

## 2.0 ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

2.1 This Chapter sets out the methodology for undertaking the Environmental Statement (ES). In particular, it details the process of identifying the likely significant environmental effects of the Proposed Development and the method of assessing the significance of the effects.

2.2 The content and conclusions of the ES are based on an assessment of the proposals as summarised in Chapter 4 of this ES, baseline surveys and a series of technical studies.

2.3 In preparing this ES, Moorland Energy has sought the advice of several specialist companies to provide expert assessment of the various elements of the Proposed Development. The consultants who have contributed to the ES and form the Project Team have the following areas of responsibility:

- Barton Willmore LLP – Planning, Sustainability, Landscape and Visual, Socio Economic, Environmental Impact Assessment;
- URS Corporation Ltd – Ecology, Air Quality, Flood Risk, Hydrology, Drainage and Geology;
- Cannon Consulting Engineers – Traffic and Transportation;
- Forbes-Laird Arboricultural Consultancy Ltd – Arboriculture;
- Peter Cardwell – Archaeology and Cultural Heritage;
- Acia Engineering Acoustics – Noise and Vibration;
- WSP Group – Lighting;
- Land Use Consultancy Services – Agricultural Land and Soils; and
- CNG Services Ltd - Excavation/Construction Programme.

### General Approach

2.4 The Proposed Development falls within Schedule 2 of the 'Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999' as it lies partially within the North York Moors National Park, which is defined as a 'sensitive area' under Regulation 2(1). The Proposed Development is also considered to fall within Sections 2 (d) 'Extractive Industry' and 3 (b) 'Energy Industry' of Schedule 2 of the above Regulations and it exceeds the thresholds within those Sections. Paragraph 30 of Circular 02/99 (Environmental Impact Assessment) states that development within a sensitive area should only be considered Scheduled Development where developed falls within Schedule 2. Paragraph 36 of the Circular states that the criteria and thresholds

in the second column of Schedule 2 do not apply where development is proposed in, or partly in, a 'sensitive area'.

- 2.5 Further, North Yorkshire County Council (NYCC) adopted in their Screening Opinion on 18<sup>th</sup> August 2009 (Ref: NY/2009/0319/SCR) (attached at **Appendix 2.1**) that, on the basis that the projected level of gas extraction will be between 425,000 and 566,000 cubic metres per day, the Proposed Development falls under Schedule 1 of the above Regulations. This is because the upper limit of projected gas extraction exceeds the 500,000 cubic metres per day threshold set out in Section 14, Schedule 1 of the above Regulations and Environmental Impact Assessment (EIA) is therefore considered to be required. North York Moors National Park Authority (NYMNP) determined that the Proposed Development falls under Schedule 2 of the above Regulations as detailed in their letter dated 19<sup>th</sup> August 2009 (attached at **Appendix 2.2**).
- 2.6 As such, an Environmental Impact Assessment is required for the above reasons. Moorland Energy has therefore undertaken an Environmental Impact Assessment to enable full account of the effects of the Proposed Development to be determined.
- 2.7 The ES has been prepared in accordance with the EIA Regulations which implement the European Council Directive No. 85/337/EEC, as amended by European Council Directive No. 97/11/EC. Regard has also been given to the content of the 'Public Gas Transporter Pipe-line Works (Environmental Impact Assessment) Regulations 1999' and 'The Pipeline Works (Environmental Impact Assessment) Regulations 2000'.
- 2.8 Reference has also been made to currently available good practice guidance on EIA including:
- *'Environmental Impact Assessment – A Guide to Procedures'*, Department of the Environment, Transport and Regions (DETR) 2000;
  - *'Preparation of Environmental Statement for Planning Projects that require Environmental Assessment – A Good Practice Guide'*, Department of the Environment (DoE) 1995;
  - *'Environmental impact assessment'*, DETR Circular 02/99;
  - *'Notes on Environmental Impact Assessment Directive for Local Planning Authorities'*, Office of the Deputy Prime Minister (ODPM) 2004;
  - *'Guidelines for Environmental Impact Assessment'*, Institute of Environmental Management and Assessment (IEMA), 2004

2.9 The ES has considered the likely significant environmental effects of the Proposed Development, based upon information gathered and assessed in respect of the Assessment Site and the surrounding environment. Following the findings of the various studies which have contributed to the ES, ways of avoiding, reducing or offsetting any potential significant adverse effects (collectively known as 'mitigation measures') have been identified and these are set out in each technical Chapter.

### **Scoping the EIA**

2.10 Scoping is a fundamental component of the EIA process and involves focusing the study (and hence the ES) on those issues of greatest potential significance. It is an important tool for identifying all of the likely significant effects of a proposed development through its design, excavation/ construction and operation and ensures that appropriate mitigation measures are considered, and proposed where necessary.

2.11 An EIA Scoping Report (see **Appendix 2.3**) for the Proposed Development was produced and submitted to North Yorkshire County Council and the North York Moors National Park Authority on 18 January 2010. It was agreed that NYCC would lead on the Scoping Report consultation so as not to duplicate responses from both of the Council's and third party representatives. The aim of the Scoping Report was to agree the scope and contents of ES so that the required information and assessment was provided in relation to the Proposed Development. Defining the scope is one of the most important parts of the EIA process in that it identifies the context of what follows. If the scope is defined too narrowly, some critical areas of uncertainty or adverse impact may emerge late in the day once decisions shaping the project are too far advanced to allow for any real change. However, if the scope of the work is too loosely defined then much time, effort and cost may be spent in pursuing unnecessary detail. Effective scoping is the key to a good quality EIA and resultant ES.

2.12 The Scoping Report responses from NYCC indicated that the following environmental issues associated with the Proposed Development should be addressed in detail in the ES:

- Ecology;
- Landscape and Visual;
- Air Quality;
- Noise and Vibration;
- Traffic and Transport;



Council	<p>Way, including the Byway Open to All Traffic, must remain open and available for use at all times.</p> <ul style="list-style-type: none"> <li>Advise that a Byway Open to All Traffic can be used by motorised vehicles and any engineering works undertaken in this area should take account of this</li> </ul> <p><u>Health and Environment</u></p> <ul style="list-style-type: none"> <li>The main issues are noise and air pollution/ odours, both during the construction phase and the operation of the facilities together with the number of private water supplies in the area</li> <li>Advise that the consultant liaises directly with Health and Environment Services in relation to private water supplies</li> </ul>	<p>Chapter 8 (Landscape and Visual)</p> <p>Chapter 9 (Air Quality)</p> <p>Chapter 10 (Noise and Vibration)</p> <p>Chapter 12 (Flood Risk, Hydrology and Drainage)</p>
Natural England	<p><u>Ecology</u></p> <ul style="list-style-type: none"> <li>Hedgerows surveys should consider the presence of dormice. The dormouse is a protected species which has been successfully reintroduced at a number of sites in North Yorkshire in recent years</li> </ul> <p><u>Landscape</u></p> <ul style="list-style-type: none"> <li>Advise that the applicants discuss suitable viewpoints with the relevant persons within NYCC and NYMNP</li> <li>Would expect to see an assessment of the impact of the proposals on the National Park itself, but also on the setting of the National Park, and on views from within the Park looking out over the surrounding landscape.</li> </ul> <p><u>Air Quality</u></p> <ul style="list-style-type: none"> <li>The closest SSSI, Troutdale and Rosekirkdale Fens, supports some particularly rare habitat types which are likely to be very sensitive to air quality</li> </ul> <p><u>Lighting</u></p> <ul style="list-style-type: none"> <li>Advise that the impact of the lighting requirements on the local bat population should be assessed both during the construction and operational phases</li> </ul> <p><u>Agriculture/ Soils</u></p> <ul style="list-style-type: none"> <li>Satisfied with the proposed scope of works for agriculture and soils</li> </ul>	<p>Chapter 7 (Ecology)</p> <p>Chapter 8 (Landscape and Visual)</p> <p>Chapter 9 (Air Quality)</p> <p>Chapter 7 (Ecology) Chapter 14 (Lighting)</p> <p>Chapter 16 (Agricultural Land and Soils)</p>
Environment Agency	<p><u>Flood Risk</u></p> <ul style="list-style-type: none"> <li>The erection of any flow control structures or any culverting of a</li> </ul>	<p>Chapter 12 (Flood Risk, Hydrology and Drainage)</p>

	<p>watercourse requires prior written approval of the Environment Agency</p> <p><u>Groundwater Protection</u></p> <ul style="list-style-type: none"> <li>• Recommends that a water features survey is conducted along the pipeline route to identify water features which may be impacted by the earth works</li> </ul> <p><u>Biodiversity</u></p> <ul style="list-style-type: none"> <li>• Surveys should include identification of any likely invasive plants that may spread along the pipeline corridor. No water is to be transferred from one catchment area to another. Any water used must be returned to the same point from which it was taken. A check for bats should be carried out before the main nesting season prior to any tree felling.</li> </ul>	Chapter 7 (Ecology)
English Heritage	<p><u>Archaeology and Heritage</u></p> <ul style="list-style-type: none"> <li>• Concurrence with the adopted scope of work and methodology proposed</li> </ul>	Chapter 13 (Cultural Heritage)
Thornton Drainage Board	<p><u>Drainage</u></p> <ul style="list-style-type: none"> <li>• Requests that attenuation measures are implemented especially for the access road and Hurrell Lane site</li> <li>• Measurements should be proposed to ensure no pollution into the ditch network</li> <li>• Remedial drainage works should be incorporated into designs</li> </ul>	Chapter 12 (Flood Risk, Hydrology and Drainage)
Yorkshire Water	<p><u>Water</u></p> <ul style="list-style-type: none"> <li>• Advise that the area around Wilton is an area of importance for groundwater abstraction. Protection of groundwater should therefore be taken into account</li> <li>• Advise that there is a foul water rising main at the junction of Hurrell Lane and New Ings Lane and a 10" live water pipeline laid within the A170</li> </ul>	Chapter 12 (Flood Risk, Hydrology and Drainage)

2.14 As a result it was concluded that all the environmental issues associated with the Proposed Development as listed above should be addressed through the EIA and reported in the ES.

## Consultation Process

- 2.15 The following statutory and non-statutory organisations have been consulted regarding the Proposed Development through the EIA Scoping Exercise and pre-submission discussions:
- North Yorkshire County Council;
  - North Yorks Moors National Park Authority;
  - Ryedale District Council;
  - Forestry Commission;
  - Natural England;
  - English Heritage;
  - Environment Agency;
  - Yorkshire Water;
  - Thornton-le-Dale Parish Council;
  - Wilton and Allerston Parish Council; and
  - Ebberston and Yedingham Parish Council.
- 2.16 All the landowners and agricultural tenants through which the proposed pipeline and Gas Processing Facility are located have been consulted. In addition, the local MP, John Greenway (Conservative), has been consulted, along with the prospective parliamentary candidates for the three main parties for the constituency – Howard Keal (Liberal Democrat), Anne McIntosh (Conservative) and Jonathan Roberts (Labour).
- 2.17 A comprehensive programme of public consultation was undertaken to inform the Proposed Development. An information brochure was produced and provided to residents in the vicinity of the proposed site and press packs issued to the local media. In addition, Moorland Energy has launched a dedicated website regarding the Proposed Development and a two day public exhibition was held in the vicinity of the site in March 2010. Further details on the consultation process and the feedback received are contained within the Statement of Community Involvement that accompanies the Planning Application.
- 2.18 As a result of the consultation process, the proposed route and depth of the pipeline has been amended. The design evolution is discussed within the Design and Access Statement that accompanies the planning application. Involvement with the local community will continue throughout the planning process and during the excavation, construction and operational phases of the Proposed Development.

## **The Environmental Statement**

2.19 The scope and content of the ES is based upon the following:

- Review of the current situation through existing information, including data, reports, desktop studies, site surveys and modelling;
- Consideration of relevant National, Regional and Development Plan policies and other relevant guidance;
- Identification of the likely environmental effects and an evaluation of their duration, magnitude and significance;
- Consideration of potential sensitive receptors;
- Expert opinion;
- Use of technical guidance and best practice; and
- Specific consultations with appropriate bodies (as listed in Table 2.1).

## **Structure of Technical Chapters**

2.20 Through the EIA process, the likely significant environmental effects of the Proposed Development have been assessed. Each key environmental topic has been assigned a separate chapter in the ES (Chapters 7 – 18), and within each of these chapters, the information which has informed the EIA process has been broadly set out in the following way:

- i. Introduction;
- ii. Planning Policy Context;
- iii. Assessment Methodology;
- iv. Baseline Conditions;
- v. Likely Significant Effects;
- vi. Mitigation Measures;
- vii. Residual Effects; and
- viii. Summary.

2.21 Cumulative and interactive effects have been dealt with in each Chapter (where appropriate) and summarised in the Conclusions of the ES.

2.22 Each Section seeks to include the following:



*Introduction*

- 2.23 The Introduction provides a brief summary of what will be considered in the Chapter.

*Planning Policy Context*

- 2.24 This section will provide a review of the National and Development Plan policies of relevance to the Proposed Development.

*Assessment Methodology*

- 2.25 The Assessment Methodology provides an outline of the methods used to undertake the technical studies with reference to legislation, published standards, guidelines, best practice and any other relevant significant criteria.

*Baseline Conditions*

- 2.26 An important element of the ES is the baseline conditions. This provides a description of the prevailing environmental conditions against which the likely significant environmental effects of the Proposed Development have been assessed. These are usually taken to be the conditions at the time or immediately prior to submission of the Planning Application. These conditions are not usually predicted to alter significantly, if at all, during the interim period before development works are programmed to commence.

*Likely Significant Effects*

- 2.27 This identifies the likely significant environmental effects resulting from the Proposed Development as it is proposed in the Planning Application and consideration of the effects during excavation, construction and once the Proposed Development is operational.

*Mitigation Measures*

- 2.28 One of the fundamental aims of the ES is the development of mitigation measures to avoid, offset or reduce the significant adverse effects of the Proposed Development to an acceptable level. These measures can relate to any of the three key phases of the project: design, excavation/ construction or operation once the Proposed Development is completed.

- 2.29 Where any significant adverse environmental effect has been identified a commitment has been made by the Applicant to implement mitigation measures at the appropriate stage, either during the excavation and construction phase or once the Proposed Development is complete.

#### *Residual Effects and Conclusions*

- 2.30 This section identifies the effects of the Proposed Development that remain after implementation of available mitigation measures, and includes an assessment of the significance of these effects in accordance with the criteria set out below.

#### *Summary*

- 2.31 Each technical chapter is concluded with a short summary, including a summary of the likely significant effects of the Proposed Development as well as a Table of Significance.
- 2.32 Cumulative effects are considered within each Chapter as appropriate. Cumulative effects are generally considered to arise from the combination of effects from the Proposed Development and from other permitted schemes (not yet constructed), acting together to generate elevated levels of effects. The level of detail of assessment has been dependent on the information available for each of these schemes. Cumulative effects are dealt with in the relevant technical chapters. Interactive effects arise where effects from one environmental element bring about changes in another environmental element. Where appropriate, these effects are reviewed in the relevant technical chapters of the ES. Examples of the potential types of interactive effects could include the following:
- Effects of traffic on noise;
  - Effects of traffic on air quality;
  - Effects of landscaping on ecology; and
  - Effects of excavation on ecology, trees or agricultural land.

#### **Assessment Methodology**

- 2.33 The EIA Regulations stipulate that an ES should, where possible, identify, describe and assess the likely significant effects of a development on the environment. Therefore, the ES identifies and assesses the likely significant effects of the Proposed Development in relation to both the excavation/construction and the completed development phases.

Environmental effects have been evaluated with reference to definitive standards and legislation where available. Where it has not been possible to quantify effects, qualitative assessments have been carried out, based upon available knowledge and professional judgement. Where uncertainty exists, this has been noted in the relevant assessment Chapter.

### *Determining Significance*

2.34 Guidance on significance has been mainly of a generic nature (e.g. DETR Circular 2/99 and DCLG'S Amended EIA Circular), and practitioners have been obliged to develop definitions for specific topics and projects. However, it is broadly accepted that significance reflects the relationship between two factors:

- The magnitude or severity of an effect (i.e. the actual change taking place to the environment); and
- The sensitivity, importance or value of the affected resource or receptor.

2.35 The magnitude of an effect is often quantifiable in terms of, for example, extent of land take or predicted change in noise levels. The sensitivity, importance or value of the resource or receptor is normally derived from:

- Legislative controls;
- Designated status within the land use planning system;
- The number of individual receptors such as residents;
- An empirical assessment on the basis of characteristics such as rarity or condition; and
- Ability to absorb change.

2.36 Determination of significance also includes consideration of:

- Extent and magnitude of the effect;
- Type of effect (beneficial or adverse);
- Duration of effect (whether short, medium or long term; permanent or temporary);
- Nature of effect (whether direct or indirect, reversible or irreversible);
- Whether the effect occurs in isolation, is cumulative or interactive;
- Performance against environmental quality standards or other relevant pollution control thresholds; and

- Compatibility with environmental policies.

2.37 Significant effects occur where valuable or sensitive resources, or numerous receptors, are subject to effects of considerable magnitude. Effects are unlikely to be significant where low value or non-sensitive resources, or a small number of receptors, are subject to minor effects. Allocation of significant effects in intermediate situations will be a matter for professional judgement in each topic area.

2.38 Where an effect is considered to be significant, this significance will generally be classified as Major, Moderate or Minor (with these descriptions again being based on precedent or current guidance). Within this ES, the significance matrix in **Table 2.2** has been used to define the level of significance of effects. In some cases analogous matrices for the various specialist topics are used, and where these use different assessment criteria this is clearly stated within the relevant Chapter.

**Table 2.2: Significance Matrix**

Sensitivity / Value of Receptor	Magnitude of Effect		
	High	Medium	Low
<b>High</b> (England/UK/International)	Major	Major/ Moderate	Moderate
<b>Medium</b> (County/Regional)	Major/ Moderate	Moderate	Moderate/ Minor
<b>Low</b> (Local/District)	Moderate	Moderate/ Minor	Minor

2.39 The three levels of significance defined by the generic matrix are:

- Major – an effect which in isolation could have a material influence on the decision making process;
- Moderate – an effect which on its own could have some influence on decision making, particularly when combined with other similar effects; or
- Minor – an effect which on its own is likely to have a minor influence on decision making but when combined with other effects could have a more material influence.

2.40 Effects are also described as:

- Adverse – detrimental or negative effects to an environmental resource or receptor;
- Negligible – an effect that is likely to have a negligible influence, irrespective of other effects; or

- Beneficial – advantageous or positive effect to an environmental resource or receptor.

2.41 Each of the technical Chapters provides the criteria, including sources and justifications, for quantifying the different levels of effect. Where possible, this has been based upon quantitative and accepted criteria, together with the use of value judgements and expert interpretations to establish to what extent an effect is likely to be environmentally significant.

2.42 In the context of the Proposed Development, short term effects are considered to be those associated with the excavation and construction phase, and medium and long term effects are those associated with the operational phase. Local effects are those which affect receptors within and close to the proposed development including residents within Thornton-le-Dale, Wilton and Allerston. Effects upon receptors in the rest of Ryedale District Council are considered to be at a District level. Effects on North Yorkshire and the rest of the North York Moors National Park that are not within or adjoining the proposed development are considered to be at a County level whilst effects on the rest of Yorkshire and the Humber region are considered to be at a Regional level. Effects on England or the UK are considered to be at an England and UK level respectively. Any effects that can be considered in relation to different countries are at an International level.

### **Assumptions and Limitations**

2.43 The principle assumptions that have been made and any limitations that have been identified in preparing the ES are set out below:

- Baseline conditions have been established from a variety of sources, including historical data, but due to the dynamic nature of certain aspects of the environment, conditions will change during the excavation/ construction and operation of the Proposed Development;
- Information received by third parties is complete and up to date;
- The design, excavation/ construction and completed phases of the Proposed Development will satisfy minimum environmental standards, consistent with contemporary legislation, practice and knowledge;
- Excavation and construction of the Proposed Development will commence in late 2010 (subject to gaining planning permission) and will be completed in the summer of 2011, a period of approximately 40 weeks;

- Conditions will be attached to the planning permission that will control disturbance during the excavation/ construction works as well as controlling effects post completion.

2.44 Assumptions or limitations specifically relevant to each topic have been set out in each Chapter of the ES as appropriate.