

2.0 EIA METHODOLOGY

Introduction

- 2.1 This chapter sets out the methodology used to prepare each chapter of the ES and describes its structure and content. In particular, it sets out the process of identifying and assessing the likely significant effects of the Development on the environment.
- 2.2 The ES has been prepared to comply with the Town & Country Planning (Environmental Impact Assessment (EIA)) Regulations 2011, (the 'EIA Regulations'), which implement European Council Directive No. 85/337/EEC as amended by Council Directive No. 97/11/EC. The ES has also drawn on currently available good practice guidance in EIA, including:
- Planning Practice Guidance (PPG) (DCLG, 2014);
 - Guidelines for Environmental Impact Assessment, Institute of Environmental Management and Assessment (IEMA, 2004); and
 - Guidelines for the Assessment of Indirect and Cumulative Impacts as well as Impact Interactions, Luxemburg (Office for the Official Publications of the European Communities, 1999).

Scoping

- 2.3 Scoping involves focusing the content of the ES on those issues of greatest potential significance. It is an important tool for identifying the likely significant effects of a proposed development on the environment and for agreeing the appropriate assessment methodology.
- 2.4 The Development seeks planning permission to effectively combine elements of two extant planning permissions, the Ryedale Gas Project and the Ebberston Moor 'A'-Knapton Gas Pipeline (further information on these schemes is provided in Chapter 3). The scope of the ES has therefore been informed by the EIAs and ESs undertaken to accompany the planning applications for these extant permissions. As a result the following technical assessments were scoped into the ES:
- Ecology and Nature Conservation;
 - Landscape and Views;
 - Air Quality;
 - Noise and Vibration;

- Transport;
- Flood Risk, Hydrology and Drainage;
- Produced Water Disposal;
- Cultural Heritage;
- Economics; and
- Ground Conditions and Contamination.

Consultation

2.5 The following organisations were approached as part of the EIA process to identify baseline information and to enable the Development to be refined in relation to environmental issues raised, where appropriate:

- NYCC (various departments);
- NYMNP (various departments);
- Ryedale District Council (RDC);
- English Heritage; and
- Environment Agency

Public Consultation

2.6 The planning application is the culmination of a design process which has involved consultation with the relevant local authorities, statutory consultees, and the local community.

2.7 The Applicant organised a public exhibition on 2nd July 2014 in Allerston Village Hall. The exhibition described the nature and purpose of the Development. Leaflets advertising the exhibition were posted prior to the public exhibition to local households and businesses, posters were placed on notices boards and other prominent places in the local area and an advertisement was placed in the local media. A total of 70 people registered their attendance at the event, although it was not possible to capture all the attendees' names and, therefore, the actual attendance at may have been slightly higher. The issues raised at the public exhibitions and responses, together with the design evolution, are discussed in the Statement of Community Involvement submitted in support of the planning application.

Approach to Technical Studies

- 2.8 The EIA studies commenced at an early stage in the development process. The findings of these baseline environmental studies have played an important role in the design of the Development by defining the environmental sensitivities, constraints and opportunities associated with the Site.
- 2.9 The technical studies have been undertaken in accordance with current best practice. Specific guidance used is referenced within each of the respective assessment chapters.
- 2.10 The majority of assessments involved consultations with statutory and non-statutory bodies, desk-based research, site inspections and surveys, impact prediction and mitigation.
- 2.11 The assessment and conclusions of the ES are based on the description of the Development provided in Chapters 3 and 5 and accompanying figures.

Structure of Technical Chapters

- 2.12 Each technical chapter of the ES (Chapters 6-15) has been set out broadly in line with Table 2.1 below.
- 2.13 Chapter 5 provides information to allow the construction phase of the Development assessed by the disciplines set out in chapters 6-15.

Table 2.1: Structure of the Technical Chapters

Technical Chapter Structure	
Introduction	Each of the technical chapters begins with an introduction providing context to the EIA completed.
Policy Context	This section includes a summary of national and local policies of relevance to the environmental discipline and explains its purpose in the context of the Development and the ES. Relevant legislation is also identified.
Assessment Methodology & Significance Criteria	This section describes the method and approach employed in the assessment of likely significant effects, the criteria against which the significance has been evaluated, the sources of information used and any technical difficulties encountered.
Baseline Conditions	This section describes and evaluates the baseline environmental conditions i.e. the current situation and anticipated changes over time assuming the Site remains undeveloped. This is a critical part of the EIA process as it provides a measure against which the likely significant effects on the environment can be assessed.

Technical Chapter Structure	
Likely Significant Effects	This section identifies the likely significant effects on the environment resulting from the Development during demolition, construction and operational phases. A description of the likely effects of the Development and an assessment of their predicted significance is provided.
Mitigation Measures	One of the main aims of the EIA process is to develop suitable mitigation measures to avoid, reduce or compensate for any significant adverse effects of a project. These measures relate to all phases. This section describes the measures which would be implemented to mitigate against potential adverse impacts. Where possible, enhancement measures have also been proposed.
Residual Effects	The residual effects, i.e. the remaining effects of the Development assuming implementation of the proposed mitigation measures, have been estimated and presented. The methods used to make these estimates are described and proposed methods of treatment for any residual effects have been identified and quantified where possible.
Cumulative Effects	This section considers the cumulative effects of the Development with committed developments identified within the vicinity of the Site. Any likely significant effects on the environment arising in this respect are set out in this section.
Summary	Each technical chapter concludes with a brief summary outlining the potential residual effects for the construction phase (short/medium) and operation (medium/long-term) phase of the Development.

Likely Significant Effects

- 2.14 The assessment of effect significance has been undertaken using appropriate national and international quality standards. Where no such standards exist, the judgments that underpin the attribution of significance are described. The guidelines, methods and techniques used in the process of determining significance of effects are contained within each of the technical chapters presented.

Magnitude

- 2.15 The methodology for determining the scale, or magnitude, of effect is set out in Table 2.2 below.

Table 2.2: Methodology for Assessing Magnitude

Magnitude of Impact	Criteria for Assessing Effect
Major	Total loss or major/substantial alteration to key elements/features of the baseline conditions such that the post development character/composition/attributes will be fundamentally changed.
Moderate	Loss or alteration to one or more key elements/features of the baseline conditions such that post development

Magnitude of Impact	Criteria for Assessing Effect
	character/composition/attributes of the baseline will be materially changed.
Minor	A minor shift away from baseline conditions. Change arising from the loss/alteration will be discernable/detectable but not material. The underlying character / composition / attributes of the baseline condition will be similar to the pre-development circumstances/situation.
Negligible	Very little change from baseline conditions. Change barely distinguishable, approximating to a 'no change' situation.

Sensitivity

- 2.16 The sensitivity of a receptor is based on the relative importance of the receptor using the scale in Table 2.3 below.

Table 2.3: Methodology for Assessing Sensitivity

Sensitivity	Examples of Receptor
High	The receptor/resource has little ability to absorb change without fundamentally altering its present character, or is of international or national importance.
Moderate	The receptor/resource has moderate capacity to absorb change without significantly altering its present character, or is of high importance.
Low	The receptor/resource is tolerant of change without detriment to its character, is of low or local importance.

Significance

- 2.17 The significance of an environmental effect is determined by the interaction of magnitude and sensitivity, whereby the impacts can be positive or negative. Table 2.4 below shows how magnitude and sensitivity interact to derive effect significance.

Table 2.4: Methodology for Assessing Significance

Magnitude	Sensitivity		
	High	Moderate	Low
Major	Major Adverse/Beneficial	Major - Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial
Moderate	Major - Moderate Adverse/Beneficial	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial
Minor	Moderate - Minor Adverse/Beneficial	Minor Adverse/Beneficial	Minor - Negligible
Negligible	Negligible	Negligible	Negligible

- 2.18 The above magnitude and significance criteria have been provided as a guide for technical specialists to assess impact significance. Where discipline specific methodology has been

applied that differs from the generic criteria above, this has been clearly explained within the given chapter under the heading of Assessment Methodology and Significance Criteria.

Mitigation

2.19 Any adverse environmental effects have been considered for mitigation at the design stage and, where practicable, specific measures have been put forward. Measures have been considered based on the following hierarchy of mitigation:

- Avoidance;
- Reduction;
- Compensation;
- Remediation; and
- Enhancement.

2.20 Where the effectiveness of the mitigation proposed has been considered uncertain, or where it depends upon assumptions of operating procedures, data and/or professional judgement has been introduced to support these assumptions.

2.21 Mitigation recommended during the demolition and construction phase would be set out in the Construction Environmental Management Plan (CEMP) to be agreed with NYMNPA and NYCC prior to the commencement of work and implemented throughout the duration of the works. Outline mitigation measures to be included in a future CEMP are set out in Chapter 5: Construction Methodology and Programme.

2.22 Mitigation to be implemented during the operational phase would be secured through planning conditions and obligations.

Cumulative Effects

2.23 A requirement of the EIA Regulations is to assess cumulative effects. Cumulative effects are generally considered to arise from the combination of effects from the Development and from other committed schemes in the vicinity, acting together to generate elevated levels of effects. PPG identifies that:

"...There are occasions where other existing or approved development may be relevant in determining whether significant effects are likely as a consequence of a proposed development.."

- 2.24 Guidance in the PPG states that “existing and approved” developments should be considered. A list of potential cumulative schemes has been provided by NYMNPA and NYCC (see Appendix 2.1). The Project Team has undertaken a review of the list and identified two schemes with the potential for likely significant effects. The justification for not including the other schemes in the cumulative assessment is provided in Appendix 2.1.
- 2.25 One of the schemes (York Potash) is not ‘committed’ in terms of planning approval, but has been included at the request of NYMNPA. The cumulative assessment therefore goes beyond the requirements of the EIA Regulations and existing guidance.
- 2.26 With regard to the Ebberston Moor EDS project it should be noted that Third Energy (one of the Applicants for this Development) formerly known as Viking UK Gas Limited, was also the Applicant for this project. The Applicant therefore has control in terms of when and if to implement this extant planning permission and it is very unlikely that it would be constructed or operational concurrently with the Development. However, an assessment of this scheme has been undertaken as part of the cumulative assessment in the ES to demonstrate a ‘worst case’.
- 2.27 Details of these schemes are included in Table 2.5 and their locations are shown on Figure 2.1.

Table 2.5: Cumulative Schemes

Number on Figure 2.1	Scheme	Applicant and Application Reference Number	Description
1	Ebberston Moor Early Development Scheme (EDS)	Viking UK Gas Limited NYM/2013/0477/EIA	The development includes: Gas production from the existing well, Ebberston Moor-1 at the Ebberston Moor ‘A’ Well Site; and Connection to the neighbouring Local Transmission Zone (LTZ) Above Ground Installation (AGI), including the construction of: - a gas conditioning facility (the facility where the impurities from the gas are removed to meet the LTZ gas quality specification); - metering facilities to deliver gas into the LTZ pipeline; and - facilities for the storage and

Number on Figure 2.1	Scheme	Applicant and Application Reference Number	Description
			transport of condensate-LPG mix, and gas treatment fluids from the Lockton Compound.
2	York Potash	York Potash Limited Planning application not yet submitted.	Proposed new mine near Whitby to extract polyhalite, a multi-nutrient form of potash, and underground tunnel to transport the polyhalite between the mine site near Whitby and the materials handling facility at Teesside.

2.28 Each technical chapter (Chapters 6-15) has assessed the potential for likely significant cumulative effects on the environment as a result of the above committed developments combined with the Development.

Residual Effects

2.29 The likely significant effects on the environment, assuming the successful implementation of mitigation measures proposed, have been identified within each chapter.

Assumptions and Limitations

2.30 The principal assumptions that have been made and any limitations that have been identified in preparing the ES are set out in each technical chapter. General assumptions include the following:

- All the principal existing land uses adjoining the Site remain unchanged;
- Information received by third parties is complete and up to date;
- The design, construction, operation, decommissioning and restoration phases of the Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge;
- It is expected that construction will commence in 2015 (subject to gaining planning permission) and is scheduled for completion in 2016;
- Significant environmental effects have been assessed using the design and description of the Development set out in Chapter 3 and 5;
- Conditions will be attached to the planning permission that will control any disturbance during construction works;
- Necessary off-site services infrastructure will be provided by statutory undertakers;

- The planning permission, when granted, will have appropriate conditions attached that will be sufficient to limit the development to that which has been assessed in the EIA;

Objectivity

- 2.31 The technical studies undertaken within the ES have been progressed in a transparent, impartial and unbiased way with equal weight attached, as appropriate, to beneficial and adverse effects. Where possible, this has been based upon quantitative and accepted criteria together with the use of value judgements and expert interpretations.
- 2.32 The assessment has been explicit in recognising areas of limitation within the ES and any difficulties that have been encountered, including assumptions upon which the assessments are based. Where appropriate, the assessment of significance has been given confidence levels to give a judgement as to the the likelihood of an effect occurring.