II barn north of the Rectory form an exceptionally important historic group.

Edleston records that their spatial, historic and visual relationship has remained substantially intact for centuries. The church is the principal historic building of Stratton St Michael; the Old Rectory retains its historic functional relationship with it; and the barn forms part of the same rural group. The surrounding agricultural land reinforces the relative isolation and rural function of all three.

The recent Long Stratton bypass has adversely affected the setting to the south, particularly through traffic noise and physical intervention. That does not extinguish the value of the remaining rural setting to the north. Indeed, Edleston identifies an important consequence of the bypass works: the new footpath and footbridge now provide a panoramic viewpoint from which the church, Old Rectory and barn can be appreciated together with open agricultural land beyond.

The Applicant acknowledges that the southern fields of Sub-Site 4B contribute to the significance of the Church of St Michael and has removed those fields from built development. It nevertheless concludes that the remainder of Site 4 makes no meaningful contribution to the church's setting and that any remaining views of PV arrays would be distant and minor. It similarly concludes no harm to the Old Rectory because there are said to be no direct views between it and Site 4, and no harm to the barn because the nearest fields are retained as grassland.

Edleston's evidence exposes the weakness of those conclusions. The arrays and proposed 132kV substation would sit beyond the retained foreground and would be experienced as an industrial backdrop in wider views from the churchyard, footpaths, footbridge and surrounding farmland. The issue is not whether the Old Rectory has a direct line of sight from a window; it is whether its historic relationship with the church, barn and surrounding rural landscape is altered. Edleston assesses the resulting harm to **all three assets as less than substantial at a moderate level**.

For a Grade I church and Grade II* rectory, that difference in professional judgment is highly material. The Applicant's no-harm conclusions should not be accepted merely because the closest development field has been removed.

Thatched Cottage

The Grade II Thatched Cottage, described in the application as the Cottage occupied by Mr and Mrs Woods, lies only about 30m south-west of Sub-Site 4B. Its simple vernacular form and longstanding relationship with the small agricultural settlement contribute to its significance.

The Applicant again relies on the undeveloped southern fields to conclude no harm. Edleston identifies wider views north from Church Lane and the new footbridge, and reciprocal views south from the agricultural land. The arrays and substation would appear beyond the retained foreground

as industrial elements within that setting. He therefore identifies **less-than-substantial harm at the lower end of the scale**.

Church Farmhouse

Edleston agrees with the Applicant that Church Farmhouse is relatively enclosed by mature vegetation and ancillary buildings and that no material harmful effect has been demonstrated. That agreement is important: the BEPS assessment is not predicated on finding harm to every asset.

The Cedars

The Cedars is a prominent Grade II listed building approximately 70m west of Sub-Site 4B. Although surrounded by trees and adjoining development, Edleston records numerous views from the A140, Church Lane and surrounding farmland in which its roofscape, chimneys and principal elevations are experienced within an open agricultural setting.

The Applicant concludes no harm, relying on limited intervisibility and retained land immediately east. Edleston identifies proposed arrays on open land north and east of the building and on both sides of the A140. These would be visible in several views and would introduce industrial infrastructure alongside the asset within a setting that has historically remained largely undeveloped. He assesses **less-than-substantial harm at the lower end of the scale**.

Pair of houses owned by Mr B R Weeden

The Applicant concludes that only a small portion of Sub-Site 4B is visible and that the proposed change will be confined to new grassland. Edleston identifies materially wider intervisibility from Church Lane and the surrounding farmland, with the panels and substation forming a distant but appreciable backdrop. He assesses **lower-end less-than-substantial harm**.

Edleston agrees that Well Meadow Cottage and The Hollies would not experience material adverse effects because of their more enclosed settings, distance and restricted intervisibility.

Camp in Village / Tasburgh Hillfort Scheduled Monument

The Scheduled Monument requires separate consideration. Edleston's HIA is principally concerned with the built historic environment and does not replace the archaeological and Scheduled Monument assessment.

The Applicant accepts that the hillfort occupies a deliberately elevated position and that this topographic siting is a key element of its design. It nevertheless concludes no harm because mature vegetation now limits views and because an existing solar farm already occurs within its wider setting. The monument itself is a substantial multi-period site: the HER evidence records a major enclosure with prehistoric, Roman, Anglo-Saxon and medieval activity, including earthworks, settlement, hearths and metalworking.

BEPS considers the Applicant's reasoning too dismissive. Present vegetation does not erase the significance of the hillfort's deliberate topographic position, nor does the existence of one solar

development establish that further industrialisation of the surrounding historic landscape is harmless. The issue should be considered cumulatively and in relation to the historic landscape as a whole, rather than treated solely as a present-day visibility test.

10.7.4 Site 5 – Fritton

Site 5 is another particularly sensitive heritage location. Sub-Site 5B directly adjoins Fritton Conservation Area. The Grade I Church of St Catherine lies approximately 20–25m south of the Site; Church Farmhouse and its listed barn lie approximately 60m and 30m away respectively. Site 5 also accommodates a proposed 400kV Project Substation within Sub-Site 5A as well as extensive PV arrays.

The independent assessment recommends removal of Site 5B because of its effect upon the setting of the Grade I Church of St Catherine, Fritton. It identifies the surrounding agricultural landscape as making a material contribution to the church's significance and considers the introduction of extensive solar infrastructure into that setting to cause less-than-substantial harm which is not adequately resolved by screening.

Church of St Catherine

St Catherine's is a Grade I medieval church of exceptional significance. Edleston identifies its isolated position, the approach along the path from The Street, the green churchyard, surrounding farmland and the pronounced sense of peace, tranquillity and seclusion as important attributes of its setting. Historic mapping shows that the church's relationship with the surrounding agricultural landscape has remained substantially unchanged for generations.

The Applicant itself accepts that the rural landscape contributes to the significance of the church, but concludes no harm because the land immediately north will become community space rather than built solar development, and because it considers views between the church and the remaining Site to be limited.

Edleston's field evidence directly challenges that proposition. He records views north, west and north-west from the churchyard and approach, with markedly greater intervisibility during winter months. His photographs specifically demonstrate the difference between summer and winter vegetation.

The Scheme would place PV arrays west and north-west of the church and a major 400kV substation further north-west. Edleston concludes that their scale, movement and industrial character would intrude into the rural setting and that any operational noise from the substation would also affect the tranquillity through which the church is presently experienced. He assesses **less-than-substantial harm at a moderate-to-high level**.

This is one of the most important heritage disputes in the application. A Grade I church only metres from the Order Limits should not be assigned 'no harm' on the basis of a retained foreground and summer vegetation where independent winter site evidence demonstrates a materially different relationship.

The potential acoustic component of that setting harm should be considered together with the evidence in Chapter 12. Heritage setting is experiential: tranquillity cannot be separated artificially from the assessment simply because noise is modelled in another ES chapter.

Church Farmhouse and listed barn

The Applicant expressly acknowledges that the agricultural landscape of Sub-Site 5B forms part of the wider setting of Church Farmhouse, that it helps the building to be appreciated as a traditional rural former farmhouse, and that the farmhouse and barn derive group value from their historic agricultural relationship.

Despite those findings, it concludes no harm.

Edleston identifies the inconsistency. The retained foreground does not prevent the arrays and 400kV infrastructure on rising land beyond becoming part of the wider setting. The open agricultural land has remained historically undeveloped and contributes to the significance of the group. The introduction of major electrical infrastructure on the skyline would therefore result in **less-than-substantial harm at the lower end of the scale**.

Fritton Conservation Area

Fritton Conservation Area is distinctly rural, with development dispersed around Fritton Common and along The Street and with open agricultural land forming its wider setting. The Applicant itself accepts that the approach from the north will experience 'slight changes in views' through introduction of the arrays, but concludes that because the built infrastructure is at least approximately 500m from the Conservation Area boundary, there will be no harm.

Edleston disagrees. When travelling north out of the Conservation Area, the arrays and substation would form part of the western and north-western backdrop and introduce industrial elements into a presently undeveloped rural landscape. He therefore identifies **less-than-substantial harm at the bottom of the scale**.

The Applicant's treatment is again too binary. An unchanged immediate approach does not preserve the wider rural setting of the Conservation Area if industrial infrastructure becomes an appreciable component of that setting immediately beyond it.

10.7.5 Site 7 – Tasburgh, Hempnall, Saxlingham and Woodton

Site 7 is the largest grouping within the Scheme and comprises twelve sub-sites extending from Tasburgh through Hempnall and Saxlingham towards Woodton. The application identifies numerous listed buildings immediately adjacent or close to those parcels, including Wood Farmhouse, Grove Farmhouse, Hill Farmhouse, the Former Quaker Meeting House, Tramp's Hall and barn, the Manor Farm group, Hill Cottages, Hill House and Grade II* Oaks Farmhouse. Saxlingham Green Conservation Area lies immediately north of parts of Site 7.

Edleston's HIA identifies a substantially wider pattern of harm at Site 7 than the Applicant. It finds lower-end less-than-substantial harm to Hill Farmhouse, Wood Farmhouse and Grove Farmhouse

at Sites 7A–7C; to Manor Cottage, Manor Farmhouse, Manor Farmhouse Barn, Hill Cottages, Hill House, Holly Cottage and Saxlingham Green Conservation Area at Sites 7D–7H; and moderate less-than-substantial harm to Grade II Oaks Farmhouse at Site 7L. The Applicant identifies no harm to any of those assets and had scoped Holly Cottage out altogether.

Sub-Sites 7A–7C

Edleston agrees that the Countryman Public House, Tramp's Hall and its listed barn, and the Former Quaker Meeting House would not experience harmful effects sufficient to alter their significance.

He reaches a different conclusion for Hill Farmhouse. The building has a prominent position near the A140/Fairstead Lane junction and retains historic relationships with surrounding agricultural land. The Applicant says there are no relevant views from the farmhouse towards Site 7A and concludes no harm. Edleston identifies views east from the entrance and reciprocal views west across the open land. Because the proposed panels would be visible on rising ground within that historic agricultural setting, he assesses **less-than-substantial harm at the lower end of the scale**.

Edleston concludes that both Wood Farmhouse and Grove Farmhouse would experience less-than-substantial harm at the lower end of the scale. Both are historic farmsteads whose surviving open agricultural surroundings make a positive contribution to significance. At Wood Farmhouse, panels would remain visible beyond the retained setback and the proposed woodland planting would ultimately create enclosure and sever the historic visual relationship with farmland. At Grove Farmhouse, Edleston similarly concludes that the Applicant has undervalued the contribution made by the wider agricultural setting and that both the panels and the proposed woodland screening would adversely alter that relationship.

Sub-Sites 7D–7H – Saxlingham Green

This part of Site 7 lies immediately beside a concentrated historic group comprising Manor Cottage, Manor Farmhouse, Manor Farmhouse Barn, Hill Cottages, Hill House and Holly Cottage, together with Saxlingham Green Conservation Area. The Applicant's own baseline identifies several of these buildings within 30–70m of the Site and the Conservation Area immediately north of Sub-Sites 7D and 7F.

Edleston's completed setting assessment identifies the Conservation Area as one in which natural landscape, historic buildings, greens, footpaths and surrounding countryside interact to create significance. He identifies a particularly strong sense of arrival from the south, where the experience changes from wide open agricultural views to the historic settlement around The Green. He similarly identifies the surrounding farmland as contributing to the significance of Manor Cottage, Manor Farmhouse, Hill Cottages and Holly Cottage.

Edleston's final assessment concludes that Manor Cottage, Manor Farmhouse, Manor Farmhouse Barn, Hill Cottages, Hill House and Holly Cottage would each experience less-than-substantial harm at the lower end of the scale. He reaches the same conclusion for Saxlingham Green Conservation Area. The common cause is the loss or enclosure of the open agricultural setting through which these buildings and the Conservation Area are presently approached and experienced. Particularly important is Broaden Lane: the present transition from open farmland to the historic buildings at the entrance to Saxlingham Green would instead be experienced through or alongside solar infrastructure and screening vegetation. Holly Cottage is additionally significant because the Applicant scoped it out, whereas Edleston's field assessment identifies a harmful effect.

Sub-Sites 7I–7L – Oaks Farmhouse

Oaks Farmhouse is a Grade II* 16th- and 17th-century farmhouse lying approximately 180m east of Sub-Site 7L. Its high designation reflects substantial architectural and historic interest. Edleston records that it occupies an isolated rural position surrounded by open land which has remained undeveloped for centuries.

Importantly, the Applicant itself acknowledges that Sub-Site 7L contributes to the significance of Oaks Farmhouse and that there is intervisibility between the Site and the listed building. It nevertheless concludes no harm, relying substantially on augmentation of existing planting which it says will screen the panels once mature after approximately 15 years.

Edleston considers that conclusion unsustainable. Panels would be visible above the low boundary hedgerow in views from and towards the farmhouse, with winter visibility greater. The screening would not become effective for many years and, once mature, would itself sever the historic visual relationship between the farmhouse and its open surroundings. He therefore assesses **moderate less-than-substantial harm**.

That conclusion is particularly important because Oaks Farmhouse is one of only two Grade II* listed buildings the Applicant itself scopes into the detailed assessment.

The independent assessment also recommends removal of Site 7L in response to harm to the setting of the Grade II* Oaks Farmhouse. The recommendation is particularly material because it again reflects a conclusion that screening or later landscape treatment would not provide an equivalent heritage outcome to avoidance.

10.7.6 Site 8 – Upgate Green

The principal designated assets are Grade II Upgate Green Farmhouse and the separately listed outhouse immediately to its north. They form an important historic farmstead group within a predominantly open agricultural landscape.

Edleston identifies the surrounding gently undulating farmland as having important historic associations with the buildings and as making a positive contribution to their significance. There are open views south from the group and views north towards it across the farmland from Brooke Road.

The Applicant accepts some change to setting but concludes no harm. Edleston considers that the retained land immediately south does not resolve the effect because the arrays would occupy rising ground beyond and would be visible on the skyline. Existing hedgerows would not screen panels of the proposed height and enhanced planting would take years to become effective. He therefore identifies **less-than-substantial harm at the lower end of the scale**.

The conclusion is consistent with the Applicant's own LVIA evidence, which identifies significant visual effects at a number of Site 8 viewpoints, including the edge of Upgate Green Farm and other positions on Brooke Road during earlier stages of the mitigation period. That does not itself prove heritage harm, but it reinforces the need for a credible qualitative assessment rather than an assumption that planting removes the issue.

10.7.7 Site 9 – Brooke

Site 9 lies immediately south of Brooke in an agricultural landscape adjoining the southern edge of Brooke and Kirstead Conservation Area. The Applicant identifies Waterfield Cottage, Oldhouse Farmhouse, the listed Barn at Oldhouse Farm and Littlebeck Farmhouse as potentially sensitive, together with the Conservation Area.

Edleston's field assessment provides important evidence about their settings. Oldhouse Farmhouse and its listed barn form a historic group surrounded by open agricultural land to the east and south. The farmhouse and barn are experienced together from the road and across farmland, and Edleston identifies important historic relationships between the buildings and surrounding land. Littlebeck Farmhouse similarly retains an agricultural setting, with views across open land towards its earlier rear range. Brooke and Kirstead Conservation Area retains a rural southern edge backed by open agricultural fields.

The Applicant's LVIA is itself relevant context. It predicts significant visual effects at several Site 9 receptors during early phases, including Brooke FP6, Mill Lane, the vicinity of Oldhouse Farm and the southern side of High Green. Again, visual effect is not automatically heritage harm, but those findings make a blanket conclusion that the historic setting is unaffected particularly difficult to accept without careful explanation.

Edleston's final assessment concludes that Oldhouse Farmhouse and its listed barn, Littlebeck Farmhouse and Brooke and Kirstead Conservation Area would each experience less-than-substantial harm at the lower end of the scale. He agrees with the Applicant that Waterfield Cottage would not be harmed. The distinction is important: the independent assessment does not assume harm merely from proximity, but identifies it where field inspection demonstrates that open agricultural land makes a positive contribution to significance and would be materially altered by the Scheme.

At Oldhouse Farmhouse and Barn, the proposed panels would occupy land historically and visually associated with the farmstead and would appear on the horizon within its open setting. At Littlebeck Farmhouse, the effect is aggravated by the position of panels immediately north of Littlebeck Lane: screening would take years to mature and would itself convert the present open approach into an enclosed corridor. At Brooke and Kirstead Conservation Area, the arrays would

replace the present agricultural foreground in views towards the historic settlement edge with an industrialised solar landscape.

Site 9 also has substantial archaeological importance, considered separately below. The discovery of multi-period activity, including evidence not apparent from the earlier baseline, reinforces the wider point that this is not an historically empty landscape.

10.7.8 Site 10 – Woodton and Seething

Site 10 lies within the rural landscape between Woodton and Seething. The built heritage receptors considered by Edleston include the Grade II Old Rectory, Beulah House and Beulah Barn, together with Seething Conservation Area. The Applicant's original scoping material identified the Old Rectory approximately 300m west of Site 10, Beulah House and Beulah Barn approximately 400m west, and Seething Conservation Area further north-east.

Edleston's site evidence records that Beulah House and Beulah Barn have open agricultural land immediately to the east, with rising and gently undulating farmland forming the wider backdrop. Beulah Barn, an early timber-framed threshing barn, is experienced with Beulah House across this surrounding open land. The Old Rectory is more enclosed by mature vegetation but remains part of the same rural settlement landscape.

Edleston undertook a substantive assessment of Seething Conservation Area because he considered it potentially affected, whereas the Applicant identified it as potentially affected but did not carry out an impact assessment. Edelston considers it potentially affected because its linear agricultural settlement form is experienced within and from the surrounding open farmland. He records partial views towards the Conservation Area from surrounding fields and notes that the settlement has avoided major suburban expansion, leaving its linear historic character comparatively intact.

That decision is important evidence of the methodological dispute. It shows that the Applicant's scoping exercise has not merely produced different harm gradings; it has removed from substantive assessment a Conservation Area that an independent heritage professional, after field inspection, considers potentially affected.

Edleston's final assessment agrees that the Old Rectory would not be harmed but concludes that Beulah House, Beulah Barn and Seething Conservation Area would each experience less-than-substantial harm at the lower end of the scale. At Beulah House and Barn, the rising agricultural land to the east forms their backdrop and contributes to their setting. Edleston concludes that the 4.5m tracker arrays would be clearly visible on that rising ground, particularly in winter, and identifies the proposed 132kV Project Substation at Site 10C as an additional element inadequately addressed by the Applicant's assessment.

Seething Conservation Area is more fundamental still. Although identified as potentially affected, the Applicant did not carry out a substantive impact assessment. Edleston does. He finds that the Conservation Area retains a well-preserved linear settlement form derived from its rural agricultural economy and that Site 10E would introduce moving solar infrastructure into its open southern agricultural setting and approach. He accordingly identifies lower-end less-than-

substantial harm. This is a direct example of the Applicant's scoping process failing to capture a heritage effect subsequently identified through independent field assessment.

Site 10 also contains archaeological evidence of exceptional interest, including the regionally significant early medieval pottery-production evidence considered in Section 10.11 below. Built heritage and archaeology should therefore be examined together as evidence that Site 10 lies within a historically rich landscape, not as unrelated receptors capable of being dismissed individually.

10.8 The scale of the independent disagreement

The scale of disagreement between the Applicant and the independent assessment is substantial.

The Applicant's ES identifies harm to a very limited number of designated assets and generally concludes that residual cultural-heritage effects are not significant in EIA terms.

By contrast, the independent September 2026 Heritage Impact Assessment identifies less-than-substantial harm from the principal built development to 36 designated heritage assets and adverse effects on 41 designated assets overall when highway and abnormal-load effects are included.

That difference is important for two reasons.

First, EIA significance and heritage-policy harm are not the same test. A heritage effect may fall below the Applicant's threshold of "significant" for EIA purposes while still constituting less-than-substantial harm requiring weight in the policy balance.

Secondly, the numerical difference reflects a substantive methodological disagreement about setting rather than merely different professional labels. The independent assessment considers the Applicant to have underweighted historic landscape relationships, openness, settlement approaches, sequential views and the effect of screening upon heritage significance.

The ExA should therefore not rely upon the Applicant's headline conclusion of no significant residual heritage effect as though that were equivalent to a finding of no heritage harm.

10.8.1 Sites where avoidance is recommended

The independent assessment identifies three locations where the heritage conflict is sufficiently serious that avoidance through removal of development is recommended:

Site 4B, principally in relation to the Grade I Church of St Michael, the Grade II* Old Rectory and the Grade II listed barn;

Site 5B, principally in relation to the Grade I Church of St Catherine at Fritton; and

Site 7L, principally in relation to the Grade II* Oaks Farmhouse.

These recommendations are significant because they apply the mitigation hierarchy at the design stage. The assessment does not merely propose additional screening around retained development; it concludes that in these locations the heritage harm is best addressed by removing the conflicting development.

BEPS relies upon those recommendations as evidence that the present layout has not exhausted reasonable heritage-led avoidance.

10.9 Conservation Areas

The independent assessment identifies less-than-substantial harm to all four Conservation Areas it assesses as affected: **Fritton, Saxlingham Green, Brooke and Kirstead, and Seething**. The Applicant identifies no harm to any of them.

The common issue is the Applicant's treatment of the countryside outside the designated boundary as principally visual background. In each case, Edleston identifies a historically meaningful relationship between settlement and surrounding farmland. At Fritton, buildings remain dispersed around the common and backed by agricultural land. At Saxlingham Green, the approach from the south is characterised by a marked transition from open farmland into the historic settlement. At Brooke, the High Green settlement edge retains open agricultural countryside to the south. At Seething, the historic linear settlement survives without large-scale suburban expansion and remains experienced within surrounding farmland.

Development does not need to cross a Conservation Area boundary to harm its significance. Where the rural approach, backdrop or relationship with surrounding countryside contributes to character or appearance, replacement of that countryside by tracker arrays, electrical infrastructure or dense screening planting is capable of causing heritage harm.

The road and access works add a further dimension. The Scheme requires construction traffic, AIL movements and potentially vegetation clearance and highway intervention through or close to historic settlements. South Norfolk Council has specifically raised concern about mature-tree removal and landscape effects in or adjacent to conservation areas including Saxlingham Green and Saxlingham Nethergate and has required the Applicant to demonstrate that access works are located in the least harmful way.

The conservation-area assessment must therefore address the whole experience of those places: their rural approaches, settlement morphology, roadside vegetation, historic lanes, tranquillity and relationship with surrounding agricultural land. The Applicant's 'no harm' conclusions do not do so adequately.

0.10 Archaeology: a landscape of prolonged occupation

Edleston's HIA is deliberately confined to listed buildings and Conservation Areas and does not assess below-ground archaeology. That evidence must therefore be considered separately. The archaeological evidence does not support any characterisation of the Order Limits as low-value agricultural land with occasional isolated remains.

The Applicant's own geophysical and evaluation work demonstrates prolonged human activity across the Scheme, including prehistoric funerary and settlement evidence, Iron Age and Roman occupation, medieval settlement and field systems, and later historic activity. Importantly, previously unrecorded archaeology has been identified during the Scheme's own investigations. The absence of an HER record is therefore not evidence of archaeological absence.

Particularly important concentrations include the prehistoric, Roman and medieval evidence around Site 4; medieval and settlement-related evidence around Site 5; substantial multi-period occupation at Site 9; and the early medieval pottery-production evidence at Site 10. The latter has been identified by the Applicant's archaeological work as regionally significant and unusually important.

This evidence requires a precautionary approach to those parts of the Scheme that remain incompletely evaluated. The archaeological question is not simply whether known features can be microsited around. It is whether sufficient investigation has been completed before consent to establish the significance, extent and vulnerability of archaeological remains that may be affected by arrays, substations, cable trenches, roads, compounds, piling and HDD works.

10.11 Cable Route Corridor: the archaeological baseline remains incomplete

The Cable Route Corridor remains a material weakness in the cultural-heritage assessment. The Applicant's earlier scoping material contemplated direct archaeological effects from the CRC and a 500m cultural-heritage study area. Yet substantial archaeological investigation of the corridor was not complete when the DCO application was prepared.

This matters because the CRC is not a negligible line on a plan. Cable installation may require trenching, construction compounds, joint bays, access, working areas and HDD launch and reception pits. Those activities are capable of directly affecting archaeological deposits and palaeoenvironmental material even though the cable itself will ultimately be buried.

The Scheme's archaeological evidence already demonstrates that previously unknown archaeology can occur across apparently ordinary farmland. It is therefore unsafe to assume that unsurveyed or incompletely evaluated sections of the CRC are of low significance merely because no designated asset is recorded there.

BEPS does not contend that every archaeological detail must necessarily be resolved before consent. The objection is narrower and more important: where potentially significant archaeological remains may affect the acceptability or micrositing of the authorised works, sufficient evaluation must occur while meaningful avoidance remains possible. Post-consent investigation should refine a sufficiently understood baseline; it should not establish for the first time whether nationally important or otherwise highly significant archaeology lies in the path of authorised works.

10.12 Historic England's concerns remain material

Historic England's Relevant Representation does not support the proposition that cultural heritage is a wholly resolved matter. Historic England identifies residual heritage harm and the need for that

harm to be weighed appropriately in the planning balance. Its position is therefore materially different from an argument that the Scheme has no heritage effect.

The significance of Historic England's position should be considered alongside the independent assessment. Historic England and David Edelston do not necessarily identify the same number or degree of affected assets, but both recognise that heritage harm remains and that the effect upon setting cannot simply be dismissed because direct physical loss is avoided.

Historic England considers that changes to the settings of some designated assets are likely to amount to heritage harm in policy terms, that residual harm will remain after mitigation, that some areas within the Order Limits remain incompletely archaeologically evaluated and that previously unknown archaeology of potentially high significance may still be encountered.

Historic England also identifies the CRC methodology and mitigation as requiring further scrutiny and raises potential cumulative effects with Tasway Energy Park and associated BESS development. These are therefore live examination matters, not objections superseded by submission of the ES.

The significance of Edleston's HIA is that independent site-based assessment now identifies the scale of setting harm that Historic England had warned needed to be properly understood. The Applicant's near-universal 'no harm' conclusion should therefore not be treated as an agreed heritage position.

ExQ1 has subsequently required the heritage assessment to be considered against the August 2026 NPPF. That is important because the Applicant's ES was prepared against the preceding version of national policy. The Applicant should therefore identify whether and how its heritage conclusions change when tested against the current framework, rather than relying upon superseded paragraph references or assuming that the earlier policy assessment remains sufficient.

10.13 Compliance with the Scoping Opinion

The Scoping Opinion did not give the Applicant a general licence to exclude setting or archaeological effects. PINS required the ES to justify its cultural-heritage study areas robustly, identify sensitive receptors with reference to professional guidance and likely impacts, consider longer views towards and from affected assets and seek agreement with relevant bodies as the assessment developed.

PINS accepted the Applicant's proposal to scope out operational setting effects from the buried CRC, but that does not dispose of the direct archaeological effects of cable construction, HDD pits, compounds and associated works. Nor does it remove the requirement to assess temporary works and construction effects where sensitive heritage receptors may be affected.

The relevant question at Examination is therefore not whether Chapter 10 formally contains each heading anticipated at scoping stage. It is whether the final evidence now provides a sufficiently

robust basis to understand significance and harm. The independent HIA and the remaining archaeological uncertainty demonstrate that this question remains open.

10.14 Cumulative historic-landscape effects

The cumulative heritage assessment is particularly weak because the principal effect of East Pye is itself cumulative in character. This is not one compact solar field viewed from one heritage asset. It is a dispersed network of arrays, substations, BESS infrastructure, a National Grid Substation, access works and approximately 24km of cable corridors extending across numerous historic settlements and heritage settings.

Historic England has specifically identified potential cumulative effects with Tasway Energy Park and associated BESS development. South Norfolk Council has likewise warned that the combination of East Pye, Tasway, Norwich to Tilbury and other energy infrastructure could cause landscape and heritage harm through industrial-scale infrastructure incompatible with rural character.

The relevant cumulative receptor is therefore not merely the view from an individual listed building. It is the surviving historic agricultural landscape within which many of those buildings derive significance. Successive introduction of solar arrays, grid infrastructure, BESS compounds, pylons, highway works and screening belts can progressively erode the openness, tranquillity and settlement-to-countryside relationships that define that landscape.

The Applicant cannot answer that issue by reasoning that East Pye produces no significant effect and therefore cannot materially contribute to a cumulative effect. Edleston's evidence identifies harm to 36 designated assets. The premise underlying the Applicant's cumulative conclusion is therefore itself disputed.

10.15 Construction, traffic and tranquillity are heritage effects

Heritage setting is not exclusively visual. Historic England specifically advised that East Pye should consider the way assets are approached and experienced and the effects of noise, light and traffic.

This is material to a Scheme requiring extensive HGV and abnormal-load movements through narrow historic lanes and settlements. The physical works required for access may include vegetation clearance, visibility splays and local highway intervention, while the traffic itself alters the experience of quiet rural approaches and settlement cores. South Norfolk Council has specifically raised concerns about vegetation removal and heritage and landscape effects associated with the revised access proposals.

St Catherine's Church provides the clearest built-heritage example. Edleston identifies peace, tranquillity, isolation and the secluded approach to the Grade I church as components of its setting and concludes that noise associated with the proposed substation could itself adversely affect the way the asset is experienced.

The independent heritage assessment identifies adverse effects on additional designated assets when highway and abnormal-load effects are included, increasing the overall number of affected

designated assets from 36 in relation to principal built development to 41 overall. That finding confirms that the heritage assessment cannot properly be confined to the solar fields themselves. Construction routes, road widening, abnormal-load movements and changes to historic lanes and approaches form part of the way the Scheme is experienced in the historic environment.

These matters must therefore be considered together with Chapters 11 and 12. A conclusion that traffic or noise falls below the significance threshold in another ES chapter does not establish absence of heritage harm where tranquillity, seclusion or the character of an approach contributes to heritage significance.

10.16 Sixty years is a material heritage timescale

The Scheme is described as temporary, but its proposed operational period is 60 years. In heritage terms that is not a short-lived intervention. It represents a substantial period during which historic buildings, settlements and Conservation Areas would be experienced within an industrialised setting.

The point is particularly important where the Applicant relies upon mitigation becoming effective only after approximately 15 years, or approximately 30 years in the case of Barn Cottages. Edleston identifies both the delay in achieving screening and the separate harm that screening itself may cause by enclosing historically open settings.

Decommissioning does not retrospectively remove those effects. Nor should restoration be assumed to recreate automatically the historic spatial and landscape relationships existing before construction. The whole-life heritage assessment must therefore consider construction, the pre-maturity period, mature mitigation, replacement and maintenance activity, decommissioning and the resulting post-development landscape.

10.17 Why the Applicant's residual heritage conclusion is unreliable

The Applicant's conclusion of essentially no significant residual cultural-heritage effect sits uneasily with the scale of change admitted elsewhere in the ES and with the independent heritage evidence.

The independent September 2026 assessment identifies harm from the principal built development to 36 designated heritage assets and adverse effects on 41 overall when highway and abnormal-load effects are included. Those assets include two Grade I and three Grade II* listed buildings.

The principal reasons for the difference are identifiable:

- the Applicant gives insufficient weight to historic and functional setting relationships;
- visibility is treated too heavily as a proxy for setting;
- open agricultural land is too readily treated as neutral background;

- the effect of development upon historic approaches and sequential experience is understated;
- screening is treated predominantly as mitigation rather than also as a potential alteration of historic openness;
- seasonal visibility is insufficiently recognised; and
- highway and construction effects are not integrated fully into the heritage picture.

The ExA should therefore distinguish carefully between the Applicant's EIA conclusion that an effect is 'not significant' and the separate heritage-policy conclusion that harm exists. The former does not extinguish the latter.

10.18 Overall conclusion and remedies sought

East Pye is proposed within a surviving historic agricultural landscape in which listed farmsteads, medieval churches, vernacular buildings, Conservation Areas, historic lanes and archaeological remains remain unusually closely related to the open land around them. The Applicant's assessment largely treats that land as neutral unless strong direct visibility can be demonstrated. The independent evidence shows that approach to be too narrow.

The most serious conflicts concern the Grade I Churches of St Michael and St Catherine, the Grade II* Old Rectory and Oaks Farmhouse, together with the wider concentrations of historic farmsteads and Conservation Areas at Sites 1, 4, 5, 7, 8, 9 and 10.

The Applicant's assessment presents heritage harm as narrow and largely capable of being reduced through setback, screening and landscape mitigation. The independent September 2026 Heritage Impact Assessment reaches a materially different conclusion, identifying less-than-substantial harm from the principal built development to 36 designated heritage assets and adverse effects on 41 designated assets overall when highway and abnormal-load effects are included. The affected assets include two Grade I and three Grade II* listed buildings.

That evidence establishes that the heritage cost of the Scheme is materially greater than the Applicant's residual-effect tables suggest and must be given corresponding weight in the planning balance.

The strongest avoidance case concerns Sites 4B, 5B and 7L, where the independent assessment recommends removal of development to avoid harm to highly significant designated assets and their settings. BEPS submits that those recommendations should be examined before reliance is placed upon screening or later landscape management.

More generally, the ExA should require the Applicant to reconcile its assessment with the independent evidence, explain why the wider range of identified harms is not accepted, and apply the August 2026 NPPF to the current Scheme. Where harm remains, it must not be obscured by a conclusion of 'no significant EIA effect'.

If the Applicant cannot demonstrate that the identified heritage harm has been properly characterised, avoided where reasonably possible and given appropriate weight in the decision-making balance, that harm should weigh materially against the grant of development consent.

The primary remedy is refusal.

If the ExA nevertheless considers that consent may remain capable of recommendation, BEPS submits that, at minimum, the Examination must first require:

(a) completion of the material outstanding archaeological evaluation, particularly along the CRC and at locations affected by deep foundations and HDD;

(b) a revised assessment expressly addressing the independent HIA and the 36 identified designated-asset harms;

(c) proper assessment of cumulative effects upon Historic Landscape Character, including Tasway and relevant BESS/grid infrastructure;

(d) assessment of winter as well as summer setting conditions where deciduous screening is material;

(e) maximum-parameter assessment of the BESS, National Grid Substation and Project Substations sufficient to demonstrate the heritage worst case;

(f) reconsideration of development within the most sensitive settings, including whether avoidance or deletion of development is required rather than reliance on screening;

(g) appropriate requirements securing archaeological investigation, preservation in situ where justified, excavation and publication where necessary, and heritage-sensitive construction and decommissioning controls.

If those matters cannot be resolved sufficiently for the ExA and Secretary of State to understand the significance and extent of the heritage harm before consent, the appropriate conclusion is that the cultural-heritage case has not been made.

End of Volume 2