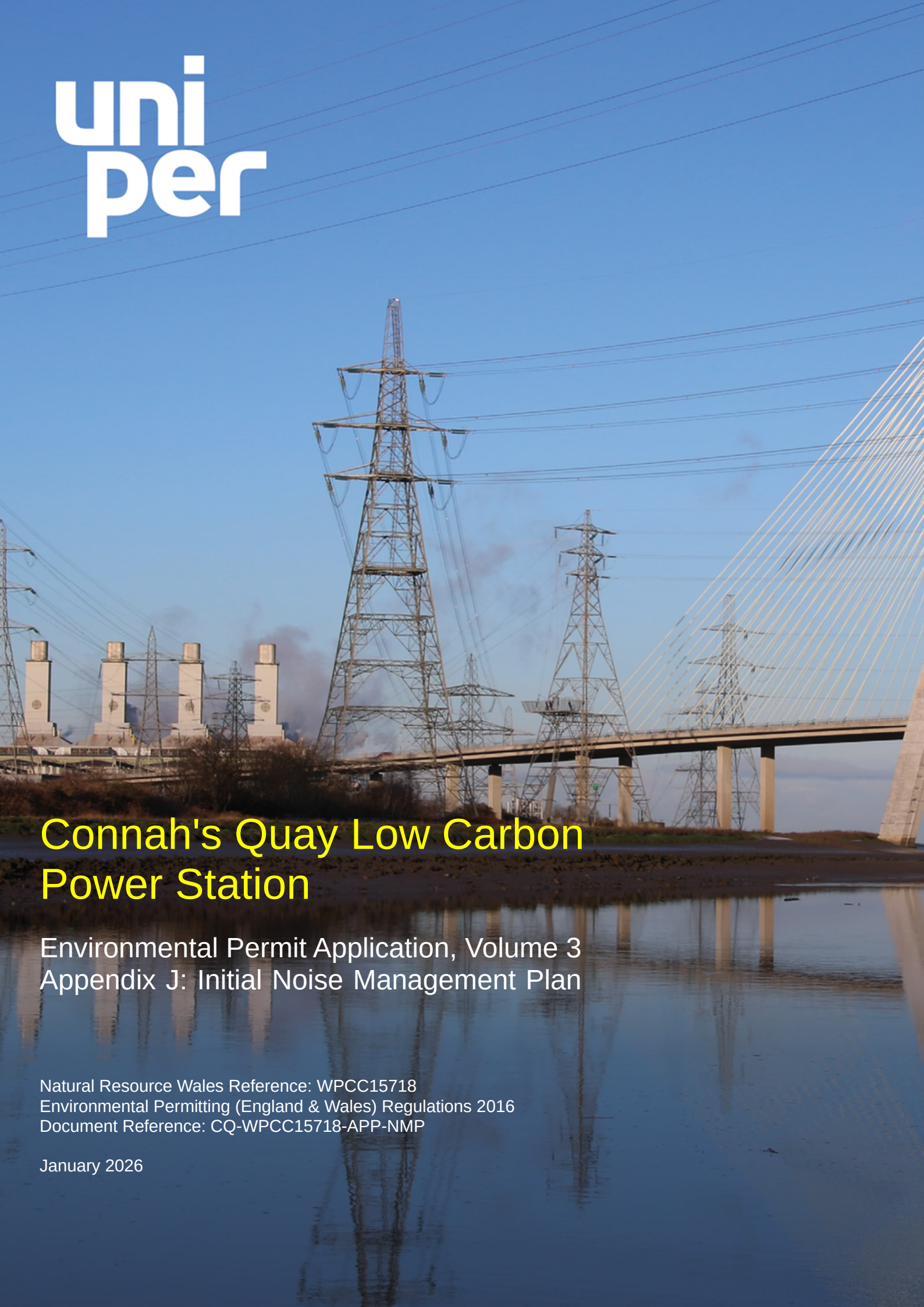

Connah's Quay Low Carbon Power Station

Environmental Permit Application, Volume 3 Appendix J: Initial Noise Management Plan

Natural Resource Wales Reference: WPCC15718
Environmental Permitting (England & Wales) Regulations 2016
Document Reference: CQ-WPCC15718-APP-NMP

January 2026

Prepared for:

Uniper UK Limited

Prepared by:

AECOM Limited

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Figures

No table of figures entries found.

Tables

1. Glossary and Abbreviations

Acoustic Terminology	Definition
Background Sound Level, $L_{A90,T}$	Defined in the BS 4142 as the "A-weighted sound pressure level that is exceeded by the residual sound for 90% of a given time interval, T, measured using time weighting F and quoted to the nearest whole number of decibels"
Ambient Sound level, L_a, $L_{Aeq,T}$	Defined in BS 4142 as the "equivalent continuous A-weighted sound pressure level of the totally encompassing sound in a given situation at a given time, usually composed of sound from many sources near and far, at the assessment location over a given time interval, T. The ambient sound comprises the residual sound and the specific sound when present";
Specific Sound Source	Sound source being assessed
Specific Sound Level, L_s ($L_{Aeq,Tr}$)	"equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given reference time interval, Tr"
Rating Level, $L_{Ar,Tr}$	"specific sound level plus any adjustment made for the characteristic features of the sound

Abbreviation	Definition
BAT	Best Available Techniques
CCP	Carbon Capture Plant
CCGT	Combined Cycle Gas Turbine
CQLCP	Connah's Quay Low Carbon Power
dB	Decibel
DCO	Development Consent Order
EIA	Environmental Impact Assessment
EMS	Environmental Management System
EP	Environmental Permit
ES	Environmental Statement
FEED	Front End Engineering Design
Km	kilometre
m	meters
MW	Mega watts
NIA	Noise Impact Assessment
NMP	Noise Management Plan
NRW	Natural Resources Wales
NSR	Noise Sensitive Receptors
UK	United Kingdom

2. Introduction

2.1 Requirement for a Noise Management Plan

This initial Noise Management Plan (NMP) has been prepared by AECOM on behalf of Uniper, referred to as 'the Operator', to support a bespoke Environmental Permit application for the proposed Connah's Quay Combined Cycle Gas Turbine (CCGT) with Carbon Capture Plant (CCP), henceforth, 'Proposed Installation'.

It should be noted that the Environmental Permit application and consequently this initial NMP is being carried out prior to completion of detailed design of the plant. As such, some worst-case assumptions have been applied to the assessment, which may lead to an over-prediction of the potential impacts. At the detailed design stage, opportunities to reduce the predicted *specific sound levels* further will be explored and the Operator will continue to ensure that Best Available Techniques (BAT) mitigation is applied to the plant design. Following detailed design, it is proposed that this NMP is reviewed, updated, and resubmitted to Natural Resources Wales (NRW), if required, to satisfy a pre-operational condition to be included in the Environmental Permit.

The NMP has been prepared following NRW's Noise and Vibration Management: Environmental Permits[1] guidance.

A Noise Impact Assessment (NIA) has been produced by AECOM dated November 2025, which has been submitted as part of the bespoke Environmental Permit application.

The NIA concluded that with the context of the existing sound environment and further mitigation it is considered the addition of the Proposed Installation would have a low to adverse, but not significant effect on nearby Noise Sensitive Receptors (NSRs).

The aim of the NMP is to ensure that noise arising from the Proposed Installation is adequately controlled by committing to good practices for the procurement, operation and maintenance of plant and equipment at the site. It also commits the Operator to appropriate mitigation of the plant sound emissions as detailed in the NIA.

More specifically, this NMP addresses the following:

- the materials and/or activity which could produce noise and the potential sources of noise emissions;
- identification of potential NSRs;
- process controls and procedures;
- potential corrective actions;
- the complaints procedure; and
- record keeping.

The NMP also provides a management framework comprising of proactive and reactive measures to manage and control potential noise from the Proposed Installation. The proactive approach will facilitate the development of operational procedures and controls as part of an on-going commitment to sustaining and improving environmental performance. Reactive procedures will also be established within the NMP for the logging, evaluation and implementation of corrective actions in the unlikely event of any noise related complaints being received.

The overall responsibility for ensuring compliance with the NMP lies with the Operator. of the Proposed Installation. Specifically, this will be the site manager, or alternative nominated person with responsibility for the NMP. The NMP will form part of the Operator's Environmental Management System (EMS) for the Proposed Installation.

The Operator shall take community needs and concerns into account when considering this major development. In this respect, this NMP reflects the requirements considered appropriate to minimise environmental noise effects associated with the Proposed Installation.

[1] Noise and vibration management: environmental permits - GOV.UK (www.gov.uk)

The NMP is a live document and will be reviewed for adequacy and relevance at least annually (unless, otherwise agreed with NRW).

The NMP does not refer in detail to operational vibration because no adverse effects are anticipated at NSRs off-site. Nevertheless, this topic shall be kept under review and included in future revisions if considered necessary.

3. Description of the Site and Process

3.1 Site Location and Setting

The Proposed Installation is situated on the south bank of the River Dee, approximately 0.6 kilometres (km) north-west of the town of Connah's Quay in Flintshire, north-east Wales. The installation is situated to the west of the existing Connah's Quay Power Station. The surrounding area is a mixture of residential and industrial in nature. Residential estates are to the south, whereas Deeside Industrial Park and Tata Steel UK Limited are to the east. Beyond the industrial facilities, the wider area is largely agricultural. The railway line and A458 are to the south of the installation.

The location of the Proposed Installation is shown on Figure A1 in Appendix A.

3.2 Description of the Proposed Installation

The design of the Proposed Installation is subject to ongoing technical studies, to provide flexibility and to align with the current grid connection, but it is expected to comprise the development of two CCGT units achieving a net electrical output capacity of up to 1,380 megawatts (MW; referred to as MWe for electrical output) (with CCP operational) onto the national electricity transmission network.

The Proposed Installation, will comprise a number of key elements:

- Main CCGT plant including gas and steam turbines, HRSGs, and exhaust gas treatment via SCR;
- Capture plant;
- Supporting infrastructure comprising solvent and water-treatment chemicals storage, clean water treatment plant for generation of high-purity water for use in recirculated water circuits, an electric auxiliary boiler for start-up support, emergency diesel generators for safe-shutdown during a power failure scenario, closed surface water drainage and appropriate treatment facilities, and infrastructure for natural gas import and conditioning and CO2 conditioning and export.

The proposed installation will also be supported by natural gas supply, water abstraction and discharge, electrical connections, utilities, access works and CO_2 export connection.

The installation boundary is shown on Figure A1 in Appendix A.

Full details of the Proposed Installation's technology and processes are provided in Section 4 of the Supporting Statement (Document Reference: WPCC15718/APP/SS).

The Operator has made a Development Consent order (DCO) application for the construction, operation and maintenance of the proposed development.

4. Potential Noise Sources, Materials and Processes

4.1 Sources of Noise

The operational facilities and equipment associated with the Proposed Installation are located to the west of the existing Connah's Quay Power Station as shown in Figure A1 in Appendix A.

The potential sources of noise emissions include, but are not limited to:

- Flue Gas Blowers
- Gas Turbine Building Intakes
- Absorber Towers
- Cooling Towers
- Compressor Building
- HRSG Building
- Pumps

Details of the sound power levels of the proposed items of plant used in the Proposed Installation are in Appendix B of the Noise Impact Assessment report. The plant elements with the highest sound power levels are the Flue Gas Blowers, Cooling Towers. Amine Pumps, Turbine Intakes and Absorber Wash Pumps.

Although the proposed plant will operate 24 hours a day, 7 days a week, not all of the plant will operate all of the time as operation is dependent upon demand and ambient temperatures.

5. Potential Receptors

5.1 Considerations for Identifying Noise Sensitive Receptors

Key NSR locations, which are representative of the nearest and potentially most sensitive existing NSRs to the Proposed Installation, have been identified based upon knowledge of the local area and professional judgement. If noise levels are suitably controlled at these NSRs, then noise levels will be suitably controlled at other more distant NSRs in the surrounding area.

These NSRs are listed in Table 1 and are shown in Figure A1 in Appendix A. For the purposes of this NMP the NSR numbering from the DCO Environmental Statement (ES) Chapter 9 Noise and Vibration have been retained.

Table 1 Key Representative Noise Sensitive Receptors

Receptor ID	Name	Receptor Type	Distance and direction from the Propose Installation (m)
R19	Glantraeth Farm	Residential	50m south-west
R20	Rockliffe Lane Properties	Residential	95m south
R21	Kelsterton Road Properties (west)	Residential	22m south
R22	Wenlo / The Sheiling, Kelsterton Road	Residential	67m south
R23	Cae Coch Cottages, Kelsterton Road	Residential	33m south=east
R24	Kelsterton Farm	Residential	190m south-east
R25	The Coach House / Kelsterton Hall	Residential	82m south-east
R26	Perenna Court Properties	Residential	185m south-east
R28	Kelsterton Lodge / 85-105 Kelsterton Road	Residential	160msouth-east
R29	66-102 Kelsterton Road	Residential	110m south-east
R30	36-64 Kelsterton Road	Residential	400m south-east
R31	2-34 Kelsterton Road	Residential	620m south-east

Note: Receptor ID is retained from DCO ES Chapter 9. R1-R18 are further away from the Proposed Installation. R27 and R32 are education facilities and have not been included in the assessment as BS 4142 states it is for assessing premises for residential use only.

The closest NSRs to the installation are R19, R21, R23 and R23. The existing noise climate consists of noise from the current operations at the Power Station, contributions from other industrial uses in the area (Tata Steel, Deeside Industrial Estate, Oakenholt Recycling centre and Essity UK (paper mill), road traffic noise from A458 and railway noise.

6. Operational and Process Controls

6.1 Noise Management Strategy

The NMP strategy is to minimise releases of noise from the installation through good working practices and the use of suitable process control measures which represent BAT.

The hierarchy of the NMP strategy is;

1. Prevent
2. Contain
3. Minimise

6.2 Noise Control Measures

The Proposed Installation is being designed to avoid or minimise impacts and effects of noise and vibration. As the design develops, measures will be embedded into the design which will include increased sound insulation and enclosure of plant and acoustic lagging, although additional and/or alternative solutions may be identified as the design evolves.

Potential noise of a tonal, impulsive, intermittent or low frequency nature will be designed out of the Proposed Development during the detailed design phase by the selection of appropriate plant, building cladding, louvres and silencers/attenuators as necessary.

As part of the operational assessment for the DCO Environmental Impact Assessment (EIA), AECOM modelled the Proposed Installation using concept engineering information in relation to the initial design parameters. The initial assessment indicated the potential for significant adverse noise effects and exceedance of the proposed operational sound limit as stated in DCO ES Chapter 9.

Therefore, the proposed sound sources were ranked from highest to lowest, based on the level of impact at the most affected NSR (R21). The suggested levels of attenuation shown in Table 2 were applied to the key noise emitting plant to minimise the adverse effect. The predicted *specific sound levels* used in the NIA for the Permit application included these proposed reductions.

Table 2 Suggested Attenuation of Plant Items/Buildings

Plant Item	Number of Item of Plant	Attenuation (dB)
Flue Gas Blower	4	20
Cooling Tower	2	20
Cooling Make-up Tower	1	15
Make-up Transfer Pump	1	15
Rich Amine Pump	2	15
Knock Out Water Pump	4	15
Lean Amine Booster pump	2	15
cooling water pumps	6	15
Absorber Wash pump	4	10
Turbine Intake	2	10
Absorber acid wash pump	2	10
Lean Amine Circulation Pump	2	10
CO_2 Compression Walls	1	10

Plant Item	Number of Item of Plant	Attenuation (dB)
CO_2 Compression roof	1	10
HRSG Walls	2	10
Aux Cooling Water Pumps	1	10
CO_2 stripper reflux pump	1	10
HRSG Roof	2	10
DCC Backwash Pump	2	10
Gas Turbine Walls	2	10
Low Pressure Condensate Pump	2	10
Stripping Air Blower	2	10
Gas Turbine Roof	2	10
Absorber Stack	4	5
DCC Circulation Pump	2	10

During the detailed design stage mitigation measures to control the operational sound to ensure compliance with a *rating level* equal to or less than 45 dB $L_{Ar,Tr}$ at the closest existing residential property would be identified. Further assessment and review will be undertaken to investigate the feasibility of reducing the sound emissions from the Proposed Installation as low as practicable through the application of BAT. These measures are summarised in Table 3.

During detailed design of the plant it may be desirable or more practical to apply higher attenuation to some plant items/buildings than listed in Table 2 in order to reduce the attenuation applied to other plant items/buildings and still achieve the operational sound criterion. Furthermore, during detailed design, an operational sound control scheme (including operational sound limits as agreed with the local authority) would be prepared and is secured by a Requirement of the draft DCO (EN010166/APP/3.1).

Table 3 Further Mitigation Measures and Best Available Techniques

Techniques	Description	Applicability
Eliminate	Review of the proposed plant and design and where possible remove unnecessary items from the scope of the design	This will be considered as part of the FEED stage
Operational Measures	These include: • Inspection and maintenance of equipment • Closing of doors and windows of buildings and enclosed areas, where possible • Plant being operated by experienced staff • Avoidance of noisy activities at night, if possible	These are part of good working practices at the Installation
Low-noise equipment	Select low noise equipment where possible	When equipment is new or being replaced. Where practicable low noise equipment will be procedure for the Proposed Installation
Noise Attenuation	• This includes:	Consideration of screening where required. In addition, the

Techniques	Description	Applicability
	• Use of screening or bunding to shield NSRs from noise sources • Reducing the breakout noise from plant through the use of enhanced enclosures, or potentially containing them within a building • Screening or enclosing the compressors or other equipment	layout of the Proposed plant has incorporated consideration of potential noise impacts within the constraints of the plot plan.
Noise Control Equipment	• This includes: • Reducing air inlet noise emissions by the addition of further in-line attenuation • Reducing stack outlet noise emissions by the addition of silencers or sound proofing panels • Reducing noise emissions by screening, re-sizing, fitting low noise fans or attenuation • Use of anti-vibration supports and interconnections for equipment	To be considered during the detailed design of the Proposed Installation
Appropriate Location of Equipment and buildings	Orientation of plant within the Installation to provide screening of low elevation noise sources by other buildings and structures, or orientating fans and the air inlets/ outlets away from NSRs	This is generally applicable to new plant and has been considered during the development of the Proposed Installation and will continue to be considered during the detailed design

Throughout the development of the Proposed Installation, practical measures to mitigate noise will be incorporated into the design as detailed above, taking use of BAT into account. But are not limited to the measures set out in the NMP risk assessment and noise control measures set out in Table 4.

Table 4 NMP Risk Assessment and Control Measures

Potential Source or Pathway	Identified Receptors	Control Measures	Probability	Consequence	Overall Risk
Noise from operation of Proposed Installation	Residential NSRs in Connah's Quay to the southwest, south and southeast of the Proposed Installation	Low noise equipment to be procured for the Proposed Installation where possible and practicable. This applies to all new and replacement equipment. The following has been considered during the development of the Proposed Installation and will continue to be considered during the detailed design stage: • Use of screening or building to shield NSRs from noise sources • Reducing the breakout noise from plant through the use of enhanced enclosures, or potentially containing them within a building • Orientation of plant within the site to provide screening of low elevation noise sources by other buildings and structures, or orientating fans and the air inlets/outlets away from NSRs • Good working practices at the installation will include: • Daily inspection of equipment • Maintenance of equipment • Closing of doors and windows of building and enclosed areas, where possible • Experienced and appropriated trained staff operating the equipment • Avoidance of noisy activities at night if possible All staff being trained in noise management and the prompt reporting of any abnormal noise so it can be investigated and rectified.	Medium. Design and selection of equipment, control measures and good working practices will minimise noise emissions	Noise significantly audible at NSRs, in combination with other operational noise sources *Rating level* from the site greater than +45 dB at the closest existing residential property, which is based on +8 dB above the representative *background sound level* as stated in DCO ES Chapter 9	Low, following implementation of all appropriate noise mitigation measures

Potential Source or Pathway	Identified Receptors	Control Measures	Probability	Consequence	Overall Risk
		Further noise control of plant and equipment will continue to be considered during the detailed design of the installation. This includes: • Reducing air inlet noise emissions by the addition of further in-line attenuation • Reducing stack outlet noise emissions by the addition of silencers or sound proofing panels; • Reducing noise emissions by screening, re-sizing, fitting low noise fans or attenuation • Use of anti-vibration supports and interconnections for equipment			
Noise from Vehicle movements and loading/unloading	Residential NSRs in Connah's Quay to the southwest, south and southeast of the Proposed Installation	To minimise noise from vehicle movement and loading/unloading the following actions will be taken: • Loading/unloading of vehicles and movement of equipment and materials around the site in such a manner that minimises noise generation, and where practical, conducted away from NSRs and screened by buildings. • Materials will be moved and lowered carefully and not dropped • Delivery and dispatch by road are scheduled to avoid as many vehicle movements as possible at night	Medium Management of vehicle movements and loading/unloading will minimise noise emissions	Noise significantly audible at NSRs, in combination with other operational noise sources *Rating level* from the site greater than +45 dB at the closest existing residential property, which is based on +8 dB above the representative *background sound level* as stated in DCO ES Chapter 9	Low, following implementation of all appropriate noise mitigation measures

6.3 Training

Appropriate training will be provided to all the Operator's employees in relation to the awareness and management of environmental noise. Personnel with specific noise control responsibilities (e.g. ensuring that consideration of noise in included in the procurement process) will be provided with training relevant to their responsibilities. Training in the use of noise measurement equipment shall also be given to any personnel undertaking this task. Records will be kept of training provided on environmental noise issues.

The site induction will include an obligation on all contractors/visitors to consider environmental noise impacts and to take appropriate steps to minimise noise generation during their work, where possible.

7. Noise Monitoring

7.1 Noise Monitoring Schedule

As part of the daily inspections of the installation, perceived changes in sound emissions or character will be logged and investigated to determine if the plant is operating correctly and under normal conditions.

Once the Proposed Installation becomes operational, noise monitoring will be undertaken to verify compliance with a *rating level* equal to or less than 45 dB at the closest existing residential property as identified in Section 4, which relates to an operational sound limit of a +8 dB rating level above the representative background sound levels as stated in DCO ES Chapter 9.

Noise monitoring will be undertaken at locations representative of the NSRs. The monitoring locations will be identified and agreed with NRW as part of subsequent revisions to the NMP. Weather conditions and details of audible noise sources will also be noted along with the measured levels.

If the initial monitoring demonstrates compliance with proposed sound limits, the possibility of reducing the frequency and number of monitoring locations will be discussed and agreed with NRW.

If the sound levels from the Proposed Installation exceed the predicted sound levels at the NSRs, the source or sources of the sound will be investigated, and corrective and preventive measures identified and implemented. These measures will be recorded and follow up monitoring will be undertaken to check the effectiveness of the mitigation measures. This will confirm if the mitigation measures are adequate or if further measures are required.

Records of the noise monitoring and remedial measures applied will be kept as part of the EMS and copies sent to NRW.

8. Emergency Scenario Contingency

8.1 Introduction

This section sets out the actions that will be taken to minimise the impacts and effects of noise during irregular or emergency situations at the installation.

8.2 Emergency Scenarios and Contingency Measures

The following items of plant have been included in the design of the Proposed Installation for 'emergency use' to keep the installation operating in the event of power or plant failure:

- Steam pressure relief safety valves (Steam Turbine)
- Steam pressure relief safety valves (Heat Recovery Steam Generator)
- Pressure relief safety valves (Compressed CO2)

The above emergency plant were not included in the operational noise models for the Proposed Installation, as they would only be used in an emergency situation.

Where possible the duration of the emergency plant will be kept to a minimum through prompt attention to resolving power outages or plant failure. Fire-fighting equipment would undergo periodic testing to ensure its preparedness in the event of an emergency. This testing would take place during normal day-time periods to minimise the potential for the additional noise being discernible at NSRs.

9. Complaints

9.1 Community Liaison

It is acknowledged that the occupiers of nearby NSRs may perceive the noise differently than the Operator, and good engagement and community liaison is an essential step in managing noise.

Nearby NSRs have been informed about the Proposed Installation through consultation events. The Operator will continue to engage and liaise with the local community via:

- Newsletters
- Website with information about the Proposed Installation and development
- Meetings with community leaders
- Informing the local community about any planned and unavoidable noisy activities
- Publicising the complaints procedure and contact details

9.2 Response to Complaints

A complaints response procedure will be administered by the Operator. Any complaint received about noise will be forwarded to the Operator's nominated complaints response officer for investigation and action.

The Operator will gather as much information as possible from the complainant including:

- Date and time of issue first identified
- Location of the complaint
- Complainant contact details
- Details of the complaint e.g.:
- Frequency/ duration of the issue
- description of the noise

The Operator will respond to the complainant within five working days of receipt of the complaint and will keep the complaint fully informed of the actions taken and the timescales for any actions which still need to be taken to deal with their complaint.

9.3 Complaint Investigation

The complaint investigation will include the following:

- Site inspection to establish if the noise can still be observed
- Review of site operations to check for any irregular or unusual activities which might have given rise to noise related to the complaint
- Review of weather conditions at the time of the complaint
- Speaking with Operators at the installation at the time of the complaint occurred and determine if there were any changes to normal operating conditions

Corrective and preventive measures shall be implemented if the complaint is substantiated. The type and level of corrective and preventative measures will be dependent on the root cause and scale of the noise source.

9.4 Records

Records of all complaints will be kept as part of the EMS. The information recorded will include:

- An overview of the complaint, including NSRs potentially affected
- Details of investigation and actions taken (if necessary)

- Follow up to close out the complaint or any preventative and corrective measures if required
- Response to the complainant

The records will be reviewed as part of Management Review meetings

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10. NMP Review

The NMP is a live document and will be reviewed for adequacy and relevance at least annually (unless, otherwise agreed with the NRW) by the Operator's Site Manager at the Proposed Installation.

Then reviews will take into account the following:

- Site records
- Compliance records
- Complaints history
- Any recent new NSRs or sensitive developments in the vicinity

The NMP will be amended as necessary following the review, including any changes to the control measures.

Appendix A Noise Sensitive Receptors and Site Plan

The nearest NSRs are shown on Figure A1.

Revision: 0 Drawn: LP Checked: JG Approved: DP Date: 2025-09-17

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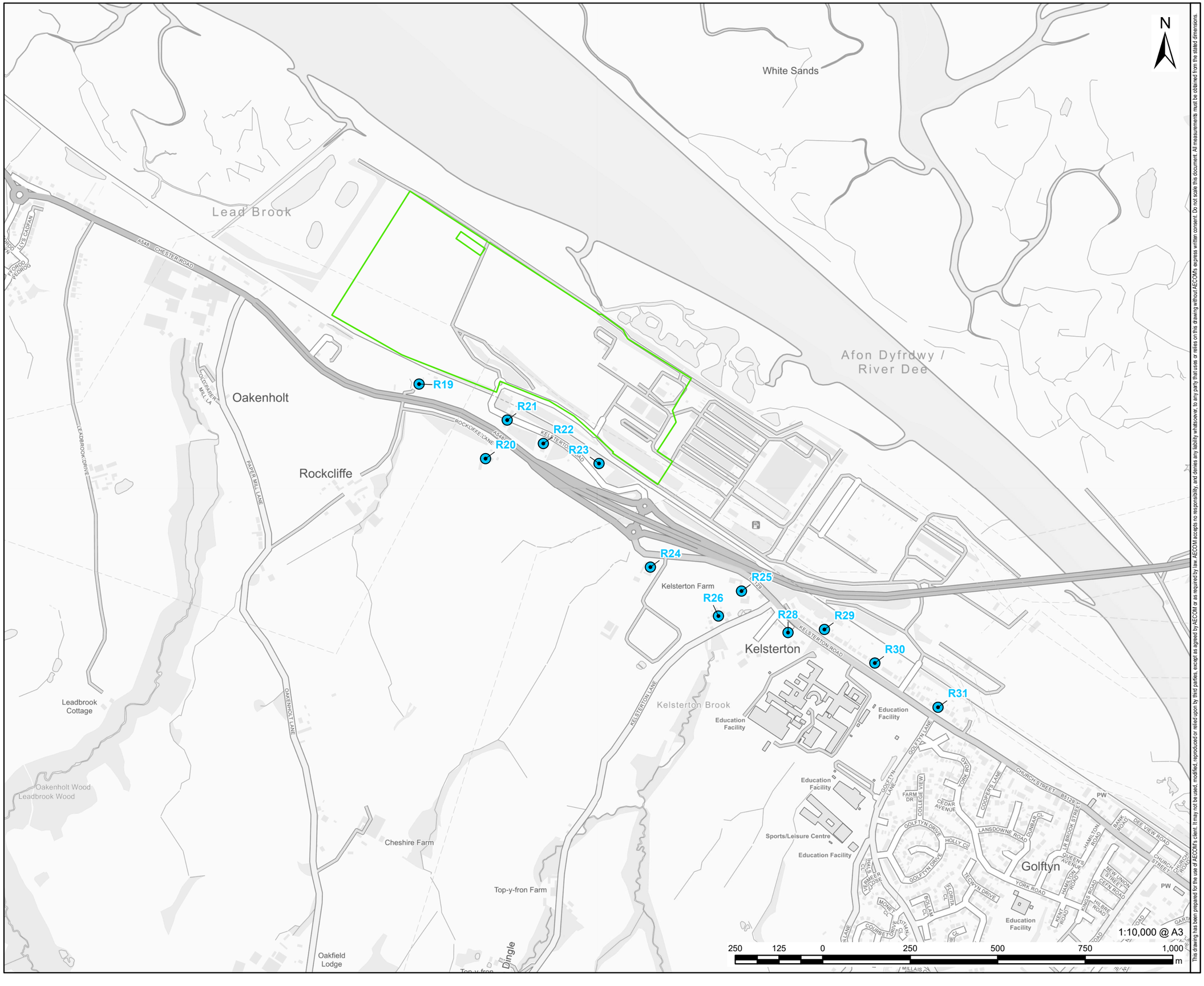

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PROJECT

Connah's Quay Low Carbon Power

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LEGEND

- Indicative Installation Boundary
- Noise Sensitive Receptor

NOTES

ISSUE PURPOSE

Environmental Permit Application

DATE

September 2025

PROJECT NUMBER

60717119

FIGURE TITLE

Noise Sensitive Receptors

FIGURE NUMBER

Figure A1