Chapter J

Cumulative Impact Assessment

East Claydon Greener Grid Park Environmental Statement

Chapter J Cumulative Impact Assessment

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Contents

J1.0 Introduction

J1.1 This chapter draws together the findings from the individual inputs into the Environmental Statement ('ES'); defines inter-relationships between these assessments of the likely environmental effect of the Proposed Development and any other developments in the area surrounding the Site; and establishes whether there are any other residual effects on the identified sensitive receptors which may require additional mitigation not previously identified.

J1.2 There are different inter-relationships between the various assessments within the ES and this section identifies where key links between any impacts identified and how these may influence each other during the construction and operational phases. Where these relationships give rise to other combined direct effects arising from the development, it is necessary to identify how these impact on those defined sensitive receptors identified in this ES.

J1.3 There may also be other indirect effects arising from the development when considered with other proposals or schemes in the surrounding area. These effects may also give rise to the need to consider additional mitigation measures; albeit it is necessary to consider the likelihood of those other schemes proceeding and the ability or necessity of the applicant to mitigate any such effects for other sites.

J1.4 Accordingly, this chapter considers two types of cumulative environmental effects in association with the Proposed Development:

- **Synergistic** - the combined effect of different types of impacts attributable to the Proposed Development in respect of a particular receptor. This includes consideration of the impacts during the construction and operational phases; and
- **Cumulative** - these arise from the combined effect of the Proposed Development with other committed development schemes that individually may be insignificant but when combined with other impacts may be significant.

J1.5 Sensitive receptors have been identified in individual chapters of the ES and are summarised in Section J2.0. These receptors are those with varying degrees of sensitivity to the environmental impact and change as a result of the proposals. Regard has been given to the sensitivity of the identified receptors to ensure consideration is then given to those which are potentially the most sensitive to impact, taking into account the extent of the effects arising. The professional judgement of those undertaking the EIA as well as topic specific criteria, legislation or guidelines have been used to identify the degree of sensitivity.

J1.6 A consideration of the impacts arising from the construction and operational phases of the development has been carried out with each of the technical chapters and is also addressed in the assessment of the inter-relationship and cumulative effects arising from the scheme.

J1.7 The structure of this chapter is as follows:

- Section J2.0 - Provides a summary of the residual effects arising (following mitigation) as identified within the main ES technical assessment chapters D-H and identification of sensitive receptors;

- Section J3.0 - Considers the inter-relationship of Direct Effects arising from the proposals (synergistic effects) and whether any additional mitigation measures are required to have regard to those effects;
- Section J4.0 - Identifies the cumulative assessment developments;
- Section J5.0 - Considers any cumulative effects arising from the scheme when considered with other identified proposals in the surrounding area. Not all schemes will be of relevance to every environmental aspect/topic; and
- Section J6.0 - Provides a summary and conclusions.

J2.0 Summary of Residual Effects and Identification of Key Sensitive Receptors

J2.1 Chapters D to I of this ES have identified a series of receptors most likely to be affected by significant environmental effects as a result of the Proposed Development. The EIA process has then identified the degree of change or impact to which each receptor is likely to be affected.

J2.2 Assuming that identified mitigation will be implemented as identified in this ES, an analysis has been carried out of the residual effects arising from the assessment of each technical aspect scoped into the EIA. This section draws out and identifies those key sensitive receptors which are likely to be affected by an impact which will be greater than negligible. This means any receptor identified with an effect classified as being of minor, moderate or substantial/major significance is identified.

J2.3 It is assumed that there is a low likelihood for cumulative or synergistic effects to arise for those receptors which are subject to no or Negligible impacts when the Proposed Development is considered in isolation. These are therefore discounted at this stage.

J2.4 Using the significance criteria described within Chapters B and D to I, it is also then possible to identify which of these effects are significant and which are non-significant effects. This approach accords with EIA legislation and best practice which focuses on the main or significant effects arising from the development. The Planning Practice Guide states (ID: 4-035-20170728, last updated 28 July 2017)[1];

"Whilst every Environmental Statement should provide a full factual description of the development, the emphasis should be on the "main" or "significant" environmental effects to which a development is likely to give rise."

J2.5 It is against these identified key sensitive receptors that the analysis of synergistic and cumulative effects will be carried out. This will include all receptors likely to be affected by significant effects (typically Major or Moderate effects unless otherwise stated in the topic-specific methodology). It also considered all those receptors currently likely to be affected by non-significant (typically only Minor effects) to robustly assess whether, cumulatively or synergistically, these may give rise to new significant effects previously not identified.

Summary of Residual Effects

J2.6 Table J2.1 provides a summary of the main residual effects (following incorporation of the mitigation measures described in Chapter K) as identified in Chapters D to I of this ES that could be expected to arise during construction, operation and decommissioning of the Proposed Development:-

Table J2.1 Summary of Residual Effects

Environmental Topic	Summary of Residual Effects
During Construction	
Landscape and Visual	Visual Effects: **Major / Moderate Adverse to Moderate Adverse and Significant visual effects** on Residents within the Monkomb Farm complex.

Environmental Topic	Summary of Residual Effects
	Moderate Adverse (not significant) visual effects on users of Bridleway BM ECL 2/1. Minor Adverse (not significant) visual effects on residents of Station House; Users of East Claydon Road; and users of all other footpaths assessed. Negligible (not significant) visual effects on Residents within the Tuckeys Farm complex, Berry Leys Farm and dwellings on the eastern fringe of East Claydon; Users of Bridleway HOG 9; visitors to Tuckey Farmhouse; and users of Verney Road. <u>Landscape Effects:</u> Moderate Adverse (not significant) landscape effects on the existing land use of the Site; the night time character of the Site; and the existing landscape character of the Site. Minor Adverse (not significant) landscape effects on existing vegetation onsite; the existing Public Right of Way within the Site; and Landscape Character LCA 5.6 Claydon Valley. Negligible (not significant) landscape effects on Site landform; Existing Landscape Character NCA 108 Upper Thames Clay Vales; and Existing Landscape Character LCT 5 Shallow Vales.
Noise	Minor Adverse (not significant) effects on residential receptors (Station House, Tuckey Farm, Berry Leys Farm, Monkomb Farm, Furzen Farm, Verney House)
Ecology	Neutral (not significant) effects on farmland birds from the displacement of nesting skylark from the Site. Minor Adverse (not significant) effects on badger setts from disturbance /damage to a four hole sett. Minor Adverse (not significant) effects on foraging and commuting bats from loss of plantation woodland and hedgerow.
Traffic and Transport	Negligible Adverse temporary (not significant) effects on non-motorised user delay and amenity. Negligible Adverse temporary (not significant) effects on motorised users from road vehicle driver and passenger delay. Negligible Adverse temporary (not significant) effects on non-motorised and motorised users from severance of communities, and fear and intimidation. Minor Adverse temporary (not significant) effects on road users (motorised and non-motorised) from pedestrian safety, and from the increase in hazardous and large loads.
Climate Change	Minor Adverse (not significant) effects on the global climate from embodied carbon associated with the construction phase. Negligible (not significant) effects on the global climate from construction traffic.
Archaeology	No effects.
During Operation	
Landscape and Visual	<u>Significant effects at Year 1:</u> **Major / Moderate Adverse to Moderate Adverse and Significant visual effects** on Residents within the Monkomb Farm complex. <u>Significant effects at Year 10:</u> None <u>Non-Significant effects at Year 10:</u> <u>Landscape Effects:</u>

Environmental Topic	Summary of Residual Effects
	Moderate Adverse (not significant) landscape effects on the existing land use of the Site. Minor Adverse (not significant) landscape effects on night time character; and the existing site landscape character. Negligible (not significant) landscape effects on Site landform; the existing PROW within the Site; and Landscape designations assessed. Minor Beneficial (not significant) landscape effects on existing vegetation. <u>Visual Effects:</u> Minor Adverse (not significant) visual effects on Residents within the Monkomb Farm complex; users of bridleway BM ECL 2/1; and users of East Claydon Road. Negligible (not significant) visual effects on Residents of Station House; Residents within the Tuckeys Farm complex, Berry Leys Farm and dwellings on the eastern fringe of East Claydon; users of other footpaths/bridleways assessed; Visitors to Tuckeys Farm House; and users of Verney Road.
Noise	Minor Adverse (not significant) effects on residential receptors (Station House, Tuckey Farm, Berry Leys Farm, Monkomb Farm, Furzen Farm, Verney House)
Ecology	Minor Beneficial (not significant) effects on sitewide species from the creation of new habitats.
Traffic and Transport	*Scoped out of assessment***.**
Climate Change	**Moderate Adverse (Significant) effects** on the local climate from operational energy (B6 emissions), and embodied carbon associated with the repair, maintenance and refurbishment (B1-5 emissions). Negligible (not significant) effects on the global climate from all aspects of emissions considered.
Archaeology	No effects.
During Decommissioning	
Landscape and Visual	Minor Adverse (not significant) landscape effects on the existing land use; and night time character. All other landscape and visual effects are considered to be Negligible and not significant.
Noise	Minor Adverse (not significant) effects on residential receptors (Station House, Tuckey Farm, Berry Leys Farm, Monkomb Farm, Furzen Farm, Verney House)
Ecology	**Minor to Moderate Beneficial (Significant) effects** on habitats through protection and retention through the decommissioning works. Neutral effects on protected species through protection and retention of habitats.
Traffic and Transport	Negligible Adverse temporary effects on non-motorised user delay and amenity. Negligible Adverse temporary effects on motorised users from road vehicle driver and passenger delay. Negligible Adverse temporary effects on non-motorised and motorised users from severance of communities, and fear and intimidation. Minor Adverse temporary effects on road users (motorised and non-motorised) from pedestrian safety, and from the increase in hazardous and large loads.
Climate Change	**Moderate Adverse (Significant) effects** on the global climate from Embodied Carbon – end of life (C1-4 emissions).

Environmental Topic	Summary of Residual Effects
Archaeology	No effects.

Summary of Sensitive Receptors

J2.7 Table J2.1 has identified that the following sensitive receptors are likely to be affected by effects that can be considered to be significant during construction, operation or decommissioning:

- Residents within the Monkomb Farm complex
- The Site/ Onsite habitats
- Global climate

J2.8 Table J2.1 has also identified that the following sensitive receptors are likely to be affected by effects considered to be non-significant during either construction, operation or decommissioning:

- Users of public footpaths/bridleways
- Residents of Station House
- Users of local road network
- Tuckeys Farm complex
- Berry Leys Farm and dwellings on the eastern fringe of East Claydon
- Night time landscape character
- Fauna within the Site
- Residents north of the Site

J3.0 Inter-relationship of Direct Effects

J3.1 This section considers the inter-relationship between the direct effects or synergistic effects arising from the Proposed Development. It takes account of the residual effects affecting the key sensitive receptors identified in Section J2.0.

J3.2 The analysis has considered both positive and negative impacts and makes reference to the degree of effect as identified within the technical assessments. The objective is to identify where the accumulation of effects on particular receptors, and the relationship between those effects, may give rise to a need for additional mitigation not identified previously.

J3.3 To assist in this analysis, the table below summarises the effects anticipated against each receptor and identifies where particular receptors may be subject to an accumulation of environmental impacts.

Table J3.1 Direct Residual Effects for Identified Sensitive Receptors

Receptor	During Construction	During Operation	During Decommissioning
Residents of Monkomb Farm complex	**LV** (N)*	**LV** (N)	(N)*
The site/habitats	(LV) (E)	(LV) (LV)	(LV)* **E**
Global climate	(CC)	**CC**	**CC**
Users of public footpaths/bridleways	(LV)	(LV)	X
Residents of Station House	(LV) (N)*	(LV) (N)	(N)*
Users of local road network	(LV) (T)*	(LV)	(T)*
Tuckeys Farm complex	(N)*	(N)	(N)*
Berry Leys Farm and dwellings on the eastern fringe of East Claydon	(N)*	(N)	(N)*
Night time landscape character	(LV)*	(LV)	(LV)*
Fauna within the site	(E)	(E)	X
Residents north of the Site	(N)*	(N)	(N)*

Key: LV=LVIA; N=Noise; E=Ecology; T=Transport; CC=Climate Change; A=Archaeology
RED - adverse effect; **GREEN** - beneficial effect; **Bold** – Significant effect; **( )** - Not Significant effect (minor); **X** - no effect anticipated; ***** - transitory / short term effect; **<>** - intermittent effect

J3.4 Table J3.1 highlights residual effects on identified receptors, after mitigation is taken into account. Where a series of technical aspects have the potential to impact (adversely or beneficially; significantly or non-significantly) a particular receptor, then a review of whether the interaction of these different effects could give rise to a new significant or cumulative effect which could require further mitigation has been undertaken. This has been conducted with reference to the technical aspect chapters of this ES and the

understanding of the relevant receptor which those chapters have identified. Consideration has also been given to mitigation measures already either embedded into the Proposed Development or capable of being delivered through planning conditions or planning obligations.

J3.5 The conclusions of this review have highlighted:

- The majority of receptors only experience effects in relation to a single technical aspect.
- Residents of Monkomb Farm would experience significant adverse visual effects during construction and the first year of operation, and would also experience non-significant noise effects during construction (temporarily) and during operation. It is noted that the visual effects are considered to reduce to non-significant effects in the long term (10 year scenario), as the trees and newly planted landscape features mature further, and in the decommissioning phase there are no visual effects as the land will be returned to its current state.
- Residents of Station House are also anticipated to experience non-significant noise and visual effects in the construction phase (temporarily) and during operation. Again, the visual effects during operation are predicted to reduce further as planting matures, where the receptors will experience only negligible effects in the long term (10 year) scenario.
- Users of the local road network are expected to experience non-significant effects during the construction period in relation to views and transport effects (driver delay). These effects would be temporary, experienced in the short term, and are transitory in nature.
- The Site itself would experience non-significant adverse effects in the construction phase from the change to the landscape itself and from impacts to existing habitats. This is considered in the context of the beneficial landscape effects during the operational phase resulting from the proposed landscape and planting strategy, linked to the beneficial effects predicted to species using the Site during the operation. The benefits are long term as reflected through the significant beneficial ecological effect on habitats at the decommissioning stage resulting from retention of habitats and planting established onsite as a part of the Proposed Development.

J3.6 No other synergistic effects are anticipated, and it is considered that the synergistic effects identified would not generate any new significant effects on the receptors assessed. Further, it is considered that there is no requirement or ability to identify additional mitigation measures to address the above synergistic effects arising from the inter relationship between impact on sensitive receptors, over and above the mitigation and monitoring measures already proposed in Chapters D to I. These are described further in Chapter K of this ES and are capable of being secured via planning condition or s106 Agreement.

J4.0 Scope of Cumulative Assessment

Schemes to be Assessed

J4.1 Best practice dictates that cumulative assessments of this nature should have regard to those schemes which are 'reasonably foreseeable' (i.e. usually those under construction or with planning permission, as specified in guidance such as IEMA's "Guidelines for Environmental Impact Assessment" (2004)[2], the EC's "Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions" (1999)[3] and the Planning Inspectorate's Advice Note 17[4] [1]). This is further clarified in the Planning Practice Guidance (Environmental Impact Assessment) which states that:

"The local planning authorities should always have regard to the possible cumulative effects arising from any existing or approved development" [Lichfields emphasis] (ID: 4-024-20170728) (last updated 28 July 2017)

J4.2 The assessment is also only capable of being carried out based on the information available at this time.

J4.3 Schemes have been identified for potential consideration in this EIA. These have been identified via:

1 Review of planning records held by BC to identify projects which have the potential to give rise to cumulative effects as a result of their geographical proximity to the site, scale of development or other relationship which may be relevant (these records were reviewed regularly throughout the EIA process to ensure that all relevant developments have been captured and assessed within the ES); and

2 Further clarification on the schemes to be considered was also sought via the Scoping Opinion from BC (included at Appendix B2 of this ES).

J4.4 The following parameters were used to scope the cumulative assessment:

1 A 5km search area has been applied, based on the maximum study area used by any individual topic within the EIA and includes a 3km buffer to this;

2 Consideration was given to schemes outside of this search area in relation to the proposed construction access route (se Figure C4.2 within Chapter C, also within the CTMP at Appendix G2), which will use East Claydon Road, Granborough Road, Vicarage Road, the A413 and the A421 (providing access to the SRN to the east and west).

J4.5 The complete list of potential schemes considered for inclusion in the Cumulative Impact Assessment is provided at Table J4.1, and a plan showing the location of these in relation to the Site is provided at Figure J4.1 and at Appendix J1.

[1] Guidance relates to the delivery of Nationally Significant Infrastructure Projects but provides helpful guidance on cumulative impact assessment relevant to this ES

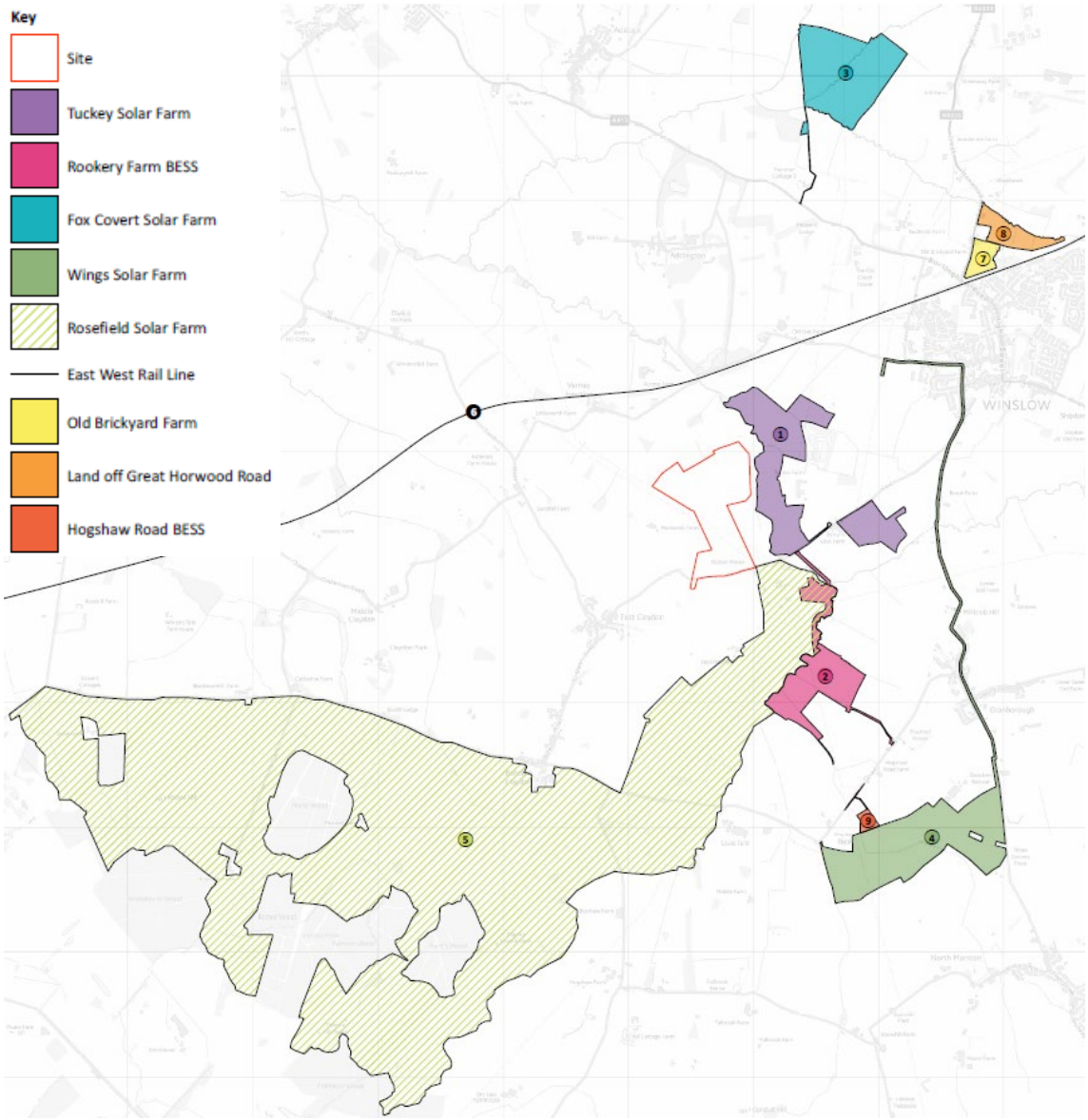
Table J4.1 Potential Cumulative Schemes for Assessment

	Site Address	Location in relation to the Proposed Development	LPA Planning Reference	Description of Development	Current Status
1	**Tuckey Solar Farm:** Tuckey Farm, East Claydon Road, Winslow, Buckinghamshire	Located c.20m east of the Site	19/00983/APP and 21/04255/APP	Ground mounted solar farm (25MW), ancillary infrastructure and associated works including the diversion of PROW	Application approved 29/04/21 Construction anticipated 2025, due to be operational in 2026.
2	**Rookery Farm BESS:** Rookery Farm, Granborough Buckinghamshire MK18 3NJ	Located c. 750m southeast of the Site	23/03875/APP	Development of a 500MW BESS by Statera, connected to the National Grid	Refused 20/12/24. Appeal lodged.
3	**Fox Covert Solar Farm**: Land to the East of Fox Covert Great Horwood Buckinghamshire	Northeast of Addington, c.2.6km northeast of the Site	20/02582/APP	Construction of a 22MW solar farm	Not yet constructed. Approved 1/06/21
4	**Wings Solar Farm**: Wings Farm, Marston Road GranboroughMK1 8 3JX	Southwest of Granborough, c. 2.4km south of the Site	23/01939/SO	EIA Screening Opinion for a proposed 49.9MW solar farm with associated works	EIA screening opinion issued 11/08/23 (EIA not required). No planning application submitted.
5	**Rosefield Solar Farm:** Adison Road, North of Calvert, Buckinghamshire.	Parcel 3 borders the East Claydon Substation, located c. 400m south of the Site. Main site is c.1.8km southwest of the Site.	NSIP - Rosefield Solar Farm	Solar generating station with a gross output of over 50 MW.	Pre-application stage, due to be submitted 2026. Scoping report Nov 2023, SoS adopted its scoping opinion 21/12/23.

	Site Address	Location in relation to the Proposed Development	LPA Planning Reference	Description of Development	Current Status
6	**East West Rail Line**	The rail line runs 600m-725m north from the Site. Applicant's pre-application consultation shows proposed DCO limits running through the Site.	Will be progressed under the Development Consent Order (DCO) process	East West Rail - Bedford to Cambridge and Western improvement DCO: New railway line between Bedford Station and Cambridge Station. Associated works to the railway network in and around Oxford, Bicester, Winslow, Bletchley, Bletchley and Bedford. Route Section 1 is relevant to the Site - Oxford to Bletchley which includes alterations and upgrades to the existing line. Connection Stage 1 improvements granted under the Network Rail (East West Rail) (Bicester to Bedford Improvements) Order 2020.	Pre-application consultation.
7	**Old Brickyard Farm** Great Horwood Road Winslow Buckinghamshire MK18 3LY	To the north of Winslow, approx. 2.2km northeast of the Site.	Outline: 19/03482/AOP	Erection of up to 120 dwellings with all matters reserved, public open space, landscaping and sustainable drainage system	Outline approved 31/08/2021. Construction not yet started. Reserved matters for up to 6 dwellings approved 29/04/24 (23/02064/ADP)
8	**Land Off Great Horwood Road** Winslow Buckinghamshire	To the north of Winslow, approx. 2.5km northeast of The Site.	22/02214/ADP Outline: 18/03422/AOP	Residential development of 198 dwellings. Original outline 215 dwellings.	Reserved matters application 24/00491/ADP and NMA 22/B2214/NON awaiting decision, validated 12/02/24.

	Site Address	Location in relation to the Proposed Development	LPA Planning Reference	Description of Development	Current Status
9	**Hogshaw Road BESS**: Land To South Of Hogshaw Road Granborough Bucks	Located c. 2.2km southeast of the Site	24/03262/APP	99MW BESS with associated access, landscaping and ancillary works	Planning application validated 17/12/24. Determination deadline 18/03/25.

Figure J4.1 Map of Cumulative Schemes



Source: Based upon Ordnance Survey mapping with the permission of His Majesty's Stationery Office.
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J4.6 Further explanation is given below to the consideration of specific schemes within the EIA cumulative impact assessment.

National Grid East Claydon Replacement Substation

J4.7 National Grid has published news of its intention to develop a replacement substation on National Grid's 'Infrastructure Projects' website page[5], and the preferred option is shown to be to the immediate west of the existing substation, located approximately 100m south of the Site, across East Claydon Road.

J4.8 The LPA included this scheme in its EIA Scoping Opinion (Appendix B2), stating that it considers there to be potential cumulative impacts in relation to noise, highways and landscape.

J4.9 At the time of writing this ES, a planning application has not been submitted in relation to the replacement substation. However as set out in Chapter A and B of this ES, the Proposed Development and the replacement substation are intrinsically linked because the Proposed Development will connect into the national grid at the replacement substation. As explained in Chapter B, an assumed baseline has been applied in this ES which assumes that the replacement substation is under construction and/or operational for the purposes of the assessment of effects for the Proposed Development. As such, where relevant, the assessment of effects included in Chapters D to I of this ES has given consideration to the potential impacts of the Proposed Development with the replacement substation.

East West Rail Line

J4.10 Information published by the Applicant of the East West Rail (EWR) Line project (Cumulative Scheme 6) for the purpose of pre-application consultation shows that while the railway line itself runs to the north of the Site (outside of the Site boundary), the proposed DCO limits could overlap with the Site. The part of the DCO limit that is shown to overlap with the Site boundary for this ES shows a traction power cable running south of Verney Junction through the Site before connecting to National Grid's substation. The proposed cable route through the Proposed Development Site appears to follow (or run adjacent to) the route of the disused railway that forms part of the main operational access for the Proposed Development. The EWR plans also show habitat creation, hedgerow and woodland planting within the Proposed Development Site.

J4.11 In completing the cumulative assessment for this EIA it has been assumed that agreement will be reached between the Applicant and the operator of East West Rail that there will be no conflicts in the delivery of the two developments. Cumulative effects have been assessed in relation to the main nature of the development, using publicly available information.

Consideration of Potential for Cumulative Effects

J4.12 Cumulative effects are unlikely to occur where the zone of impact or influence of a particular aspect area has no potential to overlap with those arising from the schemes identified for assessment in this cumulative assessment. There is therefore no potential for cumulative effects and no further requirement for further consideration. This is recorded below where relevant.

J4.13 The inter-project assessment is quantitative where possible, and utilises relevant data from the corresponding planning applications relating to construction timing, where available, however it is noted that information on construction timing is limited in relation to schemes where planning permission has not yet been granted. Therefore, reasonable assumptions have been made, for the purpose of this inter-project assessment, on the policy requirements for developments in the area surrounding the Proposed Development, based on the thorough assessment of the local, regional and national policy that has been undertaken as part of this ES.

J4.14 The assessment is only capable of being conducted on information which is readily available to the team and reasonable assumptions have been made.

J4.15 The cumulative assessment does not consider the decommissioning phase as it is assumed likely that the cumulative schemes identified will largely be complete and operational at the end of the lifetime of the Proposed Development.

J4.16 The next section reviews each technical aspect.

J5.0 Cumulative Assessment

J5.1 The cumulative assessment is set out below in relation to each technical aspect scoped into the ES.

Landscape and Views

J5.2 Due to the distance from the Site, the lack of intervisibility between the Site and the lack of locations where the Site is visible within the same view, the following schemes are scoped out of the landscape and visual cumulative assessment:

- Cumulative Scheme 3: Land To The East Of Fox Covert Great Horwood;
- Cumulative Scheme 7: Old Brickyard Farm, Great Horwood Road, Winslow; and
- Cumulative Scheme 8: Land Off Great Horwood Road, Winslow.

Landscape Resources

J5.3 Cumulatively, based on the information currently in the public domain for the above schemes, the schemes will retain the majority of existing mature vegetation and the existing landscape features within and adjacent to their respective Site boundaries where possible.

J5.4 The section of the East West Rail Line (Cumulative Scheme 6) in proximity to the Site has been constructed and the proposed landscape scheme has been implemented which provides a degree of landscape mitigation between the scheme and the Site (not considering the potential DCO limits falling within the Site).

J5.5 New built form within the proposals for each scheme, where information is currently available, is located away from field boundaries in order to preserve these important features within the local landscape context and maintain the local field pattern. The implementation of the proposed new tree, shrub, hedge planting, wildflower meadow planting will also locally supplement the existing green infrastructure network.

J5.6 The combined magnitude of effect of the above developments and the Site on landscape resource is also considered to be low. Therefore, the cumulative effects on the landscape resource of the Site and the above developments (with Scheme 2) are also considered to be Minor Adverse (not significant).

Landscape Character

J5.7 There is not anticipated to be any intervisibility between the Site and Cumulative Scheme 4 (Wings Farm Solar Farm) and Cumulative Scheme 9 (Hogshaw Road BESS). The schemes are located within neighbouring Landscape Character Areas (LCA) 5.8 – Marston Undulating Claylands and LCA 5.7 – Hogshaw Claylands.

J5.8 There is not anticipated to be any intervisibility between the Site and Cumulative Scheme 2 (BESS at Rookery Farm), however, the scheme is partially located within the same Landscape Character Area (LCA) 5.6 – Claydon Valley.

J5.9 Cumulative Scheme 1 (Tuckey Solar Farm), Cumulative Scheme 5 (Rosefield Solar Farm), and Cumulative Scheme 6 (East West Rail Line) are located in close proximity to the Site.

The schemes have a visual relationship with the Site and are located wholly or partially within the same LCA 5.6 – Claydon Valley. Where information is currently available, the development proposals for these schemes have been developed to retain the existing key landscape elements present and incorporate areas of new native tree, hedgerow and meadow planting to strengthen the existing landscape structure.

J5.10 The combined magnitude of effect of these developments (with Scheme 2) and the Site on landscape character is also considered to range from high to medium. The high magnitude of effect on the local landscape is considered to be primarily a product of the extensive nature of Cumulative Scheme 5 (Rosefield Solar Farm) and the proximity to Cumulative Scheme 1 (Tuckey Solar Farm). It is also noted that intervisibility between the built form within the Site and Cumulative Scheme 5 is anticipated to be extremely limited. Therefore, the cumulative effects on the landscape character of the Site and the considered cumulative schemes are considered to range from **Major - Moderate Adverse (Significant)** to Minor Adverse (Not Significant).

Visual Receptors

J5.11 There is not anticipated to be any intervisibility between the Site and Cumulative Scheme 4 (Wings Farm Solar Farm) and Cumulative Scheme 2 (BESS at Rookery Farm). Locations where the Site is visible in the same view as these schemes are limited to elevated sections of Bridleway HOG 9/3 near the summit of Conduit Hill. At this distance, the Site is not readily perceived in views across the wider landscape context.

J5.12 Cumulative Scheme 1 (Tuckey Solar Farm), Cumulative Scheme 5 (Rosefield Solar Farm), and Cumulative Scheme 6 (East West Rail Line) are located in closer proximity to the Site. The schemes have a visual relationship with the Site and there are a number of locations where the Site and these schemes will be visible within the same view. These locations include portions of East Claydon Road and portions of Footpaths BM WIS 1/1, BM ADD 14/1, BM ECL 3/1, BM ECL 3A/1, BM ECL 4/1, Bridleway BM ECL 2/1. Transient users of these routes may see limited elements of Site and the above schemes in quick succession when travelling along these routes. Any transient, successional views are anticipated to be primarily to the existing mature vegetation and the proposed landscape scheme of the Site and the above schemes, however, there are anticipated to be limited locations where the built form within the Site and the above schemes are seen in the same view.

J5.13 There are also anticipated to be potential views of Cumulative Scheme 1 (Tuckey Solar Farm), Cumulative Scheme 5 (Rosefield Solar Farm), and Cumulative Scheme 6 (East West Rail Line) from the Monkomb Farm Complex, Station House, Tuckeys Farm complex and Berry Leys Farm. Again, views are anticipated to be primarily to the existing mature vegetation and the proposed landscape scheme of the Site and the above schemes, but limited views of the proposed built form within the Site and the above schemes may be possible.

J5.14 The magnitude of cumulative visual effect of these developments is considered to range from medium to low resulting in a **Major – Moderate Adverse (Significant)** to Moderate Adverse (Not Significant) overall significance of effect, primarily for receptors in close proximity to the Site.

Noise and Vibration

J5.15 There are a number of other BESS or Solar developments proposed in the area. The nearest developments of interest for noise are:

- Tuckey Solar Farm – Approved Solar Farm (construction anticipated 2025), reference 19/00983/APP. Located immediately to the east of East Claydon GGP. All pre-commencement conditions are discharged (reference 19/A0983/DIS) and it is assumed the solar farm will be built out during 2025. Due to the proximity to the Proposed Development and due to having common NSRs (Tuckey Farm and Tuckey Barn most importantly) between the two developments, Tuckey Solar Farm is considered within the cumulative operational noise assessment. The noise rating levels presented in the noise report submitted for the discharge of conditions reference 19/A0983/DIS can be used to represent noise from that Solar Farm at the common NSRs.
- Rookery Farm BESS (up to 500 MW) - Refused planning application reference 23/03875/APP and an appeal has been submitted. Located south of the existing East Claydon National Grid Substation. The submitted Environmental Impact Assessment Report (EIAR) Volume 2 'Noise and Vibration' chapter, considers residential receptors surrounding that development. The nearest assessed NSR in context of the Proposed Development is one labelled "NVSR A" at coordinates 474910,225415. This is a farm located at least 600 m further south beyond our proposed NAL4 Station House, and is at least 1000 m away from the East Claydon GGP fixed plant area. No cumulative impact is anticipated with Rookery Farm BESS given the distances involved, therefore, this development has been scoped out of the cumulative noise assessment.
- Rosefield Solar Farm – A Preliminary Environmental Information Report (PEIR) was submitted in September 2024 for a DCO application for a Solar and BESS development. The operational fixed plant from this development would be south of the East Claydon National Grid Substation and fixed plant emitting considerable noise would likely be too far from any of receptors assessed in this area for the Proposed Development, namely NAL4-Station House. For example the PEIR Noise Chapter 12 provides a list of receptors that have been assessed for the Rosefield Solar Farm noise assessment and NAL4-Station House is not considered and the nearest receptor considered in this area is Sion Hill Farm at least 650m to the south of Station House. As such no significant cumulative noise impact are anticipated with Rosefield Solar Farm.

J5.16 In light of the above, a cumulative operational noise impact assessment has been considered with Tuckey Solar Farm. Cumulative construction noise is not considered, as it is unlikely that construction will occur at both the same time and same geographical locations. As such, there is a very low likelihood of a significant cumulative noise impact during construction.

J5.17 For all other Proposed Developments, these are either too distant for cumulative impacts to occur or have either not been submitted to planning yet or no relevant details with regards to noise impacts are available. Should one of the above developments which is not yet in planning retrospectively submit a Noise Impact Assessment report after the planning application for the Proposed Development has been submitted, it will be the responsibility of the latter development to consider the cumulative effect of the Proposed Development appropriately.

J5.18 The nearby consented Tuckey Solar Farm was considered based on Rating Levels that were presented by RSP in a noise report submitted to the Council (planning reference 19/A0983/DIS). These predictions were available for NAL1-3 which are judged to be the most relevant of all the NALs for potential cumulative noise impact as they are located in close proximity to both the Proposed Development and the Tuckey Solar Farm (Cumulative Scheme 1) and were also considered in the RSP noise report.

J5.19 The Table J5.1 and Table J5.2 details the levels considered and the findings of the cumulative noise assessment.

Table J5.1 Daytime cumulative noise assessment at NAL1-3 - operational

NAL	Noise Predictions (Rating Levels in dB LAeq)					Comment
	A) S1 Mitigated	B) S2 Mitigated	C)Tuckey Solar Farm Day (by RPS)	A+C) S1 Cumulative	B+C) S2 Cumulative	
NAL1-Tuckey Farm	32	24	29	34	30	In Daytime, a low impact is predicted at these receptors (in the Noise Chapter E) without Tuckey Solar Farm and this would remain the case as cumulative levels would be below 34dB which is considered a low level.
NAL2-Tuckey Barn	30	22	29	33	30	
NAL3-Berry Leys Farm	29	21	23	30	25	

Table J5.2 Night-time cumulative noise assessment at NAL1-3 - operational

NAL	Noise Predictions (Rating Levels in dB LAeq)					Comment
	A) S1 Mitigated	B) S2 Mitigated	C)Tuckey Solar Farm Day (by RPS)	A+C) S1 Cumulative	B+C) S2 Cumulative	
NAL1-Tuckey Farm	32	24	2	32	24	In Night-time, a low impact is predicted at these receptors (in the Noise Chapter E) without Tuckey Solar Farm and this would remain the case as cumulative levels would be below 32dB which is considered a low level and also there is only a small increase or no increase when comparing the Proposed Development Rating Levels compared to the cumulative Rating Levels.
NAL2-Tuckey Barn	30	22	22	31	25	
NAL3-Berry Leys Farm	29	21	22	30	25	

J5.20 Based on the findings from Table J5.1 and Table J5.2, it is concluded there is a very low likelihood of a significant cumulative noise impact during operation.

Biodiversity and Ecology

J5.21 The Zone of Influence with respect to biodiversity and ecology has been set at 5 km which is roughly equivalent to the impact risk zone (IRZ) around nearby Sites of Special Scientific Interest (SSSIs) that Natural England consider could potentially be vulnerable to large non-residential development.

J5.22 The potential for cumulative impacts resulting from the Proposed Development in combination with other committed developments relates to the cumulative permanent loss of agricultural land used by ground nesting farmland birds – notably skylark. Skylark is likely to be a relatively common and widespread specialist farmland bird in the local area and is likely to be permanently displaced from the solar, battery and residential development sites identified on the cumulative development plan (Appendix J1) as a direct result of replacing agricultural land with development infrastructure that would render each site unsuitable for ground nesting and other specialist farmland bird species. These developments include Cumulative Scheme 4[2] (Wings Farm), Cumulative Scheme 2 (Rookery Farm BESS), Cumulative Scheme 1 (Tuckey Solar Farm), Cumulative Scheme 3 (Fox Covert), and Cumulative Scheme 8 (Great Horwood Road).

J5.23 The residual cumulative impact of skylark nesting habitat loss will depend on the availability of individual mitigation/compensation packages for farmland birds– such as the provision of skylark nesting plots in cereal fields on land near to each development; and landscape proposals that enhance / create new farmland bird friendly habitats such as hedgerows. It is reasonable to assume that each scheme will provide compensation for farmland birds on land close to each development such that significant adverse cumulative effects on skylark and other farmland birds are not anticipated to occur.

J5.24 The Proposed Development is considered unlikely to result in significant cumulative effects on other protected faunal species (e.g. bats, badgers, and great crested newt) as the Proposed Development does not result in significant loss or damage to habitats that are important for these fauna in combination with the other developments. In summary the predicted effects of the East Claydon Greener Grid Park are assessed to be negligible or minor and are Not Significant.

Traffic and Transport

J5.25 As set out in Chapter G of this ES, the transport assessment in the EIA has considered all significant planning and/or committed developments in the vicinity of the Proposed Development. Where the detailed information of the specific development is known this was used to inform the assessment directly; otherwise reliance has been placed on assumptions. To that extent, Chapter G has already considered the potential for cumulative effects when the Proposed Development is considered alongside other developments in the surrounding area scoped into the assessment. The mitigation measures therefore presented in Chapter E are considered sufficient to address any cumulative effects arising and no

[2] Numbers relate to Table K4.1

further effects are anticipated nor mitigation measures are considered necessary in respect of transport.

Climate Change

J5.26 A GHG assessment has been undertaken to assess the potential for GHG from the construction, operational and decommissioning stages of the Proposed Development. GHGs are gases in the atmosphere which have the potential to increase air temperatures and contribute towards climate change. It is important to note that all GHG emissions have the potential to result in a cumulative effect in the atmosphere over long periods of time.

J5.27 All GHG emissions are described as significant in accordance with the relevant guidance for the assessment of GHGs as part of the EIA process. This does not mean that the contribution of GHG emissions from the Proposed Development alone will equate to a likely significant effect; for the majority of development projects, the individual contribution to total GHG emissions (relative to a national and global scale) will be minimal.

J5.28 Therefore, it important to acknowledge that GHG impacts are considered to be exclusively cumulative impacts because no single project makes a significant contribution to global climate change. The assessment of significance is based on whether a project's GHG emissions cumulatively represent a considerable contribution to the global atmosphere.

J5.29 No further consideration of a separate cumulative assessment is therefore required.

Archaeology

J5.30 Three of the cumulative schemes are relevant to buried archaeological remains due to their proximity to the Site and possible intersection with common receptors and are discussed below.

J5.31 Schemes that have been scoped in for archaeological cumulative assessment include East West Rail Line (Cumulative Scheme 6) and Tuckey Solar Farm (Cumulative Scheme 1). These either run through or are in proximity to the Proposed Development, with a potential for heritage assets to extend from these Schemes to within the Proposed Development.

J5.32 The route of the East West Rail Line (Cumulative Scheme 6) runs 600m-725m north from the Site, with some sections due for completion in spring 2024. Its proposed order limits run through the Proposed Development along the former course of the Aylesbury to Buckingham Railway (578800000). This area is being proposed for a traction cable and habitat creation extending south from the route of East West Rail Line along the former railway lien and overlaps a part of the Site. Providing adequate mitigation measures are adopted by the respective schemes the effects in each case will be reduced to a level which is not significant, and therefore a significant cumulative effect is not likely, even if multiple insignificant effects are combined.

J5.33 There is a potential that the Roman Road between Akeman Street at Fleet Marston and Thornborough (0203400000) extends north to south through both the East West Rail Line and the Site. There is currently some uncertainty that this road is located within the Site: the geophysical survey results suggest that it isn't present. Forthcoming evaluation trial trenching will be more definitive. The impacts of the East West Rail Line on this heritage

receptor will be appropriately mitigated prior to its construction. It is considered that there would not be any significant cumulative effect on the Roman Road as any direct impacts associated with the East West Rail scheme will have been sufficiently mitigated prior to its construction thereby reducing the significance of effect to an acceptable level. The baseline condition will have shifted between respective projects effecting the Roman Road. Any effects arising from the Proposed Development on the Roman Road will be on a separate part of the monument which will be mitigated to an appropriate level. Providing adequate mitigation measures are adopted by the respective schemes the effects in each case will be reduced to a level which is not significant, and therefore a significant cumulative effect is not likely, even if multiple insignificant effects are combined.

J5.34 Cumulative Scheme 1 (Tuckey Solar Farm), c. 20m east of the Site is the nearest application to the Site. All pre-commencement conditions have been discharged for the Tuckey Farm Development. Any potential impacts on known or potential archaeological remains will have been sufficiently mitigated. The effects of the Proposed Development will be on separate discreet localised archaeological remains due to a site-wide Zone of Influence in relation to archaeological impacts. These will be mitigated independently. There will be no effect on these remains from the Proposed Development: there is no cumulative effect for consideration.

J5.35 All of the other developments within the ZoI of the Proposed Development are at a significant distance from the Proposed Development. There will therefore be no significant adverse cumulative effects on any buried archaeological remains at the site.

Built Heritage

J5.36 Through the EIA Scoping process, it was agreed with BC that Built Heritage should be scoped out of the EIA as a standalone technical chapter, as the Proposed Development alone is unlikely to give rise to any significant adverse visual impacts on designated heritage assets within the vicinity of the Site. The LPA agreed to the approach to include Built Heritage to assess the cumulative scenario only.

Scope of cumulative assessment

J5.37 As set out in the Built Heritage Statement (Appendix J2), the only built heritage assets within 1km of the Site are the Grade II listed Tuckey Farm located to the east, and the eleven listed buildings located in East Claydon to the southwest.

J5.38 The cumulative assessment on built heritage assets has considered effects from views, noise, vibration, and traffic.

J5.39 Schemes that have been scoped in for built heritage cumulative assessment include Tuckey Solar Farm (Cumulative Scheme 1), as the Scheme is located between the Proposed Development and the listed Tuckey Farmhouse. The cumulative assessment has scoped out the remaining Schemes including Rosefield Solar Farm (Scheme 5) due to no common receptors being identified that share impacts with other Schemes.

Construction cumulative assessment

J5.40 The Proposed Development is not located in the same visual envelope as the other schemes identified for assessment for cumulative effects, as there are no schemes between the 11

listed buildings located within East Claydon, while all views from Tuckey Farmhouse are screen by mature vegetation and local topography.

J5.41 Although, Tuckey Farm Solar Farm (Cumulative Scheme 1) is located between the Proposed Development and the listed Tuckey Farmhouse, as stated they are not visible from the listed building. In addition, the agricultural fields where the Proposed Development is located does not form part of the historical, agricultural hinterland and will not impact its historical setting. Therefore, it is assessed that there will be no cumulative effects (direct visual or to the assets setting) produced by the Proposed Development during construction.

J5.42 In completing this cumulative assessment, the Chapters E (Noise) and G (Transport) have been reviewed to consider whether there would be any cumulative effects caused by air, traffic and vibration. The proposed construction traffic route will not pass any of the built heritage receptors. As there are no significant residual effects relating to these topics produced by the Proposed Development there will be no cumulative effects on built heritage from noise, vibration or traffic as a result of construction.

Operational cumulative assessment

J5.43 The green colour of the battery containers will mean that these aspects of the Proposed Development will sit more easily into the surrounding landscape. Proposed native tree and shrub mix planting depicted to the east and south of the Proposed Development main compound will provide additional screening further impeding views from Tuckey Farmhouse (UG_2507_LAN_GA_DRW_102). Similarly, the same proposed soft landscaping to the west and south of the proposed main compound and to the west of the proposed substation as well as existing mature vegetation will further screen all views from designated heritage assets located with East Claydon.

J5.44 The majority of designated heritage assets are nucleated within East Claydon, which is not proposed to be used as the operational route to access the Site (although operational traffic associated will be little and occasional), while the Grade II listed Tuckey Farmhouse is only privately accessible, meaning that there is not anticipated to be any adverse cumulative effects from increased traffic or noise. In addition, Chapter E (Noise) of the ES has confirmed there will be no operational vibration associated with the Proposed Development. There will be no significant effects in EIA terms on Built Heritage during operation arising from the Proposed Development.

J5.45 Consideration of the other cumulative schemes has identified no added intrusion into key views towards or from the designated assets. There will be no significant cumulative visual effects produced by the Proposed Development in combination with other cumulative schemes. Significant effects caused by air, traffic and vibration have been considered and no effects have been identified as a result of operation.

J6.0 Summary & Conclusions

J6.1 This chapter has considered the inter-relationship between impacts identified within the ES and whether there is a need for further mitigation (synergistic effects). It also considers the potential for cumulative impacts when the development is considered with other development in the surrounding area (cumulative effects).

J6.2 The ES has assessed the potential for the effects in relation to the following environmental matters:-

- Landscape and Views
- Noise
- Ecology
- Transport
- Climate Change
- Archaeology
- Built Heritage (Cumulative scenario only)

J6.3 A range of mitigation measures have been identified throughout the ES which are largely capable of being enforced through the planning process in relation to the Proposed Development.

J6.4 It has been identified that non-significant synergistic effects exist for some receptors within the Development Site boundary, which do not give rise to a need for additional mitigation measures.

J6.5 Consideration has also been given to the potential for cumulative effects when the Proposed Development is considered alongside other emerging cumulative schemes in the surrounding area. The assessment has shown that there is potential for Significant adverse cumulative landscape and visual effects when considering a worst-case cumulative scenario, however it is considered that no further mitigation measures are required as part of the Proposed Development to address these effects. The cumulative scenario has been considered throughout the design evolution stage to maximise embedded mitigation. Furthermore, Significant visual cumulative effects are anticipated to only relate to limited views for receptors in close proximity to the Site, and Significant landscape cumulative effects is considered to be primarily a product of the extensive nature of Cumulative Scheme 5 (Rosefield Solar Farm) and the proximity to Cumulative Scheme 1 (Tuckey Solar Farm). It is also noted that intervisibility between the built form within the Site and Cumulative Scheme 5 is anticipated to be extremely limited.

J6.6 Chapter K provides a comprehensive summary of all mitigation measures, and how these are anticipated to be secured.

J7.0 Abbreviations & Definitions

Abbreviations

- BC Buckinghamshire Council
- BESS Battery Energy Storage System
- CC Climate Change
- DCO Development Consent Order
- E Ecology
- EIA Environmental Impact Assessment
- ES Environmental Statement
- EWR East West Rail
- GHG Greenhouse Gas
- LCA Local Character Area
- LPA Local Planning Authority
- LV LVIA / Landscape and Visual Impact Assessment
- N Noise
- NCA National Character Area
- PEIR Preliminary Environmental Information Report
- T Transport

Definitions

- **Synergistic effects** – the combined effect of different types of impacts attributable to the Proposed Development in respect of a particular receptor. This includes consideration of the impacts during the construction and operational phases.
- **Cumulative effects** – these arise from the combined effect of the Proposed Development with other committed development schemes that, individually, may be insignificant, but when combined with other impacts, may be significant.

J8.0 References

1 Planning Practice Guide (ID: 4-035-20170728, last updated 28 July 2017)

2 IEMA's "Guidelines for Environmental Impact Assessment" (2004)

3 EC's "Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions" (1999)

4 Planning Inspectorate's Advice Note 17

5 https://www.nationalgrid.com/electricity-transmission/network-and-infrastructure/infrastructure-projects/east-claydon-substation