

## Viking CCS Pipeline

# 9.61 Noise Assessment - Justification of Approach

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Applicant: Chrysaor Production (U.K.) Limited,  
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# Technical Note

<b>Project name</b> Viking CCS Pipeline	<b>Project number</b> 60668955	<b>Client</b> Harbour Energy	<b>Subject</b> Noise Assessment – Justification of Approach
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## 1. Introduction

This technical note provides a brief overview justifying the approach taken to the noise assessment within the Environmental Statement for the Viking CCS Pipeline Project. In particular, this note responds directly to “Hearing Action Point #12” which arose from the Issue Specific hearing 3, held on 17<sup>th</sup> July 2024.

## 2. What is the ANC guidance?

The Association of Noise Consultants (ANC) is a trade association for acoustic, noise & vibration consultancy practices in the UK. Membership covers 110 different organisations, representing over 1,000 consultants.

One of the ANC objectives is:

*“To maintain and, where possible, improve the standards of conduct and competence of consultants concerned with noise, acoustics and vibration”.*

With this statement in mind, the ANC look to provide practical guidance to assist practitioners in adopting a consistent approach when assessing noise and vibration.

The ANC Construction Noise Guide (ANC Guide) was published in 2021 and prepared by a working group of acousticians from seven different companies. The ANC Guide is primarily designed:

*“...to assist practitioners in adopting a consistent approach when applying for prior consent under Section 61 of the Control of Pollution Act 1974”.*

Although primarily aimed at the Section 61 process, the ANC Guide is a useful resource that can be applied when assessing construction noise and vibration at the planning stage as it contains information on assessment criteria, how to undertake construction noise and vibration predictions and construction noise and vibration mitigation.

## 3. Where has the ANC guidance criteria come from?

Construction noise is assessed using BS 5228-1:2009+A1:2014, which is the statutory Code of Practice attached to the Control of Pollution Act 1974. BS 5228-1 is not an explicit guide for assessing construction noise but provides example methods for assessing construction noise. The ANC Guide identifies difficulties when applying BS 5228-1 guidance when assessing construction noise through the following quote:

*“...demolition and construction can be complex and variable, making reliable predictions and assessments at times challenging, despite, and sometimes because of, the defined process identified in the British Standard 5228”.*

The publication of the Noise Policy Statement for England (NPSE) in 2010 introduced the concepts of the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL) to describe noise effects. The LOAEL and SOAEL are used to test noise effects against the three aims of the NPSE as follows:

- Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

- Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.
- Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

In order to align with the requirements of the NPSE and test against the three aims, some interpretation of construction noise criteria in BS 5228-1 example methods needed to be undertaken to determine what the relevant LOAEL and SOAEL would be.

The most commonly adopted method when assessing construction noise is the 'ABC method', which was first introduced in BS 5228:2009 and provides a method for determining construction noise thresholds that, if exceeded, would indicate a potential significant effect. The ABC method provides some flexibility when identifying a significant effect due to project specific factors such as the number of receptors affected and the duration and character of the impact, to determine if there is a significant effect. However, if the ABC method is used to define SOAEL, this flexibility is not afforded as it will demonstrate non-compliance with the first aim of the NPSE to avoid significant adverse impacts on health and quality of life regardless of any consideration of project specific factors. As such, aligning the SOAEL with the thresholds defined using the ABC method is not appropriate when testing against the three aims of the NPSE.

The ANC Guide adopted values equivalent to the LOAEL and SOAEL (see Table 1) to align with the upper and lower thresholds of the ABC method. This was considered an appropriate method of determining compliance with the NPSE whilst allowing flexibility to identify potential significant effects for construction noise levels between LOAEL and SOAEL without these significant effects resulting in non-compliance with the first aim of the NPSE.

The LOAEL and SOAEL values in the ANC Guide were "... based upon experience from other construction projects such as High Speed 1 (formerly Channel Tunnel Rail Link), Crossrail and Thameslink". These projects were scrutinised in detail as part of the Hybrid Bill or DCO examination process. As such, they are referenced in Section 1.36 of the ANC Guide as construction noise criteria that have been rigorously tested.

**Table 1: ANC Guide LOAEL and SOAEL Values**

Period	dB LAeq,T Noise Level	
	LOAEL	SOAEL
Daytime	65	75
Evening	55	65
Night-time	45	55

## 4. Why is the ANC guidance relevant for Viking CCS?

The ANC Guide was adopted for the Viking CCS scheme as it provides the most up to date interpretation of BS 5228-1 against the requirements set out in the NPSE and is considered the best practice in the acoustics industry. The criteria are particularly relevant when considering the duration of effect of pipeline construction noise.

Example method 2 in BS 5228-1 identifies lower cut-off values for construction noise equivalent to the defined LOAEL of the Proposed Development. It states that a significant effect would be identified if the lower cut-off values were exceeded for a duration of one-month or more. Pipeline construction is short-term and sporadic at any one location with individual receptors exposed to noisy construction activities for up to approximately 18 days (in total) during the pipeline laying process, which would likely last for approximately 6-8 weeks within the wider construction programme. As the noisy activities would not be continuous for a period of one-month or more, no significant effects would be identified due to construction noise levels between LOAEL and SOAEL. Therefore the LOAEL and SOAEL values for construction noise are considered suitably proportionate for the Viking CCS scheme.

## 5. What other DCO schemes have used the ANC Guidance?

A list of example schemes that have adopted construction noise criteria equivalent to the ANC Guide is presented in Table 2. The projects follow the precedent for construction noise criteria started in Thames Tideway. Projects such as

Thames Tideway, HS2, London Luton Airport Expansion and Gatwick Airport Northern Runway represent some of the most scrutinised projects in terms of noise impacts and set a reasonable precedent to follow when defining criteria.

**Table 2: Example DCO Projects Applying LOAEL/ SOAEL Equivalent to the ANC Guide**

DCO Scheme	Submission Year	Status
Thames Tideway	2013	Consented
HS2 Phase One*	2013	Royal Assent in 2017
HS2 Phase 2a*	2017	Royal Assent in 2021
Manston Airport	2019	Consented
Sunnica Energy Farm	2021	Consented
Longfield Solar Farm	2022	Consented
Gate Burton Energy Park	2023	Consented
Gatwick Airport Northern Runway	2023	Examination
East Yorkshire Solar Farm	2023	Examination
London Luton Airport Expansion	2023	Decision
Dogger Bank South Offshore Wind Farms	2024	Pre-Examination
Tillbridge Solar Farm	2024	Pre-Examination

\*Hybrid Bill process.

In addition to the projects in [Error! Reference source not found.](#)Table 2, the Southampton to London Pipeline Project (2019) defined the SOAEL as “...an exceedance of 75dB  $L_{Aeq,16h}$  for a cumulative total of 30 days or more”. However, this was reduced to 70 dB  $L_{Aeq,T}$  in response to representations made at the issue specific hearing on environmental matters. No consideration was given to duration of effects in the revised assessment methodology when identifying a significant effect. This further demonstrates that there is no single ‘correct’ methodology to assessment of construction noise effects, which need to be considered in the context and nature of each project. The approach that is taken for the Proposed Development, using the ANC Guide, is more precautionary than that which was accepted for the Southampton to London Pipeline Project.

## 6. Anticipated Future Use of the ANC guidance

The interpretation of construction noise criteria and how it relates to NPSE requirements is a relatively new advancement in acoustics and only the ANC Guide and DMRB LA111 seek to address this. As DMRB LA111 is applicable to “motorways and all-purpose trunk road”, it is not considered directly relevant when assessing non-road projects. As such, it is expected that criteria in the ANC Guide will be referenced more regularly in future DCO projects, when testing against the three NPSE aims.

## 7. Do other technical topics use DMRB guidance or do they use other more appropriate guidance?

DMRB guidance has been used for several of the technical topics included within the Viking Pipeline Environmental Statement. However, various relevant bodies in different technical areas have created their own guidance, which is more generally accepted for projects outside of highways. For completeness, some examples of this include:

*Archaeology/Cultural heritage:* Since publication of the original DMRB guidance in 1994 (Vol 11 Section 3 Part 2), various attempts have been made to develop a more broadly applicable set of guidance for heritage impact assessment, culminating in *Principles of Cultural Heritage Impact Assessment in the UK*, published jointly by the Chartered Institute for Archaeologists (CIfA), the Institute of Historic Building Conservation (IHBC) and IEMA. This identifies the principles and good practice that can be applied widely across the heritage sector for non-road projects while acknowledging that assessment of the impact of a proposal on cultural heritage assets will always have to be tailored to meet the requirements of a specific project.

*Landscape and Visual:* The Landscape Institute (LI) issued the first edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA1) in 1995. The DMRB guidance was based on Countryside Commission and other

government related guidance that was emerging in that period. National Highways has continued to issue highway specific guidance since that time, but it has always been derivative of the Landscape Institute GLVIA and associated publications. GLVIA2 was published in 2002 and National Highways issued Interim Advice Note 135/10 Landscape and Visual Effects Assessment in 2010 as an update. GLVIA3 was issued in 2013 and is the established guidance for the assessment of landscape and visual effects for non-highway schemes.

Consequently, it is an established and accepted approach for non-highway projects to use other appropriate guidance rather than DMRB guidance when assessing the effects of different environmental topics.