Yorkshire GREEN Project

Environmental Impact Assessment

Preliminary Environmental Information Report
Volume two: Chapter 4 Approach to Preparing the PEIR

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4. Approach to Preparing the PEIR

4.1 Introduction

4.1.1 Environmental Impact Assessment (EIA) is a process for identifying and assessing the likely significant environmental effects (positive and negative) of a project to inform the decision-making process whether an order granting development consent should be made.

4.1.2 As part of the EIA, the Preliminary Environmental Information Report (PEIR) provides the latest information obtained and assessed in relation to the Project. In so doing it provides a preliminary assessment of likely significant effects arising from the construction, operation and decommissioning phases of the Project.

4.1.3 The EIA process culminates in the provision of an Environmental Statement (ES) written in accordance with the Infrastructure Planning (EIA) Regulations (As Amended) 2017[1] (The EIA Regulations). The ES will accompany the Development Consent Order (DCO) application and will follow a similar approach to EIA as set out in this PEIR. It will help inform the determination of the DCO application for the Project. In particular, the ES will provide a full assessment of the likely significant effects associated with the Project during its construction, operation and decommissioning.

4.1.4 This chapter sets out the approach to EIA for the Project to support consultation being undertaken under Sections 42 to 48 of the Planning Act 2008[2]. This consultation will inform the evolution of the Project design before the DCO application is submitted.

4.1.5 The preliminary environmental aspect assessments (**Chapters 6 to 16**) have been carried out using the general approach and processes set out in this chapter. Where required, specific aspect chapters have refined the approach set out in this chapter in order to properly address particular requirements in a suitable manner. Any changes to the approach set out here are set out in the appropriate environmental aspect chapter.

4.2 The EIA process

4.2.1 The EIA Regulations set out the procedures to be followed in relation to EIAs undertaken for Nationally Significant Infrastructure Projects (NSIPs) in England and Wales. The environmental information for a DCO is reported formally in two stages i.e. the PEIR (to inform the consultation with the public and other stakeholders) and the ES (to accompany the DCO application).

4.2.2 The EIA undertaken to date has, and will continue to, focus on aspects and matters where a likely significant effect may occur. This approach ensures that the EIA process is proportionate in line with best practice and focuses effort in those areas where significant effects are likely as required by Regulation 14(2)(b) of the EIA Regulations.

4.2.3 Regulation 12 of the EIA Regulations defines preliminary environmental information as information referred to in Regulation 14(2) which:

[1] UK Government (2017). Infrastructure Planning (EIA) Regulations (As Amended) 2017.
[2] UK Government (2008). The Planning Act 2008.

- *'a) has been compiled by the applicant; and*
- *b) is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development and any associated development'.*

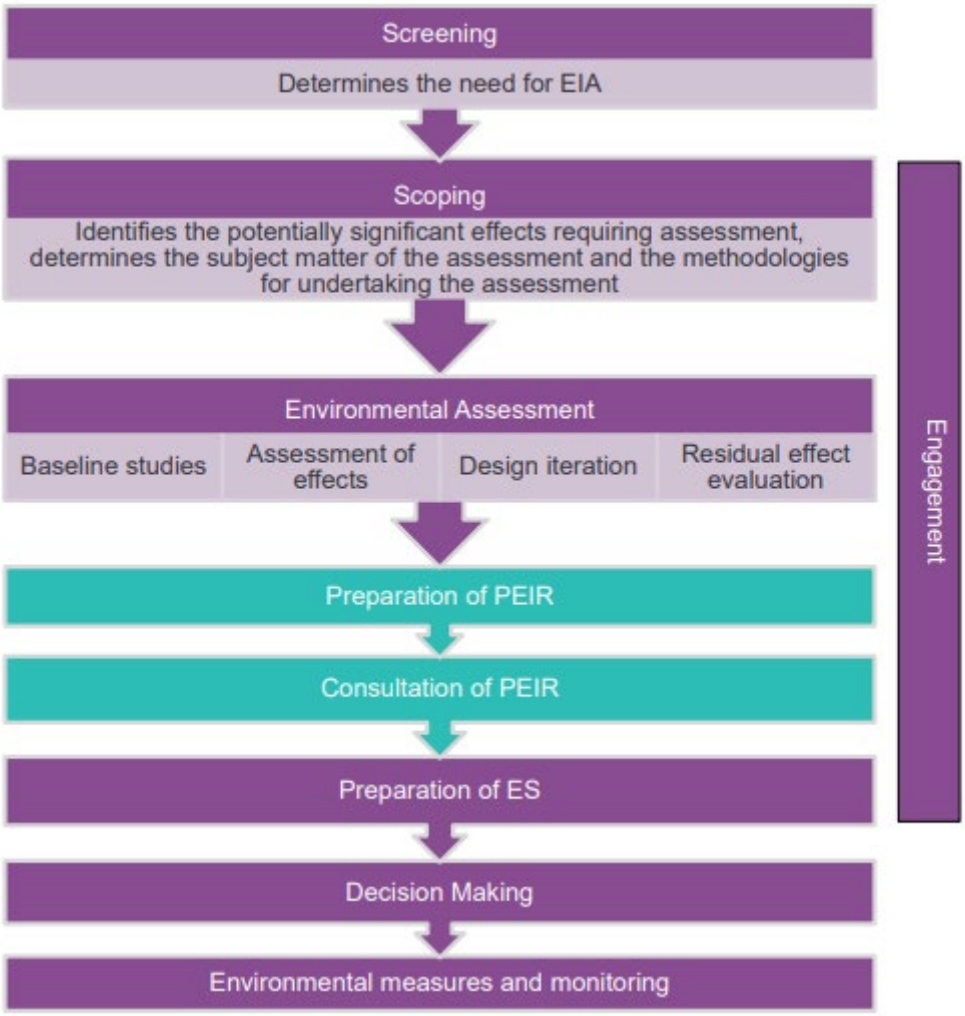
4.2.4 In line with the EIA Regulations and Planning Inspectorate Advice Note 7[3], the PEIR presents a level of preliminary assessment appropriate to enable consultees to develop an informed view of likely significant environmental effects of the Project and help inform their consultation responses during the statutory consultations as part of the pre-application stage. This will then enable both the design of the Project and the EIA to take into consideration comments received through consultation.

4.2.5 The findings presented in this PEIR are based on a preliminary assessment and reflect the current stage in the design process of the Project and understanding of baseline conditions, allowing for conclusions as to the likely significant effects to be drawn. Where the design is still evolving or further information on baseline conditions is still to be obtained, a precautionary approach is applied to ensure that a likely worst-case or maximum design scenario is assessed in the PEIR. In using this precautionary approach to the assessment, the level of effect may be overstated and subsequently reduced in the ES that would accompany the DCO application. Each environmental aspect chapter (**chapters 6 to 16**) provides commentary on the appropriate reasonable worst-case scenario adopted for the individual assessments as applicable.

4.2.6 The EIA process is summarised in **Graphic 4.1** below. The remainder of this chapter provides further detail around the key stages in this process with a focus on those stages most relevant to this preliminary stage of the assessment.

[3] Planning Inspectorate (2020). Advice Note 7: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping. [Online] Available at: https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-and-environmental-statements/

Graphic 4.1 The EIA Process



4.3 EIA scoping

[4] for the Project was submitted by National Grid to the Secretary of State (SoS) for Business, Energy and Industrial Strategy, administered by the Planning Inspectorate on 18 March 2021. The Scoping Report presented a Scoping Red Line Boundary which defined the area within which the Project would be located, including the temporary and permanent construction and operational work areas.

4.3.2 A Scoping Opinion was adopted by the Planning Inspectorate on behalf of the SoS on 28 April 2021[5]. The Scoping Opinion and the statutory consultee responses have subsequently informed the assessment work and further design evolution undertaken to date. Responses from the applicant to the Scoping Opinion comments, detailing how they have been addressed within this PEIR are provided within each of the topic environmental chapters where they are technically focussed and in **Appendix 4A** where they are overarching. Given the preliminary nature of the PEIR, any comments that are

[4] National Grid (2021). Yorkshire GREEN Project: Environmental Impact Assessment Scoping Report. [Online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020024/EN020024-000008-YGRN%20Scoping%20Report.pdf

[5] National Grid (2021). Yorkshire GREEN Project: Environmental Impact Assessment Scoping Opinion. [Online] Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN020024/EN020024-000048-YGRN%20-%20Scoping%20Opinion.pdf

pending a full response are identified, with next steps clarified, and any actions to be concluded within the ES set out.

4.3.3 Regulation 14(3)(a) of the EIA Regulations requires an ES to "*be based on the most recent scoping opinion adopted (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion)*". The iterative assessment process and stakeholder engagement has resulted in minor changes to the scope of the assessment and the methods of assessment from that which was provided for in the Scoping Report and/or Scoping Opinion. Any changes and a record of agreement on these with the relevant stakeholders are set out in each of the environmental aspect chapters (**Chapters 6 to 16**).

4.3.4 A number of aspects were proposed to be scoped out of the assessment including major accidents and disasters and Electromagnetic Fields. Further explanation as to the reasons why these aspects were scoped out of the assessment is provided in **Section 4.11**. In line with the scoping opinion further information on climate change effects, including a greenhouse gas emissions assessment is provided in **Appendix 4B**. Further detail, once more detailed Project information is available, will be included in the ES.

4.4 Consultation and engagement

4.4.1 The applicant has held, and will continue to hold, informal engagement with the key prescribed consultees, as appropriate, in order to refine the Project, the EIA and assist in the development of any required mitigation. Specific information on any feedback received is presented in the individual environmental aspect chapters (**Chapters 6** to **16**) which include a 'Consultation and stakeholder engagement' section which provides a record of all relevant comments received in relation to that topic from:

- the EIA Scoping Opinion;
- the non-statutory consultation feedback report; and
- ongoing technical engagement with relevant prescribed consultees, including the host local planning authorities.

4.5 Scope of the assessment

Baseline

4.5.1 Determining the existing environmental conditions is an important part of the EIA process which is established through desk-based studies and/or surveys of the relevant study area for each environmental aspect / receptor and provides a 'baseline' against which changes, potentially caused by the Project, can be compared. The baseline environment encompasses the draft Order Limits and wider study areas, which are set out in the aspect chapters (**Chapters 6 to 16**).

4.5.2 It is also considered whether in the absence of the Project, there is likely to be a change in the baseline conditions (relating to particular aspects or receptors), over the lifetime of the project (future baseline). For some aspects such as transport, there may be traffic growth based on regional or national trends, and this would normally be applied consistently across all road transport-related receptors. However, for other aspects, it is possible that a specific part of a study area is predicted to change, by virtue of other potential developments being likely to take place and introducing new future receptors.

4.5.3 Detailed methodologies for baseline data gathering specific to each aspect assessment can be found in **Chapters 6 to 16**.

Spatial scope

4.5.4 The spatial scope for each environmental aspect, the area over which changes to the environment are predicted to occur as a consequence of the Project, will depend on the nature of the potential effects and the location of receptors that could be affected. It takes account of:

- the physical area of the Project;
- the nature of the baseline environment; and
- the manner and extent to which environmental effects may occur.

4.5.5 Each of the environmental aspect chapters (**Chapters 6** to **16**) describes the study area to be considered, providing a clear explanation as to why the study area has been adopted. The spatial scope of each assessment has taken account of comments received from stakeholders and the EIA scoping opinion and in response to these the scoping red line boundary used as the basis of the Scoping Report has been refined with the draft Order Limits now forming the boundary of the Project (**Section 3.3**). The draft Order Limits and associated study areas may be refined for the ES in response to comments from consultees or further design and assessment work.

Temporal scope

4.5.6 The temporal scope refers to the time periods over which impacts and effects may be experienced by sensitive receptors which may be permanent, temporary, long term or short term. The EIA will assess effects during the construction (2024 to 2028), operation and maintenance and where appropriate, decommissioning phases of the Project. The Project is assumed to have a design life of 80 years with the decommissioning phase expected to be approximately two year in duration. The temporal scope for each aspect-based assessment is defined in **Chapters 6 to 16.**

Design envelope

4.5.7 In order to establish the scope of environmental assessment, the PEIR adopts what is termed a 'Rochdale Envelope' or parameter-based design envelope approach. The ES will do the same. The Planning Inspectorate Advice Note Nine[6] outlines the approach that can be taken, in accordance with the requirements of the EIA Regulations, where some details of the Project have not yet been confirmed when the Application is submitted and where flexibility is sought to address this uncertainty.

4.5.8 Assessing using a parameter-based design envelope approach means that the assessment will consider a maximum design scenario which represents the worst case scenario for each aspect whilst allowing the flexibility to make improvements in the future in ways that cannot be predicted at the time of submission of the DCO application. Development permitted by the DCO will not extend beyond the clearly defined parameters assessed in the ES. For example, defined Limits of Deviation are assumed to provide the flexibility to relocate a pylon due to poor ground conditions. Further information is provided in **Section 3.3**.

[6] Planning Inspectorate (2018). Advice Note Nine: Rochdale Envelope.

4.6 Approach to environmental measures

Embedded environmental measures

4.6.1 EIA is an iterative process and opportunities for mitigation, referred to as 'embedded environmental measures', have been considered throughout the design development of the Project and in the assessment undertaken for the PEIR where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders together with appropriate technical standards, policies and guidance.

4.6.2 These environmental measures include avoidance, best practice and design commitments, which are classified into primary, secondary or tertiary measures in accordance with the Institute of Environmental Management and Assessment's (IEMA) Guide to Delivering Quality Development[7] definitions as follows.

- primary (inherent): Referred to as 'embedded measures', are modifications to the location, design or operation of the Project made during the pre-application phase that are an inherent part of the Project, and do not require additional action to be taken;
- secondary (foreseeable): Actions that will require further activity in order to achieve the anticipated outcome and are referred to as 'additional measures'; and
- tertiary (inexorable): Actions that would occur with or without input from the EIA feeding into the development process. These include actions that will be undertaken to meet other existing legislative requirements or actions that are considered to be standard practice used to manage commonly occurring environmental effects. These are referred to as 'good practice measures' and are also embedded within the design of the Project.

4.6.3 Opportunities for embedded design measures will continue to be identified throughout the design evolution of the Project and the EIA process, whereby potential significant adverse environmental effects will be fed back into the design process to verify whether they can be avoided or otherwise mitigated in accordance with the hierarchy. Alongside this, good practice measures will be identified with reference to legislative requirements and measures of standard practice to manage commonly occurring effects. These design measures and good practice measures will be included within the Project plans and drawings and thus are integrated into the overall design strategy as embedded measures.

Additional mitigation and residual effects

4.6.4 Embedding environmental measures within the Project design may mean that no significant effects will occur because those measures mitigate potentially significant effects. However, for receptors where significant effects have been concluded even with embedded measures in place, additional mitigation may be appropriate. In such instances these additional measures are identified and an assessment of the residual effects, with this mitigation in place, is undertaken.

[7] IEMA (2016). Environmental Impact Assessment Guide to: Delivering Quality Development [online]. Available at: https://www.iema.net/document-download/7014 [Accessed 06 April 2021].

Monitoring measures

4.6.5 Monitoring measures may be required in relation to any significant negative effects on the environment caused by the Project and imposed as a DCO requirement. Whilst the need for and type of monitoring is still evolving as part of the iterative design process, any monitoring proposed at this stage with respect to significant adverse effects is identified in the environmental aspect chapters (**Chapters 6 to 16**).

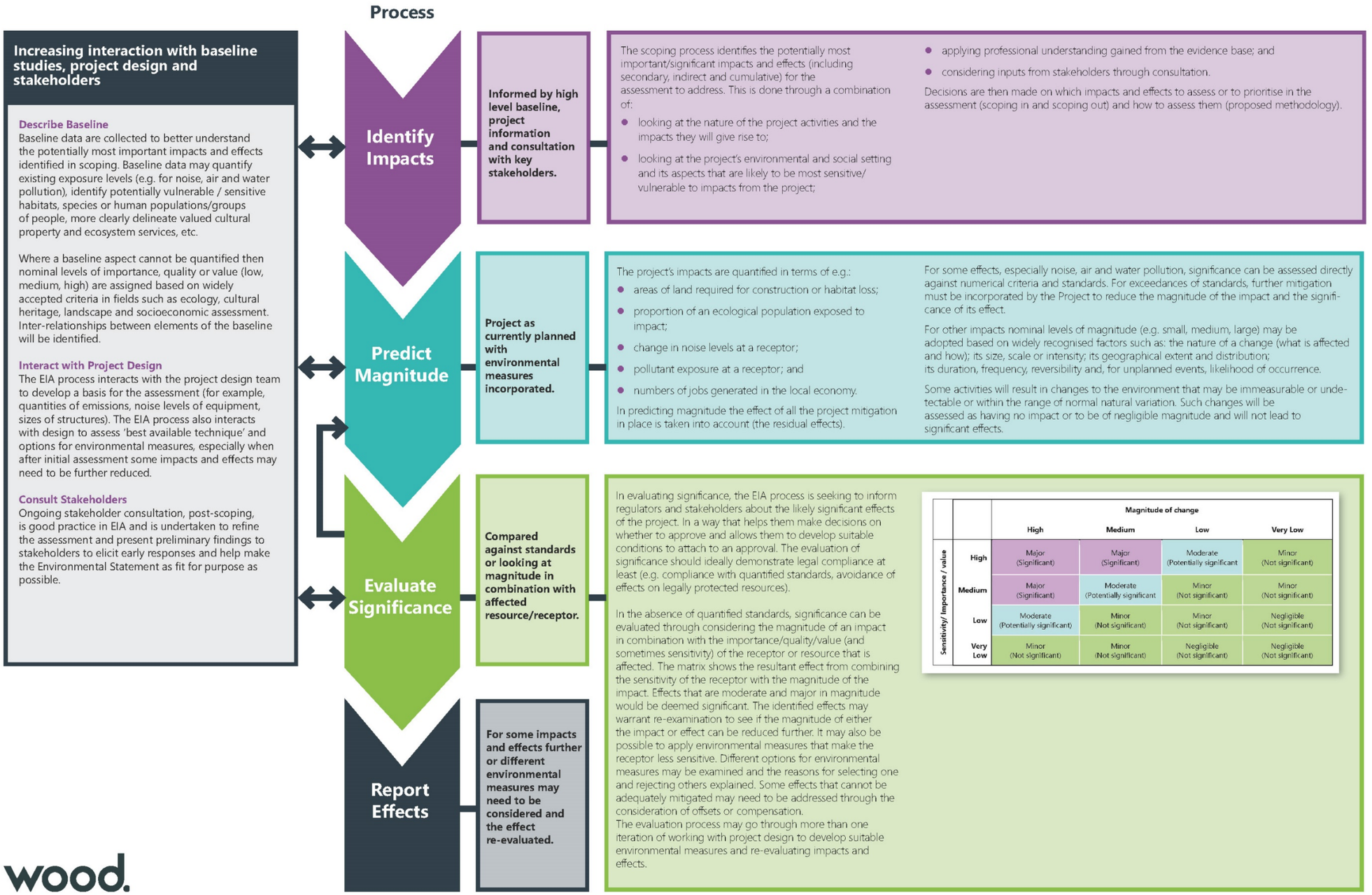
Securing mitigation and monitoring measures

4.6.6 A Mitigation Strategy will be prepared as part of the ES. This will act as the primary tool to capture and agree all embedded environmental mitigation measures, and the mechanisms for securing them. As the intention is to implement all measures as part of the Project, the preliminary assessment of likely significant effects is based on this assumption. Implementation of the embedded environmental measures relied upon in the assessment will be secured in the DCO. For example, this may be done either through the setting of Limits of Deviation or specifying mitigation measures via a DCO requirement.

4.7 Approach to the assessment of significance

4.7.1 **Graphic 4.2** sets out the approach to the evaluation of the significance of likely environmental effects that may arise from the Project. The graphic sets out the general process of evaluating significance incorporating the consideration of magnitude of change, value or sensitivity of receptor and any environmental measures that are embedded into the design of the Project to reduce likely effects. This approach has been applied in undertaking the EIA as part of the PEIR and will also be applied for the ES. Variations to the approach, which may be applicable to specific environmental aspects (e.g. Biodiversity), are detailed in each environmental aspect chapter (**Chapters 6** to **16**).

Graphic 4.2 Approach to assessment of significance



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4.8 Transboundary effects

4.8.1 Transboundary effects are those that would affect the environment in another state within the European Economic Area (EEA)[8]. The EIA Regulations require an ES to consider the transboundary effects of a development (paragraph 5 of Schedule 4). Given the nature of the Project and its proposed location, significant transboundary effects are unlikely. However, the transboundary screening matrix will be completed as detailed in the Planning Inspectorate's Advice Note Twelve[9] and included within the ES.

4.9 Assessment of cumulative effects

Overview

4.9.1 This section sets out the approach to the Cumulative Effects Assessment (CEA) to support consultation being undertaken under Sections 42 and 47 of the Planning Act 2008.

4.9.2 Two types of CEA will be considered in the assessment:

- **Inter-project (combined with other development) cumulative effects**; effects resulting from the Project combining with the same topic-related effects generated by other developments to affect a common receptor. For example, where the effects from traffic flows during the construction of Yorkshire GREEN combine with traffic flows from another development undergoing construction nearby to result in significant effects on a local resident.
- **Intra- project (within the Project) cumulative effects**; individual environmental aspect effects resulting from the Project, which are not significant in their own right, but could combine with other environmental aspect effects from the same development to create effects that are significant. For example, where changes in visual amenity and noise, dust and traffic related effects from the Project construction works combine to result in significant effects on a local resident.

4.9.3 This section presents the inter-project and intra-project assessment methodologies and the results of a screening exercise to identify projects and plans for inclusion in the inter-project CEA with supporting information provided in **Appendix 4C**. A detailed assessment will be included within the ES submitted with the DCO application, where appropriate taking account of the projects and plans identified by relevant stakeholders following statutory consultation in addition to those considered in the preliminary assessment.

4.9.4 The CEA screening exercise and preliminary assessment presented in this chapter is based on publicly available information obtained to date which will be reviewed and updated prior to finalisation of the ES.

Consultation and stakeholder engagement

4.9.5 The approach has been informed by the Scoping Opinion. An overview of the approach to consultation is provided in **Section 4.4**.

[8] The UK consists of England, Scotland, Wales and Northern Ireland, and forms a single EEA State.
[9] Planning Inspectorate (2020). Advice Note Twelve, Transboundary Impacts and Process.

4.9.6 A summary of the relevant responses received in the Scoping Opinion in relation to the CEA and confirmation of how these have been considered within the assessment to date is presented in **Table 4.1**.

Table 4.1 Summary of EIA Scoping Opinion responses relating to cumulative effects assessment

Consultee	Issue Raised	Response
Planning Inspectorate	At this stage, the Applicant has not provided a draft list of other large-scale developments or projects that is proposed to be used as the basis for the assessment of inter-project effects. The Inspectorate expects that a draft list would be prepared and discussed with relevant consultation bodies prior to submission of any DCO application to ensure that there is an agreed basis from which the cumulative effects assessment is undertaken.	Noted. This PEIR includes a long-list (**Appendix 4C**) of relevant plans and projects which has been screened to identify a short-list (**Table 4.5**) in accordance with PINS' Advice Note Seventeen. A supporting figure showing this information is provided (**Figure 4.1**). Therefore, local planning authorities and other relevant prescribed stakeholders are being consulted on the list of plans and projects to be included within the detailed Cumulative Effects Assessment (CEA) reported in the ES
Natural England	The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other 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."	Noted. This PEIR includes a long-list (**Appendix 4C**) of relevant plans and projects which has been screened to identify a short-list (**Table 4.5**) in accordance with PINS' Advice Note Seventeen. A supporting figure showing this information is provided (**Figure 4.1**). Therefore, local planning authorities and other relevant prescribed stakeholders are being consulted on the list of plans and projects to be included within the detailed Cumulative Effects Assessment (CEA) reported in the ES
Natural England	It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and a thorough assessment of the 'in	Noted. This PEIR includes a long-list (**Appendix 4C**) of relevant plans and projects which has been screened to identify a short-list (**Table 4.5**) in accordance with

Consultee	Issue Raised	Response
	combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.	PINS' Advice Note Seventeen. A supporting figure showing this information is provided (**Figure 4.1**). Therefore, local planning authorities and other relevant prescribed stakeholders are being consulted on the list of plans and projects to be included within the detailed Cumulative Effects Assessment (CEA) reported in the ES. The assessment reported in the aspect chapters is based on the effects from all elements forming part of the Project.
	The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.	Noted. This PEIR includes a long-list (**Appendix 4C**) of relevant plans and projects which has been screened to identify a short-list (**Table 4.5**) in accordance with PINS' Advice Note Seventeen. A supporting figure showing this information is provided (**Figure 4.1**). Therefore, local planning authorities and other relevant prescribed stakeholders are being consulted on the list of plans and projects to be included within the detailed Cumulative Effects Assessment (CEA) reported in the ES
North Yorkshire County Council	Cumulative Effects – There are likely to be cumulative effects in conjunction with other major developments. There are current planning applications for other major developments within 1km of the site, including a motorway service area at Lumby (2019/0547/EIA Selby DC), gas turbines adjacent to Monk Fryston Substation (2020/0594/FULM Selby DC), EIA scoping for a new quarry at Lumby (NY/2020/0204/SCO NYCC)."	At this stage a long list of potential developments has been identified and screened to determine a short list of development to be assessed and reported in the ES. The short list includes the developments listed in NYCCs scoping response (**Table 4.5**).
Skelton Parish Council	Whilst the EIA Scoping Report provides a wealth of information in respect to the project, no mention could be found of proposed sites in the York Local Plan, in particular the large scale housing developments proposed for the area North of York (ST14 Land North of Clifton	At this stage a long list of allocated sites has been identified and screened to determine a short list of development to be assessed and reported in the ES. The short list the allocation listed in Skelton Parish Councils scoping response (**Table 4.5**).

Consultee	Issue Raised	Response
	Moor) located between Skelton/Wigginton.	
Network Rail	Network Rail is delivering the Trans-Pennine Route Upgrade (TRU) Project, which involves improvements to the railway line between York and Manchester via Leeds. Construction is underway and is anticipated to continue until around 2027. The Yorkshire GREEN Project interfaces with the TRU route at the point where the existing 275kV overhead line crosses the railway close to Huddleston Old Wood, about 2.5km east of the A1M. TRU works in this location will include the installation of overhead line electrification equipment and track replacement. If the Yorkshire GREEN project involves works to the existing 275kV overhead line in this location, Network Rail should be consulted on the proposed timing and details of the proposed works. Additionally, it is possible that construction works for TRU and the Yorkshire GREEN Project could overlap and Network Rail would welcome the opportunity to discuss construction proposals to ensure cumulative effects of construction are minimised.	The ES will include a CEA considering the effects of the Project in cumulation with other development. The PEIR sets out further detail on the proposed approach to CEA, including a long list which has been screened to identify a short list of other developments proposed to be assessed and reported in the ES. The long list includes the EIA Screening Opinion request (2019/1106/SCN) included for the TRU works between Church Fenton and York which is proposed to be screened out of further detailed assessment (**Appendix 4C**). The applicant will engage with Network Rail as required.

Inter-project cumulative effects assessment

4.9.7 Inter-project effects concern the identification and assessment of effects of the Project combined with effects of other reasonably foreseeable proposed development, for example development for which consent has been applied for or granted or for which a local authority has allocated land for. These are referred to as 'other development'. Such effects can be additive or synergistic or more rarely, antagonistic and the EIA will have regard for the potential for all three types of effect. These terms are explained below:

- Additive effects are where the cumulative effect is equal to the sum of the interaction of a number of individual effects. For example, the loss of two separate areas of woodland of 1Ha each from two separate developments results in a cumulative loss of 2Ha of woodland.
- Synergistic effects are where the cumulative effect is greater than, or different from, the sum of the individual effects. For example, noise emissions from two separate developments combine to have a significant effect on a receptor when individually each development would not result in a significant effect.

- Antagonistic effects are when the interaction of a number of impacts counteract or neutralize each other so are less than the sum of the individual. For example, warming can offset ocean acidification by decreasing the solubility of carbon dioxide.

4.9.8 Whilst there is no standard approach to the CEA, the Planning Inspectorate has published Advice Note Seventeen which provides useful guidance in setting out a process for the identification and assessment of 'other development'. Hence, the EIA will follow the methodology as defined in Advice Note Seventeen[10]. This is a four-stage approach shown in **Table 4.2**.

Table 4.2 - Summary of PINS Advice Note 17 CEA process summary

Stage	Title	Description
Stage 1	Establish the ZoI and identify the long list of 'other development'	Each environmental aspect assessment included in the ES will have a Zone of Influence (ZoI) within which the potential for cumulative effects will be considered. These have been established through desk studies and modelling. A desk study of planning applications, development plans and frameworks and other available sources will be completed within this ZoI to form a long list of 'other developments'. The ZoI is measured from the draft Order Limits for the Project.
Stage 2	Identify a short list of 'other development' for CEA	Professional judgement from technical specialists will refine the long list of 'other developments' to identify those that could give rise to a significant effect cumulatively with the Project. This will be completed in consultation with relevant stakeholders and form the shortlist of 'other developments' to be assessed.
Stage 3	Information gathering	Information will be gathered on the 'other developments' in the shortlist to inform the assessment.
Stage 4	Assessment	Each of the environmental aspects will complete an assessment of the relevant 'other developments' in the shortlist within their ZoI.

4.9.9 For the purposes of this PEIR, Stage 1 and 2 have been completed in order to agree the short-list of 'other developments' to be taken forward for assessment in the ES. Once this list is finalised, Stages 3 and 4 will be completed, with a detailed CEA included as part of the ES.

Stage 1: Project ZoI and long list of 'other development'

4.9.10 In order to establish the long list of 'other development', the ZoI for each of the environmental aspects has been established through expert opinion and reference to accepted industry guidance and standards relevant to the environmental discipline. A summary of each ZoI is shown in **Table 4.3.** Comments on the ZoIs received from relevant consultees during statutory consultation will be taken into account as appropriate in the detailed CEA to be reported in the ES.

[10] Planning Inspectorate (2019). Advice note seventeen: Cumulative effects assessment relevant to nationally significant infrastructure projects, Version 2 [online]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2015/12/Advice-note-17V4.pdf [Accessed 06 April 2021].

4.9.11 PINS Advice Note 17 acknowledges that certain assessments, such as transport and associated operational assessments of vehicular emissions (including air and noise) may inherently be cumulative assessments. This is because they may incorporate modelled traffic data growth for future traffic flows. Where these assessments are comprehensive and include a worst-case within the defined assessment parameters, no additional cumulative assessment of these aspects is required. This is reflected in **Table 4.3**. This position will be kept under review in the event that any new 'other development' is identified that has potential to exceed the previous worst-case assumptions based on growth data (for example, not previously included in modelled forecasts).

Table 4.3 - Environmental aspects CEA ZoI

Environmental Aspect	Spatial ZoI (distance from draft Order Limits)	Justification and Scope
Landscape and Visual Amenity	6km	Reflects the likely maximum geographical extent for significant LVIA effects arising from other development that may overlap with the Project.
Historic Environment	6km	Reflects the likely maximum geographical extent for significant effects arising from other development that may overlap with the Project.
Biodiversity	2km	Protected habitats and species (with the exception of bats) and non-designated sites
	5km	Bats
	5km	Nationally designated sites
	15km	Internationally designated sites (non-ornithological)
	20km	Internationally designated sites (ornithological)
Hydrology	Surface water body catchments that the Project intersects	Encapsulates the WFD surface water body catchments that the Project intersects and consequently may interact with.
Geology and Hydrogeology	1km	Reasonable maximum extent over which the Project could potentially contribute to cumulative effects in relation to contamination migration (e.g. groundwater, ground gas), considering the nature of the development activities associated with the Project. This ZoI is consistent with the Study Area of 500m i.e. matches the maximum extent at which the Study Area could overlap with a 500m buffer from another development

Environmental Aspect	Spatial ZoI (distance from draft Order Limits)	Justification and Scope
Agriculture and Soils	County boundaries that the Project intersects	Consideration given to the loss of BMV within the same administrative boundary.
	Draft Order Limits	For soils the effect is only cumulative if the same soil is disturbed twice and therefore is limited to the draft Order Limits
Air Quality	350m	Dust emissions – spatial scope identified in line with Institute of Air Quality Management guidance on dust assessment[11]
	200m	Road traffic emissions – spatial scope identified in line with IAQM guidance
Noise and Vibration	800m	ZoI accounts for the way that the noise will propagate from its source, its frequency content and attenuation of distance to receiver.
Health and Wellbeing	6km	As the assessment of health effects is based on the assessment of other aspects (traffic, landscape and visual, noise, air quality, hydrology and socio-economics) the ZoI is based on other chapter ZoIs and considered sufficient to identify health receptors which could be impacted by the Project in cumulation with other development.
Socio-economics	6km (maximum extent)	Based on other chapter ZoIs and potential effects that may affect socio-economic receptors.

4.9.12 The largest ZoI relates to potential effects on Internationally designated sites (up to 20km from the draft Order Limits). The total linear extent of the draft Order Limits is approximately 40km in length and applying a 20km buffer around the draft Order Limits including Osbaldwick Substation, results in a potential search area of approximately 3100km^2. In order to undertake a proportionate approach to identifying potential other development and allocated sites which could interact with the Project the maximum ZoI has been refined as follows.

4.9.13 The Lower Derwent Valley Ramsar/SPA is located 6.1km south-east from the draft Order Limits at Osbaldwick Substation, where the Project comprises the replacement of and amendments to existing infrastructure within existing operational land. This Ramsar/SPA is also approximately 15km from the North-west of York Area, where new infrastructure is proposed.

4.9.14 The **Preliminary Habitat Regulations Assessment Report** and biodiversity assessment (**Chapter 8: Biodiversity**) have identified that no likely significant effects are predicted on this receptor and that no pathways for any effects exist. Bird survey results have recorded bird species, which are qualifying features for these designations,

[11] Institute of Air Quality Management (2016). Guidance on the Assessment of Dust from Demolition and Construction.

within the draft Order Limits to the north-west of York. The distance between the SPA and the location where these bird species were recorded (15km) is greater than typical daily commuting distances for the species recorded. It is unlikely that these species would regularly and preferentially cross the intervening urban area of York whilst suitable habitats are available within the SPA and its functionally linked habitat.

4.9.15 Therefore as there are no pathways for any effects from the Project a cumulative effect cannot occur. Therefore developments and allocations in the southern and eastern areas of York and those further to the south, south-east and east which would fall within the 20km buffer as screened out of the assessment. Developments and allocations in north, north-west and west of York and beyond fall within the 6km ZoI identified for other aspects and are therefore identified on the long list of development.

4.9.16 The **Preliminary Habitat Regulations Assessment Report** and biodiversity assessment (**Chapter 8: Biodiversity**) has scoped out potential effects on SACs which are more than 2km from the draft Order Limits which are not designated for bat or ornithological interest features. Within the 15km buffer referenced in **Table 4.3** such sites include:

- The River Derwent SAC which is 6.1km east of Osbaldwick at its closest point and designated for freshwater species and habitat; and
- Strenshall Common SAC which is 3.5km from the closest draft Order Limits and is designated for its heathland habitats.

4.9.17 The potential for cumulative effects on these receptors is much more likely in closer proximity (i.e. within the 2km ZoI typically used for such designations in assessing biodiversity effects – see **Chapter 8: Biodiversity**).

4.9.18 For the River Derwent SAC, given the distance between the SAC and the draft Order Limits, there are no effect pathways present and therefore there could be no cumulative effects in combination with any proposed development.

4.9.19 Although the draft Order Limits are 3.5km from Strenshall Common SAC, the closest area of construction works is approximately 6km from the SAC and there are no pathways for effects associated with air quality (**chapter 13: Air Quality**). The 6km ZoI is therefore considered sufficient to identify any potential development which could result in cumulative effects on this receptor, although it should be noted that no impact pathways associated with the Project exist for this designated site and therefore a cumulative effect cannot occur.

4.9.20 Therefore, the biodiversity ZoI has been refined to 6km in line with the ZoI set out in **Table 4.3** for other aspects included landscape and visual and historic environment.

4.9.21 Given the minor works at Osbaldwick Substation, the appearance of the existing infrastructure at Osbaldwick will undergo very minor changes and therefore cumulative effects in terms of setting, landscape character and views are likely to be very limited and mostly occur during the construction phase of the Project. Therefore, for this element of the Project the ZoI of influence for identifying potential developments and allocations for the long list has been reduced to 3km.

Proposed criteria for identifying 'other development'

4.9.22 Planning Inspectorate Advice Note 17 acknowledges that the approach to defining which 'other developments' to include in the CEA depends on the availability of information necessary to conduct a CEA. This will partly depend on the status of the

relevant ‘other developments’ and therefore the guidance consequently groups ‘other developments’ into tiers, which reflect the likely degree of certainty attached to each development occurring, with Tier 1 being the most certain and Tier 3 the least certain. The criteria associated with the three Tiers is set out in **Table 4.4**.

Table 4.4 - Proposed criteria for identifying other developments

Hierarchy of other Developments	Proposed criteria of other Developments
Tier 1	Under construction.
	Permitted application(s), where the project is classified as ‘major development’, whether under the *Planning Act 2008* or other consent regimes, but not yet implemented.
	Submitted application(s), where the project is classified as ‘major development’, whether under the *Planning Act 2008* or other consent regimes, but not yet determined.
Tier 2	Projects on the Planning Inspectorate’s Programme of Projects, and/or the relevant local planning authorities planning portal where the project is classified as ‘major development’ and a scoping report has been submitted.
Tier 3	Projects on the Planning Inspectorate’s Programme of Projects, and/or the subject of pre-application discussion with a relevant LPA, where a scoping report has not been submitted. Projects registered on the local planning authority’s portal classed as major development but do not require EIA.
	Identified in the relevant Development Plan (and emerging Development Plans - with appropriate weight being given as they move closer to adoption) recognising that much information on any relevant proposals will be limited.
	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.

4.9.23 Information on ‘other developments’ has been gathered from the following sources:

- Local authority planning portals;
- Relevant Local Plans;
- Planning Inspectorate’s programme of projects; and
- Developer / project websites, where available.

Temporal scope

4.9.24 The criteria have been applied to all planning and development consent applications submitted (and which are either consented or pending determination) in the last five years over the maximum extent of all aspect ZoIs (i.e. the widest aspect ZoI area). Five years is selected as planning permissions typically expire after a period of three to five years (unless an application for extension is permitted), and there are no made development consent orders which apply within the ZoI area.

4.9.25 For the purpose of producing the long list of 'other developments', the 5-year period runs from August 2017 to the end of August 2022. For the PEIR, consideration has been given to the period August 2017 to end of July 2021; the long list will be reviewed prior to the DCO submission and any additional Tier 1 – 3 developments will be included in the ES as appropriate.

4.9.26 Where the construction of 'other developments' is expected to be completed before construction of the Project commences, and the effects of those projects are fully determined, effects arising from them are considered as part of the future baseline and therefore as part of the assessment of both the construction and operational phases. The ES will therefore clearly distinguish between projects forming part of the future baseline and those in the CEA.

Stage 2: Short list of 'other development'

4.9.27 In order to determine that the CEA is proportionate, Stage 2 involved a high-level information gathering exercise in order to determine:

- **The scale and nature of 'other development'**: whether the scale and nature of the other development identified in the ZoI was likely to interact with the Project;
- **The temporal scope of 'other development'**: whether the other development had overlapping construction, operational and/or decommissioning phases with the Project; and
- **Any other relevant factors**: whether any other factors, such as the sensitivity of the receiving environment or uncertainty in the potential effects merit further assessment of the potential cumulative effects; and
- **Consultation**: requests from relevant stakeholders for the inclusion of specific projects and / or plans within the CEA.

4.9.28 Information was therefore captured about the other developments including the proposed programme of consenting, construction, operation and decommissioning to determine whether there is overlap and any potential for interaction with the Project. Consideration was given to the scale and nature of the other developments identified in the ZoI, to determine whether they were likely to interact with the Project and to result in a cumulative effect.

4.9.29 Professional judgement was used in order to avoid excluding 'other development' that was close to the threshold limits but had characteristics likely to give rise to a significant effect; or which could give rise to a cumulative effect by virtue of its proximity to the Project. Similarly, professional judgement was applied where 'other development' was considered to not give rise to discernible effects.

4.9.30 Other developments were also scoped-out on the basis that the development:

- was understood to have already undergone construction or will be complete and operational before construction of the Project and therefore is part of the current baseline or will form part of the future baseline conditions and has been considered on that basis;
- was of sufficient distance from the Project that significant cumulative effects are not likely to occur; or
- the closest element of the Project comprised existing infrastructure undergoing reconductoring, for example the existing Monk Fryston to Poppleton 275kV XC/XCP overhead line. The overhead line already forms part of the baseline environment, and this was taken into account in whether there could be effects in cumulation with other development in proximity to this part of the Project, particularly in relation to long-term landscape and visual effects and setting effects on historic environment receptors. However, the potential for cumulative effects during construction was considered.

4.9.31 **Table 4.5** sets out the short list of other development which will be taken forward into the assessment for the ES and identified, at this preliminary stage, for which aspects there could be significant effects.

Table 4.5 - Inter-related effects – short listed projects for CEA

ID	Development and Tier	Local Authority	Location, Distance and Direction from draft Order Limits	Aspects with Potential for Significant Cumulative Effects
2, 3, 4, 5, 8, 10	Developments located in and around Tockwith 19/01734/FULMAJ (63 dwellings, 2.3Ha); 18/04528/FULMAJ (39 dwellings, 1.43Ha; 18/04529/FULMAJ (landscaping, 1.43Ha); 17/04919/FULMAJ (74 dwellings, 2.93Ha, 18/01802/OUTMAJ (mixed use, 6.7Ha); 18/04395/REMMAJ (80 dwellings). Tier 1	Harrogate Borough Council	Tockwith, 2.6 to 3.6km west	Historic environment (to further assess potential for cumulative effects on setting of Marston Moor Registered Battlefield).
13	20/01004/FUL Construction of an additional free range egg laying unit dimensions 127.5m x 20.8m, with an eaves height of 3.7m and a ridge height of 6.528. The development includes additional infrastructure of 2 feed bins, and an attenuation pond for surface water drainage. Site: 1.00 ha, Gross new internal floorspace: 2652 sq m Tier 1	Hambleton District Council	Shipton By Beningbrough, 780m west	Historic environment, landscape, biodiversity, socio-economics, health, hydrology, hydrogeology, agriculture, noise
35	2019/0547/EIA Proposed construction of a motorway service area Tier 1	Selby District Council	west side of A1(M), A63 junction, 200m west	All Aspects
56	2020/0594/FULM: Installation and operation of 11no. 4.5MW gas engines and ancillary development. Tier 1	Selby District Council	Development adjacent to south of Monk Fryston Substation	All Aspects
39	2021/0633/FULM: Installation and operation of a battery storage facility and ancillary development Tier 1	Selby District Council	Development adjacent to south of Monk Fryston Substation	All Aspects

ID	Development and Tier	Local Authority	Location, Distance and Direction from draft Order Limits	Aspects with Potential for Significant Cumulative Effects
40	2021/0789/FULM: Construction of a zero-carbon energy storage and management facility including containerised batteries, synchronous condensers and associated infrastructure, access and landscaping. Tier 1	Selby District Council	Development adjacent to south of Monk Fryston Substation	All Aspects
42	2021/0927/COU: Change of use from an agricultural field to a community park space Tier 1	Selby District Council	Towton, 2.3km east	Historic environment (to further assess potential for cumulative effects on setting of Towton Registered Battlefield).
64	19/01840/FULM: Erection of an energy storage facility with up to 42no. battery storage units, 21no. reservoir units and ancillary structures Tier 1	York City Council	Adjacent to south of Osbaldwick Substation	All aspects scoped into PEIR
65	21/00092/FULM: Erection of 2no. three storey office buildings (use class E) and 2no. two storey light industrial buildings (use classes B2 and B8) together with parking and new access arrangements following demolition of 2no. existing buildings in commercial and light industrial / storage use Tier 1	York City Council	370m north of Osbaldwick Substation	All aspects scoped into PEIR, likely to be limited to construction effects as development is replacing existing similar built development
71	14/02798/FULM (reclamation works, development platform), 15/00524/OUTM (,100 dwellings, community uses, public open space) Tier 1	York City Council	Plantation Drive, York, 2.5km south	Landscape and visual, historic environment setting effects on receptors in York

ID	Development and Tier	Local Authority	Location, Distance and Direction from draft Order Limits	Aspects with Potential for Significant Cumulative Effects
85	NY/2021/0098/A27 Extension for application to Jackdaw Quarry to south of existing quarry. Tier 1	North Yorkshire County Council	Jackdaw Crag Quarry, Moor Lane, Stutton, up to 500m east	Historic environment, landscape, biodiversity, socio-economics, health, hydrology, hydrogeology, agriculture, noise
86	NY/2020/0204/SCO: Request for an EIA Scoping Opinion for Mineral extraction of limestone with restoration back to existing ground level through backfilling with inert material Tier 2	North Yorkshire County Council	Land off A63, Lumby. Partly within draft Order Limits	All aspects
88	NY/2017/0268/ENV: Consent to extend quarry to south (phase 5), NY/2019/0165/ENV: Waste recycling and restoration by infill (on phases 1 to 4, phase 5 excluded) – crushing/screening of materials on site – either for use in restoration or moved off site for recycling Tier 1	North Yorkshire County Council	Newthorpe Quarry, 1km west	Historic environment, landscape, biodiversity, socio-economics, health, agriculture, hydrology, hydrogeology,
89	NY/2018/0009/FUL: Quarry restoration including extraction of remaining 30,000 tonnes of limestone and importation of 600,000 tonnes of construction waste to complete restoration and export of 300,000 tonnes of secondary aggregate Tier 1	North Yorkshire County Council	Stutton, Tadcaster, 1.2km east	Historic environment, landscape, biodiversity, socio-economics, health, agriculture, hydrology
91	18/01884/OUTM (outline), 20/00710/REMM (RM): Mixed-use development of up to 379,729 m2 of floorspace Gross External Area (GEA) primarily comprising up to 2,500 homes (Class C3), between 70,000 m2 and 87,693 m2 of office use (Class B1a), up to 11,991 m2 GEA of retail and leisure	York City Council	York Central Leeman Road York, 5km south-east	Landscape and visual, historic environment setting effects on receptors in York

ID	Development and Tier	Local Authority	Location, Distance and Direction from draft Order Limits	Aspects with Potential for Significant Cumulative Effects
	uses (Classes A1-A5 or D2), hotel with up to 400 bedrooms (Class C1), up to 12,120 m2 GEA of non-residential institutions (Class D1) for expansion of the National Railway Museum, multi-storey car parks and provision of community uses all with associated works. Tier 1			
94	ST14: Land West of Wiggington Road - to deliver a sustainable garden village of approximately 1348 dwellings (1200 during plan period) (55Ha) Tier 3	York City Council	2.5km east (located 1.5km east of Skelton)	Historic environment, landscape, socio-economics, agriculture, health, biodiversity
99	Site allocation for residential development (TAD2: 105 dwellings) Tier 3	Selby District Council	600m east, located on western edge of Tadcaster	Historic environment, landscape, biodiversity, socio-economics, health, hydrology, geology and hydrology, agriculture, noise

4.9.32 The long list of the 'other developments' identified using the search criteria are included as **Appendix 4C**. This includes information as to why these developments were screened out from Stage 2 of the CEA process.

4.9.33 At this preliminary stage of the assessment the short list of other developments indicates that there is the potential for likely significant cumulative effects on receptors in and around the existing Monk Fryston Substation as a result of the construction and operation of a number of potential developments in this area (the proposed gas peaking plant and battery storage developments south of the existing substation, the motorway service station to the west and potential mineral extraction development north of the A63). There are also quarry extraction projects and a housing allocation in and around Tadcaster which could contribute to effects on receptors impacted by the Project in this area. Receptors in Shipton could be impacted by the construction and operation of the agricultural unit proposed north of the village and receptors in and around both Shipton and Skelton could experience effects from the Project in cumulation with the major housing allocation east of Skelton.

Stage 3: Information gathering

4.9.34 Further information on the short-listed developments will be gathered to inform the detailed CEA based on publicly available information such as that submitted in support of applications for consent. This includes:

- Proposed design and location information;
- Construction and operational timescales; and
- Results of any environmental assessments completed for the other developments.

Stage 4: Assessment of other development

4.9.35 Stage 4 of the assessment which will be progressed and reported in the ES will accord with the methodology presented in PINS' Advice Note 17. The assessment will be undertaken with information which is available at the time of assessment. Consequently, there may be information gaps for some of the other development proposals. Where this occurs, such gaps will be discussed and acknowledged within the assessment.

4.9.36 All short-listed Tier 1 and Tier 2 other development will be assessed. The assessment for Tier 3 other development will be high level in comparison to Tier 1 and 2, owing to the information which will be available. The significance criteria used to identify likely significant effects will be consistent with the criteria presented in **Section 4.7**.

Intra-related effects

4.9.37 Paragraph 5(2)(e) of the EIA Regulations 2017 requires that the EIA consider the interaction of environmental effects associated with the Project. The intra-related effects assessment considers likely significant effects from multiple impacts and activities from the construction, operation and decommissioning of Yorkshire GREEN on the same receptor, or group of receptors.

4.9.38 Intra-related effects can be the following:

- Project lifetime effects: i.e., those arising throughout more than one phase of the Project (construction, operation, and decommissioning) to interact to potentially create a more significant effect on a receptor than if just one phase were assessed in isolation; and

- Receptor led effects: assessment of the scope for all effects to interact, spatially and temporally, to create inter-related effects on a receptor (or group). Receptor-led effects might be short term, temporary or transient effects, or incorporate longer term effects.

4.9.39 There is no standard approach to the assessment of intra-project effects, although it should be carried out with reference to guidance and to professional judgement.

4.9.40 Common receptors for environmental aspects have been identified, and consideration given to whether the aspect effects on any common receptors are likely to combine. This has identified:

- the common receptor(s) from the individual aspect assessments;
- the impact source pathways that can affect the common receptor(s);
- the potential effects on the identified common receptor(s); and
- the inter-related effects across the construction, operation and maintenance and decommissioning phases where appropriate.

4.9.41 It should be noted that some elements of the preliminary assessment inherently consider intra-related effects. For example, the terrestrial ecology and nature conservation assessment of effects takes into account the potential for multiple impacts affecting particular features such as disturbance effects on faunal receptors resulting from noise and vibration, visual disturbance and lighting. Where this is the case, this is described within the individual aspect chapter.

4.9.42 Given the preliminary stage of the process, sufficient detail is not currently available to enable a detailed assessment of intra-related effects to be undertaken.

4.9.43 Therefore at this stage the preliminary assessment of intra-related cumulative effects has focused on those receptors where potential significant effects have been predicted in respect of at least two or more topics.

4.9.44 The individual aspect chapters have identified preliminary environment effects upon those receptors within their respective study areas. This information has been reviewed and a matrix developed to summarise where different aspects have identified the same receptors and provides a preliminary assessment of likely cumulative significant effects. Only receptors that would experience residual effects that have the potential to combine with a different type of effect, have been included and 'negligible' or 'neutral' effects have been excluded from the matrix.

4.9.45 Effects that are greater than 'negligible', 'neutral' or similar, have been included in the matrix, including effects that are, for example 'slight' or 'very low', and are not considered significant on their own, but which could combine with a different type of effect to result in an intra-project effect. Where an aspect assessment only distinguishes between significant and not significant effects, rather than providing a scale of significance, professional judgement has been used to determine which non-significant residual effects have the potential to result in intra-project effects.

4.9.46 **Table 4.6** provides a preliminary summary of the significance of intra-related effects from the Project. As construction noise effects have not yet been assessed these are marked as 'to be assessed' (TBA).

Table 4.6 Common receptors and preliminary significance of identified effects

Receptor	Noise	Air Quality	Landscape and Visual	Historic Environment	Biodiversity	Hydrology	Traffic	Socio-economics
North-west of York Area								
Residential receptors/properties/ businesses around Corban Lane	TBA	NS	S (Woodstock Lodge) operation	NS		NS	NS	S (Woodstock Lodge)
Residential receptors/properties/ businesses in Shipton by Beningborough	TBA	NS	NS	NS		NS	NS	NS
Residential receptors/properties/ businesses in Skelton	TBA	NS	NS		NS	NS	NS	NS
Residential receptors/properties/ businesses in Nether Poppleton	TBA	NS	NS		NS	NS	NS	NS
Residential receptors/properties/ businesses in Moor Monkton	TBA	NS	NS		NS	NS	NS	NS
Residential receptors/properties/ businesses receptors in Overton	TBA	NS	NS		NS	NS	NS	NS

Receptor	Noise	Air Quality	Landscape and Visual	Historic Environment	Biodiversity	Hydrology	Traffic	Socio-economics
Scattered Residential receptors/properties/ businesses	TBA	NS	S (Dwelling on Scagglethorpe Moor), Overton Grange (operation), New Farm (operation)		NS	NS	NS	NS
Overton Road (including NCN 65)	S (traffic)	NS	S for users of cycle route and road (construction, operation YR1)	NS				S (construction)
PRoWs			PRoWs (west of Newlands Farm, operation), east of Shipton (construction, operation)				NS	NS
River Ouse Corridor (LWS, candidate SINC)			S (construction)		NS	NS	NS	NS
Tadcaster								
Residential receptors/properties/ businesses around Tadcaster area	TBA	NS	S (Red Brick Farm House, Moor Lane	NS		NS	NS	NS

Receptor	Noise	Air Quality	Landscape and Visual	Historic Environment	Biodiversity	Hydrology	Traffic	Socio-economics
			(construction, operation yr 1)					
Roads			A659 (construction)				A659 (construction)	
Monk Fryston Area								
Residential receptors/properties/ businesses around Monk Fryston Area	TBA		S (Pollums House Farm (Construction, operation 1)					
Roads			Rawfield Lane (construction)					
Other receptors								
WFD waterbodies, watercourses, adopted drains (other than River Ouse)					NS	NS		
Clifton Ings and Rawclifffe SSSI, Sherburn Willows SSSI, Overton Borrow Pit SSSI, Heaulaugh Marsh SINC					NS	NS		

4.9.47 **Table 4.6** shows that preliminary significant intra-project related effects are likely to be related to construction works, particularly in close proximity to where works are more intensive around the construction compounds. There is the potential for intra-project related effects at Woodstock Lodge both as a visual receptor and a business. At the proposed Overton Substation the preliminary assessment indicates that those using Overton Road, including cyclists using the National Cycle Network Route, are likely to experience significant effects from construction noise as well as from construction traffic and visual effects whilst using this route. In the Tadcaster area further assessment of construction noise is needed to identify if there are intra-project effects on receptors in this area. The preliminary assessment indicates there could be such effects on users of the A659 with those using this route experiencing significant visual effects between the A64 and Garnet Lane and significant traffic effects further north between Tower Crescent and Station Road. As with Tadcaster, further assessment of construction noise effects is needed to determine if there intra-project effects on receptors around the proposed Monk Fryston Substation and associated construction compounds in this area.

4.9.48 Following Statutory Consultation, the intra-related effects assessment will be updated, and a detailed assessment will be reported in the ES together with any embedded measures which would be implemented.

4.10 COVID-19 implications

4.10.1 The restrictions imposed during the COVID-19 pandemic in 2020 and 2021 have had potential implications for the Project, in particular with regard to normal consultation activities and conducting site surveys. The following measures have been undertaken by the project team to achieve as much as possible during the EIA programme whilst working fully within the restrictions, and being mindful of and managing any potential implications:

- EIA surveys that do required land access whilst restrictions were in place were planned to proceed within appropriate seasons this calendar year (2021) where possible, whilst applying social distancing measures to keep surveyors and members of the public safe. A watching brief will continue to be maintained on the progress of data collection throughout the EIA, and progress will be shared with appropriate stakeholders, should restrictions be reintroduced during this time.
- EIA surveys that may not require land access but rely on the baseline environment to reflect the normal situation such as noise and traffic surveys or that are significantly hindered this calendar year because of the restrictions imposed by the pandemic have been planned for a time when survey results will reflect a more normal pattern (i.e. once restrictions have been lifted).
- In accordance with the Planning Inspectorate's Advice Note Seven[12], the applicant is conducting early targeted consultation with some stakeholders. The purpose of this engagement is to share and seek agreement on assessment approaches and to obtain as much relevant environmental information as possible in advance of key project milestones. As recognised in Advice Note Seven, the Planning Inspectorate expects consultation bodies to work with applicants in finding suitable approaches to

[12] Planning Inspectorate (2020). Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements, Version 7 [online]. Available at: https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2017/12/Advice-note-7.pdf [Accessed 06 April 2021].

aid the robust preparation of applications, and the applicant will continue to engage with stakeholders on this basis.

- The project team is keeping abreast of the advice issued with regard to site surveys and consultation activities such as that issued by the National Infrastructure Planning Association, Natural England, Chartered Institute of Ecology and Environmental Management (CIEEM) and the Planning Inspectorate. In addition, all activity will follow Government guidance on COVID-19.

4.11 Environmental aspects scoped out of the PEIR

Electro Magnetic Fields

4.11.1 All equipment that generates, distributes or uses electricity produces Electric and Magnetic Fields (EMFs), and EMFs also occur naturally. The UK power frequency (the frequency at which electric power is generated and distributed) is 50 Hertz (Hz) which is the principal frequency of the EMFs produced, which are also known as Extremely Low Frequency (ELF) EMFs.

4.11.2 The strength of electric fields depend on the operating voltage of the equipment producing them and are measured in V/m (volts per metre). The voltage applied to equipment is a relatively constant value. Magnetic fields depend on the electrical currents flowing, which vary according to the electrical power requirements at any given time and are measured in μT (microtesla). Both fields diminish rapidly with distance from the source and are present in all areas where electricity is in use (e.g. office and homes), arising from electric cabling and equipment in the area.

4.11.3 All overhead lines produce EMFs, and these tend to be highest directly under an overhead line and decrease to the sides at increasing distance. Underground cables produce no external electric fields, and the magnetic field falls more rapidly, falling to the levels typically found in UK homes within approximately 20m compared to approximately 150m for an overhead line. Substations and CSECs do not produce EMFs in excess of the exposure limits outside their boundaries.

Regulatory and Planning Policy Context

4.11.4 All relevant policies and guidance, such as those contained within the National Policy Statements EN-1[13] and EN-5[14] have been reviewed and are embedded within National Grid's design specifications and policies for all assets.

4.11.5 The National policies, guidance and legislation are explained and documented below.

4.11.6 NPS EN-5 (July 2011)[14], gives clear guidance on the EMF requirements of all electricity infrastructure projects stating (paragraph *2.10.9) 'Before granting consent to an overhead line application, the IPC should satisfy itself that the proposal is in accordance with the guidelines, considering the evidence provided by the applicant and any other relevant evidence.'* Paragraph 2.10.11 states '*Where the applicant cannot demonstrate that the line will be compliant with the Electricity Safety, Quality and Continuity Regulations 2002, with the exposure guidelines as specified in the Code of Practice on compliance, and with the policy on phasing as specified in the Code of Practice on optimal phasing then the IPC should not grant consent*.'

[13] Department of Energy and Climate Change (2011) Overarching National Policy Statement (NPS) for Energy (EN-1)
[14] Department of Energy and Climate Change (2011) National Policy Statement for Electricity Network Infrastructure (EN-5)

4.11.7 A simplified route map for dealing with EMFs is provided in NPS EN-5 and is reproduced in **Graphic 4.3.**

4.11.8 Whilst there are no statutory regulations in the UK that limit the exposure of people to power-frequency EMF, responsibility for implementing appropriate measures for the protection of the public lies with the UK Government. In 2004, the Government adopted guidelines published in 1998 by the International Commission on Non-Ionizing Radiation Protection (ICNIRP)[15] in line with the terms of the 1999 EU recommendation[16] on public exposure to EMFs. National Policy Statement EN-52 documents this policy.

4.11.9 **Table 4.7** below summarises the relevant values for power frequencies.

Table 4.7: Exposure Limits for Power Frequency EMFs

Public Exposure Levels	Electric Fields	Magnetic Fields
Basic restriction (induced current density in central nervous system)	2mA/m^2	
Reference level (external unperturbed field)	5kV/m	100μT
Field corresponding to the basic restriction (external unperturbed field)	9kV/m	360μT

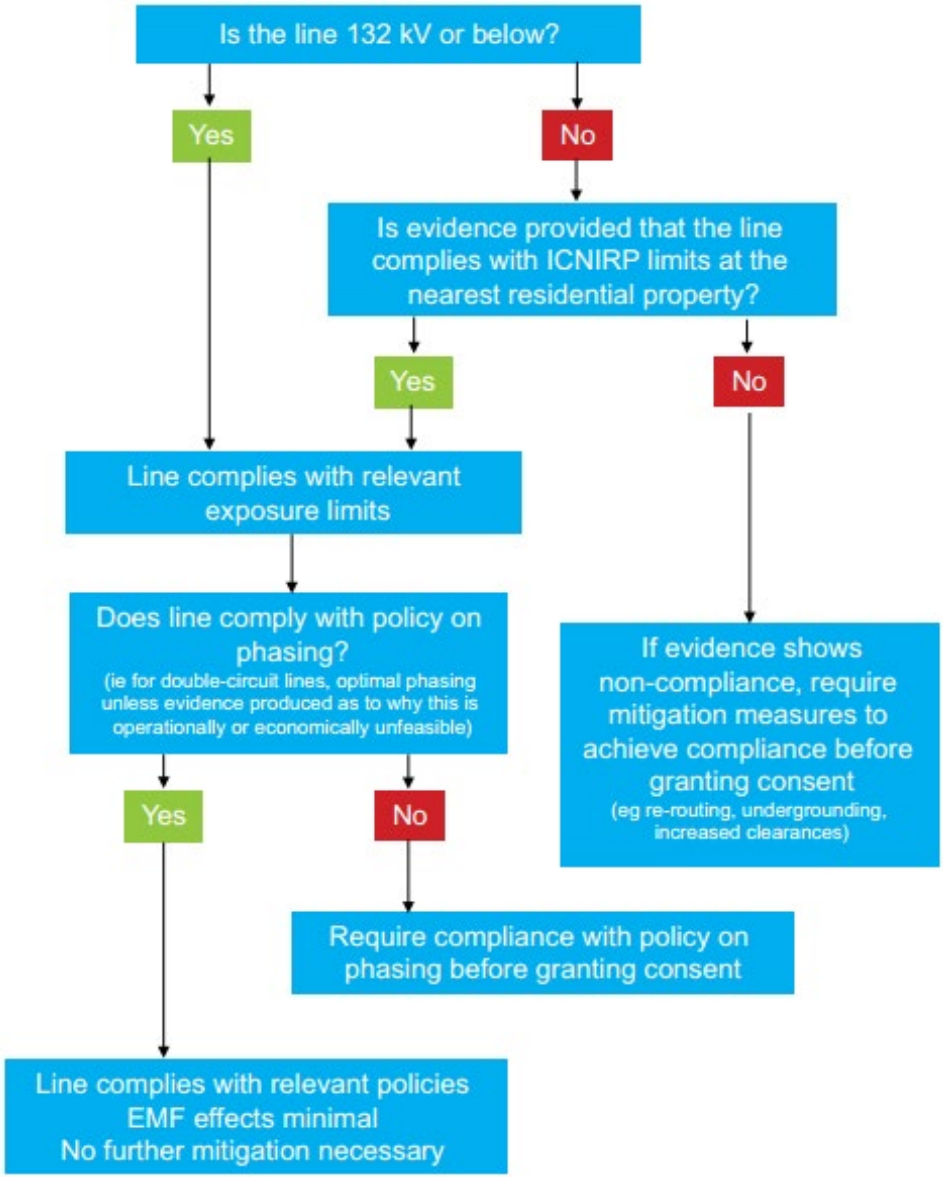
4.11.10 The EMF guidelines documented in NPS EN-52 and their application are explained in the Code of Practice, 'Power Lines: Demonstrating compliance with EMF public exposure guidelines – a voluntary Code of Practice'[17] published by the Department of Energy and Climate Change (DECC). It is the National Grid's policy to comply with Government guidelines on EMF, and this Code of Practice forms an integral part of the Government's and therefore National Grid's policy .

4.11.11 There is also a second Code of Practice, 'Optimum Phasing of high voltage double-circuit Power Lines'[18], which sets out the principles for optimum phasing of overhead lines. This details the Government supported precautionary measures recommended by the Stakeholder Advisory Group on extremely low frequency electric and magnetic fields (ELF EMFs) (SAGE) in its First Interim Assessment[19].

4.11.12 It is National Grid's policy to ensure that all its assets, including all those proposed for the Yorkshire GREEN Project, comply with the requirements set out in NPS EN-5. A full assessment of the final design will be performed in line with the principles of both Codes of Practice and submitted as a stand alone document in support of the DCO application.

[15] International Commission on Non-Ionising Radiation Protection (1998) Guidelines for Limiting Exposure to Time-Varying Electric, Magnetic and Electromagnetic Fields, Health Physics.
[16] EU Council (1999) Recommendation of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz) (1999/519/EC).
[17] Department of Energy and Climate Change (2012) Power Lines: Demonstrating compliance with EMF public exposure guidelines. A voluntary Code of Practice.
[18] Department of Energy and Climate Change (2012) Optimum Phasing of high voltage double-circuit Power Lines. A voluntary Code of Practice.
[19] SAGE (2007). First Interim Assessment. [Online] Available at: https://www.emfs.info/wp-content/uploads/2014/07/SAGEfirstinterimassessment.pdf

Graphic 4.3: Simplified Route Map for Dealing with EMFs Reproduced from National Policy Statement EN-5 (Pg. 23)



Approach and Methodology

4.11.13 It is National Grid's Policy, as set out in its Public Position statement[20] on the subject to *"…as a minimum comply with EMF regulations, guidelines and practices in force in which we operate*". To achieve this National Grid design polices and technical specifications ensure that all electricity assets are designed to comply with the requirements of NPS EN-5 in worst-case conditions. This ensures that all the assets installed as part of this and every project will be incapable of producing EMF in excess of the Government exposure guidelines detailed in **Table 4.7**.

4.11.14 The National Grid policies and procedures that prescribe these requirements are:

- Technical Specification 1- Ratings and General requirements for plant, equipment and apparatus for the National Grid system (National Grid, 2007, Addendum 2017) and those specifically falling under Tier 2 and 3 specifications;

[20] National Grid (2021). EMF Public Position Statement. [Online] Available at: https://www.nationalgrid.com/uk/electricity-transmission/document/137286/download

- National Grid SHES Standard- Non-ionising radiational standard- UK/T1/8.7.4/S (National Grid, 2020)[21]; and
- Policy Statement (Transmission) 103- EMF Policy applied to overhead line designs (National Grid, 2013)[22].

4.11.15 These technical specifications and policies will ensure that the Project design would be compliant with the requirements of NPS EN-5 and the impacts would be negligible. Therefore, as all equipment proposed as part of the Project will be designed to be compliant, no significant effects are likely. It is, therefore, proposed that the assessment of EMFs is scoped out of the ES, which in accordance with the EIA Regulations, is required to describe the "likely significant effects of the development". NPS-EN5 states in paragraph 2.10.15 "*where it can be shown that the line will comply with the current public exposure guidelines and the policy on phasing, no further mitigation should be necessary"*

4.11.16 National Grid, however, recognises the extent of public concern regarding EMFs and therefore wishes to provide all the relevant information on EMFs as part of the DCO application. Furthermore, NPS EN-5 requires the provision of specified information to demonstrate compliance with the exposure guidelines and other policies. Therefore, comprehensive information on EMFs as they relate to the Project will be provided in a separate document which will be submitted alongside the ES as part of the DCO application. A stand-alone document in the DCO submission will include relevant information from this document as appropriate. The information provided will include evaluations of the EMFs that will be produced. These will be performed according to the provisions of the DECC Code of Practice 'Power Lines: Demonstrating Compliance with Public Exposure Guidelines', and satisfying the requirements of NPS EN-5, as well as background information on EMFs and the scientific evidence relating to them.

Summary

4.11.17 National Grid's policy, as set out in its Public Position Statement (National Grid, 2021), states that '…*as a minimum we comply with EMF regulations, guidelines or practices in force… in which we operate'*.

4.11.18 The Project will be designed in accordance with the ICNIRP guidance, and a compliance report will be submitted in support of the application for Development Consent. As the measures are embedded within the Project design, no further assessment for EMF is required within the ES.

Major accidents and disasters

4.11.19 Chapter 17 of the Scoping Report proposed to scope out the assessment of Major Accidents and Disasters from the EIA. In the consideration of potential Major Accident and Disaster effects at Scoping, it was identified that there are a number of existing utility systems in the vicinity of the Project, and the Applicant committed to consulting with the Health and Safety Executive (HSE) with respect to any Major Accident Hazard site or pipelines.

4.11.20 In paragraph 3.3.23 of the Scoping Opinion, the Planning Inspectorate reflected the HSE response to the Scoping Report, by highlighting the Northern Gas Networks (NGN) high pressure gas main known as Northern Gasworks Towton / Askham Bryan (HSE

[21] National Grid (2020) SHES Standard- Non-ionising radiational standard – UK/T1/8.7.4/S.
[22] National Grid (2013) Policy Statement (Transmission) 103 – EMF Policy applied to overhead line designs

ref: 7708). The Planning Inspectorate stated that '*the Applicant should make the necessary approaches to the relevant pipeline operators. The ES should include a description of the risks associated with the Proposed Development's proximity to the identified pipelines and any mitigation required, together with, where relevant, an assessment of the likely significant effects*'. The following paragraphs are intended to directly address these items.

4.11.21 The principal potential Major Accident risk associated with the Project near buried pipelines is the potential to cause harm to receptors in the vicinity, in the unlikely event of pipeline failure. During the construction phase, in some locations, the construction workforce will be in proximity to pipelines and hence may be exposed to harm resulting from the pipeline failure, for example, an ignited release.

4.11.22 National Grid has processes in place to identify all buried infrastructure, with this forming a key consideration in the placement of new pylons. The utilities survey within the draft Order Limits is updated every six months to ensure that all infrastructure within close proximity to the Project has been identified and documented prior to construction.

4.11.23 Where the Project is in close proximity to underground utility systems, written agreements will be reached with the asset owners, as to the protection/construction methods to be employed, which may include hand digging, separation distances, structural reinforcement, or relocation. All construction works will be risk assessed under the Construction (Design and Management) Regulations 2015 (CDM) and will be carried out in accordance with Good Industry Practice. Good Industry Practice will include work planning/scheduling to minimise the works required in the vicinity and manage the risk of those activities which remain. Driven by the CDM Risk Assessments, the construction compounds will be located a safe distance away from the areas where pipelines are crossed, to be agreed with the asset owners. The appropriate risk management measures to be applied will be determined by risk assessment in line with the CDM Regulations. These measures will also mitigate the risk of a release from a pipeline, which is unrelated to the Project, for example, due to third party interference or corrosion.

4.11.24 In relation to the NGN high pressure gas main, if damage were to be caused to the pipeline, then there could be a significant release of gas leading to a fire/explosion. In the worst case, this could lead to serious injuries or fatalities to those directly impacted, most likely, the construction workers. In addition to the general safeguards described above and in the outline Construction Environmental Management Plan (CEMP), NGN has a legal easement around their pipeline. All works within this area will be subject to the approval of NGN prior to construction in accordance with the Pipeline Safety Regulations 1999. The approach to crossing the pipeline is still to be determined by design studies, once determined, Risk Assessments and Method Statements for the proposed crossing approach will be sent to NGN for their review and approval, and NGN may also elect to supervise the works. This would ensure that any works in the vicinity of the pipeline are carried out safely and therefore there are no significant effects relating to the presence of the high pressure gas main.

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