3 ENVIRONMENTAL ASSESSMENT PROCESS

3.1 Introduction

3.1.1 As outlined at Chapter 1, although the Proposed Project does not constitute formal EIA development, National Grid have provided an Environmental Assessment Report to demonstrate how it intends to meet its environmental responsibilities, covering all elements of the Proposed Project (including any potential impacts arising from underground cabling works).

3.1.2 This Environmental Assessment Report is provided in support of the planning application to Barnsley Metropolitan Borough Council and Peak District National Park Authority, for the elements of the scheme noted as requiring planning permission in Table 1.1. It reports the process and outcomes of the environmental assessments undertaken for all elements of the Proposed Project. Its purpose is to present the Proposed Project and its predicted environmental effects in a concise, and objective manner in order to provide stakeholders with sufficient information to assess its likely environmental effects.

3.2 Scoping

3.2.1 Although the Proposed Project does not constitute Environmental Impact Assessment (EIA) development, it was subject to a detailed scoping exercise which informed matters that should be addressed in the Environmental Assessment Report and the form individual assessments should take.

3.2.2 The scoping exercise involved a review of available documentation related to the form and status of the existing environment, consultation with statutory and non-statutory agencies and other environmental bodies with knowledge of the Proposed Project site and surrounding areas, preliminary desk-based and site-based appraisals and surveys, and knowledge of the potential environmental implications of comparable projects (based on direct past project experience and other published experience and guidance).

3.2.3 Scoping concluded that the following aspects were relevant for investigation in the environmental assessment owing to the potential for significant environmental effects to arise:

- ecological interests: habitats and species;
- land-based interests: archaeology and cultural heritage, landscape and visual, geology, soils, and contaminated land;
- hydrological interests: surface water, flood risk and groundwater;
- human environment: socio-economics, the existing traffic network and pollution on receptors (e.g. noise).

3.2.4 A Scoping Report[1] was prepared and issued by National Grid to Barnsley Metropolitan Borough Council and Peak District National Park Authority in July 2016. Barnsley Metropolitan Borough Council engaged the following parties as part of the scoping process and issued its scoping opinion to National Grid on 17 March 2017:

[1] National Grid (2016) 'Visual Impact Provision Peak District National Park (East), Overhead Line Scoping Report (July 2016)'.

- Barnsley Metropolitan Borough Council including South Yorkshire Mining Advisory Service and South Yorkshire Archaeology Service;
- Peak District National Park Authority;
- Environment Agency;
- Campaign to Protect Rural England (CPRE);
- Coal Authority; and
- Yorkshire Water.

3.2.5 In addition National Grid engaged with Natural England as part of the scoping process. A formal response from Peak District National Park Authority was not received although some informal comments were provided.

3.2.6 Table 3.1 details the environmental aspects proposed to be scoped out of the environmental assessment (as detailed in the Scoping Report, July 2016) based on the limited potential for environmental effects to arise.

Table 3.1: Aspects Proposed to be Scoped Out of the Environmental Assessment

Aspects Scoped Out of the Environmental Assessment (as reported in Scoping Report, July 2016)
Landscape and Visual Impact Assessment
Effects of the Proposed Project on landscape or visual receptors located outside of the LVIA study area will not be assessed unless they are particularly sensitive, as highlighted through ZTVs or discussion with stakeholder and interested parties. The effects of the Proposed Project on landscape or visual receptors wholly outside of the ZTV will not be assessed. Effects on residential receptors outside of public spaces are not included because in law, private individuals do not have a right to a view and impacts on living conditions are usually dealt with through a separate residential visual amenity assessment, if required.
Ecology
The following species have been scoped out of the assessment: • Hedgerow surveys will be scoped out due to an absence of formalised hedgerows within the majority of the ecological survey area. • Neither desk study records nor the consultation undertaken to date has indicated than an ecological survey is likely to support significant populations of white clawed crayfish. • It is unlikely that the Proposed Project would result in significant potential effects upon mountain or brown hare habitat. At the scoping stage field surveys were not deemed necessary for fish to inform the EcIA. This was based on their status and distribution, combined with the likely potential effects of the Proposed Project. (To note following further discussions with Barnsley Metropolitan

Aspects Scoped Out of the Environmental Assessment (as reported in Scoping Report, July 2016)
Borough Council on the scope of the ecology surveys, fish and aquatic invertebrate surveys were undertaken at part of the ecological assessment) Potential indirect impacts on fish and aquatic ecology associated with the River Don and other small watercourses within the ecological survey area will be considered in combination with the assessment of effects upon water resources and water quality.
Archaeology & Cultural Heritage
None identified.
Water Resources
None identified.
Geology, Soils and Contaminated Land
None identified.
Agriculture and Land Use
Potential economic effects of the Proposed Project on individual landowners and farmers and temporary land take during the construction and decommissioning.
Air Quality
Construction phase emissions of particulate matter, on road traffic and Non Road Mobile Machinery. Operational impacts on air quality.
Traffic and Transport
Potential effects of vegetation on routes used by construction traffic. Potential effect of construction traffic on road condition. Potential effects on road safety due to track-out of mud onto the public highway. Potential effects of operational traffic on transport networks. (Note: Mitigation measures for some of these potential effects has been included in the CEMP).
Socio-economics and Tourism
None identified.
Noise and Vibration
Detailed construction design has determined that piling works *are likely to be* required for the construction of the SEC therefore vibration due to construction works will not be scoped out. Operational vibration.

Aspects Scoped Out of the Environmental Assessment (as reported in Scoping Report, July 2016)
Operational noise from the underground cables, cable jointing building, SEC and pylon, and fixtures and fittings.
Climate Change
Operational and maintenance issues associated with the underground cable elements.

3.2.7 It is noted that in terms of air quality, this Environmental Assessment Report does not include a separate section on air quality, rather measures to minimise the generation of air emissions at source are included as part of the Construction Environmental Management Plan (CEMP).

3.2.8 Similarly, this Environmental Assessment Report does not include a separate section on climate change, rather climate change is addressed as part of the Flood Risk Assessment (see Appendix 9J) which takes climate change into consideration when assessing the risk of flooding.

3.2.9 A copy of the scoping opinion and associated consultee responses is presented in Appendix 3B. Each topic chapter of this Environmental Assessment Report provides a summary of the key points raised in the scoping opinion, together with a response to these.

3.3 Environmental Assessment Methodology

Establishment of Baseline Environment

3.3.1 The environmental assessment of scoped-in environmental aspects commenced with the identification and review of information relating to known, or the likely presence of, environmental receptors and resources within a defined study area in order to determine their relative value, importance and/or sensitivity towards change.

3.3.2 Site surveys were undertaken to verify and consolidate information gathered during the desk-based review, and to evaluate the relationships between specific environmental interests and their wider environmental value.

3.3.3 Environmental resources were defined as those environmental aspects that support and are essential to natural or human systems. These include areas or elements of population, ecosystems, watercourses, air and climatic factors, landscape, and material assets.

3.3.4 Environmental receptors were defined as people (i.e. occupiers of dwellings and users of recreational areas, places of employment and community facilities) and elements within the environment (e.g. flora and fauna) that rely on environmental resources.

3.3.5 Study area extents vary in accordance with the environmental aspect being considered. For some topics, a study area has been defined as being relatively localised to the Proposed Project, while for others it has extended outward to capture the surrounding road network, distant communities, and environmentally sensitive areas. The definition of each study area has been informed by a review of the relationship between the Proposed Project and the receiving environment, the outcomes of scoping, discussions with stakeholders and reference to thresholds stipulated in topic-specific environmental assessment or best practice guidance.

3.3.6 Due to the iterative nature of the environmental assessment process, the site boundary has evolved since it was first referenced in the Scoping Report, July 2016. Scoping was undertaken using a red-line boundary that comprised a 'Search Area for Permanent Development' (see Figure 1.2, Scoping Report, July 2016). In order to ensure that all temporary and permanent works are considered, a 'worst-case-scenario' approach was later adopted by all technical teams and a new 'blue line' boundary containing all areas being considered for potential temporary and permanent works was subsequently developed in accordance with emerging information (see Figure 3.1). As a minimum, topic-specific study areas have been defined by this Area of Search for Permanent and Temporary Works. Further to the definition of the Area of Search for Permanent and Temporary Works, the project components have been refined into a Site Boundary (the footprint of all works) as shown on figures presented within each of the technical chapters.

Impact Prediction and Assessment

3.3.7 Impacts comprise identifiable changes to the baseline environment. These can be either beneficial (e.g. introduction of planting to screen visually detracting elements) or adverse (e.g. loss of an attractive environmental component), and can take the following forms:

- Direct (e.g. loss of habitat to accommodate the Proposed Project);
- Indirect (e.g. development required to support the Proposed Project, e.g. nearby road improvements);
- Short-term/temporary (e.g. dust generated during construction);
- Medium-term (e.g. cutting back of planting which is subsequently allowed to regenerate);
- Long-term/permanent (e.g. improvement in visual amenity);
- Cumulative (e.g. incremental changes caused by other past, present or reasonably foreseeable actions together with those associated with the Proposed Project, or where a receptor or resource is subject to a combination of individual impacts such as air pollution, noise and visual impact associated with the Proposed Project in isolation).

3.3.8 Environmental assessments have been both quantitative and qualitative in nature and have been based on comparisons between the environmental conditions immediately prior to the assumed construction of the Proposed Project and the predicted environment conditions resulting from its implementation.

3.3.9 Impacts have been defined in accordance with accepted terminology and standardised methodologies to predict the magnitude of impact (or change) resulting from the Proposed Project.

3.3.10 Assessments have been undertaken for the construction, operation and decommissioning phases.

Environmental Effects

3.3.11 Effects are defined as the consequence of impacts. They are formulated as a function of the receptor/resource value and sensitivity, and the predicted magnitude of impact.

3.3.12 Professional judgement, defined thresholds, established criteria and standards have been used to report the environmental effects of impact, which can be referred to as either being prior to, or following establishment of, environmental mitigation.

Environmental Mitigation

3.3.13 Environmental mitigation measures have been developed to address potentially significant adverse environmental effects.

3.3.14 Mitigation can take the following forms:

- Agreed measures incorporated or embedded into the evolving design of the Proposed Project (referred to throughout the report as embedded measures);
- Standard measures (e.g. best practice construction management to control dust emissions) that are enforceable through planning conditions; and
- Measures proposed in outline (e.g. off-site planting to provide visual screening to nearby residential dwellings) that may require further development and formal agreement to ensure their implementation.

3.3.15 The principles adopted in the identification and development of environmental mitigation for the Proposed Project are avoidance (wherever possible), reduction (where avoidance cannot be achieved) and compensation (where reduction is unachievable or would not achieve the required level of mitigation).

Predicting and Assessing Significance of Effects

3.3.16 The significance of an environmental effect has been established by way of reference to the importance/value of affected resources; the number and sensitivity of affected receptors; impact magnitude; duration, frequency and extent of effect; and reversibility of effect.

3.3.17 A combination of magnitude of the impact under consideration and the sensitivity or value of the receiving environment/receptor can be used in considering the overall significance of an effect, outlined in Table 3.2.

3.3.18 Significance categories have been applied across the environmental aspects to ensure identifiable environmental effects are assessed in a comparable manner, except where such criteria are not applicable due to other prevailing topic-specific guidance and/or established standards and thresholds (e.g. EU limit for air emissions), outlined in Table 3.3.

3.3.19 For the purpose of this environmental assessment, moderate and major effects are considered to be significant, unless otherwise stated in the technical assessment methodology.

3.3.20 Each technical discipline will amend the assessment criteria as per the relevant guidelines or standards pertinent to that topic. Assessment methodologies are described in each respective chapter.

Table 3.2: Classification of Effects

Sensitivity / value of receptor	Magnitude of impact			
	High	Medium	Low	Very low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Very low	Minor	Negligible	Negligible	Negligible

Table 3.3: Significance Category Descriptions

Significance Category	Typical description
Major	A large and detrimental change to a valuable/sensitive receptor; likely or apparent exceedance of accepted (often legal) threshold. A large and beneficial change, whereby the improvements to the baseline whereby previously poor conditions are replaced by new legal compliance or a major contribution is made to national targets. These effects may represent key factors in the decision making process. Potentially associated with sites and features of national importance or likely to be important considerations at a regional or district scale. Major effects may relate to resources or features which are unique and which, if lost, cannot be replaced or relocated.
Moderate	A medium scale change which, although not beyond an accepted threshold, is still considered to be generally unacceptable, unless balanced out by other significant positive benefits of a project. Likely to be in breach of planning policy, rather than legal statute. These effects, if adverse, are likely to be important at a local scale and on their own could have a material influence on decision making. A positive moderate effect is a medium scale change that is significant in that the baseline conditions are improved to the extent that for example guideline targets (e.g. UK BAP targets) are contributed to.
Minor	A small change that, whilst adverse, does not exceed legal or guideline standards. Unlikely to breach planning policy. A small positive change, but not one that is likely to be a key factor in the overall balance of issues. These effects may be raised as local issues and may be of relevance in the detailed design of the project, but are unlikely to be critical in the decision making process.
Negligible	A very small change that is so small and unimportant that it is considered acceptable to disregard. Effects which are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error, these effects are unlikely to influence decision making, irrespective of other effects.

Residual Effects

3.3.21 The declared residual environmental effects of the Proposed Project are those that are predicted to remain after taking account of environmental mitigation measures.

Cumulative Effects

3.3.22 There are a number of types of cumulative effects including synergistic, combined, interrelated effects etc. For the purpose of this environmental assessment, cumulative effects have been defined under the two categories identified in the IEMA 2011 Report on 'The State of Environmental Impact Assessment in the UK' (IEMA, 2011). These are inter-project and intra-project effect. These two types of cumulative effects are explained below:

- Inter-project effects: the combined effects of the Proposed Project with other relevant projects which may, on an individual basis be insignificant but, together (i.e. cumulatively), have a significant effect. An example would be surface water runoff likely to be generated by the construction of a proposed supermarket in the area, which would need to be added to the predicted surface water runoff figures for the Proposed Project, in order to understand the true potential effects as a result of the combined projects.
- Intra-project effects: the combined effects arising as a result of the Proposed Project, for example upon a single receptor or resource.

3.3.23 Cumulative impacts arising from the Proposed Project have been addressed in Chapter 15 (Cumulative Impacts) which addresses inter-project and intra-project effects.

3.4 Construction Environmental Management Plan

3.4.1 A Construction Environmental Management Plan (CEMP) has been prepared to support the planning application. The CEMP presents the general approach and application of environmental management and mitigation for the construction of the Proposed Project. The CEMP aims to ensure that adverse effects from the construction phase on the environment and local communities are minimised.

3.5 Assessment of Alternatives

3.5.1 Chapter 2 (Project Description) of this Environmental Assessment Report provides an outline of the main alternatives considered during development of the Proposed Project design, and the reasoning for the final proposal, taking into account factors including the environmental effects.

3.6 Assessment Reporting

3.6.1 Each individual assessment follows a comparable format (where possible) to ensure consistency in reporting the existing environmental conditions and the potential effects arising from implementation of the Proposed Project. This is:

- Introduction – introduces the assessment topic under consideration
- Scope and Methodology – identifies and describes the scope of the assessment, the methods and criteria adopted, relevant guidance followed, and any assessment limitations, assumptions or difficulties encountered.
- Statutory and Planning Context – outlines statutes, guidance, policies and plans relevant to the environmental interests forming the focus of the assessment.
- Existing Environment – describes the features and characteristics associated with the baseline environment.

- Key Parameters for Assessment – describes the elements of the project design, phasing, embedded mitigation and standard construction practices relevant to the topic.
- Predicted Effects – reports the predicted effects on the baseline environment during the construction, operation and decommissioning phases (assuming incorporation of embedded and standard mitigation).
- Mitigation – describes additional mitigation measures designed to address any significant adverse effects remaining after embedded mitigation and standard construction practices have been applied to the Proposed Project.
- Summary of Residual Effects – summarises the nature and significance of residual environmental effects that are predicted to remain, post-implementation of mitigation measures.

3.7 Assumptions, Uncertainties and Limitations

3.7.1 The environmental assessment was undertaken and the resulting Environmental Assessment Report has been compiled using the material made available to the Environmental Assessment team by National Grid and members of their project team, together with other readily available and publicly accessible material including existing literature and studies, as well as personal communication with local experts and stakeholders. Every effort has been made to obtain data concerning the existing environment and to accurately predict the effect of the Proposed Project.

3.7.2 Assumptions adopted in the evaluation of impacts are reported in the individual topic chapters. However, these assumptions are often implicit, relying on expert professional judgement. Where technical deficiencies are known, or it has been necessary to make assumptions, these are documented.

3.7.3 The environmental assessment has been undertaken during the initial design phase of the Proposed Project and therefore some of the technical aspects of the construction and operation have yet to be fully determined. The environmental assessment has taken a precautionary approach to adopt conservatism in the assumptions made and any scenarios assumed, so that a reasonable 'worst-case' scenario was assessed. Therefore, inherent uncertainties are accounted for and subsequent modifications to the project during the detailed design phase are less likely to fall outside of the assumed envelope of the assessment parameters.

3.8 Planning Application

3.8.1 As outlined within Chapter 1 the Proposed Project will be subject to a number of various consenting regimes. The main elements of the Proposed Project that will be subject to the Planning application are:

- Construction of a new sealing end compound, including permanent access;
- Construction of a temporary haul road from Brook Hill Lane including widened bellmouth;
- Construction of a temporary Trans Pennine Trail (TPT) diversion to be used for approximately 12-18 months; following construction approximately 410m of said diversion surface would be retained permanently; and
- Erection of two bridges (one temporary and one permanent) along the TPT diversion.

3.8.2 Predicted effects have where possible been discussed under specific project element headings within the Environmental Assessment Report, to highlight where

effects are associated with the project elements that are subject to the planning application. The project elements sub headings are described as follows:

- **Trans Pennine Trail Diversion – Subject to Planning Application.** This would include the temporary Trans Pennine Trail diversion. Following construction a stretch of approximately 410m of the diversion surface would be retained permanently along the stretch that provides private access to Yorkshire Water assets, this is along the route of an existing farm track. This includes Permanent Bridge 1, Temporary Bridge 2, associated working and laydown areas;
- **Wogden Foot Sealing End Compound (SEC) – Subject to Planning Application.** This would include a permanent access road, security fencing, hard surfacing and gantries amongst other electrical infrastructure.
- **Access Point 7 and Northern Access Road – Subject to Planning Application.** This would include the temporary northern access track and bellmouth off Brook Hill Lane (Access Point 7);
- **400kV Cable (Undergrounding)** – This would comprise the installation of approximately 2km of 400kV underground cable along the existing Trans Pennine Trail and partially within Wogden Foot Local Wildlife Site, approximately four link pillar boxes along the Trans Pennine Trail and associated drainage works including the restoration of sections of open ditch along the Trans Pennine Trail. During construction this would involve temporary construction compounds/ laydown areas (including within Wogden Foot LWS and the existing operational National Grid Compound at Dunford Bridge), working areas, drainage works and temporary access tracks;
- **Removal of Existing Infrastructure (VIP Subsection)** – this would involve the removal of approximately 2km of overhead line (OHL) comprising the Dunford Bridge SEC and seven existing 400kV pylons (4ZO164R within Dunford Bridge SEC, 4ZO163, 4ZO162, 4ZO161, 4ZO160, 4ZO159 and 4ZO158) and during construction would involve temporary construction access tracks, working areas and laydown areas. The removal of an additional Pylon 4ZO157 is also considered here, although this would be replaced by a new Tension Pylon and the very occasional vehicular access to Pylons 4ZO156 and 4ZO155 to facilitate re-stringing works to the new tension pylon; and
- **Construction of replacement Pylon 4ZO157R** – this would involve the construction of a new Tension Pylon 4ZO157R (which would replace 4ZO157), and replacement of conductors and connection to the SEC, and during construction would involve temporary construction, working areas and laydown areas and access.