ARDERSIER PORT ENERGY TRANSITION FACILITY PORT EXTENSION

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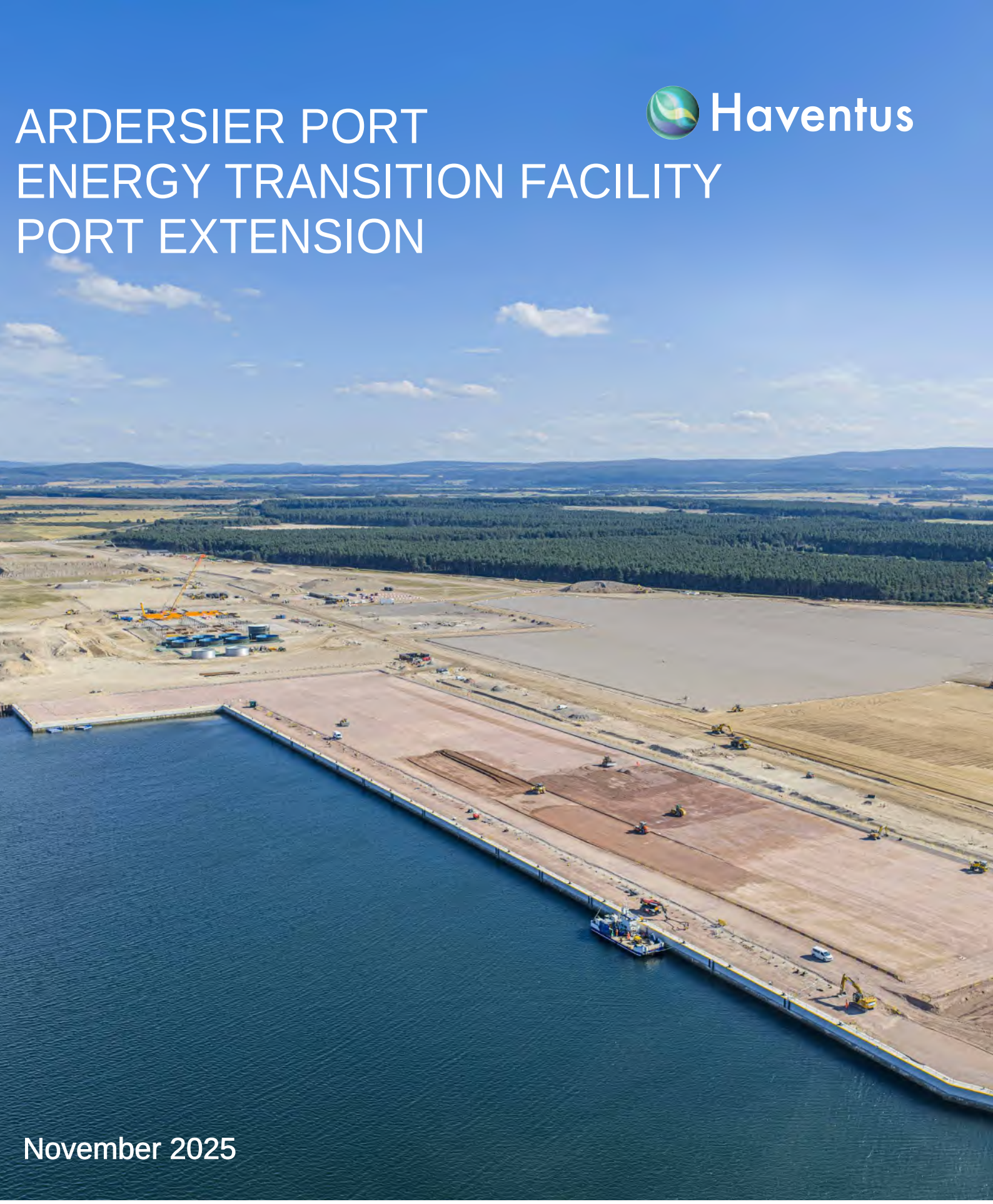

November 2025

Appendix 6.1 Legislation, Policy and Guidance

Ardersier Port Extension

Revision Number	Final
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Author	Helen Makewell
Technical Reviewer	Hasan Akil

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1 APPENDIX 6.1 – LEGISLATION, POLICY AND GUIDANCE

1.1 NATIONAL LEGISLATION

1.1.1 The Environmental Noise (Scotland) Regulations, 2006[1]

The Environmental Noise (Scotland) Regulations 2006 transpose and implement Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise. This directive is also known as The Environmental Noise Directive (END). The regulations came into force on 5 October 2006 and apply to environmental noise to which humans are exposed, in particular in built up areas, public parks or other quiet areas in an agglomeration, near schools, hospitals, and other noise sensitive buildings and areas. The regulations apply to noise from road railway and airport sources, as well as industrial noise. The regulations do not apply to noise that is caused by the person exposed to the noise, noise from domestic activities, noise created by neighbours, noise at work places, or noise inside means of transport or due to military activities in military areas.

1.1.2 The Environmental Protection Act, 1990[2]

Since April 1st 1996, by virtue of the Environment Act 1995, the Environmental Protection Act 1990 (the 1990 Act) has given Scottish Local Authorities considerable and wide-ranging powers to tackle noise nuisance. S. 79 of the 1990 Act imposes a duty on local authorities to take reasonable steps to investigate complaints of nuisance and to inspect their area from time to time to detect statutory noise nuisances. Where a local authority is satisfied that the noise emitted from any premises is prejudicial to health or constitutes a 'nuisance', it must serve an abatement notice on the person responsible for the noise. This notice may require the abatement of the nuisance or prohibit or restrict its occurrence or recurrence, and may also require the execution of such works and the taking of such steps as are necessary for this purpose. Local Authorities can exercise these controls at any time if satisfied there is a statutory nuisance regardless of the terms of any planning permission.

1.1.3 The Noise and Statutory Nuisance Act, 1993[3]

This Act amended Part III of the Environmental Protection Act 1990 by placing additional definitions in the list of statutory nuisances in section 79 of that Act. The definitions related to nuisance caused by vehicles, machinery and equipment in the road.

1.1.4 Control of Pollution Act, 1974[4] (COPA)

The Control of Pollution Act 1974 offers protection against disturbance to residents that might be affected by construction activity. COPA has been largely repealed by the Environmental Protection Act, 1990.

Section 60 of the Act enables a local authority to serve a notice specifying its noise control requirements covering plant or machinery hours of working, and levels of noise that can be emitted.

[1] The Environmental Noise (Scotland) Regulations 2006. Available at: https://www.legislation.gov.uk/ssi/2006/465/contents (Accessed 19/09/2025)
[2] The Environmental Protection Act 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents (Accessed 19/09/2025)
[3] The Noise and Statuatory Nuisance Act 1993. Available at: https://www.legislation.gov.uk/ukpga/1993/40/contents (Accessed 19/09/2025)
[4] Control of Pollution Act 1974. Available at: https://www.legislation.gov.uk/ukpga/1974/40 (Accessed 19/09/2025)

Section 61 relates to prior consent in which the contractor consults with the local authority and provides an application prior to construction works commencing to obtain approval for the methods to be used and the steps proposed to minimize noise resulting from the works. If the local authority considers that the application contains sufficient information and that "best practicable means" of noise control are being implemented, and if works are being carried out in accordance with the applications, it would not serve a notice under Section 60.

1.1.5 Pollution and Prevention Control Act, 1999[5]

The Act defines 'emissions' as the direct or indirect release of substances, vibrations, heat or noise from individual or diffuse sources in an installation into the land, air or water. Noise and vibration are included within this definition.

1.2 NATIONAL POLICY

1.2.1 National Planning Framework 4, 2023[6]

National Planning Framework 4 (NPF4) is Scotland's national spatial strategy. It sets out the spatial principles, regional priorities, national developments and national planning policy. It should be read as a whole and replaces NPF3 and Scottish Planning Policy.

Of particular relevance is Policy 23, relating to Health and Safety, which states: *"[..] Development proposals that are likely to raise unacceptable noise issues will not be supported. The agent of change principle applies to noise sensitive development. A Noise Impact Assessment may be required where the nature of the proposal or its location suggests that significant effects are likely."*

1.2.2 Planning Advice Note (PAN) 1/2011 Planning and Noise, 2011[7]

PAN 1/2011 provides advice on the role of the planning system in helping to prevent and limit the adverse effects of noise. It supersedes Circular 10/1999 Planning and Noise and PAN 56 Planning and Noise. Information and advice on noise impact assessment (NIA) methods is provided in the associated Technical Advice Note.

1.2.3 Assessment of Noise: Technical Advice Note (TAN), 2011[8]

TAN 2011 provides guidance which may assist in the technical evaluation of noise assessment. It has been prepared as a guide for noise professionals, both in the public and private sector, in the preparation and evaluation of noise impact assessments. aims to assist in assessing the significance of impact.

TAN 2011 provides definitions for important acoustic terms and sets out an outline noise assessment methodology that should be followed, consisting of five states:

- Stage 1: Initial Process: The initial process requires the identification of all noise sensitive receptors (NSR) that may potentially be affected by the development and to prioritise each NSR according to their level of sensitivity. The following steps are then carried out for each NSR identified.
- Stage 2: Quantitative Assessment: The procedure within a quantitative assessment depends on the type of development i.e. noise generating development or noise sensitive development. The final procedure in this stage is to determine the magnitude of the impact.
- Stage 3: Qualitative Assessment: A qualitative assessment allows additional factors to be included in the assessment procedure to augment the quantitative evaluation. The outcome from

[5] Pollution and Prevention Control Act 1999. Available at: https://www.legislation.gov.uk/ukpga/1999/24/contents (Accessed 19/09/2025)
[6] The Scottish Government, 2023. National Planning Framework 4. The Scottish Government
[7] The Scottish Government, 2011. Planning Advice Note PAN 1/2011 Planning and Noise. The Scottish Government
[8] The Scottish Government, 2011. Assessment of noise: technical advice note. Available at: https://www.gov.scot/publications/technical-advice-note-assessment-noise/ (Accessed 19/09/2025)

this process allows the magnitude of impacts determined from the quantitative assessment to be adjusted accordingly.

- Stage 4: Level of Significance: The level of significance of the noise impact at the NSR is obtained through the relationship of the receptor's sensitivity to noise and the magnitude of the noise impact. The result of this process is entered into the Summary Table of Significance of Noise Impacts.
- Stages 2, 3 and 4 are repeated for each NSR.
- Stage 5: The Decision Process: The number of noise sensitive receptors within each level of significance is totalled to complete the Summary Table of Significance. The Summary Table will normally form only part of the information required to inform the decision process when applying for planning permission.

Further guidance and example assessments are provided for a range of scenarios. The assessments presented herein follow this assessment methodology where appropriate.

1.3 LOCAL POLICY

1.3.1 Highland-wide Local Development Plan, 2012[9]

The Highland-wide Local Development plan sets out the guidelines for development and investment in the area over the twenty year period following adoption. Of particular relevant is Policy 72, Pollution, which states:

"Proposals that may result in significant pollution such as noise (including aircraft noise), air, water and light will only be approved where a detailed assessment report on the levels, character and transmission and receiving environment of the potential pollution is provided by the applicant to show how the pollution can be appropriately avoided and if necessary mitigated.

Where the Council applies conditions to any permission to deal with pollution matters these may include subsequent independent monitoring of pollution levels.

Major Developments and developments that are subject of Environmental Impact Assessment will be expected to follow a robust project environmental management process, following the approach set out in the Council's Guidance Note "Construction Environmental Management Process for Large Scale Projects" or a similar approach."

1.4 STANDARDS AND GUIDELINES

1.4.1 British Standard (BS) 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound[10]

British Standard (BS) 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound provides a method of determining rating levels for sources of industrial or commercial sound for the purposes of determining the noise impact from new, modified, or additional sources of sound, and assessing sound at noise sensitive receptors.

The BS 4142 assessment approach, in summary, involves the following:

- The specific sound level, L_s, (of commercial sound) is determined at each assessment location during time intervals that are representative of the period of interest. For a source that is not yet operating this is determined by calculation.

[9] The Highland Council, 2012. Highland-wide Local Development Plan. The Highland Council.
[10] British Standards Institution, 2019. BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound. BSI.

- The background sound level, $L_{A90,T}$, is measured at each assessment location (or equivalent representative location). A representative value of the background sound level is then determined for each period of interest. Observations and a description of the acoustic environment are required to understand the context in which the specific sound source is being assessed.
- The rating level, $L_{Ar,Tr}$, of commercial sound is determined at each assessment location accounting for the expected character of the specific sound, by applying corrections for characteristics that attract attention (tonality, impulsivity, intermittency, any other distinctive features). This can be undertaken using objective or subjective methods.
- The level and potential effects of uncertainty in the assessment are then reported.

BS 4142:2014+A1:2019 states:

"The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the Rating level of the Specific sound source exceeds the background sound level and the context in which the sound occurs."

An estimation of the impact can be obtained by the difference of the rating noise level and the background noise level and considering the following:

"Typically, the greater this difference, the greater the magnitude of the impact;

- *A difference of around +10dB or more is likely to be an indication of a significant adverse impact, depending on the context;*
- *A difference of around +5dB is likely to be an indication of an adverse impact, depending on the context; and*
- *The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context."*

1.4.2 British Standard (BS) 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise[11]

BS 5228-1 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise provides a methodology for predicting and assessing noise levels generated by fixed and mobile plant used for a range of typical construction operations. The standard includes a database of noise levels at a reference distance of 10m from the source and a simple noise propagation that can be used to make allowance for effects such as source-receiver distances, ground properties, and utilisation time.
Annex E, section E.3.2 of the standard also sets criteria to assess the potential significant effect of construction noise at dwellings (example method 1 – The ABC method).

1.4.3 British Standard (BS) 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration[12]

BS 5228-2 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration provides a methodology for predicting and assessing vibration levels generated by construction activities such as piling and compaction. The standard also presents thresholds based on perceived impacts using the metric Peak Particle Vibration (PPV, mm/s).

[11] British Standards Institution, 2014. BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 1: Noise. BSI.
[12] British Standards Institution, 2014. BS 5228-2:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration. BSI.

1.4.4 British Standard (BS) 8233:2014 Guidance on sound insulation and noise reduction for buildings[13]

This British Standard provides guidance for the control of noise in and around buildings. It is applicable to the design of new buildings, or refurbished buildings undergoing a change of use, but does not provide guidance on assessing the effects of changes in the external noise levels to occupants of an existing building. The Standard presents guidance on external noise sources, specific types of buildings, sound insulation within buildings, and noise from building services.

Table 4 of the Standard presents "desirable" internal ambient noise limits for dwellings. This table and the supporting notes are reproduced below.

Table 1: Table 4 of BS 8233:2014: "indoor ambient noise levels for dwellings"

Activity	Location	07:00 – 23:00	23:00 – 07:00
Resting	Living room	35 dB $L_{Aeq,T}$	-
Dining	Dining room/area	40 dB $L_{Aeq,T}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,T}$	30 dB $L_{Aeq,T}$

"NOTE 1 Table 4 provides recommended levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Groundborne noise is assessed separately and is not included as part of these targets, as human response to groundborne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.
NOTE 2 The levels shown in Table 4 are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the levels recommended in Table 4.
NOTE 3 These levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.
NOTE 4 Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or LAmax,F, depending on the character and number of events per night. Sporadic noise events could require separate values.
NOTE 5 If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.
NOTE 6 Attention is drawn to the Building Regulations [30, 31, 32].
NOTE 7 Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved. If there is noise from a mechanical ventilation system, the internal ambient noise levels should be reported separately with the system operating and with it switched off. If the room contains items such as fridges, freezers, cookers and water heaters, these should be turned off during measurement. Shorter measurement periods such as LAeq, 1 hour may be used by agreement, provided the selected shorter measurement period is shown to be representative of the entire night or day period."

Paragraph 7.7.3.2 of the Standard relates to external amenity spaces and states:

"For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline

[13] British Standards Institution, 2014. BS 8233:2014 Guidance on sound insulation and noise reduction for buildings. BSI.

values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited."

1.4.5 BS 6472: 2008 Part 1 Guide to Evaluation of Human Exposure to Vibration in Buildings (Vibration sources other than blasting) [14]

BS 6472-1 is a British Standard providing guidelines for evaluating human exposure to vibration in buildings. It focuses on ground-borne vibrations, particularly those originating from sources like construction activities or nearby railways. The standard outlines methods for measuring, assessing, and reporting vibration levels to ensure they remain within acceptable limits, thereby protecting occupant comfort and health. It also includes criteria for different times of day and various building types, offering a comprehensive approach to managing vibration impacts.

BS 6472-1 introduced the Vibration Dose Value metric (VDVm $/s^{1.75}$) as a means of comparing vibration exposure and effects from varying sources.

1.4.6 BS 7385: 1993 Part 2 Evaluation and measurement for vibration in buildings. Guide to damage levels from ground-borne vibration[15]

BS 7385: Part 2: 1993 "Evaluation and measurement for vibration in buildings" gives guidance on the levels of vibration above which building structures could be damaged. The standard states that there is a major difference between the sensitivity of people in feeling vibration and the onset of levels of vibration which damage the structure. Furthermore, it states that cracking commonly occurs in buildings whether they are exposed to vibration or not.
For the purposes of BS 7385, damage is classified as cosmetic (formation of hairline cracks), minor (formation of large cracks) or major (damage to structural elements). Guide values given in the Standard are associated with the threshold of cosmetic damage only, usually in wall and/or ceiling lining materials.

1.4.7 Design Manual for Roads and Bridges (DMRB) LA 111 Noise and vibration, Revision 2, 2020[16]

DMRB LA 111 Revision 2, dated May 2020, (which supersedes HD 213/11 and the accompanying IAN 185/15) sets out the requirements for noise and vibration assessments from road projects, applying a proportionate and consistent approach using best practice and ensuring compliance with relevant legislation.

It requires that environmental assessments of noise and vibration emissions shall include likely significant effects from construction noise, construction vibration and operational noise. Operational vibration is scoped out of the assessment methodology as a maintained road surface will not have the potential to lead to significant adverse effects.

DMRB LA111 details the assessment methodology for scoping, study areas and baseline. It also sets the criteria to determine the significance of impacts.

[14] British Standards Institution, 2009. BS 6472-1:2008 Guide to Evaluation of Human Exposure to Vibration in Buildings Part 1: Vibration sources other than blasting. BSI.
[15] British Standards Institution, 1993. BS 7385-2:1993 Evaluation and measurement for vibration in buildings. Guide to damage levels from ground-borne vibration. BSI.
[16] Highways England, 2020. Design Manual for Roads and Bridges LA 111 Noise and Vibration Revision 2. Highways England

1.4.8 Calculation of Road Traffic Noise (CRTN), 1988[17]

CRTN provides procedures for predicting noise levels for a given flow of road traffic at sensitive receptors. These methodologies are used in the determination of entitlement under the Noise Insulation Regulations and for traffic noise change assessments undertaken in accordance with the DMRB guidance noted above.

1.4.9 WHO Night Noise Guidelines for Europe, 2009[18]

The WHO Night Noise Guidelines (NNG) for Europe 2009 was published for "the development of future legislation and policy action in the area of assessment and control of night noise exposure".

The document states "There is no sufficient evidence that the biological effects observed at the level below 40dB $L_{night,outside}$ are harmful to health. However, adverse health effects are observed at the level above 40dB $L_{night,outside}$, such as self-reported sleep disturbance, environmental insomnia, and increased use of somnifacient drugs or sedatives."

Further to this "An interim target (IT) of 55dB $L_{night,outside}$ is recommended in the situations where the achievement of NNG is not feasible in the short run for various reasons. It should be emphasized that the IT is not a health-based limit value by itself. Vulnerable groups cannot be protected at this level. Therefore, the IT should be considered only as a feasibility-based intermediate target which can be temporarily considered by policy-makers for exceptional local situations."

1.4.10 WHO Environmental Noise Guidelines for the European Region, 2018[19]

The main purpose of these guidelines is to provide recommendations for protecting human health from exposure to environmental noise originating from various sources: transportation (road traffic, railway and aircraft) noise, wind turbine noise and leisure noise. The current guidelines complement the Night Noise Guidelines from 2009.

The guidelines set out to define recommended exposure levels for environmental noise in order to protect population health. Specific recommendations formulated for road traffic noise include the following.

- For average noise exposure, it strongly recommends reducing noise levels produced by road traffic below 53 decibels (dB) L_{den}, as road traffic noise above this level is associated with adverse health effects.
- For night noise exposure, it strongly recommends reducing noise levels produced by road traffic during night-time below 45dB L_{night}, as night-time road traffic noise above this level is associated with adverse effects on sleep.
- To reduce health effects, it strongly recommends that policy-makers implement suitable measures to reduce noise exposure from road traffic in the population exposed to levels above the guideline values for average and night noise exposure. For specific interventions, it recommends reducing noise both at the source and on the route between the source and the affected population by changes in infrastructure.

1.4.11 Guidelines for Noise Impact Assessment (IEMA), 2014[20]

The Institute of Environmental Management and Assessment (IEMA) Guidelines for Environmental Noise Impact Assessment provide guidance on noise assessment in the Environmental Impact Assessment (EIA) context. These define key methodologies used within the noise impact assessment process and provide advice on their limitations. They apply to both minor and major projects.

[17] Department of Transport, 1988. Calculation of Road Traffic Noise. HMSO
[18] World Health Organization, 2009. Night Noise Guidelines for Europe. WHO Regional Office for Europe.
[19] World Health Organization, 2018. Environmental Noise Guidelines for the European Region. WHO Regional Office for Europe.
[20] Institute of Environmental Management & Assessment, 2014. Guidelines for Environmental Noise Impact Assessment Version 1.2. IEMA.

The IEMA Guidelines provide a table for the generic relationship between noise impact (magnitude) and noise effect (magnitude and sensitivity) including the evaluation of significance. An extract from the table is show in Table 2.

Table 2: Extract from IEMA showing generic relationship between noise impact, effect, and significance

Magnitude (nature of impact)	Descriptor	Significance
Negligible	No discernible effect on receptor	Not significant
Slight	Receptor perception = non-intrusive Noise impact can be heard, but does not cause any change in behaviour or attitude, for example turning up the volume of the television, speaking more loudly, closing windows. Can slightly affect the character of the area but not such that there is a perceived change in the quality of life.	Less likely to be significant (greater justification needed based on impact magnitude and receptor sensitivity to justify a significant effect)
Moderate	Receptor perception = intrusive Noise impact can be heard and causes small changes in behaviour and / or attitude, for example turning up volume of television; speaking more loudly, closing windows. Potential for non-awakening sleep disturbance. Affects the character of the area such that there is a perceived change in the quality of life.	
Substantial	Receptor perception = disruptive Causes a material change in behaviour and / or attitude for example avoiding certain activities during periods of intrusion. Potential for sleep disturbance resulting in difficulty getting back to sleep. Quality of life diminished due to change in character of the area.	More likely to be significant (greater justification needed based on impact magnitude and receptor sensitivity to justify a non-significant effect)

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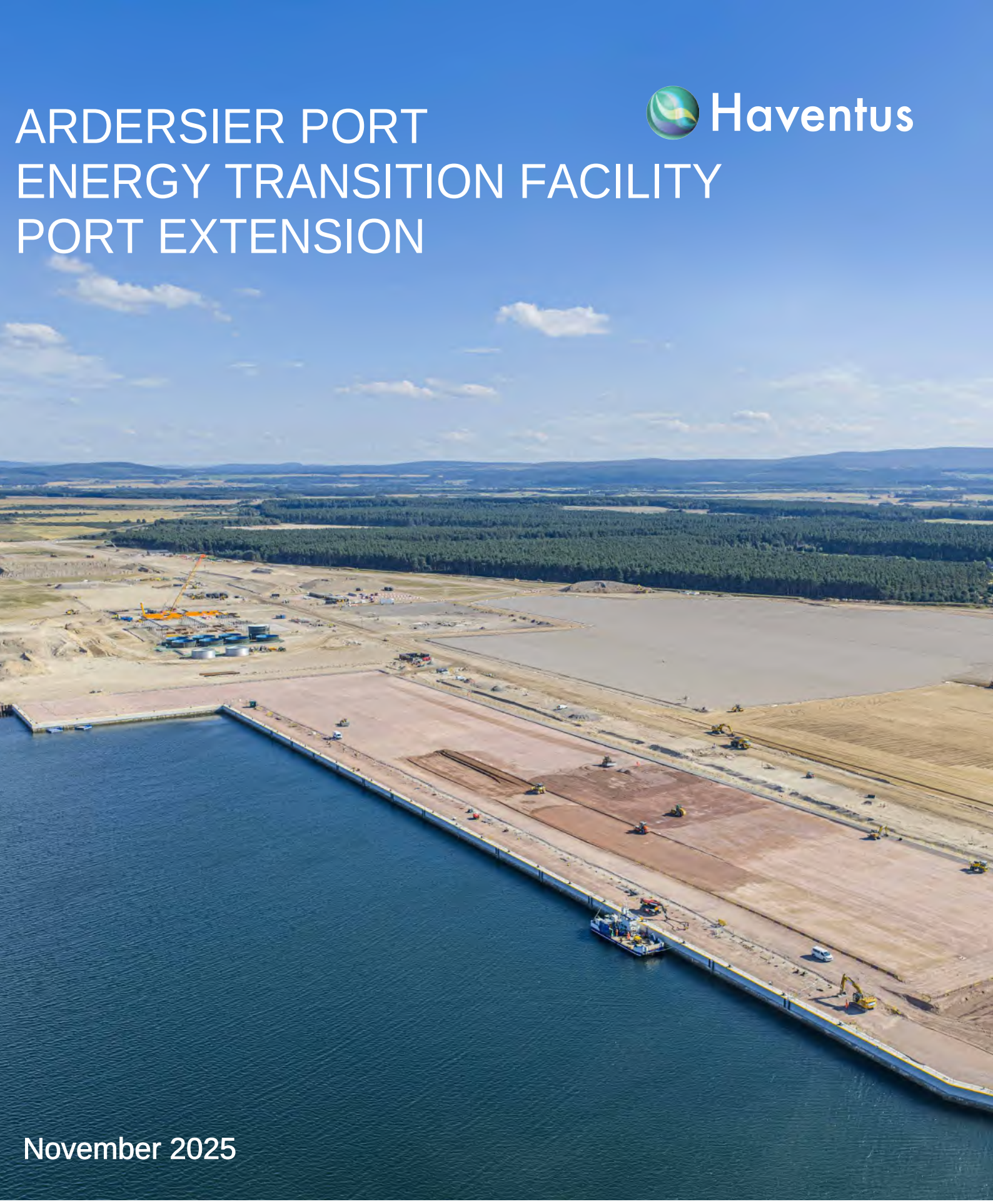

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Appendix 6.2 Assessment Methodology

Ardersier Port Extension

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TABLES

Appendix 6.2: Assessment Methodology

1.1 CONSTRUCTION IMPACT ASSESSMENT

Noise

At this stage of the project, a detailed construction programme has yet to be finalised, however an indicative assessment of potential noise impacts has been presented based on information that is available.

It is anticipated that the construction phase of the development would not be a continuous series of activities but would take place in discrete phases over a 26- month period. Given the proximity of the site to the nearest noise sensitive receptors (NSRs) it is anticipated that there could be noise and/or vibration impacts as a result of the works. Specific detail on the type of plant is not available at this stage therefore construction noise levels are based on generic plant detail contained within BS 5228-1:2009 +A1:2014.

Calculations have been undertaken based on areas of the site where the works are anticipated to occur and in the absence of mitigation – this approach to assessment is considered to be a conservative worst-case. In reality, each of the identified activities will not occur simultaneously over the individual works areas and so noise levels would be lower due to differences in separation distance, local screening and plant working 'on-times'.

To assess the potential impacts of construction noise on existing NSRs, the 'ABC' method set out in Annexe E of BS 5228-1-2009 +A1:2014 and defines category threshold levels which are determined by the time of day and existing monitored noise levels, was used. The noise level generated by construction activities, corrected to take into account the existing monitored noise levels ('total' noise level) and then compared against the identified threshold noise level. If the total noise level exceeds the 'threshold' value of an activity it is considered that there could be a significant impact as a result.

For consistency with previous assessments undertaken for the development of the Ardersier Port site, the criteria in Table 1: Construction Noise Significance Criteria below was adopted to enable consistent definition of potential significant impacts.

Table 1: Construction Noise Significance Criteria

Impact Significance	Level Above Threshold Value (dB(A))	Definition
Negligible	<0	The impact is not of concern
Minor adverse	0.1 – 4.9	The impact is undesirable but of limited concern
Moderate adverse	5.0 – 9.9	The impact gives rise to some concern but is likely to be tolerable depending on scale and duration
Major adverse	>10	The impact gives rise to serious concern and it should be considered unacceptable

Vibration

Two types of vibration impacts have been considered:

- The impacts on people or equipment within buildings; and
- The impacts on buildings (or other structures).

Limited guidance is available to enable the calculation and/or assessment of vibration associated with construction, therefore BS 5228-2:2009 +A1:2014 has been used as the primary method of assessment. Based on this guidance, the thresholds set out in Table 2 below have been considered for determining the potential effects of construction vibration on a receptor.

Table 2: Impact Magnitude Construction Vibration

Vibration limit PPV (mm/s)	Interpreted Significance to Humans	Impact Magnitude (Human Receptor)	Interpreted Significance to Buildings[1]
<0.14	Vibration unlikely to be perceptible	No impact	Vibration instance unlikely to incur cosmetic or structural damage to buildings in good condition
0.14 – 0.3	Vibration might just be perceptible in the most sensitive situations for most vibration frequencies associated with construction	Negligible Adverse	
0.3 – 1.0	Vibration might just be perceptible in residential environments	Minor Adverse	
1.0 to <10.0	It is likely that vibration at this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents	Moderate Adverse	
>10.0	Vibration is likely to be intolerable for any more than a brief exposure to this level	Major Adverse	
12.5 – 15.0			Probability for cosmetic damage to buildings in good condition increases from zero beyond 12.5mm/s
>15.0			Cosmetic damage to buildings in good condition could occur

Further to Table 2 above, Table 3 below presents the distance at which activities anticipated to generate vibration is likely to reach the various thresholds indicated based on a 33% chance of exceedance.

Table 3: Distance from Vibratory Piling when Cosmetic Damage and Complaints May Occur

Activity	Indicative Threshold				
	0.3mm/s	1.0mm/s	10mm/s	12.5mm/s	15mm/s
Vibratory Piling	100m	40m	7m	6m	5m
Vibratory Compaction (Start Up)	90m	35m	5m	4m	3m
Vibratory Compaction (Steady State)	60m	26m	5m	4m	3m

1.2 OPERATIONAL IMPACT ASSESSMENT

Noise

Technical Advice Note 2011 (TAN) to Planning Advice Note 1/2011 'Noise' presents a five-stage noise assessment methodology which applicable to both noise generating developments (NGDs) and noise sensitive developments (NSDs). As the proposed development is considered an NGD, the relevant procedure will be followed as detailed below.

[1] Potential for damage to structures is based on both PPV (mm/s) and the dominant frequency of the vibration.

Where industrial development are proposed the change in noise level could affect existing noise sensitive premises, the TAN recommends an assessment based on the principles described in BS: 4142 however it does not adhere to the BS 4142 method of evaluation. TAN describes a methodology to determine the sensitivity of receptors using the values detailed in Table 4 below.

Table 4: Receptor Sensitivity Criteria (Site Operational Noise)

x = BS 4142 Rating Level ($L_{Ar,Tr}$ Minus Monitored Background Level ($L_{A90,T}$)	Sensitivity of Receptor
x <5	Low
5 ≤ x <10	Medium
x ≥ 10	High

Table 5 provides the criteria used to define the magnitude of noise impacts where a noise generating development is expected to affect noise sensitive receptors.

Table 5: Operational Noise Magnitude of Noise Impact

Change in (Total) Noise Level (dB $L_{Aeq,T}$)	Magnitude
0.1 to 0.9	Negligible
1 to 2.9	Minor Adverse
3 to 4.9	Moderate Adverse
≥ 5	Major Adverse

Once the sensitivity of a receptor has been determined and the change in noise level has been predicted, Table 6 can be used to determine the significance of any noise impacts from the operation of the development.

Table 6: Operational Noise Significance Criteria

Magnitude of Impact (reference Table 1.5)	Sensitivity of Receptor Based on Likelihood of Complaint		
	Low (x < 5)	Medium (5 ≤ x < 10)	High (x ≥ 10)
Major	Slight / Moderate	Moderate / Large	Large / Very Large
Moderate	Slight	Moderate	Moderate / Large
Minor	Neutral / Slight	Slight	Slight / Moderate
Negligible	Neutral / Slight	Neutral / Slight	Slight
No Change	Neutral	Neutral	Neutral

For the purpose of this EIAR, the criteria detailed in Table 6 can be translated to the overall significance criteria in Table 7 and the relative effect on the decision-making process for the proposed development.

Table 7: Significance Criteria Relating to the Planning Decision Process

Operational Noise Significance Criteria	Interpretation in Terms of Decision Making Process
Very Large	These effects represent key factors in the decision-making process. They are generally, but not exclusively associated with impacts where mitigation is not practical or would be ineffective.
Large	These effects are likely to be important considerations but where mitigation may be effectively employed such that resultant adverse effects are likely to have a Moderate or Slight significance.
Moderate	These effects, if adverse, while important, are not likely to be key decision-making issues.
Slight	These effects may be raised but are unlikely to be of importance in the decision-making process.
Neutral	No effect, not significant, noise need not be considered as a determining factor in the decision-making process.

1.3 TRAFFIC NOISE ASSESSMENT

In addition to the methodology presented above the TAN recommends that the significance of impact arising from vehicle movements is assessed based on the change in the prevailing noise level. In the example given, the change in noise level is based on the L_{A10} noise parameter, which is the accepted parameter for the assessment of road traffic noise. The Calculation of Road traffic Noise predictive methodology is used to determine the LAeq,1h. The change in the prevailing noise level with the development is then used to determine the significance of the impact.

The initial process for the assessment requires the assigning of sensitivity to receptors, as with the assessment of operational noise detailed previously. Table 8 below details the method to determine receptor sensitivity for increased noise incident on designated quiet areas within an agglomeration, however these criteria are also considered appropriate for this assessment.

Table 8: Receptor Sensitivity Criteria (Traffic Noise)

Existing Noise Condition Across 50% of Receptor Area (dB $L_{Aeq,16h}$)	Sensitivity of Receptor
x >55	Low
50 ≤ x ≤ 55	Medium
x <50	High

Table 8 above presents the significance criteria for change in the prevailing noise level due to potential increases in vehicle flows. Table 6: Operational Noise Significance Criteria will also be considered in the determination of the significance of the impact.

Table 9: Traffic Noise Magnitude of Noise Impact

Change in Ambient Noise Level dB ($L_{Aeq,1h}$)	Magnitude
0	No change
0.1 to 0.9	Negligible
1 to 2.9	Minor

Change in Ambient Noise Level dB ($L_{Aeq,1h}$)	Magnitude
3 to 4.9	Moderate
≥5	Major

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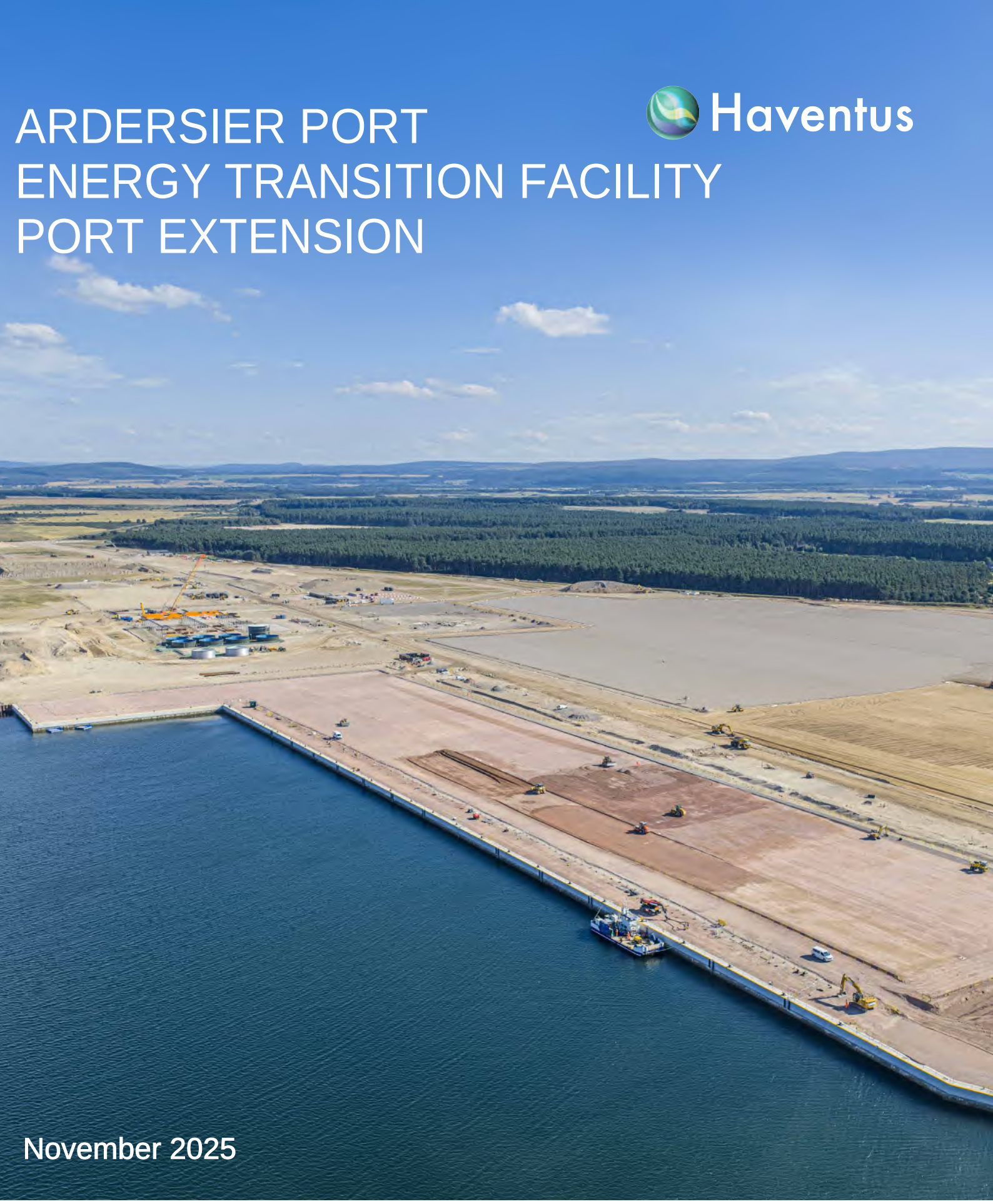

November 2025

Appendix 6.3 Construction Noise Assessment

Ardersier Port Extension

Revision Number	Final
Date	October 2025
Version:	1
Author	Helen Makewell
Technical Reviewer	Hasan Akil

CONTENTS

TABLES

APPENDIX 6.3 CONSTRUCTION NOISE ASSESSMENT

Table 1: BS 5228-1 Assessment Thresholds

Receptor	Daytime Measured Noise Level (dB $L_{Aeq,T}$)	BS 5228-1 ABC Threshold Level	Daytime threshold
NSR-A	48	Category A	65dB
NSR-D	48	Category A	65dB

Table 2: Indicative Programme and Calculated Sound Power Levels per Activity (SWL dB)

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
Month 1	Vegetation/Tree Clearance - Existing Tree Removal	East Extension Area	104.8	865	34.2	48	48.2	-16.8	Negligible	920	33.6	48	48.2	-16.8	Negligible
Month 2	Vegetation/Tree Clearance - Existing Tree Removal	East Extension Area	104.8	865	34.2	48	48.2	-16.8	Negligible	920	33.6	48	48.2	-16.8	Negligible
Month 3	Vegetation/Tree Clearance - Existing Tree Removal	East Extension Area	104.8	865	34.2	48	48.2	-16.8	Negligible	920	33.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Diaphragm Wall - Diaphragm Wall	Ph2 Existing Quayside Section 1	120.9	1095	48	48	51	-14	Negligible	2400	40.3	48	48.7	-16.3	Negligible
	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 1	120.8	1095	47.9	48	51	-14	Negligible	2400	40.2	48	48.7	-16.3	Negligible
Month 4	Diaphragm Wall - Diaphragm Wall	Ph2 Existing Quayside Section 1	120.9	1095	48	48	51	-14	Negligible	2400	40.3	48	48.7	-16.3	Negligible
	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 1	120.8	1095	47.9	48	51	-14	Negligible	2400	40.2	48	48.7	-16.3	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	120.9	1095	48	48	51	-14	Negligible	2400	40.3	48	48.7	-16.3	Negligible
	Diaphragm Wall - Diaphragm Wall	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	East Extension Area	104.8	865	34.2	48	48.2	-16.8	Negligible	920	33.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Diaphragm Wall - Diaphragm Wall*	Ph2 Existing Quayside Section 3	120.9	1040	48.5	48	51.3	-13.7	Negligible	1995	42.2	48	49	-16	Negligible
Month 5	Diaphragm Wall - Diaphragm Wall	Ph2 Existing Quayside Section 3	120.9	1040	48.5	48	51.3	-13.7	Negligible	1995	42.2	48	49	-16	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 2	120.8	833	50.6	48	52.5	-12.5	Negligible	1990	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	East Extension Area	104.8	865	34.2	48	48.2	-16.8	Negligible	920	33.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	West Extension Area	104.8	160	50.7	48	52.6	-12.4	Negligible	1250	30.6	48	48.1	-16.9	Negligible
Month 6	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 2	120.8	833	50.6	48	52.5	-12.5	Negligible	1990	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	West Extension Area	104.8	160	50.7	48	52.6	-12.4	Negligible	1250	30.6	48	48.1	-16.9	Negligible
Month 7	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 2	120.8	833	50.6	48	52.5	-12.5	Negligible	1990	42.1	48	49	-16	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	West Extension Area	104.8	160	50.7	48	52.6	-12.4	Negligible	1250	30.6	48	48.1	-16.9	Negligible
Month 8	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 2	120.8	833	50.6	48	52.5	-12.5	Negligible	1990	42.1	48	49	-16	Negligible
	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 3	120.8	1040	48.4	48	51.2	-13.8	Negligible	1995	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Vegetation/Tree Clearance - Existing Tree Removal	West Extension Area	104.8	160	50.7	48	52.6	-12.4	Negligible	1250	30.6	48	48.1	-16.9	Negligible
Month 9	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 3	120.8	1040	48.4	48	51.2	-13.8	Negligible	1995	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	West Extension Area	104.8	160	50.7	48	52.6	-12.4	Negligible	1250	30.6	48	48.1	-16.9	Negligible
Month 10	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 3	120.8	1040	48.4	48	51.2	-13.8	Negligible	1995	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	East Extension Area	105.8	865	35.2	48	48.2	-16.8	Negligible	920	34.6	48	48.2	-16.8	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	West Extension Area	105.8	160	51.7	48	53.2	-11.8	Negligible	1250	31.6	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	Gorse Extension Area	104.8	470	40.2	48	48.7	-16.3	Negligible	823	34.7	48	48.2	-16.8	Negligible
Month 11	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 3	120.8	1040	48.4	48	51.2	-13.8	Negligible	1995	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	West Extension Area	105.8	160	51.7	48	53.2	-11.8	Negligible	1250	31.6	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Existing Tree Removal	Gorse Extension Area	104.8	470	40.2	48	48.7	-16.3	Negligible	823	34.7	48	48.2	-16.8	Negligible
Month 12	Diaphragm Wall - Guide Wall	Ph2 Existing Quayside Section 3	120.8	1040	48.4	48	51.2	-13.8	Negligible	1995	42.1	48	49	-16	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	West Extension Area	105.8	160	51.7	48	53.2	-11.8	Negligible	1250	31.6	48	48.1	-16.9	Negligible
Month 13	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	120.9	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	120.9	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	120.9	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	West Extension Area	105.8	160	51.7	48	53.2	-11.8	Negligible	1250	31.6	48	48.1	-16.9	Negligible
Month 14	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	West Extension Area	105.8	160	51.7	48	53.2	-11.8	Negligible	1250	31.6	48	48.1	-16.9	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	Gorse Extension Area	105.8	470	41.2	48	48.8	-16.2	Negligible	823	35.7	48	48.2	-16.8	Negligible
Month 15	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Utilities - Installation of Electrical and Water Diversions	Site	116.4	1080	43.6	48	49.4	-15.6	Negligible	957	44.8	48	49.7	-15.3	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	Gorse Extension Area	105.8	470	41.2	48	48.8	-16.2	Negligible	823	35.7	48	48.2	-16.8	Negligible
Month 16	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 1	123.7	1095	50.8	48	52.6	-12.4	Negligible	2400	43.1	48	49.2	-15.8	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	Gorse Extension Area	105.8	470	41.2	48	48.8	-16.2	Negligible	823	35.7	48	48.2	-16.8	Negligible
Month 17	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	Gorse Extension Area	105.8	470	41.2	48	48.8	-16.2	Negligible	823	35.7	48	48.2	-16.8	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
Month 18	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Utilities - Removal of redundant Electrical and Water Diversions	Site	113.4	1080	40.6	48	48.7	-16.3	Negligible	957	41.8	48	48.9	-16.1	Negligible
	Vegetation/Tree Clearance - Vegetation Removal and Land Levelling	Gorse Extension Area	105.8	470	41.2	48	48.8	-16.2	Negligible	823	35.7	48	48.2	-16.8	Negligible
Month 19	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Debris Removal	Ph2 Dredge Area	104.8	945	33.4	48	48.1	-16.9	Negligible	2074	25.7	48	48	-17	Negligible
Month 20	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Debris Removal	Ph2 Dredge Area	104.8	945	33.4	48	48.1	-16.9	Negligible	2074	25.7	48	48	-17	Negligible
Month 21	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 2	123.7	833	53.5	48	54.6	-10.4	Negligible	1990	45	48	49.8	-15.2	Negligible
	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Debris Removal	Ph2 Dredge Area	104.8	945	33.4	48	48.1	-16.9	Negligible	2074	25.7	48	48	-17	Negligible
Month 22	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Debris Removal	Ph2 Dredge Area	104.8	945	33.4	48	48.1	-16.9	Negligible	2074	25.7	48	48	-17	Negligible
Month 23	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Debris Removal	Ph2 Dredge Area	104.8	945	33.4	48	48.1	-16.9	Negligible	2074	25.7	48	48	-17	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Vegetation/Tree Clearance - Drainage Ditch	East Extension Area	121.9	865	51.3	48	53	-12	Negligible	920	50.7	48	52.6	-12.4	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	West Extension Area	121.6	160	67.5	48	67.6	2.6	Minor Adverse	1250	47.4	48	50.7	-14.3	Negligible
Month 24	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Capital Dredge	Ph2 Dredge Area	110.8	945	39.4	48	48.6	-16.4	Negligible	2074	31.7	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	East Extension Area	121.9	865	51.3	48	53	-12	Negligible	920	50.7	48	52.6	-12.4	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	West Extension Area	121.6	160	67.5	48	67.6	2.6	Minor Adverse	1250	47.4	48	50.7	-14.3	Negligible
Month 25	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Capital Dredge	Ph2 Dredge Area	110.8	945	39.4	48	48.6	-16.4	Negligible	2074	31.7	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	East Extension Area	121.9	865	51.3	48	53	-12	Negligible	920	50.7	48	52.6	-12.4	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	West Extension Area	121.6	160	67.5	48	67.6	2.6	Minor Adverse	1250	47.4	48	50.7	-14.3	Negligible
Month 26	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Capital Dredge	Ph2 Dredge Area	110.8	945	39.4	48	48.6	-16.4	Negligible	2074	31.7	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	East Extension Area	121.9	865	51.3	48	53	-12	Negligible	920	50.7	48	52.6	-12.4	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	West Extension Area	121.6	160	67.5	48	67.6	2.6	Minor Adverse	1250	47.4	48	50.7	-14.3	Negligible
Month 27	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible

Month	Works	Area	Activity SWL (dB)	Distance to NSR-A (m)	NSR-A Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude 1.	Distance to NSR-D (m)	NSR-D Source Noise Level (dB)	Daytime LAeq,T (dB)	Total LAeq,T (dB)	Total Noise Level - 65	Daytime Magnitude
	Port Office - Foundation	Ph2 Existing Quayside	117.1	833	46.9	48	50.5	-14.5	Negligible	1990	38.4	48	48.4	-16.6	Negligible
	Port Office - Kit/Roof/Cladding etc	Ph2 Existing Quayside	97.8	833	27.6	48	48	-17	Negligible	1990	19.1	48	48	-17	Negligible
	Port Office - Car Parking	Ph2 Existing Quayside	116.6	833	46.4	48	50.3	-14.7	Negligible	1990	37.9	48	48.4	-16.6	Negligible
	Navigation Channel - Capital Dredge	Ph2 Dredge Area	110.8	945	39.4	48	48.6	-16.4	Negligible	2074	31.7	48	48.1	-16.9	Negligible
	Vegetation/Tree Clearance - Drainage Ditch	East Extension Area	121.9	865	51.3	48	53	-12	Negligible	920	50.7	48	52.6	-12.4	Negligible
Month 28	Quayside Civils - Excavation, backfill & capping	Ph2 Existing Quayside Section 3	123.7	1040	51.3	48	53	-12	Negligible	1995	45	48	49.7	-15.3	Negligible

ARDERSIER PORT ENERGY TRANSITION FACILITY PORT EXTENSION

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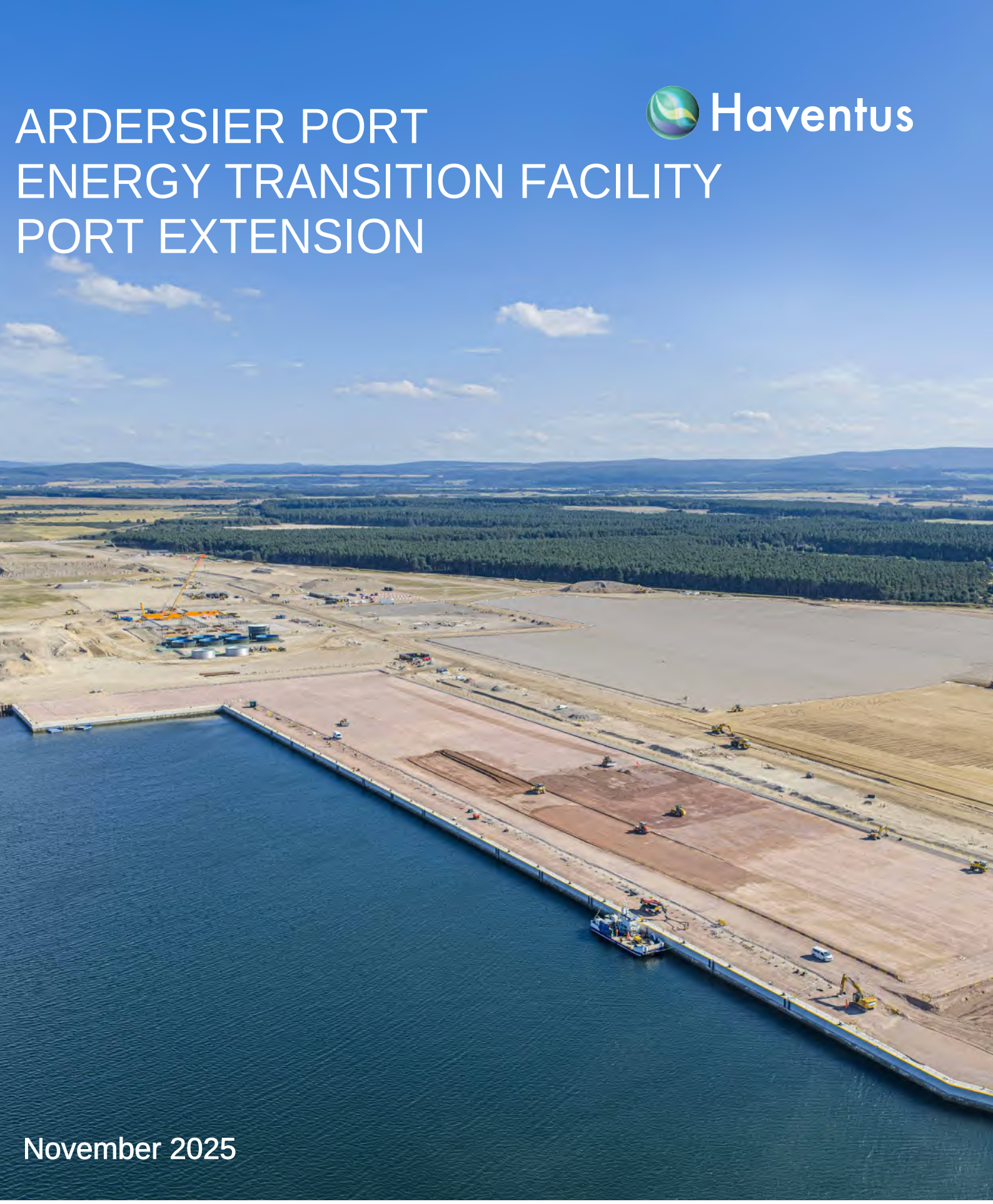

November 2025

Appendix 6.4: Road Traffic Noise Assessment

Ardersier Port Extension

Revision Number	Final
Date	October 2025
Version:	1
Author	Helen Makewell
Technical Reviewer	Hasan Akil

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APPENDIX 6.4 ROAD TRAFFIC NOISE ASSESSMENT

The text below is a reproduction of the assessment and associated table presented as part of the September 2018 application.

The initial process for the traffic noise assessment would be to assign a level of sensitivity to NSRs. The level of sensitivity for all assessed NSRs, based on Table 1, this would be Medium.

Table 1: Baseline Noise Summary [Table 9.14, September 2018 application]

Location		Monitoring Period	Noise Level (dB)					
			LAeq,T	LA90,ave	LA90 +25%	LA10	LAMax	LAMax (90%)
LT1	Free field ground floor long term unattended monitoring position (280175, 857193)	Day (0700-2300)	50.9	32.7	29.7	45.3	95.4	76.1
		Night (2300-0700)	46.9	29.7	27.5	37.5	86.8	69.6

The 18-hour annual average weekday traffic flows (AAWT) included within the 2013 Transport Assessment (prepared by SKM Colin Buchanan) on approach roads for the site have been used to establish noise changes as a consequence of the proposed development. Traffic data has been provided for a baseline situation and a baseline situation plus the proposed development for the opening year (2016). This enables the noise impact as a direct consequence of the proposed development to be calculated.

Basic noise levels (BNL) have been calculated for the road links covered by the traffic impact assessment. The calculations have utilised the 18-hour AAWT and heavy goods vehicle (HGV) compositions provided by the traffic engineers. The calculated BNL's and noise changes for each road link are presented in Appendix 6.4 and summarised in Table 2.

Table 2: Operational Traffic Assessment – 2016 Flows [Table 9.4.1, Appendix 9.4, September 2018 application]

Road		Assessment of LA10 18-hour Basic Noise Levels at 10m from Road									
		Assessment Year 2016			2016 + Development			% Flow Change	Assessment		
		% HGV	Speed (kph)	Flow	% HGV	Speed (kph)	Flow		Base Year	Base Year + Development	Change
1	A96 (between Leopold Street and St Ninian Road)	5	48	18334	5	48	21479	17.2	69.5	70.1	0.7
2	A96 (between B9092 and Leopold Street)	6	48	14670	6	48	17662	20.4	68.7	69.5	0.8
3	A96 (Between Site Access road and B9092)	6	48	14613	6	48	15361	5.1	68.8	69.0	0.2
4	A96 (between B9092 and Site Access road)	6	48	14696	6	48	19445	32.3	68.7	69.9	1.2
5	A96 (between Inverness Airport roundabout and B9006)	6	48	15638	6	48	20387	30.4	69.0	70.2	1.2
6	A96 (between Eastfield Road and Barn Church Road)	4	48	34107	4	48	37878	11.1	71.8	72.3	0.5
7	A96 (between A9 and Eastfield Road)	4	48	37809	4	48	41580	10.0	72.2	72.6	0.4
8	B865 Milburn Road (between Perth Old Road and A9)	2	48	23004	2	48	26039	13.2	69.5	70.0	0.5

Calculations of road traffic noise levels in terms of the BNL, indicate that increases in road traffic noise levels on the principal roads surrounding the proposed development would be less than 3dB(A) on completion and occupation. This is expected to be an imperceptible change in noise levels over a period of time. However, an increase in noise levels of this of 1.2dB has the potential to give rise to a minor magnitude of noise impact on sensitive receptors within 10m of the carriageway edge.

Table 3: Assessment of Noise Impact Magnitude (Traffic Noise) [Table 9.19, September 2018 application]

Road		Base Year	Base Year + Development	Change in Noise Level	Magnitude of Impact
1	A96 (between Leopold Street and St Ninian Road)	69.7	70.1	0.7	Negligible
2	A96 (between B9092 and Leopold Street)	68.7	69.5	0.8	Negligible
3	A96 (between Site Access road and B9092)	68.8	69.0	0.2	Negligible
4	A96 (between B9006 and Site Access road)	68.7	69.9	1.2	Minor
5	A96 (between Inverness Airport roundabout and B9006)	69.0	70.2	1.2	Minor
6	A96 (Between Eastfield Way and Barn Church Road)	71.8	72.3	0.5	Negligible

Road		Base Year	Base Year + Development	Change in Noise Level	Magnitude of Impact
7	A96 (between A9 and Eastfield Way)	72.2	72.6	0.4	Negligible
8	B896 Milburn Road (between Old Perth Road and A9)	69.5	70.0	0.5	Negligible

Referencing the significance of effects, medium receptor sensitivity and moderate impact magnitudes would result in a **neutral / slight significance** of effects on receptors 10m from the carriageway and are not deemed to be of significance in the decision-making process for the proposed development.

Additionally, the ambient noise levels at receptors 10m from the A96 carriageway would be elevated due to proximity to passing traffic. It is likely that the sensitivity of these receptors would be reduced to 'Low' with expected noise levels of over 55dB $L_{Aeq,16hr}$. It is therefore considered that combined with moderate impact magnitudes, a **neutral significance of effects** would be predicted. Hence road traffic noise need not be considered as a determining factor in the decision-making process.'

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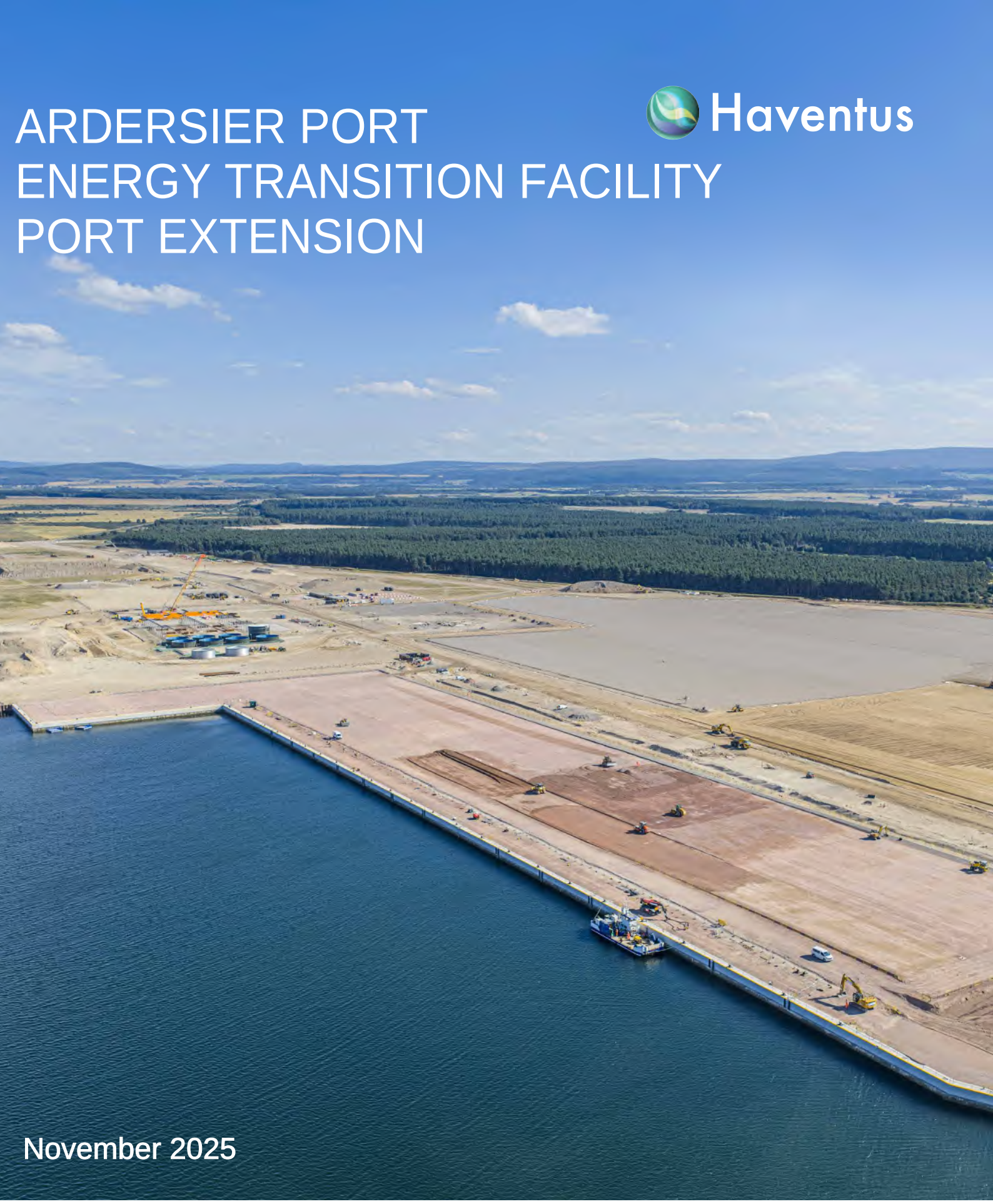

November 2025

Appendix 6.6 Noise Glossary of Terms

Ardersier Port Expansion

Revision Number	Final
Date	October 2025
Version:	1
Author	Helen Makewell
Technical Reviewer	Hasan Akil

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TABLES

APPENDIX 6.6 – NOISE GLOSSARY OF TERMS

Table 1: Glossary of Terms

Term	Definition
Absorptive noise barrier	A noise barrier that has an absorptive lining
Acoustic environment	Sound from al sources as modified by the environment
Ambient noise	Ambient noise is the total sound in a given situation at a given time usually composed of sound from many sources, near and far.
AAWT	Annual Average Weekday Traffic
A-weighting	In addition to its non-linear amplitude response, the human ear has a non-linear frequency response; it is less sensitive at low and high frequencies and most sensitive in the mid-range frequencies. NOTE 1: The A-weighting is applied to measured sound pressure levels so that these levels correspond more closely to the subjective response. NOTE 2: A-weighted noise levels are often expressed in dB(A).
Background sound level	The underlying noise level at a given location, normally quantified with the dB $L_{A90,T}$ metric
Baseline scenario	A description of the state of the environment without implementation of the scheme.
Basic noise level	The basic noise level (BNL) is a measure of source noise as set out in the Calculation of Road Traffic Noise
BPM	Best practicable means. Typically references construction noise and vibration mitgiation.
Calculation of road traffic noise	The technical memorandum that describes the procedures for calculating noise from road traffic (CRTN).
Decibel	The unit of measurement used for sound pressure levels and noise levels quoted in decibels (dB). NOTE 1: The decibel scale is logarithmic rather than linear; the threshold of hearing is zero decibels while, at the other extreme, the threshold of pain is about 130 decibels. NOTE 2: These limits are seldom experienced and typical levels lie within the range of 30dB(A) (a quiet night time level in a bedroom) to 90dB(A) (at the kerbside of a busy road).
Design Manual for Roads and Bridges	A set of specification documents produced jointly by the various Highways Authorities of the United Kingdom, including Transport Scotland. These documents set out information about current design standards relating to the design, assessment and operation of motorway and all-purpose trunk roads in the United Kingdom. The methodology of assessment set out can be applied to other roads at the discretion of the relevant Overseeing Organisation (DMRB)

Term	Definition
Environmental Noise Directive (END) quiet area	A location formally designated as a 2002/49/EC quiet area.
Environmental Impact Assessment (EIA)	Process to examine the likely significant effects of a project whereby the applicant prepares an EIA Report, this and any other information is consulted upon and examined by the Competent Authority which then forms a reasoned conclusion (set out in Article 1(2)(g) of the EIA Directive).
EIA Report	Document prepared by the applicant that presents the output of the EIA.
Facade sound level	Sound level that is determined 1 metre (m) in front of a window or door in a facade.
Free-field sound level	The sound level, which is measured or calculated, in the open, without any reflections from nearby surfaces except the ground.
Insertion loss	The A-weighted sound level, in dB, that is exceeded 10% of the measurement period. NOTE: The insertion loss of a device is the difference, in dB, between the noise level with and without the device present.
L_{A10}	The A-weighted sound level, in dB, that is exceeded 10% of the measurement period. NOTE: This is the standard index used within the UK to describe traffic noise.
$L_{A10,18hr}$	The noise level, in dB, that is exceeded 10% of the time between 0600 and 2400.
L_{A90}	The noise level, in dB, that is exceeded 90% of the time of the measurement period. It is commonly referred to as the background noise level.
L_{Aeq}	The equivalent continuous sound level (L_{Aeq}) is the level of a notional steady sound, which at a given position and over a defined period of time, would have the same A-weighted acoustic energy as the fluctuating noise.
L_{Amax}	The maximum A-weighted level measured during a given time period.
L_{day}	Equivalent continuous sound pressure level where the time interval is the 12-hour period between 07:00 and 19:00.
$L_{evening}$	Equivalent continuous sound pressure level where the time interval the 4-hour period between 17:00 and 23:00.
L_{night}	A façade noise index derived from the $L_{A10,18hr}$ using the TRL conversion method PR/SE/451/02.
$L_{night,outside}$	For the purpose of night-time noise assessment, the $L_{night,outside}$ is the equivalent continuous sound level L_{night} for the period 23:00 to 07:00 hours assessed outside a dwelling and is free-field.
Lowest observed adverse effect level (LOAEL)	Level above which adverse effects on health and quality of life can be detected.
Mitigation	Measures envisaged to avoid, prevent or reduce any identified significant adverse effects on the environment
Noise	Unwanted sound.
Noise mapping	The production of computer software generated maps showing how the predicted levels of outdoor noise vary with location.
Noise modelling	Software to predict noise levels. NOTE: This can be undertaken either by specialist software to provide a 3D representation of the project and nearby noise sensitive receptors or a simple spreadsheet.
Noise monitoring	Measurement of noise levels.

Term	Definition
Noise sensitive receptor	Receptors which are potentially sensitive to noise. NOTE: Examples include dwellings, hospitals, healthcare facilities, education facilities, community facilities, END quiet areas or potential END quiet areas, international and national or statutorily designated sites, public rights of way and cultural heritage assets.
Peak particle velocity (PPV)	The PPV is the most basic value used in vibration measurements. It indicates the greatest particle velocity over a period of time per axis. Quantified using the metric mm/s.
Opening year	The first year of operation.
Operational noise assessment	An assessment to determine the operational noise impacts and effects of a project.
Potential END quiet area	A location with potential to be formally designated as an END quiet area, but not officially designated as such.
Rating level, $L_{Ar,Tr}$	Specific sound level (dB L_{As}) plus any adjustment for the characteristic features of the sound
Reflective noise barrier	A noise barrier that reflects noise.
Residual sound	Ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound
Scoping	The process of considering the information required for reaching a (reasoned) conclusion on the likely significant effects of a project on the environment.
Screening	The identification of likely significant effects on the environment and consequential need for an Environmental Statement
Sensitive buildings	Dwellings, including those that are listed, hospitals, healthcare facilities, education facilities or other buildings where noise or vibration can cause disturbance to people using the buildings.
Significance	This relies on informed, expert judgement about what is important, desirable or acceptable for public health with regards to changes triggered by the proposal in question. The use of 'significance' in this guide is distinct from 'statistical significance'. Statistical significance is routinely used in scientific analysis to refer to whether the effects are real rather than chance occurrences, and is not necessarily a test of importance, desirability or acceptability
Significant observed adverse effect level (SOAEL)	The level above which significant adverse effects on health and quality of life occur.
Sound pressure level	A measure of the specific sound pressure at a specific location. Uses a dB reference of $2 * 10^{-5}$ Pa
Sound power level	A measure of the total acoustic energy emitted by a source in all directions. Uses a dB reference of 10^{-12} W.
Specific sound level, dB L_s	Equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, Tr
Vibration	A to-and-fro motion which oscillates about a fixed equilibrium position.
Vibration dose value (VDV)	A metric to measure human exposure to vibration from various sources derived from RMS acceleration. Uses the metric $m/s^{1.75}$ and is defined in BS 6472-1:2008
Vibration sensitive receptor	Receptors which are potentially sensitive to vibration. NOTE: Examples include dwellings, hospitals, healthcare facilities, education facilities, community facilities, buildings containing vibration sensitive equipment and cultural heritage assets.