Proposed Solar PV Development

Preliminary Environmental Information Report Chapter 13 Cumulative Effects

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Reference: EN010139

Revision 1 | May 2023

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13.1 Introduction

13.1.1 This chapter discusses the potential for cumulative effects arising from the construction, operation and decommissioning of the Proposed Development.

13.1.2 Cumulative effects are the result of multiple actions on environmental receptors or resources over time and are generally additive or interactive (synergistic) in nature. Two categories of cumulative effects are typically considered within the cumulative effects chapter of an ES:

- In-combination effects from the interrelationship between different environmental effects of the Proposed Development (intra-project) (Section 13.4); and
- Cumulative effects from the interrelationship between different projects along with the Proposed Development (inter-project) (Section 13.5).

13.1.3 In-combination effects, or intra-project effects, occur when a resource, receptor or group of receptors are potentially affected by more than one source of direct environmental impact resulting from the same development. For example, a community may be affected by noise and dust effects resulting from the construction phase activities of a single development.

13.1.4 Cumulative effects, or inter-project effects, occur when a resource, receptor or group of receptors are potentially affected by more than one development at the same time. For example, the construction traffic effects of a development in isolation may not be significant, but when combined with the construction traffic effects of another development (using the same geographical area at the same time) may result in significant cumulative effects on the surrounding highway network.

13.2 Legislation, Policy and Guidance

Legislation

13.2.1 The requirement to consider in-combination and cumulative effects is set out in the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). Regulation 5(2)(e) requires the consideration of 'interactions':

"*the interaction between the factors population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and landscape*."

13.2.2 Paragraph 5(e) of Schedule 4 of the EIA Regulations describes cumulative effects as:

"*the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources*."

Policy

13.2.3 The requirement to consider cumulative effects is outlined in national planning policy.

13.2.4 National Policy Statement (NPS) EN-1 paragraphs 4.2.5 and 4.2.6 states that:

"*When considering cumulative effects, the ES should provide information on how the effects of the applicant's proposal would combine and interact with the effects of other development (including projects for which consent has been sought or granted, as well as those already in existence)…*

The [Infrastructure Planning Commission] IPC should consider how the accumulation of, and interrelationship between, effects might affect the environment, economy or community as a whole, even though they may be acceptable when considered on an individual basis with mitigation measures in place." [1].

13.2.5 The latest draft NPS EN-1 [2] reiterates the importance of undertaking a cumulative effects assessment.

13.2.6 Draft NPS EN-3 paragraph 3.8.85 states that:

"*Assessment of environmental effects of cabling infrastructure and any proposed offshore or onshore substations should assess effects both alone and cumulatively with other existing and proposed infrastructure* [3].".

13.2.7 Draft NPS EN-3 paragraph 3.10.39 states that: "… *applicants should consider the cumulative impacts of situating a solar farm in proximity to other energy generating stations and infrastructure*."

Guidance

13.2.8 There is currently no standard methodology for a Cumulative Effects Assessment (CEA), however, there is a range of public sector and industry led guidance available.

13.2.9 The assessment will be consistent with Planning Inspectorate (PINS) Advice Note Seventeen [4] which provides advice regarding a staged approach for documenting the CEA within an ES, relevant to NSIPs. The Advice Note highlights the need to consider the potential for cumulative effects arising due to the interactions between different components of the development, as well as with other existing development and/or approved development.

13.3 Scoping and Consultation

13.3.1 A summary of how this chapter of the PEIR has responded to each scoping opinion comment relating to cumulative effects is provided in Table 13-1 below.

Table 13-1 Response to the Scoping Opinion

Reference	Stakeholder	Comment	Response
3.6.1	PINS	**3.6 Cumulative Effects** ▪ No matters have been proposed to be scoped out of the assessment	No response required.
N/A	Durham County Council	Cumulative landscape and visual impacts from the proposed development together with other developments including the consented solar farms within 1-4km at Whitfield, Brafferton (DM/21/02816/FPA) and Cowley House Farm, Thorpe Larches (DM/20/01991/FPA) should be fully assessed in the ES, having regard to the combined effects of sequential, fleeting and intermittent views of both the proposed and consented development along the road network but also views where the proposed and consented are likely in to be seen in combination (e.g. PROW network around Foxton).	These developments have been included in the long list of developments in Appendix 13.1: Gately Moor (ID 16), Lime Lane (Whinfield) (ID 21) and Cowley House Farm (ID 42).
N/A	Darlington Borough Council	**Chapter 7 Landscape and Visual** ▪ It is acknowledged as stated that trees and hedgerows may reduce this in some locations but given the raised topography in these areas, and particularly the Sadberge area sitting raised above the wider valley the proposed sites, form part of the wider landscape which they may influence in a significant manner particularly cumulatively with the recently granted permissions (22/00727/FUL) on land to the south of Gately Moor Reservoir, Bishopton and (21/00958/FUL) at Lime Lane, Brafferton.	
N/A	Darlington Borough Council	**Chapter 10 – Cumulative effects** ▪ The Council is generally in agreement with the scope and methodology set out.	Noted.
N/A	Natural England	**2. Cumulative and in-combination effects** ▪ 2.1 The ES should fully consider the implications of the whole development proposal. This should include an assessment of all supporting infrastructure. ▪ 2.2 An impact assessment should identify, describe, and evaluate the effects that are likely to result from the project in combination with other	Agreed. The ES will include an assessment of cumulative effects in alignment with PINS Advice Note Seventeen. The long list of cumulative developments is presented in Appendix 13.1.

Reference	Stakeholder	Comment	Response
		projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment (subject to available information): • Existing completed projects; • Approved but uncompleted projects; • Ongoing activities; • Plans or projects for which an application has been made and which are under consideration by the consenting authorities; and • Plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects. **11. Landscape and visual impacts** ▪ 11.4 The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. This should include an assessment of the impacts of other proposals currently at scoping stage.	This approach is broadly in line with the Planning Inspectorate Advice Note 17 which is the basis for the CEA. This approach has therefore been implemented in the ES.

13.4 In-combination effects assessment (intra-project effects)

13.4.1 An assessment of the potential for intra-project effects will be undertaken and documented within each of the environmental topic chapters for the ES. This will include a summary of impact interactions, setting out how the particular topic area has considered and assessed secondary effects arising as a result of direct impacts from other environmental chapters. Rather than assessing this separately, secondary effects are often considered within the main assessment owing to the integrated nature of the EIA process, where this is the case, this will be explained within each of the environmental topic chapters of ES.

13.4.2 Table 13-2 presents a summary of the receptor types identified through the topic-specific chapters, and highlights where these receptor types are common across assessments and may be subject to impact interactions.

13.4.3 Assessments undertaken as part of environmental topic chapters (refer to Chapters 5 to 12 of this PEIR) that already inherently consider impacts from other aspect chapters, have been included with the aspect chapters of this PEIR and will be subject to further assessment within the ES. These are not further considered within this chapter.

13.4.4 In-combination climate change impacts have been scoped out of assessment as the Proposed Development is not anticipated to exacerbate climate parameters, as agreed through the PINS Scoping Opinion.

Table 13-2 Environmental aspect interactions

Receptor types	Biodiversity	Landscape and visual	Cultural heritage and archaeology	Land use and socio-economics	Hydrology and Flood Risk	Noise and vibration	Traffic and Transport	Temporal overlap	Spatial overlap	Approach to assessment of interactions
Human (residential properties)	N	Y	N	N	N	Y	Y	Yes	Yes	These interactions are covered in Chapters 7, 11 and 12 of the PEIR and will be assessed within their respective chapters for the ES. These interactions are therefore not considered in this chapter.
Sensitive community facilities	N	Y	N	Y	N	Y	Y	Yes	Yes	These interactions are covered in Chapters 7, 9, 11 and 12 of the PEIR and will be assessed within their respective chapters for the ES. These interactions are therefore not considered in this chapter.
Non-residential, commercial, business facilities (including farm holdings)	N	Y	N	Y	N	Y	Y	Yes	Yes	These interactions are covered in Chapters 7, 9, 11 and 12 of the PEIR and will be assessed within their respective chapters for the ES. These interactions are therefore not considered in this chapter.
Ecological receptors	Y	N	N	N	N	Y	N	Yes	Yes	These interactions are covered in Chapter 6 of the PEIR and will be assessed within its respective chapter for the ES. These interactions are therefore not considered in this chapter.
Historic landscape assets (e.g historic parklands, Conservation areas)	N	Y	Y	N	N	N	N	Yes	Yes	These interactions are covered in Chapters 7 and 8 of the PEIR and will be assessed within their respective chapters for the ES. These

Receptor types	Biodiversity	Landscape and visual	Cultural heritage and archaeology	Land use and socio-economics	Hydrology and Flood Risk	Noise and vibration	Traffic and Transport	Temporal overlap	Spatial overlap	Approach to assessment of interactions
										interactions are therefore not considered in this chapter.
Built heritage features	N	N	Y	N	N	Y	N	Yes	Yes	These interactions are covered in Chapter 8 of the PEIR and will be assessed within its respective chapter for the ES. These interactions are therefore not considered in this chapter.
Archaeological features	N	N	Y	N	Y	N	N	Yes	Yes	These interactions are covered in Chapter 8 of the PEIR and will be assessed within its respective chapter for the ES. These interactions are therefore not considered in this chapter.
Water bodies / features	Y	N	N	N	Y	N	N	Yes	Yes	These interactions are covered in Chapter 6 of the PEIR and will be assessed within its respective chapter for the ES. These interactions are therefore not considered in this chapter.
All travellers (vehicle users, pedestrians, cyclists, public transport users)	N	N	N	Y	N	N	Y	Yes	Yes	These interactions are covered in Chapters 9 and 12 of the PEIR and will be assessed within their respective chapters for the ES. These interactions are therefore not considered in this chapter.

13.5 Cumulative effects assessment

13.5.1 The EIA Regulations require the EIA to consider cumulative effects, i.e. the cumulative effect of the Proposed Development being carried out alongside other existing and/or approved developments. The EIA will include an assessment of the potential effects of the Proposed Development in the context of other local developments and, therefore, the cumulative effects that may result from the Proposed Development and these other developments on the same receptor.

13.5.2 The EIA will consider the cumulative effects of the Proposed Development in combination with the environmental effects of other existing and/or approved developments on sensitive receptors identified through the EIA process. The scope of cumulative assessment includes identification of a long list of developments within the appropriate Zone of Influence (ZoI) for each environmental topic, which will form the basis of the search area for the cumulative effects assessment. The cumulative effects assessment will draw upon the method as set out within the PINS Advice Note Seventeen (see Table 13-3).

Table 13-3 Stages of Cumulative Assessment

CEA Stage	Key Activities
Stage 1: Establish the ZoI and establish the long list of 'other existing development and/or approved development'	▪ identify the ZoI (study area) for each environmental aspect considered within the ES; ▪ identify a long list of other developments in the vicinity of the Proposed Development which may have cumulative effects in consultation with the relevant local authority; and ▪ undertake desktop review of available environmental information for identified cumulative developments.
Stage 2: Establish the short list of 'other existing development and/or approved development'	▪ identify which of the identified other developments from Stage 1 has the potential to give rise to significant cumulative effects by virtue of overlaps in temporal scope, due to the scale and nature of the other development/receiving environment; or any other relevant factors.
Stage 3: Information gathering	▪ information relating to each of the other developments is gathered and reviewed.
Stage 4: Assessment	▪ an assessment of the cumulative effects is undertaken. Each individual other development is reviewed in turb to identify whether there is potential for significant cumulative effects; and ▪ mitigation measures are identified.

Stage 1: Establishing the Zone of Influence and long list of 'other developments'

Zone of Influence

13.5.3 The ZoI for each environmental topic has been identified based on the extent of likely effects as identified as the study area in each of the individual topic chapters (Chapters 5-12) of this PEIR. The ZoI has been identified in line with industry specific guidance along with professional judgement and knowledge of the local area relevant to each environmental topic.

13.5.4 The ZoI for the Proposed Development varies for each environmental topic and these are set out in Table 13-3 below along with the identification of what type of impact is likely.

Table 13-4 ZoI, potential impacts and receptors for EIA topics

Environmental topic	ZoI for assessments
Biodiversity	▪ International and national statutory designated sites of ecological importance within 10km of the Site Area (Ramsar sites, special protection areas (SPA) and special areas of conservation (SAC); ▪ nationally designated sites (sites of special scientific interest (SSSIs) and nature reserves), within 2km of the Site Area;
Landscape and Visual	▪ 3km as any EIA scale project within 3km may interact with the Proposed Development in terms of landscape and visual effects on receptors within the 2km LVIA study area.
Cultural heritage	▪ 5km from the Site Area
Land use and Socio-economics	▪ 500m from the Site Area
Hydrology	▪ Flood Risk: Any area hydrologically linked to the Site Area will be assessed. ▪ Water Quality: Impacts will be investigated up to 1km downstream of the Site Area, to be extended if there is a protected area reasonably close to the Site Area. ▪ Groundwater: Any principal aquifers or source protection zone with hydrological connectivity to the Proposed Development.
Noise and Vibration	▪ 1km from the Site Area
Traffic and Transport	▪ the network of access routes to Panel Areas A-F. This extends from the A1(M) to the west, to the A689 and A19 to the north and east, and the A66 to the south
Climate Change	▪ it is not considered appropriate to include this topic in the cumulative assessment. As detailed in Chapter 5, GHG emissions are not restricted to a geographical area.

Establishing the long list of 'other developments'

13.5.5 The PINS Advice Note [4] recommends that a wide range of future projects is included within the CEA which can be tiered (from Tier 1-3) according to how far advanced the development is within the planning system and to the level of detail that is likely to be available for each tier. These different tiers are set out in Table 13-5, adapted to the context of the Proposed Development.

Table 13-5 Project tiering for the purpose of CEA

CEA Tier	Description	
Tier 1	▪ projects under construction; ▪ permitted application(s) whether under the Planning Act 2008 or other regimes but not yet implemented; and ▪ submitted application(s) whether under the Planning Act 2008 or other regimes but not yet determined.	Decreasing level of detail likely to be available 
Tier 2	▪ Project on the PINS programme of Projects where an EIA Scoping Report has been submitted.	
Tier 3	▪ projects on the PINS Programme of Projects where an EIA Scoping Report has not been submitted; ▪ identified in the relevant Development Plan (and emerging Development Plans – with appropriate weight being given as they move closer to adoption) recognising that there will be limited information available on the relevant proposals; and ▪ identified in other plans and programmes (as appropriate) which set the framework for future development consents/approvals, where such development is reasonably likely to come forward.	

Landscape and Visual cumulative effects assessment

13.5.6 The cumulative assessment methodology for landscape and visual effects is presented in Appendix 7.1. An indicative assessment of effects on landscape and visual has been undertaken to determine the short list of 'other developments' and is presented from paragraph 13.5.12, which follows the approach agreed through the EIA Scoping Report:

Table 13-6 Criteria for the assessment of cumulative effects for LVIA

Criteria	Rationale
All existing development within the study area	Forms part of the baseline for the main LVIA.
Consented development within the study area	Included within the future baseline for the main LVIA unless there is good reason to believe it will not be constructed (or that it will not be constructed before the proposed development). Where consented development is not included within the future baseline, it will be considered within the assessment of cumulative effects.
Development in planning within the study area	Considered within the assessment of cumulative effects.
Developments in scoping within the study area	Generally presumed to be excluded but will be agreed on a case-by-case basis with consultees.
Site allocations in the local plan (without applications)	Generally presumed to be excluded but will be agreed on a case-by-case basis with consultees.
All EIA development within 3km of the Site Area	Any EIA scale project within 3km may interact with the Proposed Development in terms of landscape and visual effects on receptors within the 2km LVIA study area.

Criteria	Rationale
Non-EIA linear or area-based development within 2km of the Site Area	Development within 2km which does not have significant landscape and visual effects in its own right may interact with the proposed development in terms of landscape and visual effects on receptors within the 2km LVIA study area. (This category would include e.g., developments of new residential or commercial properties, smaller solar farms, phone masts and/or local electricity transmission lines).
All smaller scale planning applications and changes	Exclude - smaller scale changes are unlikely to generate significant cumulative effects with the Proposed Development.

Stage 2: Establishing the short list of 'other developments'

13.5.7 For this Proposed Development, relevant 'other developments' were initially identified through a desk-based review of published sources on relevant planning authority websites.

13.5.8 The less information that is available for the future projects (for example environmental impacts predicted and project definition), the less likely that the CEA will be able to make any robust assessment in relation to these projects. Reasonable steps have been taken to review publicly available information when conducting the CEA.

13.5.9 Withdrawn or refused applications have been included in the long list as a precautionary approach. Due to the uncertainty of an appeal being lodged, withdrawn or refused applications have not been included in the short list (Stage 2).

13.5.10 The developments which met the criteria given in Table 13-6 were included in the initial long list.

Table 13-7 Long list of 'other development' inclusion criteria

Development		Housing unit (no)	Housing land (ha)	Non-residential (ha)	Distance from Main Application Site Boundary
Nationally Significant Infrastructure Projects		All	All	All	10km
Transport and Works Act Orders (TWAO)		All	All	All	10km
Mineral and Waste EIA applications		All	All	All	10km
Applications or allocations	Large scale	200+	4+	2+	10km
	Medium scale	10-199	0.5-4	1-2	2km
	Small scale	1-9	Less than 0.5	Less than 1	200m

13.5.11 Searches for relevant 'other development' were conducted online, using the planning authorities' websites. Searches were undertaken for planning authorities, which are within 10 kilometres of the Proposed Development. Figure 13.1 Long List of Committed Developments shows the location of each local planning authority and ZoI applied.

Landscape and Visual cumulative effects assessment

13.5.12 The EIA Scoping Opinion consultation responses from Durham County Council and Darlington Borough Council requested cumulative assessment in terms of potential landscape and visual effects for: Gately Moor (ID 16), Lime Lane (Whinfield) (ID 21) and Cowley House Farm (ID 42). These developments, in addition to those meeting the LVIA scoping criteria, have been included in the long list of developments in Appendix 13.1.

13.5.13 A site visit was undertaken to determine the likelihood of potential cumulative impacts for landscape and visual. A number of the developments listed were noted on site as having very localised effects and would not warrant consideration as cumulative developments in the ES and are therefore not taken forward to the short list. These included the solar panels at the Durham Way sewage works (ID 17); two small leisure developments (IDs 23, 24); the smaller housing developments (IDs 19, 25 and 35); and all developments beyond 3km from the Panel Areas.

13.5.14 Operational and consented developments will be included as part of the baseline and future baseline in ES assessment and have been included in the preliminary assessment where pertinent. The most relevant of these based on site work to date are the large poultry sheds at Hauxley Farm (ID 20) and Whinfield (ID 21) and Gately Moor (ID 16) solar farms. Other consented and operational projects which will be considered in the cumulatives assessment include Forrest Park (ID 29); solar farms at High Meadow (ID 26) and Hell Hole Farm (ID 40); and residential developments at Berrymead Farm (IDs 33 and 39) and Burtree Lane South (ID 37).

13.5.15 Based on site observations (recorded within the viewpoint analysis provided in Appendix 7.4) and the extent of effects identified within the preliminary assessment, developments in planning most likely to be of relevance for cumulative assessment in the ES will be Long Pasture solar farm (ID 41). Other projects in planning which will be considered include solar farms at California Farm (ID 18) and Burtree Lane (ID 36); and mixed use development at Beaumont Hill (ID 32).

All topics

13.5.16 Appendix 13.1 presents the identified long list of existing and/or approved developments within the search area and sets out the threshold criteria applied to identify the preliminary short list of existing and/or approved developments for each environmental topic. The geographical location of the long list of developments is shown on Figure 13.1.

13.5.17 The long list will be kept under review, frozen for issue of the ES to allow for a robust assessment of cumulative effects, and then updated ahead of Examination to ensure the most relevant applications are being considered. This will ensure that the information within the ES is up to date at the point of decision.

13.5.18 From the long list of potential 'Other Developments' presented in Appendix 13.1, a shorter list has been identified using criteria defined in line with Advice Note 17 presented in Table 13-7. The short list identifies the other developments that may give rise to significant cumulative effects by virtue of overlaps in temporal scope, due to the scale and nature of the 'other development'/receiving environment, or any other relevant factors., The shortlisted 'other developments' that may give rise to cumulative effects are presented in Table 13-8 and shown in Figure 13.2.

Table 13-8 Criteria for shortlisting 'other development'

Threshold	Description
The temporal scope of 'other development' potential for interaction	▪ consideration of relative construction, operation and decommissioning programmes of the 'other development' identified in the ZoI with the scheme programme, to establish whether there is overlap, or similar temporal scope for construction and operation phases, and any potential for interaction
The scale and nature of 'other development'	▪ consideration of whether the scale and nature of the developments identified in the ZoI are likely to interact with the scheme and to result in a cumulative effect ▪ characteristics of other developments in relation to use of natural resources, pollution and nuisances, and risks to human health ▪ the scale of developments which are more than 1 hectare of urban development which is not a dwelling development ▪ the development includes more than 150 dwellings ▪ the overall area of the development exceeds 5 hectares
Any other relevant factors	▪ nature and/or capacity of the receiving environment that would make a significant cumulative effect with 'other development'. The sensitivity of the receiving environment includes whether the sites are within: • wetlands, riparian areas, river mouths • coastal zones and the marine environment • mountain and forest areas • nature reserves and parks • European sites and other areas classified or protected under national legislation • areas in which there has already been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure • densely populated areas • landscapes and sites of historical, cultural or archaeological significance ▪ the relative abundance, availability, quality and regenerative capacity of natural resources in the area ▪ potential for creation of source-pathway-receptor impacts ▪ the likely significance of effects where environmental assessments have been undertaken for the 'other developments' as having moderate to large significance

Table 13-9 Short List of 'other developments'

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
Nationally Significant infrastructure Projects							
3	EN010103	**Net Zero Teesside power and Net Zero North Sea Storage Limited** **The Net Zero Teesside Project** A full chain carbon capture, utilisation and storage ('CCUS') project, comprising a CO2 gathering network, including CO2 pipeline connections from industrial facilities on Teesside to transport the captured CO2 (including the connections under the tidal River Tees); a combined cycle gas turbine ('CCGT') electricity generating station with an abated capacity circa 850 gigawatts output (gross), cooling water, gas and electricity grid connections and CO2 capture; a CO2 gathering/booster station to receive the captured CO2 from the gathering network and CCGT generating station; and the onshore section of a CO2 transport pipeline for the onward transport of the captured CO2 to a suitable offshore geological storage site in the North Sea.	Approx. 6.3km east of the Site Area	Project is awaiting a decision from the Secretary of State by 10 May 2023.	1	Yes – Biodiversity	Large scale development within 6.3km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
Transport and Works Act Order							
None within 10km search area							
Minerals and Waste EIA applications – Tees Valley Joint Minerals and Waste Development Plan Documents							
6	23/0090/EIS	**Suez Tees Valley Site Haverton Hill Road Billingham** Stockton-on-Tees Borough Council	Approx. 6.8km east of	Application validated 24 January 2023.	1	Yes - Biodiversity	Large scale development within 6.8km of the Site Area could lead to cumulative effects due

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
		Carbon capture facility for existing Energy from Waste site	the Site Area.	Awaiting decision.			to the likely temporal overlap of construction periods with the Proposed Development.
7	20/0193/VARY	**Port Clarence Landfill Site 1 Stockton-on-Tees Borough Council** Section 73 application to vary condition no.3 (Environmental Statement) of planning approval 07/2984/EIS to extend the waste types specifically to include the management and treatment of low level radioactive waste.	Approx. 9.7km east of the Site Area.	Application validated 24 January 2020. Awaiting decision.	1	Yes - Biodiversity	Large scale development within 9.7km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
8	20/0192/VARY	**Port Clarence Landfill Site 2 Stockton-on-Tees Borough Council** Section 73 application to vary condition no.3 (Environmental Statement) of planning approval 94/1049/P (TDC/94/065) to extend the waste types specifically to include the disposal of low level radioactive waste.	Approx. 9.6km east of the Site Area	Application validated 24 January 2020. Awaiting decision.	1	Yes - Biodiversity	Large scale development within 9.6km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
Town and Country Planning Projects							
14	22/0334/EIS	**Summerville Farm Stockton-on-Tees Borough Council** Hybrid planning application comprising of 1) full application for the erection of 385 dwellings with associated infrastructure, access and landscaping and 2) Outline application with some matters reserved (appearance, landscaping, layout and scale) for the erection of up to 285 dwellings	Directly adjacent south of the Site Area	Awaiting decision, validated 11 February 2022	1	Yes – all topics	Large scale development directly adjacent to the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
16	22/00727/FUL	**Gately Moor Darlington Borough Council** Solar farm and energy storage facility together with associated works, equipment and infrastructure. Approx. 123.37 hectares.	Lies within the Site Area	Approved with conditions 10 November 2022	1	Yes – all topics	Large scale development which shares the cable route along Redmarshall Road within the Site Area. This could lead to cumulative effects due to the

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
							likely temporal overlap of construction periods with the Proposed Development.
18	22/1511/FUL	**California Farm** **Stockton-on-Tees Borough Council** Proposed solar farm (49.9mw) and battery energy storage system (BESS) and associated infrastructure, access and landscaping. Approx. 80 hectares.	Directly adjacent to the south of the Site Area	Approved with conditions 15 March 2023	1	Yes – all topics	Large scale development directly adjacent to the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
21	DM/21/02816/FPA (21/00958/FUL)	**Whinfield** **Durham County Council** Installation of a solar photovoltaic array/solar farm with associated infrastructure. Approx 42.30 hectares.	Lies within the Site Area	Approved 4 October 2022	1	Yes – all topics	Large scale development within the Site Area could lead to could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
26	21/2290/FUL	**High Meadow 2** **Stockton-on-Tees Borough Council** Construction of a temporary 10.8MW Solar Farm, to include the installation of Solar Panels with transformers, a DNO control room, a customer substation, GRP comms cabin, security fencing, landscaping and other associated infrastructure. Approx 15.03 hectares.	Approx 400m north of the Site Area	Approved with conditions 15 December 2021 Discharged conditions 13 April 2022	1	Yes – biodiversity, landscape and visual, cultural heritage, land use and socio-economics, hydrology, noise and vibration	Large scale development within 400m of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
28	20/2692/FUL	**Middlefield Farm** **Stockton-on-Tees Borough Council** Installation of a ground mounted photovoltaic (PV) solar energy generation system (Solar Farm), co-located battery storage, 132kV substation, associated equipment and infrastructure. Approx. 28.60 hectares.	Approx 80m north of the Site Area	Approved with conditions 28 April 2021	1	Yes – all topics	Large scale development within 80m of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
29	DM/19/00283/OUT	**Forrest Park** **Durham County Council** Outline planning application for an Industrial and Trade Park with ancillary office space, Hotel, Pub and Roadside Restaurant and Retail Units with petrol station and associated infrastructure including an electric power station, parking and landscaping. Approx. 55.15 hectares.	Approx 600m west of the Site Area	Approved 1 November 2019 Latest discharge of conditions 23 December 2022	1	Yes - biodiversity, landscape and visual, cultural heritage, hydrology, noise and vibration, traffic and transport	Large scale development within 600m of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
32	22/00146/OUT	**Beaumont Hill** **Darlington Borough Council** Outline planning permission with all matters reserved except access for a residential development up to 600 no. dwellings, convenience store (up to 400m2) and associated parking, open space, landscaping and infrastructure works	Approx 1km south of the Site Area	Awaiting decision, validated 16 February 2022	1	Yes - biodiversity, landscape and visual, cultural heritage, hydrology, noise and vibration	Large scale development within 1km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
33	15/00804/OUT	**Berrymead Farm 1** **Darlington Borough Council** Outline planning permission for the erection of 370 No dwelling houses (Use Class C3) and land reserved for a primary school and nursery (D1) (Additional Information received 8th September 2016) (Additional information and amended plans received 3 July 2017, 6th July 2017 and 1 November 2017). (Additional and Amended plans received 23 January 2018)	Approx 1.7km south of the Site Area	Approved 27 June 2022 Latest approval of details reserved by conditions awaiting decision.	1	Yes - biodiversity, landscape and visual, cultural heritage, hydrology	Large scale development within 1.7km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development, particularly in combination with Berrymead Farm 2 (ID 39).
34	21/3097/FUL	**Harrowgate Lane 2** **Stockton-on-Tees Borough Council** Application for the erection of 178 dwellings to include creation of new access from Redmarshall Road and Darlington Back Lane,	Approx 1.7km south of the Site Area	Awaiting decision, validated 5 January 2022	Tier 1	Yes - biodiversity, landscape and visual, cultural heritage, hydrology	Large scale development within 1.7km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
		associated infrastructure, landscaping and SUDS.					
36	22/00213/FUL	**Burtree Lane Solar** **Darlington Borough Council** Installation of a solar farm comprising of ground mounted bifacial solar panels, access tracks, string inverters, transformers, substation, storage containers, underground cables and conduits, perimeter fence, temporary construction compound and associated infrastructure and planting scheme. Approx. 58.96 hectares.	Approx 2km south-west of the Site Area	Approved 11 January 2023	1	Yes - biodiversity, landscape and visual, cultural heritage	Large scale development within 2km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
37	15/01050/OUT	**Burtree Lane (S)** **Darlington Borough Council** Outline planning permission for residential development for up to 380 residential dwellings, with access arrangements, open space and landscaping with all matters reserved except for access (Amended Description) (Additional information received 8th September 2016) (Amended plans and information received 27th, 30 June 2017, 3 November 2017 and 31 January 2018).	Approx 2.3km south-west of the Site Area	Approved 21 August 2020. Non material amendment approved 19 August 2022	1	Yes - biodiversity, landscape and visual, cultural heritage	Large scale development within 2.3km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
39	21/00346/RM1	**Berrymead Farm 2** **Darlington Borough Council** Application for reserved matters approval relating to appearance, landscaping, layout and scale for the erection of 123 no. dwellings, hard/soft landscaping, drainage and associated works attached to outline planning permission 15/00804/OUT dated 06 February 2020 (Outline planning permission for the erection of 370 No dwelling houses (Use Class C3) and	Approx 1.9km south-west of the Site Area	Granted 7 February 2020 Non-material amendment approved 7 November 2022	1	Yes - biodiversity, landscape and visual, cultural heritage	Large scale development within 1.9km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.

ID	Application Reference	Applicant for 'other development' and brief description	Distance from project	Status	Tier	Within ZoI?	Justification
		land reserved for a primary school and nursery (D1))					
40	20/2131/FUL	**Hell Hole Farm** **Stockton-on-Tees Borough Council** Installation of a ground mounted photovoltaic (PV) solar energy generation system (Solar Farm) with associated equipment and infrastructure. Approx. 38.50 hectares.	Approx 2km north of the Site Area	Approved with conditions 11 December 2020	1	Yes - biodiversity, landscape and visual, cultural heritage	Large scale development within 2km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
41	22/01329/FUL	**Long Pasture** **Darlington Borough Council** Proposed ground mounted solar farm consisting of the Installation of 49.9MW solar photovoltaic array/solar farm with associated infrastructure. Approx. 104.50 hectares.	Approx 700m south of the Site Area	Awaiting decision, validated 16 December 2022	1	Yes - biodiversity, landscape and Visual, cultural heritage, hydrology, noise and vibration, traffic and transport	Large scale development within 700m of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.
42	DM/20/01991/FPA	**Cowley House Farm** **Durham County Council** Installation and operation of a Solar Farm and associated infrastructure. Approx. 87.77 hectares.	Approx 3.6km north of the Site Area	Approved 25 January 2021	1	Yes – biodiversity, cultural heritage	Large scale development within 3.6km of the Site Area could lead to cumulative effects due to the likely temporal overlap of construction periods with the Proposed Development.

13.5.19 Where developments have been discounted, they will continue to be monitored to ensure that any changes to those schemes are identified and their omission from the short list is reassessed. For example, in the instance that developments have been discounted because the application failed to obtain planning consent.

Stage 3: Information gathering

13.5.20 The next stage of the cumulative effects assessment process is to gather environmental information for the short listed existing and/or approved development, where available, including details of:

- Proposed design
- Location;
- Programme (construction, operation and decommissioning);
- Baseline data; and
- Effects arising from such other developments.

13.5.21 A preliminary review of the short-listed cumulative schemes has been undertaken and where necessary, further information will be gathered and reported in the ES.

Stage 4: Assessment

13.5.22 The assessment of likely cumulative effects will be undertaken within the ES to an appropriate level of detail commensurate with the information available on other existing and/or approved developments and will set out measures envisaged to reduce or avoid any identified significant adverse cumulative effects and, where appropriate, any proposed monitoring arrangements.

13.6 Next Steps

In-combination effects

13.6.1 An assessment of the potential for intra-project effects will be undertaken and documented within each of the environmental topic chapters for the ES. This will include a summary of impact interactions, setting out how the particular topic has considered and assessed secondary effects arising as a result of direct impacts from other environmental chapters.

Cumulative effects

13.6.2 The long list and short list have not yet been finalised and consultation with local authorities will continue to help identify further relevant other developments going forward. Any other developments that are identified, will be considered in the long list and a decision will be taken using the assessment criteria and professional judgement applied to determine whether the development(s) will be included in the short list.

13.6.3 Any new projects added to the short list will be assessed in the ES. The long list and short list will be finalised in advance of submission of the DCO application.

13.6.4 The long list and short list of developments will be agreed with Darlington Borough Council, Stockton-on-Tees Borough Council and Durham County Council before the assessment is undertaken and reported within the ES.

13.6.5 Where developments have been discounted, they will continue to be monitored to ensure that any changes to those developments are identified and their omission from the short list is reassessed. Where new projects are added to the short list, these will be assessed in the ES.

13.6.6 The next stage of the cumulative effects assessment will be to gather further information on the short list of developments, where required following feedback from statutory consultation, to inform the cumulative assessment to be presented within the ES. The cumulative assessment methodology and findings will be reported in full within the ES.

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