APPENDIX 11-2

OPERATIONAL NOISE REPORT

A specialist energy consultancy

Appendix 11-2

Operational Noise Report

Umma More Renewable Energy Development

Umma More Ltd

14373-003
02 March 2023

COMMERCIAL IN CONFIDENCE

Quality Assurance

TNEI Services Ltd, TNEI Africa (PTY) Ltd and TNEI Ireland Ltd operate an Integrated Management System and is registered with The British Assessment Bureau as being compliant with ISO 9001 (Quality), ISO 14001 (Environmental) and ISO 45001 (Health and Safety).

Disclaimer

This document is issued for the sole use of the Customer as detailed on the front page of this document to whom the document is addressed and who entered into a written agreement with TNEI. All other use of this document is strictly prohibited and no other person or entity is permitted to use this report unless it has otherwise been agreed in writing by TNEI. This document must be read in its entirety and statements made within may be based on assumptions or the best information available at the time of producing the document and these may be subject to material change with either actual amounts differing substantially from those used in this document or other assumptions changing significantly. TNEI hereby expressly disclaims any and all liability for the consequences of any such changes. TNEI also accept no liability or responsibility for the consequences of this document being relied upon or being used for anything other than the specific purpose for which it is intended, or containing any error or omission which is due to an error or omission in data used in the document that has been provided by a third party.

This document is protected by copyright and may only be reproduced and circulated in accordance with the Document Classification and associated conditions stipulated or referred to in this document and/or in TNEI's written agreement with the Customer. No part of this document may be disclosed in any public offering memorandum, prospectus or stock exchange listing, circular or announcement without the express and prior written consent of TNEI. A Document Classification permitting the Customer to redistribute this document shall not thereby imply that TNEI has any liability to any recipient other than the Customer.

Any information provided by third parties that is included in this report has not been independently verified by TNEI and as such TNEI accept no responsibility for its accuracy and completeness. The Customer should take appropriate steps to verify this information before placing any reliance on it.

Document Control

Revision	Status	Prepared by	Checked by	Approved by	Date
D0	DRAFT	GC/JB	JM	JM	12/12/2022
D1	CLIENT COMMENTS	GC/JB	JM	JM	01/02/2023
D2	CLIENT COMMENTS	GC	JS	JS	09/02/2023
R0	FINAL ISSUE	GC	JS	JS	13/02/2023
R1	MINOR UPDATE	GC	JS	JS	02/03/2023

TNEI Services Ltd
Company Registration Number: 03891836 **VAT Registration Number: 239 0146 20**

Registered Address		
Bainbridge House	7th Floor West One	7th Floor
86-90 London Road	Forth Banks	80 St. Vincent Street
Manchester	Newcastle upon Tyne	Glasgow
M1 2PW	NE1 3PA	G2 5UB
Tel: +44 (0)161 233 4800	Tel: +44 (0)191 211 1400	Tel: +44 (0)141 428 3180

TNEI Ireland Ltd
Registered Address: 104 Lower Baggot Street, Dublin 2, DO2 Y940
Company Registration Number: 662195 **VAT Registration Number: 3662952IH**

Unit S12, Synergy Centre
TU Dublin Tallaght Campus
Tallaght
D24 A386
Tel: +353 (0)190 36445

TNEI Africa (Pty) Ltd
Registered: Mazars House, Rialto Rd, Grand Moorings Precinct,7441 Century City, South Africa
Company Number: 2016/088929/07

Unit 514 Tyger Lake
Niagara Rd & Tyger Falls Blvd
Bellville, Cape Town
South Africa, 7530

Executive Summary

TNEI Ireland was commissioned by Umma More Ltd ('the Applicant') to undertake an operational noise assessment for the proposed Umma More Renewable Energy Development (hereinafter referred to as 'the Proposed Development' or 'Wind Farm Site'). The noise assessment was undertaken to assess the potential impact of operational noise from the Proposed Development on the nearest noise sensitive receptors.

The Irish Governments '*Wind Energy Development Guidelines, 2006*' (WEDG 2006), produced by the Department of Environment Heritage and Local Government (DoEHLG), are the current guidelines for setting noise limits for wind energy developments. The information relating to noise in the WEDG 2006, is very limited and it is widely agreed that the limits proposed in the WEDG 2006 were drafted to broadly align with the UK guidance ETSU-R-97 *'The Assessment and Rating of Noise from Wind Farms'.* In 2013, the UK guidance was supplemented by a document produced by the Institute of Acoustics *'A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise'* (IOA GPG). Reference has been made to guidance contained in ETSU-R-97 and the IOA GPG to supplement the WEDG 2006.

Background noise monitoring was undertaken at six noise sensitive receptors. The monitoring locations were selected to be representative of the noise sensitive receptors located closest to the Proposed Development.

There were 341 buildings (potential Noise Sensitive Receptors (NSRs)) identified within the ~3 km search area defined from the proposed turbine locations within the Wind Farm Site. A number of the buildings identified were subsequently classified as derelict (H1, H77, H116, H131, H177, H224, H228 and H237) and therefore were not considered to be noise sensitive for the purposes of this assessment. Of the remaining identified NSRs, a total of sixteen were chosen as Noise Assessment Locations (NALs). The NALs were chosen to represent the NSRs located closest to the Proposed Development. The modelling results for the NALs have been presented within the main body of this report whilst predicted noise immission levels for the NSRs have been included within an Annex to the report. For the assessment locations where no background noise measurements were undertaken, noise data collected at proxy locations deemed representative of the expected background noise environment was used to assess the wind turbine noise impact at those receptors. For clarity all buildings were labelled with the letter 'H' and numbered to be consistent with the rest of the Environmental Impact Assessment Report (EIAR).

Wind speed data was measured using a LIDAR unit. The wind data was measured directly at hub height (104 m). These hub height wind speeds were then standardised to a height of 10 m in accordance with the IOA GPG.

Analysis of the measured data has been undertaken in accordance with the WEDG 2006 to determine the pre-existing background noise environment and to establish the daytime and night time noise limits at each of the NALs and NSRs.

Based on the guidance in the WEDG 2006 and recent planning permissions issued from An Bord Pleanála, the daytime WEDG Noise Limit was set at 40 dB(A) where background noise levels were <30 dB, and 45 dB(A) or background plus 5 dB whichever is the greater where background noise levels were >30 dB. The night time WEDG Noise Limit has been set at 43 dB(A) or background plus 5 dB whichever is the greater.

Predictions of wind turbine noise for the Proposed Development were made, based upon the sound power level data for a candidate wind turbine which has a rotor diameter of 162 m, a maximum rated capacity of 6.2 MW with serrated trailing edge blades and a hub height of 104 m. The candidate

turbine modelled is considered to be representative of the type of turbine that could be installed at the site.

Modelling was undertaken using the noise prediction model ISO 9613: 1996 *'Acoustics – Attenuation of sound during propagation outdoors Part 2: General method of calculation',* which accords with the recommendations in the IOA GPG and is considered to provide a realistic impact assessment.

There are no cumulative schemes (operational, consented, or proposed (planning application submitted) within 10 km of the Wind Farm Site and as such a cumulative assessment was not required for the operational phase of the Proposed Development.

Predicted noise levels indicate that at all noise assessment locations wind turbine noise immissions were below the WEDG Noise Limits.

Should planning permission be granted for the Proposed Development it would be appropriate to include a set of noise related planning conditions, which detail the noise limits applicable to the Proposed Development.

Should the Proposed Development receive planning permission the final choice of turbine would be subject to a competitive tendering process. As such, predictions of wind turbine noise are for the purposes of assessment only. The final choice of turbine would, however, need to meet the noise limits determined and contained within any planning permission condition imposed.

Contents

TABLES

ANNEXES

1 Introduction

1.1 Brief

1.1.1 TNEI was commissioned by Umma More Ltd ('the Applicant') to undertake an operational noise assessment for the proposed Umma More Renewable Energy Development (hereinafter referred to as 'the Proposed Development'). The following steps summarise the noise assessment process:

- Measure and analyse existing background noise levels and present the measured noise data with reference to existing government guidance and the recommendations of the Department of Environment Heritage and Local Government (DoEHLG), which are contained in the '*Wind Energy Development Guidelines, 2006'* [(1)] (WEDG 2006), in conjunction with the guidance produced by the United Kingdom's Department of Trade and Industry Noise Working Group on Noise from Wind Turbines. Reference has also been made to guidance contained within ETSU-R-97 *'The Assessment and Rating of Noise from Wind Farms'* [(2)] and *'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'* [(3)] (IOA GPG) to supplement the WEDG 2006;
- Determine the WEDG 2006 noise limits applicable to the Proposed Development;
- Undertake modelling of the operational wind turbine noise immissions from the Proposed Development that is predicted at neighbouring noise sensitive receptors;
- Compare the predictions of the operational wind turbine noise immissions from the Proposed Development against the WEDG 2006 noise limits; and
- Assess the impact of noise from the Proposed Development with reference to existing government guidance and the recommendations of the Department of Environment Heritage and Local Government, which are contained in the WEDG 2006.

1.2 Background

1.2.1 The Proposed Development is located approximately 2 km south west of Ballymore, Co. Westmeath, 6.6 km to the north of Moate, Co Westmeath and 12.2 km north east of Athlone, Co. Westmeath. The approximate Irish Transverse Mercator (ITM) reference for the centre if the site is 619623, 745904 and the proposed layout is shown on Figure A1.1 in Annex 1.

1.2.2 This noise assessment models a candidate turbine with a rotor diameter of 162 m, a maximum rated capacity of 6.2 MW, serrated trailing edge blades and a hub height of 104 m. The candidate turbine modelled is considered representative of the type of turbine that could be installed at the site.

1.2.3 TNEI is not aware of any schemes that are operational, consented, or proposed (planning application submitted) within 10 km of the proposed development site, therefore, a cumulative noise impact assessment was not required for the operational phase of the Proposed Development.

1.2.4 Note that the term 'noise emission' relates to the sound power level *emitted* from each wind turbine, whereas the term 'noise immission' relates to the sound pressure level *received* at any receptor location, due to the operation of the wind turbines. All references to dB are dB(A) unless otherwise stated. A full glossary of terms is provided in Section 8.

2 Noise Planning Policy and Guidance

2.1 Overview of Noise Planning Policy and Guidance

2.1.1 In assessing the potential noise impacts of the Proposed Development, the following guidance and policy documents have been considered:

- National Planning Policy;
- Regional Planning Policy;
- Local Policy;
- Department of Environment Heritage and Local Government (DoEHLG) '*Wind Energy Development Guidelines,'* 2006;
- ETSU-R-97 *'The Assessment and Rating of Noise from Wind Farms'*; and
- Institute of Acoustics *'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'* (IOA GPG) May 2013.

2.2 National Planning Policy

2.2.1 The National Planning Framework 'Project Ireland 2040' [(4)] was adopted on 29 May 2018. The document sets out a number of National Policy Objectives, of which number 65 relates to noise.

2.2.2 National Policy Objective 65 states;

"Promote the pro-active management of noise where it is likely to have significant adverse impacts on health and quality of life and support the aims of the Environmental Noise Regulations through national planning guidance and Noise Action Plans."

2.2.3 The document does not contain specifics with regards to the assessment of noise. Rather, it states (page 5):

'The National Planning Framework, is a planning framework to guide development and investment over the coming years. It does not provide every detail for every part of the country; rather it empowers each region to lead in the planning and development of their communities, containing a set of national objectives and key principles from which more detailed and refined plans will follow.'

Accordingly, it is necessary to look at regional and local guidance and policy for further direction.

2.3 Regional Spatial and Economic Strategies (RSES) 2020-2032

2.3.1 The RSES provides a strategy for delivering effective region development in the Eastern and Midland Regional Assembly of Ireland. In relation to renewable energy it states (page 163):

'It is important that our region sets out its ambitions concerning renewable energy in this context and shows its ability to help contribute to achieving national targets.'

2.3.2 The RSES does not include any information specific to noise but states the following:

'The forthcoming Renewable Electricity Policy and Development Framework will aim to identify strategic areas for the sustainable development of renewable electricity projects of scale, in a sustainable manner, compatible with environmental and cultural heritage, landscape and amenity considerations. The development of the Wind Energy Guidelines and the Renewable Electricity Development Plan will also facilitate informed decision making, in relation to renewable energy infrastructure.'

2.3.3 The Department of Environment, Climate and Communications (DECC) is currently preparing the Renewable Electricity and Policy Development Framework (REPDF).

2.4 Local Policy

2.4.1 The Westmeath County Development Plan (2021-2027) was adopted on 3 May 2021. Chapter 10 *'Transport, Infrastructure and Energy'* of Volume 1 states (Section 10.1) states that the local authorities aim is:

'To provide for the development of indigenous energy resources with an emphasis on renewable energy supplies.'

2.4.2 Section 10.23 *'Wind Energy'* states that the Council:

'will have regard to the Wind Energy Development Guidelines for Planning Authorities, prepared by the Department of Environment, Heritage and Local Government, or any update made thereto.'

2.4.3 *The Council have set out a number of Wind Energy Policy Objectives. In relation to noise policy, objective CPO 10.147 states:*

'Ensure that proposals for energy development demonstrate that human health has been considered, including those relating to the topics of:

• Noise (including consistency with the World Health Organisation's 2018 Environmental Noise Guidelines for the European Region)……'

2.4.4 Further information on the World Health Organisation's 2018 Noise Guidelines can be in Section 11.2 of the EIAR.

2.5 Wind Energy Development Guidelines, 2006

2.5.1 The current guidelines for setting noise limits are detailed in the Department of Environment Heritage and Local Government (DoEHLG), *'Wind Energy Development Guidelines, 2006'* (WEDG 2006).

2.5.2 The information relating to noise in the WEDG 2006 is very limited. For example, there is no guidance on where or how to measure background noise levels and how to correlate these with wind speed on the proposed wind farm site, there is also no mention of how to consider cumulative effects) The WEDG 2006 guidelines do, however, include guidance on how to derive limits for daytime and night time periods.

2.5.3 The daytime limits take account of existing background noise levels and include a fixed limit of 45 dB or background + 5 dB, whichever is the greater, except in low background noise environments where a fixed minimum limit in the range 35-40 dB should be considered. TNEIs interpretation of these limits is that turbine noise should not exceed:

- 45 dB $L_{A90,\ 10\ min}$ or background noise + 5 dB, whichever is the greater, for daytime hours (applicable where background noise levels are greater than 30 dB L_{A90}); or,
- 35 to 40 dB $L_{A90,\ 10\ min}$ where background noise is less than 30 dB L_{A90};

2.5.4 The WEDG states that a *"fixed limit of 43dB(A) will protect sleep inside properties during the night",* however, whilst it is not explicit within the WEDG guidance, the addition of a night time 'background noise +5 dB' parameter is commonly applied in wind turbine noise assessments. This is detailed in numerous examples of planning conditions issued by local authorities and An Bord Pleanála. On that basis, the night time noise limits used in this assessment have been based on 43 dB or background noise + 5 dB, whichever is the greater.

2.5.5 It is widely agreed that the limits proposed in the WEDGs were drafted to broadly align with the UK guidance *ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms'*. The Association of Acoustic Consultants of Ireland (AACI) Environmental Noise Guidance [5] states the following in relation to the WEDG 2006:

'The document includes daytime and night-time noise criteria. As criteria included in the document are evidently derived from ETSU-R-97, it is considered more robust to base noise assessments on the ETSU and IOA documents, particularly as the DOEHLG document is somewhat vague. The document has been undergoing a protracted review process for several years.'

2.5.6 In 2013 this UK guidance was supplemented by a document produced by the Institute of Acoustics' (IOA) *'A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise'* (IOA GPG). Given the lack of detail in parts of the WEDG, information contained in ETSU-R-97 and the IOA GPG is often used to supplement the WEDGs and to inform wind farm noise assessments in Ireland.

Draft 2019 WEDG

2.5.7 It is noted that the WEDG are currently under review and a set of 'draft 2019 WEDG' were issued for consultation in December 2019. The draft 2019 WEDG included reference to, and reliance upon, some elements of ETSU-R-97 and the IOA GPG, however, significant concerns were raised during the consultation process regarding the noise section of the draft 2019 WEDGs and at the time of writing this report, no further updates have been issued. Given the limitations of the draft 2019 WEDGs and the likelihood that significant changes would need to be made to them before they could be adopted, an assessment using those draft guidelines has not been undertaken.

2.5.8 Timelines for the conclusion of the WEDGs review are unclear. It is possible that an updated version of the WEDG will be issued (although it is expected that it would be materially different to the draft 2019 WEDGs).

2.5.9 The guidance in the WEDG 2006 has been used to assess operational noise from the Proposed Development. In the absence of detailed guidance being included in WEDG 2006

the assessment methodology has been supplemented with reference to the guidance in ETSU-R-97 and the IOA GPG where appropriate.

2.6 ETSU-R-97 The Assessment and Rating of Noise from Wind Farms

2.6.1 As wind farms started to be developed in the UK in the early 1990's, it became apparent that existing noise standards did not fully address the issues associated with the unique characteristics of wind farm developments and there was a need for an agreed methodology for defining acceptable noise limits for wind farm developments. The methodology was developed for the former Department of Trade and Industry (DTI) by the Working Group on Noise from Wind Turbines (WGNWT).

2.6.2 The WGNWT comprised a number of interested parties including, amongst others, Environmental Health Officers, wind farm operators, independent acoustic consultants and legal experts who:

'…between them have a breadth and depth of experience in assessing and controlling the environmental impact of noise from wind farms.'

2.6.3 In this way it represented the views of all the stakeholders that are involved in the assessment of noise impacts of wind farm developments. The recommendations of the WGNWT are presented in the DTI Report – ETSU-R-97 *'The Assessment and Rating of Noise from Wind Farms (1996).'*

2.6.4 The basic aim of the WGNWT in arriving at the recommendations was the intention to provide:

'Indicative noise levels thought to offer a reasonable degree of protection to wind farm neighbours, without placing unreasonable restrictions on wind farm development or adding to the costs and administrative burdens on wind farm developers or local authorities.'

2.6.5 ETSU-R-97 makes it clear from the outset that any noise restrictions placed on a wind farm must balance the environmental impact of the wind farm against the national and global benefits that would arise through the development of renewable energy sources:

'The planning system must therefore seek to control the environmental impacts from a wind farm whilst at the same time recognising the national and global benefits that would arise through the development of renewable energy sources and not be so severe that wind farm development is unduly stifled.'

2.6.6 ETSU-R-97 states that noise limits should reflect the variation in both turbine source noise and background noise with wind speed. Absolute lower limits, different for daytime and night time, are applied where low levels of background noise are measured. The wind speed range that should be considered ranges between the cut-in wind speed for the turbines (usually about 2 to 3 ms^{-1}) and up to 12 ms^{-1}, where all wind speeds are referenced to a 10 metre measurement height.

2.6.7 Separate noise limits apply for daytime and for night time. Daytime limits are chosen to protect a property's external amenity, and night time limits are chosen to prevent sleep disturbance indoors, with windows open.

2.6.8 The daytime noise limit is derived from background noise data measured during so-called 'quiet periods of the day', which comprise weekday evenings (18:00 to 23:00), Saturday afternoons and evenings (13:00 to 23:00) and all day and evening on Sundays (07:00 to 23:00). Multiple samples of 10 minute background noise levels using the $L_{A90,10min}$ measurement index are logged continuously over a range of wind speed conditions. These measured noise levels are then plotted against concurrent wind speed data and a 'best fit' curve is fitted to the data to establish the background noise level as a function of wind speed. The ETSU–R-97 daytime noise limit, sometimes referred to as a 'criterion curve', is then set at a level 5 dB(A) above the best fit curve over the desired wind speed range; subject to an appropriate daytime fixed minimum limit.

2.6.9 The night time noise limit is derived from background noise data measured during the night time periods (23:00 to 07:00), with no differentiation being made between weekdays and weekends. The 10 minute L_{A90} noise levels measured over the night time periods are plotted against concurrent wind speed data and a 'best fit' correlation is established. The night time noise limit is also based on a level 5 dB(A) above the best fit curve over the 0 – 12 ms^{-1} wind speed range, with a fixed minimum limit of 43 dB L_{A90}.

2.6.10 The exception to the setting of both the daytime and night time fixed minimum limits occurs where a property occupier has a financial involvement in the wind farm development. Paragraph 24 of ETSU-R-97 states:

'The Noise Working Group recommends that both day and night time lower fixed limits can be increased to 45 dB(A) and that consideration should be given to increasing the permissible margin above background where the occupier of the property has some financial involvement in the wind farm.'

2.6.11 ETSU-R-97 provides a robust basis for determining the noise limits for wind turbine(s) and since its introduction has become the accepted standard for such developments across the UK.

2.6.12 As detailed above, for this assessment reference has also been made to guidance contained within ETSU-R-97. The noise limits have been derived in accordance with WEDG 2006.

2.7 Current Good Practice

A Good Practice Guide on the Application of ETSU-R-97

2.7.1 In May 2013, the Institute of Acoustics issued *'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'* (IOA GPG). The document provides guidance on background noise data collection, data analysis and limit derivation, noise predictions, cumulative issues, reporting requirements and other matters such as noise related planning conditions.

2.7.2 The Authors of the IOA GPG sets out the scope of the document in Section 1.2:

"This guide presents current good practice in the application of the ETSU-R-97 assessment methodology for all wind turbine developments above 50 kW, reflecting the original principles within ETSU-R-97, and the results of research carried out and experience gained since ETSU-R-97 was published. The noise limits in ETSU-R-97 have not been examined as these are a matter for Government."

2.7.3 The guidance document was endorsed by all Governments within the UK.

2.7.4 As with ETSU-R-97, for this assessment the recommendations included in the IOA GPG have been used to supplement the guidance provided within the WEDG.

2.7.5 The IOA GPG refers to six Supplementary Guidance Notes and where applicable these have also been considered in this report.

2.7.6 To summarise, the assessment of operational noise from the Proposed Development has been undertaken in accordance with WEDG 2006, with reference to the guidance presented in ETSU-R-97 and the IOA GPG where appropriate.

3 Potential Impacts

3.1 Operational Noise Sources

3.1.1 Wind turbines may emit two types of noise. Firstly, aerodynamic noise is a more natural sounding 'broad band' noise, albeit with a characteristic modulation, or 'swish', which is produced by the movement of the rotating blades through the air. Secondly, mechanical noise may emanate from components within the nacelle of a wind turbine. Potential sources of mechanical noise include gearboxes or generators.

3.1.2 Aerodynamic noise is usually perceived when the wind speeds are fairly low although at very low wind speeds the blades either do not rotate, or rotate very slowly, and so negligible aerodynamic noise is generated. In higher winds aerodynamic noise may be masked by the normal sound of wind blowing through the trees and around buildings. The level of this natural 'masking' noise relative to the level of wind turbine noise is one of the several factors that determine the subjective audibility of the wind turbines [(6)].

3.2 Infrasound, Low Frequency Noise and Vibration

3.2.1 The term infrasound can be defined as the frequency range below 20 Hz, while low frequency noise (LFN) is typically in the frequency range 20 – 200 Hz [(7)]. An average young healthy adult has an audible range from 20 Hz to 20,000 Hz, although the sensitivity of the ear varies with frequency and is most sensitive to sounds with frequencies between 500 Hz and 4,000 Hz. Wind turbines do produce low frequency sounds [(8)], but our threshold of hearing at such low frequencies is relatively high and they therefore go unnoticed. Infrasound from wind turbines is often at levels below that of the noise generated by wind around buildings and other obstacles.

3.2.2 In 2004, the former DTI commissioned The Hayes McKenzie Partnership to report on claims that infrasound or LFN emitted by wind turbine generators (WTGs) were causing health effects. Of the 126 wind farms operating in the UK, five had reported LFN problems, therefore, such complaints are an exception, rather than a general problem that exists for all wind farms. Hayes McKenzie investigated the effects of infrasound and LFN at three wind farms for which complaints had been received and the results were reported in May 2006 [(9)]. The report concluded that:

- *'infrasound associated with modern wind turbines is not a source which will result in noise levels which may be injurious to the health of a wind farm neighbour;*
- *low frequency noise was measurable on a few occasions but below the existing permitted Night Time Noise Criterion. Wind turbine noise may result in internal noise levels within a dwelling that is just above the threshold of audibility, however at all sites it was always lower than that of local road traffic noise;*
- *that the common cause of complaint was not associated with LFN, but the occasional audible modulation of aerodynamic noise especially at night. Data collected showed that the internal noise levels were insufficient to wake up residents at these three sites. However once awoken, this noise can result in difficulties in returning to sleep.'*

3.2.3 The Applied and Environmental Geophysics Research Group at Keele University was commissioned by the Ministry of Defence (MOD), the DTI and the British Wind Energy Association (BWEA) to undertake microseismic and infrasound monitoring of LFN and vibrations from wind farms for the purposes of siting wind farms in the vicinity of Eskdalemuir in Scotland. Whilst the testing showed that vibration can be detected several kilometres away from wind turbines, the levels of vibration from wind turbines were so small that only the most sophisticated instrumentation can reveal their presence and they are almost impossible to detect. Nevertheless, the Renewable Energy Foundation alleged potential adverse health effects and when that story was picked up in the popular press, notably the Scotsman, the report's authors expressed concern over the way in which their work had been misinterpreted and issued a rebuttal statement [(10)] in August 2005:

'Vibrations at this level and in this frequency range will be available from all kinds of sources such as traffic and background noise – they are not confined to wind turbines. To put the level of vibration into context, they are ground vibrations with amplitudes of about one millionth of a millimetre. There is no possibility of humans sensing the vibration and absolutely no risk to human health.'

3.2.4 In response to concerns that wind turbines emit infrasound and cause associated health problems, Dr Geoff Leventhall, Consultant in Noise Vibration and Acoustics and author of the Defra Report on Low Frequency Noise and its Effects, said in the article in the Scotsman ('Wind farm noise rules 'dated'- James Reynolds, 5 August 2005'):

'I can state quite categorically that there is no significant infrasound from current designs of wind turbines.'

3.2.5 An article [(11)] published in the IOA Bulletin (March/April 2009) concluded that there is no robust evidence that either low frequency noise (including 'infrasound') or ground-borne vibration from wind farms, has an adverse effect on wind farm neighbours.

3.2.6 Work [(12)] by Dr Leventhall looked at infrasound levels within the ear compared to external sources and concluded:

'The conclusion is that the continuous inner ear infrasound levels due to internal sources, which are in the same frequency range as wind turbine rotational frequencies, are higher than the levels produced in the inner ear by wind turbines, making it unlikely that the wind turbine noise will affect the vestibular systems, contrary to suggestions made following the measurements at Shirley. The masking effect is similar to that in the abdomen (Leventhall 2009). The body, and vestibular systems, appear to be built to avoid disturbance from the high levels of infrasound which are produced internally from the heartbeat and other processes. In fact, the hearing mechanisms and the balance mechanisms, although in close proximity, have developed to minimise interaction (Carey and Amin 2006).'

3.2.7 During a planning Appeal (PPA-310-2028, Clydeport Hunterston Terminal Facility, approximately 2.5 km south-west of Fairlie, 9 Jan 2018), the health impacts related to LFN associated with wind turbines were considered at length by the appointed Reporter (Mr M Croft). The Reporter considered evidence from Health Protection Scotland and the National Health Service. In addition, he also considered LFN surveys undertaken by the Appellant and the Local Authority, both of which demonstrated compliance with planning conditions and did not identify any problems attributable to the turbine operations; some periods with

highest levels of low frequency noise were in fact recorded when the turbines were not operating.

3.2.8 The Reporter concluded that:

- The literature reviews by bodies with very significant responsibilities for the health of local people found insufficient evidence to confirm a causal relationship between wind turbine noise and the type of health complaints cited by some local residents;
- The NHS's assessment is that concerns about health impact are not supported by good quality research; and
- Although given the opportunity, the Community Council failed to provide evidence that can properly be set against the general tenor of the scientific evidence.

3.2.9 It is therefore considered unnecessary to carry out specific assessments of Infrasound, LFN and Vibration, and it has not been considered further in the noise assessment.

3.3 Amplitude Modulation of Aerodynamic Noise (AM)

3.3.1 In the context of wind turbine noise, amplitude modulation describes a variation in noise level over time; for example, observers may describe a 'whoosh whoosh' sound, which can be heard close to a wind turbine as the blades sweep past. Amplitude Modulation of aerodynamic noise is an inherent characteristic of wind turbine noise and was noted in ETSU-R-97, on page 68:

'The modulation or rhythmic swish emitted by wind turbines has been considered by some to have a characteristic that is irregular enough to attract attention. The level and depth of modulation of the blade noise is, to a degree, turbine-dependent and is dependent upon the position of the observer. Some wind turbines emit a greater level of modulation of the blade noise than others. Therefore, although some wind turbines might be considered to have a character that may attract one's attention, others have noise characteristics which are considerably less intrusive and unlikely to attract one's attention and be subject to any penalty.

This modulation of blade noise may result in a variation of the overall A-weighted noise level by as much as 3dBA (peak to trough) when measured close to a wind turbine. As distance from the wind turbine [or] wind farm increases, this depth of modulation would be expected to decrease as atmospheric absorption attenuates the high frequency energy radiated by the blade.'

3.3.2 In recent times the Acoustics community has sought to make a distinction between the AM discussed within ETSU-R-97, which is expected at most wind farms and as such may be considered as 'Normal Amplitude Modulation' (NAM), compared to the unusual AM that has sometimes been heard at some wind farms, hereinafter referred to as 'Other Amplitude Modulation' (OAM). The term OAM is used to describe an unusual feature of aerodynamic noise from wind turbines, where a greater than normal degree of regular fluctuation in sound level occurs at blade passing frequency, typically once per second. In some appeal decisions it may also be referred to as 'Excess Amplitude Modulation' (EAM). It should be noted that the noise assessment and rating procedure detailed in ETSU-R-97 fully takes into account the presence of the intrinsic level of NAM when setting acceptable noise limits for wind farms.

3.3.3 On 16 December 2013, RenewableUK (RUK) released six technical papers [13] on AM, which reflected the outcomes of research commissioned over the previous three years, together with a template planning condition. Whilst this research undoubtedly improved understanding of Other Amplitude Modulation (OAM) and its effects, it should be noted that at the time of writing it has not been endorsed by any relevant body such as the Institute of Acoustics (IOA).

3.3.4 On 22 January 2014, the IOA released a statement regarding the RUK research and the proposed planning condition to deal with the issue of amplitude modulation from a wind turbine and stated:

'This research is a significant step forward in understanding what causes amplitude modulation from a wind turbine, and how people react to it. The proposed planning condition, though, needs a period of testing and validation before it can be considered to be good practice. The IOA understands that RenewableUK will shortly be making the analysis tool publicly available on their website so that all interested parties can test the proposed condition, and the IOA will review the results later in the year. Until that time, the IOA cautions the use of the proposed planning condition.'

3.3.5 Research regarding amplitude modulation continued. In April 2015, the IOA issued a discussion document entitled *'Methods for Rating Amplitude Modulation in Wind Turbine Noise'*. The document presented three methods that can be used to quantify the level of AM at a given measurement location. After extensive consultation a preferred method of measuring OAM, which provides a framework for practitioners to measure and rate AM, was recommended by the IOA.

3.3.6 On 3 August 2015, the UK Department for Energy and Climate Change (DECC), now the Department for Business, Energy and Industrial Strategy (BEIS), commissioned independent consultants WSP Parsons Brinkerhoff to carry out a literature review on OAM (which they refer to simply as AM). The stated aims were as follows:

- *'To review the available evidence on Amplitude Modulation (AM) in relation to wind turbines, including but not limited to the research commissioned and published by RenewableUK in December 2013;*
- *To work closely with the Institute of Acoustics' AM working group, who are expected to recommend a preferred metric and methodology for quantifying and assessing the level of AM in a sample of wind turbine noise data;*
- *To review the robustness of relevant dose response relationships, including the one developed by the University of Salford as part of the RenewableUK study, on which the correction (or penalty) for amplitude modulation proposed as part of its template planning condition is based;*
- *To consider how, in a policy context, the level(s) of AM in a sample of noise data should be interpreted, in particular determining at what point it causes a significant adverse impact;*
- *To recommend how excessive AM might be controlled through the use of an appropriate planning condition; and*
- *To consider the engineering/cost trade-offs of possible mitigation measures.'*

3.3.7 Their report, which was released in October 2016, concluded that there is sufficient robust evidence that excessive AM leads to increased annoyance from wind turbine noise and recommended that excessive AM is controlled through a suitably worded planning condition, which will control it during periods of complaint. Those periods should be identified by measurement using the metric proposed by the work undertaken by the IOA, and enforcement action would rely upon professional judgement by Local Authority Environmental Health Officers based on the duration and frequency of occurrence.

3.3.8 It is not clear within the body of the report which evidence the authors relied upon to arrive at their conclusions, although the Executive Summary states (page 4);

"It is noted that none of the Category 1 or 2 papers have been designed to answer the main aim of the current review in its entirety. The Category 1 studies have limited representativeness due to sample constraints and the artificiality of laboratory environments, whereas the Category 2 studies generally do not directly address the issue of AM WTN exposure-response. A meta – analysis of the identified studies was not possible due to the incompatibility of the various methodologies employed. Notwithstanding the limitations in the evidence, it was agreed with DECC that the factors to be included in a planning condition should be recommended based on the available evidence, and supplemented with professional experience".

3.3.9 The report [14] states that any planning condition must accord with existing planning guidance, and should be subject to legal advice on a case by case basis. Existing guidance would include compliance with the six tests of a planning condition embodied in Circular 4/98. The report's authors did not dictate a particular condition to be used but did suggest that any condition should include the following elements (p5):

- *"The AM condition should cover periods of complaints (due to unacceptable AM);*
- *The IoA-recommended metric should be used to quantify AM (being the most robust available objective metric);*
- *Analysis should be made using individual 10-minute periods, applying the appropriate decibel 'penalty' to each period, with subsequent analysis;*
- *The AM decibel penalty should be additional to any decibel penalty for tonality; and*
- *An additional decibel penalty is proposed during the night time period to account for the current difference between the night and day limits on many sites to ensure the control method works during the most sensitive period of the day."*

3.3.10 At the time of writing there has been no official response to those recommendations from the IOA Noise Working Group and, as yet, no endorsement from any UK Government Minister or Department. The recommendation to impose a planning condition and the associated penalty scheme is at odds with the advice from the IOA GPG, which currently states (paragraph 7.2.10):

'7.2.1 The evidence in relation to "Excess" or "Other" Amplitude Modulation (AM) is still developing. At the time of writing, current practice is not to assign a planning condition to deal with AM.'

3.3.11 It is therefore considered unnecessary to carry out specific assessments of OAM, and it has not been considered further in the noise assessment.

4 Methodology

4.1 Assessing Operational Noise Impact

4.1.1 To undertake an assessment of the operational noise impact, the following steps are required:

- Specify the location of the wind turbines for the Proposed Development;
- Measure the background noise levels as a function of on-site wind speed at a selection of representative Noise Monitoring Locations (NML);
- Establish for each NML the 'WEDG Noise Limits' on analysis of the measured background noise levels;
- Identify the locations of all nearby noise sensitive receptors (NSRs) and select a sample of relevant Noise Assessment Locations (NAL). For each NSR, identify the most representative measured background noise dataset;
- Specify the likely noise emission characteristics of the wind turbines for the Proposed Development;
- Calculate the likely noise immission levels due to the operation of the Proposed Development and compare it to the Proposed Development's 'WEDG Noise Limits'.

4.2 Consultation

Scoping Opinion (dated 6 September 2021)

4.2.1 The Health Service Executive (HSE) stated the following in relation to noise:

'A full and thorough noise survey must be carried out to assess the impact of noise from the proposed turbines on the residents living in the vicinity.

It is essential that up to date baseline monitoring is carried out to establish the existing noise environment. All noise sensitive receptors in the vicinity of the turbines shall be identified. The selection of noise monitoring locations for background noise is of critical importance in the noise survey, therefore the rationale for choosing the number and the positioning of these should be provided by the applicant.

Once the existing noise environment has been established, the predicted increase in noise from the proposed turbines should then be quantified and assessed. It is this departments opinion that adherence to specified noise limit values does not always protect sensitive receptors from noise nuisance therefore the significance of the predicted change in the noise environment should be fully assessed. It is requested that this information is outlined and displayed clearly in the EIS.

The potential cumulative effects of other windfarms, industry, quarrying etc in the vicinity of the development should be assessed as part of the noise survey. All mitigation measures for the control of noise shall be described.'

4.2.2 Full details regarding the baseline noise survey are included within Section 5 below with supporting information included within Annexes 1-4.

4.2.3 Predicted noise levels and average background noise levels are presented in detail in Sections 5 and 6. Both background noise levels and wind turbine noise levels vary with wind speed and direction making the calculation of a change in noise level difficult to define, significance is discussed in the EIAR chapter.

4.2.4 In relation to the background noise survey, the data collected has been split into quiet daytime and night time periods as detailed in Section 2.6.8 and 2.6.9. The background noise data collected during the remaining period (07:00-18:00 weekdays and 07:00-13:00 on a Saturday), when the nearby quarry would most likely have been operational was filtered out as part of the splitting of the data. In addition, the times series graphs were reviewed to consider any other potential atypical periods measured during the noise survey as discussed in Section 5.3 below. There are no operational, permitted or proposed wind farms within 10 km of the Proposed Development and therefore there is no potential for cumulative effects during the operational phase of the Proposed Development.

4.3 Assessment Methodology

Wind Shear

4.3.1 Wind shear can be defined as *'the change in the relationship between wind speed at different heights'.* Due to wind shear, wind speeds recorded on one meteorological mast at different heights usually vary, generally the higher the anemometer the higher the wind speed recorded. For example, if a wind speed of 4 ms^{-1} is recorded at 80 m height, 3.5 ms^{-1} may be recorded at 40 m and 2.5 ms^{-1} may be recorded at 10 m.

4.3.2 Hub height wind speed is the key wind speed for a wind farm noise assessment, as it is the wind speed at hub height which will determine the noise emitted by the wind turbines and informs the turbine control system. Ideally, both wind turbine noise predictions and background noise level measurements should refer to hub height wind speed (or a representation thereof), ensuring that there is no discrepancy between the wind speed at which the noise is emitted and the wind speed at which the corresponding background noise is measured.

4.3.3 The IOA GPG states that one of three methods of wind speed measurement may be adopted. For this assessment wind speeds were recorded directly at hub height (104 m) in line with 'Method A' of Section 2.6.3 of the IOA GPG to fully take account of wind shear.

Noise Impact Criteria in the WEDG

4.3.4 Analysis of the measured data has been undertaken to determine the pre-existing background noise environment and to establish the daytime and night time WEDG Noise Limits for each NAL.

4.3.5 The WEDG Noise Limits for the daytime have been set at;

- 40 dB(A) where background noise levels are below 30 dB; and,
- 45 dB(A) or background noise plus 5 dB, whichever is the greater, where background noise levels are greater than 30 dB.

4.3.6 The daytime fixed minimum noise limits were selected on the basis of the limits included within some recent planning decisions issued by An Bord Pleanála.

4.3.7 The WEDG Noise Limits at night time has been set at;

- 43 dB(A) or background plus 5 dB, whichever is the greater.

4.3.8 The acceptable limits for wind turbine operational noise are clearly defined for all time periods by the application of the WEDG methodology. Consequently, the test applied to operational noise is whether or not the predicted wind turbine noise immission levels at nearby noise sensitive properties lie below the derived WEDG Noise Limits.

Noise Prediction Model

4.3.9 The ISO 9613-2: 1996 *'Acoustics – Attenuation of sound during propagation outdoors Part 2: General method of calculation'* [15] model algorithm provides a robust prediction method for calculating the noise immission levels at the nearest receptors. A European Commission (EC) research project into wind farm noise propagation over large distances, published as 'Development of a Wind Farm Noise Prediction Model,' JOULE project JOR3-CT95-0051 in 1998, identified a simplified version of ISO 9613-2 as the most suitable at that time, but the full method has been used for this assessment.

4.3.10 Guidance on noise prediction and propagation modelling is not provided within the WEDG, however, the IOA GPG recognises the standard as appropriate for the prediction of wind turbine noise.

4.3.11 There is currently no standard approach to specifying error bands on noise predictions, however, Table 5 of ISO 9613-2 suggests, at best, an estimated of accuracy of ± 3 dB(A). The work undertaken as part of the EC research study concluded that the ISO 9613-2 algorithm reliably predicted noise levels that would generally occur under downwind propagation conditions. The error bands referenced in the ISO standard itself relate to the general application of the standard. Additional, wind farm specific studies, have also been undertaken to validate the use of the standard to predict wind farm noise and these are referenced in Section 4 of the IOA GPG, which goes on to conclude that:

"The outcome of this research has demonstrated that the ISO 9613-2 standard in particular, which is widely used in the UK, can be applied to obtain realistic predictions of noise from on-shore wind turbines during worst case propagation conditions (i.e. sound speed gradients due to downwind conditions or temperature inversions), but only provided that the appropriate choice of input parameters and correction factors are made."

4.3.12 TNEIs experience of undertaking compliance monitoring for operational wind farms indicates that the predictions undertaken using the guidance in the IOA GPG show a good correlation with measured levels.

4.3.13 The ISO 9613-2 model can take account of the following factors that influence sound propagation outdoors:

- Geometric divergence;
- Atmospheric absorption;
- Reflecting obstacles;
- Screening;
- Vegetation; and
- Ground attenuation.

4.3.14 The model uses as its acoustic input data the octave band sound power output of the turbine and calculates, on an octave band basis, attenuation due to the factors above, as appropriate.

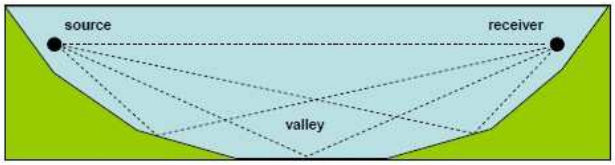
4.3.15 The IOA GPG quotes a comparative study undertaken in Australia that indicated ISO 9613-2 can, in some conditions, under-predict ground attenuation effects and the potential for additional reflection paths 'across a valley', whilst slightly over-predicting on flat terrain. It should be noted, however, that the wind farm layouts studied were untypical for the UK, with rows of turbines spreading over 10 km on an elevated ridge. It also should be noted that no correction for background contribution was undertaken and the monitoring locations were located as far as 1.7 km from the nearest turbine, where turbine noise may be at similar levels to background noise and therefore difficult to differentiate. For the study's modelling work topographic height data was included as an input, which is consistent with ISO 9613-2 methodology generally, but not with the requirements of the IOA GPG.

4.3.16 The model used in this assessment does not model barrier attenuation using the method in ISO 9613-2, but instead uses the guidance in the IOA GPG to consider whether any topographical corrections are required as set out below in Sections 4.3.23to 4.3.24. Any differences in ground height between the receptors and the turbines are considered when calculating the propagation distance between each source and receiver.

4.3.17 The IOA GPG discusses the potential for topographical screening effects of the terrain surrounding a wind farm and the nearby noise sensitive receptors. Although barrier screening effects in ISO 9613-2 can make corrections of up to 15 dB, the IOA GPG states that where there is no line of sight between the highest point on the rotor and the receiver location a reduction of no more than 2 dB may be applied.

4.3.18 The IOA GPG also states that a *'further correction of +3 dB should be added to the calculated overall A-weighted level for propagation 'across a valley', i.e. a concave ground profile or where the ground falls away significantly between a turbine and the receiver location.'* The potential reflection paths are illustrated in Schematic 4.1 below.

Schematic 4.1: Multiple reflection paths for sound propagation across concave ground



Source: IOA GPG, page 21, Figure 5

4.3.19 A formula from the JOULE Project JOR3-CT95-0051 dated 1998 is suggested for determining whether a correction is required.

$$h_m \geq 1.5 \times (abs\ (h_s - h_r) / 2)$$

where h_m is the mean height above the ground of the direct line of sight from the receiver to the source (as defined in ISO 9613-2, Figure 3), and h_s and h_r are the heights above local ground level of the source and receiver respectively).

4.3.20 The calculation of h_m requires consideration of the digital terrain model and needs to be performed for each path between every turbine and every receiver. Interpretation of the results of the calculation above and the subsequent inclusion of a concave ground profile

correction requires careful consideration with any topographical variation considered in the context of a site. The requirements for topographical corrections are detailed within Sections 4.3.23 and 4.3.24 below.

Noise Propagation Parameters

4.3.21 The noise immission levels have been calculated using the full ISO 9613-2 model with a receiver height of 4.0 m above local ground level, mixed ground (G=0.5) and air absorption based on a temperature of 10 °C and 70 % relative humidity. The modelling parameters reflect current good practice as detailed within the IOA GPG.

4.3.22 The wind turbine noise immission levels are based on the $L_{A90,10\ minute}$ noise indicator in accordance with the recommendations in the WEDG, which were obtained by subtracting 2dB(A) from the turbine sound power level data (L_{Aeq} indicator).

4.3.23 A topographical assessment has been undertaken between each NSR and wind turbine location to determine whether any concave ground profiles exist between the source and receiver. Analysis undertaken using a combination of CadnaA [16] and an Excel model found that if the formula in the IOA GPG is applied directly, no corrections were required for any turbines at any receptor, as summarised in Annex 6.

4.3.24 In addition, an assessment has been undertaken to determine whether any topographical screening effects of the terrain occur where there is no direct line of sight between the highest point on the turbine rotor and the receiver location. Upon analysis of each NSRs it was found that no barrier correction could be applied to any turbines at a number of receptors as detailed in Annex 6.

5 Baseline

5.1 Identification of Potential Noise Receptors

5.1.1 A desk based review was undertaken to identify potential NSRs within proximity to the Proposed Development. Of the identified receptors, a total of six Noise Monitoring Locations (NMLs) were selected as being appropriate locations to determine a representative baseline for all of the identified NSRs. The NMLs were located to the north, east, east-southeast, and west of the Proposed Development.

5.1.2 The NMLs were selected following a detailed review of the area using aerial photography. Where possible, locations were selected that were subject to minimal influence from other noise sources, such as local watercourses, operational wind turbines and vegetation.

5.2 Background Noise Survey

5.2.1 Background noise monitoring was undertaken for the purposes of setting the WEDG Noise Limits. Data was recorded over the period 01 March 2022 to 03 May 2022 at each of the NMLs simultaneously.

5.2.2 The equipment at NML3 was knocked over by cattle at some point during the second month of monitoring. The exact period when it occurred could not be determined therefore the data collected during the second month of the survey was discarded. In addition, the equipment at NML5 suffered a fault during the first maintenance visit and did not repower following calibration. The kit was replaced with another sound level meter. The noise monitoring equipment at the other NMLs functioned correctly for the full duration of the survey. Notwithstanding the issues experienced with the two meters, sufficient background noise data was collected at all NMLs to provide robust datasets for the derivation of noise limits for the assessment.

5.2.3 Details of the exact monitoring periods, the rationale behind the exact kit location and the dominant noise sources observed at each of the NMLs are detailed in the Field Data Sheets (FDS) and installation report included in Annex 2.

5.2.4 The NML is the position that the sound level meter was sited at each property, as shown on Figure A1.1 (Annex 1) and summarised in Table 5.1 below.

Table 5.1 Noise Monitoring Locations

NML	X (ITM)	Y (ITM)
NML1	618362	748260
NML2	620525	746549
NML3	621430	745247
NML4	620944	744124
NML5	617409	745830
NML6	618020	747119

5.3 Noise Monitoring Equipment

5.3.1 Section 2.4 of the IOA GPG includes information on the type and specification of noise monitoring equipment that should be used for background noise surveys and states:

'Noise measurement equipment and calibrators used on site should comply with Class 1/Type 1 of the relevant standard(s). Enhanced microphone windscreens should be used. Standard windshields of a diameter of less than 100 mm cannot be relied upon to provide sufficient reduction of wind noise in most circumstances.'

5.3.2 The noise monitoring equipment used for the background noise survey meets with the requirements of the IOA GPG. Details of the noise monitoring equipment used, the calibration drift recorded and photographs at each NML are detailed in the FDS included in Annex 2. The IOA GPG states that for calibration drift greater than 1 dB the measurements should be discarded. The maximum calibration drift recorded during the noise survey was 0.4 dB as detailed in the FDS (included in Annex 2) therefore no correction has been applied to the noise data.

5.3.3 Copies of the calibration/conformance certificates for the sound level meters and sound level calibrator used for the noise survey are included in Annex 3. All sound level meters conform to Class 1/ Type 1.

5.3.4 The microphones were all mounted between 1.2 m and 1.5 m above local ground level, situated between 3.5 m and 20 m from the dwelling and were located where possible *'in an area frequently used for rest and relaxation'* (Section 2.5.1 of IOA GPG), and away from obvious local sources of noise such as boiler flues, fans and running water. The sound level meters were situated as far away from hard reflective surfaces such as fences and walls as practicable.

5.3.5 All locations exhibited periods of dawn chorus throughout the survey and affected data has been excluded from the noise assessment as required.

5.3.6 All measurement systems were set to log the L_{A90} and L_{Aeq} noise levels in ten minute intervals continuously over the deployment period.

5.4 Meteorological Data

5.4.1 The WEDG state on Page 29 that:

'Noise limits should be applied to external locations, and should reflect the variation in both turbine source noise and background noise with wind speed.'

5.4.2 ETSU-R-97 states on Page 84 that:

'background noise measurements should be correlated with wind speed measurements performed at the proposed site, such that the actual operating noise levels from the turbines may be compared with the noise levels that would otherwise be experienced at a dwelling.'

5.4.3 Concurrent wind speed and direction were recorded using a LIDAR unit, which was located within the site (grid reference 620297, 745443). The meteorological data was collected and provided by the MKO. The installation report and calibration information for the LIDAR is

included within Annex 2. Average 10 minute wind speed and direction data were collected over the same time-scale as the noise data to provide the analysis of the measured background noise as a function of wind speed and direction.

5.4.4 The preferred methodologies for measuring or calculating wind shear are detailed in Section 4.3.1.

5.4.5 A tipping bucket rain gauge was installed at NML1 and NML2 for the duration of the noise survey to record periods of rainfall, time synchronised to the sound measurements. As per the recommendations in Section 3.1.9 of the IOA GPG, the rain data were analysed and any 10 minute periods that contained registered rainfall events, plus the preceding 10 minute periods, were excluded. All excluded rainfall periods are shown on Figures A1.2a-A1.2f (Annex 1) as blue squares.

5.5 Directional Filtering of Background Noise

5.5.1 In Section 3.1.22 of the IOA GPG the need to directionally filter background noise data is discussed. Where a receiver is located upwind of a dominant local noise source whilst also being systematically downwind of the turbines then it may be necessary to filter background noise data particularly when this corresponds to the prevailing wind direction.

5.5.2 There is an operational quarry to the north of the Wind Farm Site. As detailed in Sections 2.6.8 and 2.6.9 above, the background noise data was filtered to only include so-called 'quiet periods of the day' which comprise weekday evenings (18:00 to 23:00), Saturday afternoons and evenings (13:00 to 23:00) and all day and evening on Sundays (07:00 to 23:00). The noise data that would have been collected during the periods when the quarry would have been operational would therefore be removed as part of that filtering process. On that basis no further filtering of the data to consider quarrying activities was deemed necessary.

5.5.3 For this site there are no dominant local noise sources so no directional filtering was undertaken.

5.6 Analysis of Measured Data

5.6.1 Time series graphs are provided in Annex 4, which show the variation in measured wind speed/direction and noise level over the monitoring period. These graphs also show where data was excluded, either due to rainfall, birdsong (dawn chorus) or manual exclusions due to atypical data.

5.7 Prevailing Background Noise Level

5.7.1 Table 5.3 and Table 5.3 summarise the derived prevailing background noise levels from the baseline survey.

Table 5.2 Summary of Prevailing Background Noise Levels during Quiet Daytime Periods (dB(A))

NML	Prevailing Background Noise Level $L_{A90,10\ min}$											
	1	2	3	4	5	6	7	8	9	10	11	12
NML1	27.6*	27.6*	27.6	28.0	29.3	31.4	34.2	37.6	41.4	45.6	50.1	54.7
NML2	28.4*	28.4*	28.4	28.6	29.5	31.1	33.4	36.4	40.2	44.7	44.7*	44.7*
NML3	28.6*	28.6*	28.6*	28.6	29.3	30.6	32.7	35.6	39.4	44.2	50.1	50.1*
NML4	29.1*	29.1*	29.1	29.2	30.0	31.6	33.7	36.5	39.8	43.6	47.8	52.4
NML5	26.4*	26.4*	26.4	26.7	27.7	29.4	31.8	34.8	38.3	42.4	46.9	51.8
NML6	27.9*	27.9*	27.9*	27.9	28.7	30.3	32.7	35.7	39.2	43.2	47.6	52.3

**restricted where derived minimum occurs at lower wind speeds and maximum level recorded at higher wind speeds. See Sections 5.6.4-5.6.6.*

Table 5.3 Summary of Prevailing Background Noise Levels during Night time Periods (dB(A))

NML	Prevailing Background Noise Level $L_{A90,10\ min}$											
	1	2	3	4	5	6	7	8	9	10	11	12
NML1	16.9*	16.9	17.0	18.7	21.5	25.3	29.8	34.7	39.8	44.8	49.5	53.5
NML2	15.8*	15.8*	15.8	17.0	19.5	22.9	27.0	31.6	36.5	41.3	45.9	50.0
NML3	22.1*	22.1*	22.1	22.2	23.4	25.7	28.9	32.7	37.1	41.7	46.6	51.3
NML4	18.0*	18.0*	18.0	19.1	21.2	24.3	28.1	32.4	37.0	41.6	46.1	50.1
NML5	18.6*	18.6*	18.6	19.4	21.2	23.6	26.8	30.5	34.6	39.1	43.9	48.9
NML6	17.5*	17.5*	17.5	18.5	20.6	23.6	27.3	31.7	36.4	41.4	46.4	51.4

**restricted where derived minimum occurs at lower wind speeds. See Sections 5.6.4-5.6.6.*

5.7.2 A series of graphs are presented for each of the NMLs to illustrate the data collected, these are included as Figures A1.2a - A1.2f (Annex 1). There is a set of graphs for each NML, which show the range of wind speeds and directions recorded during the survey, the 10 minute average wind speed plotted against the recorded $L_{A90,\ 10min}$ noise level, and a calculated 'best fit' polynomial regression line for both quiet daytime and night time periods. Each Figure also includes a table with the number of measured data points per integer wind speed bin and the prevailing measured background noise level.

5.7.3 The background noise levels have been calculated using a best fit polynomial regression line of no more than a fourth order through the measured $L_{A90,\ 10min}$ noise data, as required by ETSU-R-97 and the IOA GPG.

5.7.4 In line with the recommendations included in Section 3.1.21 of the IOA GPG, for all NMLs the polynomial background curve for low wind speed conditions have been restricted at wind speeds below that where the derived minimum occurs.

5.7.5 ETSU-R-97 states (Page 101) that data may not be extrapolated beyond the measured range of wind speeds. It is, however, reasonable to assume that background noise levels will not decrease at higher wind speeds. As such, in the interest of protecting residential amenity, the noise levels for wind speeds higher than the maximum where noise levels were measured have been set equal to those derived for lower wind speeds, as per Section 3.1.20 of the IOA GPG.

5.7.6 This is presented on the Figures, where the final regression analysis curve is shown as a continuous black line and the original polynomial line of best fit is shown as a dashed black line. A summary is also included in Table 5.4 below.

Table 5.4 Analysis of Measured Datasets

NML	Quiet Daytime	Night Time
NML1	Restricted below 3 ms^{-1} (minimum level recorded)	Restricted below 2 ms^{-1} (minimum level recorded)
NML2	Restricted below 3 ms^{-1} (minimum level recorded)	Restricted below 3 ms^{-1} (minimum level recorded) and above 10 ms^{-1} maximum level recorded)
NML3	Restricted below 4 ms^{-1} (minimum level recorded)	Restricted below 4 ms^{-1} (minimum level recorded) and above 11 ms^{-1} maximum level recorded)
NML4	Restricted below 4 ms^{-1} (minimum level recorded)	Restricted below 3 ms^{-1} (minimum level recorded)
NML5	Restricted below 3 ms^{-1} (minimum level recorded)	Restricted below 3 ms^{-1} (minimum level recorded)
NML6	Restricted below 4 ms^{-1} (minimum level recorded)	Restricted below 3 ms^{-1} (minimum level recorded)

5.7.7 Section 2.9.5 of the IOA GPG recommends that no fewer than 200 valid data points should be recorded in each of the quiet daytime and night time periods, with no fewer than 5 valid data points in any 1 ms^{-1} wind speed bin, which was achieved at NMLs 1, 4, 5 and 6 for all time periods and NMLs 2 and 3 during the night time period. For NML2, <5 valid data points were recorded within the 11 and 12 ms^{-1} wind speed bins during the quiet daytime period and for NML3, <5 valid data points were recorded within the 12 ms^{-1} wind speed bin during the quiet daytime period.

5.7.8 The number of data points measured in each wind speed bin for each receptor, once exclusions were applied, are summarised in Figures A1.2a - A1.2f (Annex 1). The Figures also show the final prevailing background noise levels which have been determined following the analysis detailed above.

6 Noise Assessment Results

6.1 Noise Sensitive Receptors and Noise Assessment Locations

6.1.1 A total of 16 NSRs were chosen as Noise Assessment Locations (NALs) to represent the individual or clusters of NSRs located closest to the Proposed Development. The modelling results for the NALs are presented within the main body of this report, however, an assessment for the individual NSR has also been included within Annex 5 for completeness.

6.1.2 Each NAL and NSR are shown on Figure A1.1 (Annex 1). A set of inset maps (Figures A1.1a-c) have also been included for clarity. All NALs and NSRs are labelled with the letter 'H' and are numbered to ensure consistency with the labelling of these receptors within the rest of the Environmental Impact Assessment Report (EIAR).

6.1.3 A number of the buildings included within the original 341 buildings identified have subsequently been classified as derelict (H1, H77, H116, H131, H177, H224, H228 and H237). These locations are not considered to be noise sensitive for the purposes of this assessment and have not been considered further. The derelict properties are shown on Figures A1.1 and A1.1a-c.

6.1.4 Predictions of noise at the NALs ensures that the assessment reports the noise immission levels expected at each group of NSRs. If predicted noise levels meet the noise limits at the NALs then it infers compliance at other NSRs located further away from the Proposed Development. For completeness, an assessment for all NSRs is included within Annex 5. Table 6.1 details which NML has been used to set noise limits for each NAL and a similar table detailing which NML has been used to set limits at each NSR has also been included within Annex 5.

Table 6.1 Noise Assessment Locations

Noise Assessment Location (NAL)	X (ITM) (m)	Y (ITM) (m)	Elevation (m AOD)	Background Noise Data Used
NAL1 (H3)	619841	746630	60	NML2
NAL2 (H4)	621453	745239	109	NML3
NAL3 (H5)	618915	745338	60	NML5
NAL4 (H6)	620556	746589	70	NML2
NAL5 (H7)	618087	745667	65	NML5
NAL6 (H8)	621320	746366	71	NML2
NAL7 (H10)	621172	744654	90	NML4
NAL8 (H13)	619889	747394	69	NML2
NAL9 (H14)	618287	747683	85	NML6

Noise Assessment Location (NAL)	X (ITM) (m)	Y (ITM) (m)	Elevation (m AOD)	Background Noise Data Used
NAL10 (H19)	620818	746596	83	NML2
NAL11 (H25)	618422	748301	100	NML1
NAL12 (H28)	618077	746968	78	NML6
NAL13 (H35)	620376	744130	81	NML4
NAL14 (H67)	619592	748749	60	NML1
NAL15 (H86)	619669	744029	70	NML4
NAL16 (H97)	618860	749119	69	NML1

6.2 Noise Emission Characteristics of the Wind Turbines

6.2.1 This assessment considers a 6.2 MW candidate turbine for the Proposed Development with a rotor diameter of 162 m, serrated trailing edge blades and a hub height of 104 m.

6.2.2 Due to the differences in the way in which levels are provided by different manufacturers, TNEI has accounted for uncertainty using the guidance contained within Section 4.2 of the IOA GPG (2013). Details of the sound power level, octave data and measurement uncertainty used for the turbine considered in this assessment are included in Annex 7.

6.2.3 Manufacturer noise level data is usually supplied based on a turbine of a specific hub height although the noise levels are presented as standardised to 10 m height. Accordingly, the noise data used in this assessment corrects the published turbine noise data following the guidance detailed in Section 4.3 of IOA GPG Supplementary Guidance Note 4, where applicable.

6.3 WEDG Noise Limits

6.3.1 The WEDG Noise Limits have been established for each of the NALs as detailed in Table 6.2 and Table 6.3 below.

Table 6.2 WEDG Noise Limits Daytime

Location	Wind Speed (ms^{-1}) as standardised to 10m height											
	1	2	3	4	5	6	7	8	9	10	11	12
1 - NAL1 (H3)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
2 - NAL2 (H4)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	49.2	55.1	55.1
3 - NAL3 (H5)	40.0	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	47.4	51.9	56.8
4 - NAL4 (H6)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
5 - NAL5 (H7)	40.0	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	47.4	51.9	56.8
6 - NAL6 (H8)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
7 - NAL7 (H10)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4

Location	Wind Speed (ms^{-1}) as standardised to 10m height											
	1	2	3	4	5	6	7	8	9	10	11	12
8 - NAL8 (H13)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
9 - NAL9 (H14)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.2	52.6	57.3
10 - NAL10 (H19)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
11 - NAL11 (H25)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7
12 - NAL12 (H28)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.2	52.6	57.3
13 - NAL13 (H35)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4
14 - NAL14 (H67)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7
15 - NAL15 (H86)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4
16 - NAL16 (H97)	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7

Table 6.3 WEDG Noise Limits Night Time

Location	Wind Speed (ms^{-1}) as standardised to 10m height											
	1	2	3	4	5	6	7	8	9	10	11	12
1 - NAL1 (H3)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
2 - NAL2 (H4)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.7	51.6	56.3
3 - NAL3 (H5)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.1	48.9	53.9
4 - NAL4 (H6)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
5 - NAL5 (H7)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.1	48.9	53.9
6 - NAL6 (H8)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
7 - NAL7 (H10)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
8 - NAL8 (H13)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
9 - NAL9 (H14)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.4	51.4	56.4
10 - NAL10 (H19)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
11 - NAL11 (H25)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5
12 - NAL12 (H28)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.4	51.4	56.4
13 - NAL13 (H35)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
14 - NAL14 (H67)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5
15 - NAL15 (H86)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
16 - NAL16 (H97)	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5

6.3.2 Table 6.4 and Table 6.5 show the daytime and night time WEDG Noise Limits, noise predictions for the Proposed Development and the exceedance level. A negative exceedence demonstrates compliance with the WEDG Noise Limits.

Table 6.4 WEDG Compliance Table – Daytime

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL1 – H3	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	30.8	32.4	36.4	40.1	41.4	41.4	41.4	41.4	41.4	41.4
	Exceedance Level	-	-	-9.2	-7.6	-3.6	-4.9	-3.6	-3.6	-3.8	-8.3	-8.3	-8.3
NAL2 – H4	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	28.2	29.8	33.8	37.5	38.8	38.8	38.8	38.8	38.8	38.8
	Exceedance Level	-	-	-11.8	-10.2	-6.2	-7.5	-6.2	-6.2	-6.2	-10.4	-16.3	-16.3
NAL3 – H5	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	29.3	30.9	35.0	38.7	40.0	40.0	40.0	40.0	40.0	40.0
	Exceedance Level	-	-	-10.7	-9.1	-5.0	-1.3	-5.0	-5.0	-5.0	-7.4	-11.9	-16.8
NAL4 – H6	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	29.2	30.8	34.9	38.6	39.9	39.9	39.9	39.9	39.9	39.9
	Exceedance Level	-	-	-10.8	-9.2	-5.1	-6.4	-5.1	-5.1	-5.3	-9.8	-9.8	-9.8
NAL5 – H7	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29.0	33.0	36.7	38.0	38.0	38.0	38.0	38.0	38.0
	Exceedance Level	-	-	-12.6	-11.0	-7.0	-3.3	-7.0	-7.0	-7.0	-9.4	-13.9	-18.8
NAL6 – H8	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	27.6	29.1	33.2	36.9	38.2	38.2	38.2	38.2	38.2	38.2
	Exceedance Level	-	-	-12.4	-10.9	-6.8	-8.1	-6.8	-6.8	-7.0	-11.5	-11.5	-11.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL7 – H10	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.5	29.1	33.1	36.8	38.1	38.1	38.1	38.1	38.1	38.1
	Exceedance Level	-	-	-12.5	-10.9	-6.9	-8.2	-6.9	-6.9	-6.9	-10.5	-14.7	-19.3
NAL8 – H13	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	28.6	30.2	34.2	37.9	39.2	39.2	39.2	39.2	39.2	39.2
	Exceedance Level	-	-	-11.4	-9.8	-5.8	-7.1	-5.8	-5.8	-6.0	-10.5	-10.5	-10.5
NAL9 – H14	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.9	29.5	33.6	37.3	38.6	38.6	38.6	38.6	38.6	38.6
	Exceedance Level	-	-	-12.1	-10.5	-6.4	-7.7	-6.4	-6.4	-6.4	-9.6	-14.0	-18.7
NAL10 – H19	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	28.4	30.0	34.0	37.7	39.0	39.0	39.0	39.0	39.0	39.0
	Exceedance Level	-	-	-11.6	-10.0	-6.0	-7.3	-6.0	-6.0	-6.2	-10.7	-10.7	-10.7
NAL11 – H25	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.9	36.2	36.2	36.2	36.2	36.2	36.2
	Exceedance Level	-	-	-14.5	-12.9	-8.9	-10.1	-8.8	-8.8	-10.2	-14.4	-18.9	-23.5
NAL12 – H28	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	28.0	29.6	33.6	37.3	38.6	38.6	38.6	38.6	38.6	38.6
	Exceedance Level	-	-	-12.0	-10.4	-6.4	-7.7	-6.4	-6.4	-6.4	-9.6	-14.0	-18.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL13 – H35	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.9	27.5	31.5	35.2	36.5	36.5	36.5	36.5	36.5	36.5
	Exceedance Level	-	-	-14.1	-12.5	-8.5	-9.8	-8.5	-8.5	-8.5	-12.1	-16.3	-20.9
NAL14 – H67	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.2	24.8	28.9	32.6	33.9	33.9	33.9	33.9	33.9	33.9
	Exceedance Level	-	-	-16.8	-15.2	-11.1	-12.4	-11.1	-11.1	-12.5	-16.7	-21.2	-25.8
NAL15 – H86	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	45.0	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.8	33.5	34.8	34.8	34.8	34.8	34.8	34.8
	Exceedance Level	-	-	-15.8	-14.2	-10.2	-11.5	-10.2	-10.2	-10.2	-13.8	-18.0	-22.6
NAL16 – H97	WEDG Noise Limit, L_{A90}	40.0	40.0	40.0	40.0	40.0	45.0	45.0	45.0	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.2	22.8	26.8	30.5	31.8	31.8	31.8	31.8	31.8	31.8
	Exceedance Level	-	-	-18.8	-17.2	-13.2	-14.5	-13.2	-13.2	-14.6	-18.8	-23.3	-27.9

Table 6.5 WEDG Compliance Table – Night time

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL1 – H3	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
	Predicted Wind Turbine Noise L_{A90}	-	-	30.8	32.4	36.4	40.1	41.4	41.4	41.4	41.4	41.4	41.4
	Exceedance Level	-	-	-12.2	-10.6	-6.6	-2.9	-1.6	-1.6	-1.6	-4.9	-9.5	-13.6
NAL2 – H4	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	28.2	29.8	33.8	37.5	38.8	38.8	38.8	38.8	38.8	38.8
	Exceedance Level	-	-	-14.8	-13.2	-9.2	-5.5	-4.2	-4.2	-4.2	-7.9	-12.8	-17.5
NAL3 – H5	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	29.3	30.9	35.0	38.7	40.0	40.0	40.0	40.0	40.0	40.0
	Exceedance Level	-	-	-13.7	-12.1	-8.0	-4.3	-3.0	-3.0	-3.0	-4.1	-8.9	-13.9
NAL4 – H6	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
	Predicted Wind Turbine Noise L_{A90}	-	-	29.2	30.8	34.9	38.6	39.9	39.9	39.9	39.9	39.9	39.9
	Exceedance Level	-	-	-13.8	-12.2	-8.1	-4.4	-3.1	-3.1	-3.1	-6.4	-11.0	-15.1
NAL5 – H7	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29.0	33.0	36.7	38.0	38.0	38.0	38.0	38.0	38.0
	Exceedance Level	-	-	-15.6	-14.0	-10.0	-6.3	-5.0	-5.0	-5.0	-6.1	-10.9	-15.9
NAL6 – H8	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
	Predicted Wind Turbine Noise L_{A90}	-	-	27.6	29.1	33.2	36.9	38.2	38.2	38.2	38.2	38.2	38.2
	Exceedance Level	-	-	-15.4	-13.9	-9.8	-6.1	-4.8	-4.8	-4.8	-8.1	-12.7	-16.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL7 – H10	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	27.5	29.1	33.1	36.8	38.1	38.1	38.1	38.1	38.1	38.1
	Exceedance Level	-	-	-15.5	-13.9	-9.9	-6.2	-4.9	-4.9	-4.9	-8.5	-13.0	-17.0
NAL8 – H13	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
	Predicted Wind Turbine Noise L_{A90}	-	-	28.6	30.2	34.2	37.9	39.2	39.2	39.2	39.2	39.2	39.2
	Exceedance Level	-	-	-14.4	-12.8	-8.8	-5.1	-3.8	-3.8	-3.8	-7.1	-11.7	-15.8
NAL9 – H14	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.9	29.5	33.6	37.3	38.6	38.6	38.6	38.6	38.6	38.6
	Exceedance Level	-	-	-15.1	-13.5	-9.4	-5.7	-4.4	-4.4	-4.4	-7.8	-12.8	-17.8
NAL10 – H19	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.3	50.9	55.0
	Predicted Wind Turbine Noise L_{A90}	-	-	28.4	30.0	34.0	37.7	39.0	39.0	39.0	39.0	39.0	39.0
	Exceedance Level	-	-	-14.6	-13.0	-9.0	-5.3	-4.0	-4.0	-4.0	-7.3	-11.9	-16.0
NAL11 – H25	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.9	36.2	36.2	36.2	36.2	36.2	36.2
	Exceedance Level	-	-	-17.5	-15.9	-11.9	-8.1	-6.8	-6.8	-8.6	-13.6	-18.3	-22.3
NAL12 – H28	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	28.0	29.6	33.6	37.3	38.6	38.6	38.6	38.6	38.6	38.6
	Exceedance Level	-	-	-15.0	-13.4	-9.4	-5.7	-4.4	-4.4	-4.4	-7.8	-12.8	-17.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
NAL13 – H35	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.9	27.5	31.5	35.2	36.5	36.5	36.5	36.5	36.5	36.5
	Exceedance Level	-	-	-17.1	-15.5	-11.5	-7.8	-6.5	-6.5	-6.5	-10.1	-14.6	-18.6
NAL14 – H67	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	23.2	24.8	28.9	32.6	33.9	33.9	33.9	33.9	33.9	33.9
	Exceedance Level	-	-	-19.8	-18.2	-14.1	-10.4	-9.1	-9.1	-10.9	-15.9	-20.6	-24.6
NAL15 – H86	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.8	33.5	34.8	34.8	34.8	34.8	34.8	34.8
	Exceedance Level	-	-	-18.8	-17.2	-13.2	-9.5	-8.2	-8.2	-8.2	-11.8	-16.3	-20.3
NAL16 – H97	WEDG Noise Limit, L_{A90}	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	21.2	22.8	26.8	30.5	31.8	31.8	31.8	31.8	31.8	31.8
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-12.5	-11.2	-11.2	-13.0	-18.0	-22.7	-26.7

6.3.3 Table 6.4 and Table 6.5 show that the predicted wind turbine noise immission levels meet the WEDG Noise Limits under all conditions and at all locations for both the daytime and night time periods.

6.3.4 The predictions and assessment of noise for all identified NSRs is included in Annex 5.

6.3.5 A series of graphs to show the predicted wind turbine noise from the Proposed Development compared to WEDG Noise Limits are included as Figures A1.3a - A1.3p (Annex 1).

6.4 On-site Substation

6.4.1 The 110 kV onsite substation will be installed in the southern half of the Wind Farm site. The closest receptor to the substation is H5, which is at a distance of approximately 290 m.

'EirGrid Evidence Based Environmental Studies Study 8: Noise'[17] presents measured noise levels for a similar 100 kV substation (Dunfirth Substation). Sound pressure level measurements are provided at four different locations around the substation at distances of 5 m and 10 m, which vary between 37 dB LAeq(t) and 39 dB LAeq(t). The document provides commentary on the measurements, stating, "The measured noise levels at the boundary of this substation are below the daytime WHO threshold limits for serious annoyance (55 dB LAeq) and moderate annoyance (50 dB LAeq) for outdoor living areas. They are also below the night-time free-field threshold limit of 42 dB (LAeq) for preventing negative effects on sleep."

6.4.2 With a separation distance of 290 m to the closest receptor, the level of distance attenuation will be approximately 50 dB. Accordingly, the noise level from the substation at the receptor will be negligible.

7 Summary and Conclusions

7.1.1 This report has assessed the potential impact of operational noise from the Proposed Development on nearby Noise Sensitive Receptors (NSRs) using the guidance contained within the WEDG 2006. Reference was also made to guidance contained in ETSU-R-97 and the IOA GPG to supplement the WEDG 2006.

7.1.2 Background noise monitoring was undertaken by TNEI at six NSRs neighbouring the Proposed Development. A total of 341 NSRs were identified, of which sixteen were chosen as Noise Assessment Locations (NALs). For the assessment locations where no background noise measurements were undertaken, noise data collected at proxy locations considered representative of the background noise environment was used to assess the noise impact at those receptors.

7.1.3 Wind speed data was collected using a LIDAR unit located within the Wind Farm Site. The data collected directly at hub height (104 m), were then standardised to 10 m height in accordance with current good practice.

7.1.4 Analysis of the measured data was undertaken to determine the pre-existing background noise environment and to establish the daytime and night time noise limits for each of the assessment locations. A WEDG Noise Limit of 40 dB(A), where background noise levels are below 30 dB, and 45 dB or background noise plus 5 dB, whichever is the greater, where background noise levels are above 30 dB was set for the daytime. A limit of 43 dB(A) or background noise plus 5 dB, whichever is the greater, was used for night time.

7.1.5 An assessment was undertaken to determine whether the Proposed Development could operate within the WEDG Noise Limits and it was found that noise immissions predicted at all identified NSRs were below the WEDG Noise Limits when considering a candidate turbine with a 162 m rotor diameter, 6.2 MW with serrated trailing edge blades. The turbine is considered to be representative of the type of turbine that could be installed on the site.

7.1.6 Should the proposal receive planning permission, the final choice of turbine would be subject to a competitive tendering process. The final choice of turbine would, however, have to meet the derived WEDG 2006 noise limits and/or noise limits determined and contained within any planning permission condition imposed.

8 Glossary of Terms

Amplitude Modulation: a variation in noise level over time; for example observers may describe a 'whoosh whoosh' sound, which can be heard close to a wind turbine as the blades sweep past.

Attenuation: the reduction in level of a sound between the source and a receiver due to any combination of effects including: distance, atmospheric absorption, acoustic screening, the presence of a building façade, etc.

Background Noise: the noise level rarely fallen below in any given location over any given time period, often classed according to daytime, evening or night time periods. The L_{A90} indices (see below) is often used to represent the background noise level.

Bin: subset or group into which data can be sorted; in the case of wind speeds, bins are often centred on integer wind speeds with a width of 1 m/s. For example the 4 m/s bin would include all data with wind speeds of 3.5 to 4.5 m/s.

Dawn Chorus: noise due to birds which can occur at sunrise.

Broadband Noise: noise with components over a wide range of frequencies.

Decibel (dB): the ratio between the quietest audible sound and the loudest tolerable sound is a million to one in terms of the change in sound pressure. A logarithmic scale is used in noise level measurements because of this wide range. The scale used is the decibel (dB) scale which extends from 0 to 140 decibels (dB) corresponding to the intensity of the sound level.

dB(A): the ear has the ability to recognise a particular sound depending on its pitch or frequency. Microphones cannot differentiate noise in the same way as the ear, and to counter this weakness the noise measuring instrument applies a correction to correspond more closely to the frequency response of the human ear. The correction factor is called 'A Weighting' and the resulting measurements are written as dB(A). The dB(A) is internationally accepted and has been found to correspond well with people's subjective reaction to noise. Some typical subjective changes in noise levels are:

- a change of 3 dB(A) is just perceptible;
- a change of 5 dB(A) is clearly perceptible;
- a change of 10 dB(A) is twice (or half) as loud.

Directivity: the property of a sound source that causes more sound to be radiated in one direction than another.

Frequency: the pitch of a sound in Hz or kHz. See Hertz.

Ground Effects: the modification of sound at a receiver location due to the interaction of the sound wave with the ground along its propagation path from source to receiver. Described using the term 'G', and ranges between 0 (hard), 0.5 (mixed) and 1 (soft).

Hertz (Hz): sound frequency refers to how quickly the air vibrates, or how close the sound waves are to each other (in cycles per second, or Hertz (Hz)).

L_w: is the sound power level. It is a measure of the total noise energy radiated by a source of noise, and is used to calculate noise levels at a distant location. The L_{WA} is the A-weighted sound power level.

L_{eq}: is the equivalent continuous sound level, and is the sound level of a steady sound with the same energy as a fluctuating sound over the same period. It is possible to consider this level as the ambient noise encompassing all noise at a given time. The $LA_{eq,T}$ is the A-weighted equivalent continuous sound level over a given time period (T).

L_{90}: index represents the noise level exceeded for 90 percent of the measurement period and is used to indicate quieter times during the measurement period. It is often used to measure the background noise level. The $L_{A90,10min}$ is the A-weighted background noise level over a ten minute measurement sample.

Noise emission: the noise energy emitted by a source (e.g. a wind turbine).

Noise immission: the sound pressure level detected at a given location (e.g. the nearest dwelling).

Night Time Hours: ETSU-R-97 defines the night time hours as 23.00 to 07.00 every day.

Quiet Daytime Hours: ETSU-R-97 defines the amenity hours as 18.00 to 23.00 Monday to Friday, 13.00 to 23.00 on Saturdays and 07.00 to 23.00 on Sundays.

Sound Level Meter: an instrument for measuring sound pressure level.

Sound Power Level: the total sound power radiated by a source, in decibels.

Sound Pressure Level: a measure of the sound pressure at a point, in decibels**.**

Standardised Wind Speed: a wind speed measured at a height different than 10 m (generally measured at the turbine hub height) which is expressed to a reference height of 10 m using a roughness length of 0.05 for standardisation purpose (in accordance with the IEC 61400-11 standard).

Tonal Noise: noise which covers a very restricted range of frequencies (e.g. a range of ≤20 Hz). This noise can be more annoying than broadband noise.

Wind Shear: the increase of wind speed with height above the ground.

9 References

1. **Department of Environment, Heritage and Local Government (DoEHLG).** https://www.gov.ie/en/publication/f449e-wind-energy-development-guidelines-2006/. *Wind Energy Development Guidelines.* [Online] 2006. [Cited: 19 01 2022.]

2. **ETSU for the DTI (Department of Trade and Industry.** *The Working Group on Noise from Wind Turbines ETSU-R-97 The Assessment and Rating of Noise from Wind Farms'.* 1996.

3. **Institute of Acoustics.** *Good Practice Guidance on the application of ETSU-R-97 for wind turbine noise assessment.* 2013.

4. **Ireland, Government of.** Project Ireland 2040 National Planning Framework. *https://npf.ie/wp-content/uploads/Project-Ireland-2040-NPF.pdf.* [Online] 29 05 2018. [Cited: 01 02 2022.]

5. **Ireland, Association of Acoustic Consultants of.** *Environmental Noise Guidance for Local Authority Planning & Enforcement Departments.* 2021.

6. *Visual and acoustic impact of wind turbine farms in residents Final report.* **Frits van den Berg et al.** s.l. : FP6-2005-Science-and-Society-20 Specific Support Action, 3 June 2008.

7. *Low frequency noise and annoyance .* **HG, Leventhall.** s.l. : Noise & Health Journal, 2004, Vol. 6.

8. *Do wind turbines produce significant low frequency sound levels? Conference paper 11th International Meeting on Low Frequency Noise and Vibration and its Control .* **Berg, G.P. van den.** Maastricht The Netherlands : s.n., 2004.

9. **Department of Trade and Industry.** *The Measurement of LFN at three UK Wind Farms .* 2006 : s.n.

10. **Keele University Rejects Renewable Energy Foundation.** http://archive.is/d3WB. *Low Frequency Noise Research Claims .* [Online]

11. **Institute of Acoustics Bulletin.** *Prediction and assessment of wind turbine noise.* 2009.

12. *Infrasound and the ear, 5th International conference on Wind Turbine Noise.* **Leventhall, G.** Denver : s.n., 2013.

13. **renewable UK.** http://www.renewableuk.com/search/all.asp?bst=amplitude+modulation. [Online]

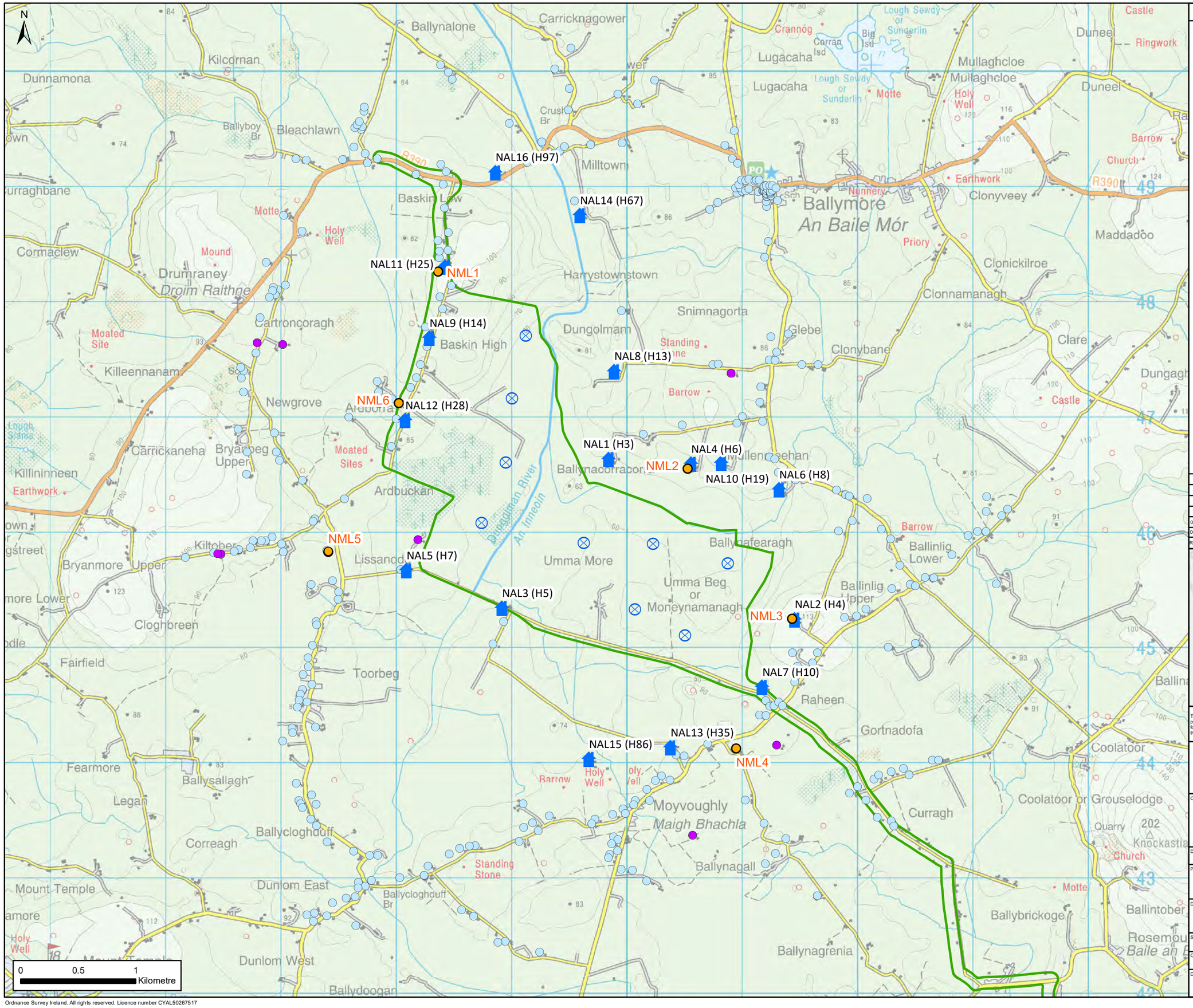
14. **Department of Energy & Climate Change.** *Wind Turbine AM Review Phase 2 Report.* 2016.

15. **International Standards Organisation.** *ISO9613:1996 'Acoustics – Attenuation of sound during propagation outdoors' – Part 2: General method of calculation.* 1996.

16. **DataKustik Gmbh.** CadnaA Version 4.4.

17. ***RPS. (2016). EirGrid Evidence Based Environmental Studies Study 8: Noise. Literature review and evidence based field study on the noise effects of high voltage transmission development. : Eirgrid. p.63.***

Annex 1 – Figures



NOTES

- EIAR Site Boundary
- Proposed Turbine Location
- Noise Monitoring Location (NML)
- Noise Assessment Location (NAL)
- Noise Sensitive Receptor (NSR)
- Derelict Property

Rev.	Date	Amendment Details	Drw'n	Chk'd	App'd
01	31/01/23	Minor Updates	GC	JB	JB
00	06/12/22	First Issue	JCM	GC	GC

tnei

Client: Umma More Ltd

Drawing Status: FOR PLANNING

Project Title: Umma More Renewable Energy Development

Drawing Title: Figure A1.1 – Noise Monitoring and Assessment Locations

Scale	Designed	Drawn	Checked	Approved
1:30,482	JCM	JCM	GC	GC
Original Size	**Date**	**Date**	**Date**	**Date**
A3	06/12/2022	06/12/2022	06/12/2022	06/12/2022

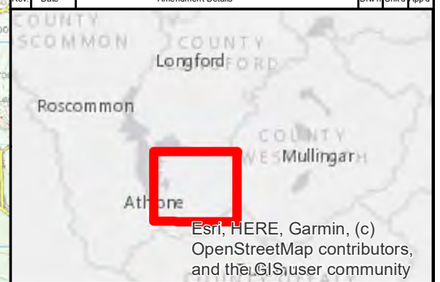
Drawing Number: 14373-007

Revision: 1

NOTES

- Derelict Property
- Noise Monitoring Location (NML)
- Noise Assessment Location (NAL)
- Noise Sensitive Receptor (NSR)
- Proposed Turbine Location
- EIAR Site Boundary

Rev.	Date	Amendment Details	Drw'n	Chk'd	App'd
01	31/01/23	Minor Updates	GC	JB	JB
00	06/12/22	First Issue	JCM	GC	GC



tnei

Client: Umma More Ltd

Drawing Status: FOR PLANNING

Project Title: Umma More Renewable Energy Development

Drawing Title: Figure A1.1a – Noise Sensitive Receptors - Inset A

Scale	Designed	Drawn	Checked	Approved
1:60,000	JCM	JCM	GC	GC
Original Size	**Date**	**Date**	**Date**	**Date**
A3	06/12/2022	06/12/2022	06/12/2022	06/12/2022

Drawing Number: 14373-008

Revision: 1

N

NOTES

- EIAR Site Boundary
- Proposed Turbine Location
- Noise Assessment Location (NAL)
- Noise Monitoring Location (NML)
- Noise Sensitive Receptor (NSR)
- Derelict Property

Rev.	Date	Amendment Details	Drw'n	Chk'd	App'd
01	31/01/23	Minor Updates	GC	JB	JB
00	06/12/22	First Issue	JCM	GC	GC

Longford
Roscommon
Mullingar
Athlone

Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

tnei

Client: Umma More Ltd

Drawing Status: FOR PLANNING

Project Title: Umma More Renewable Energy Development

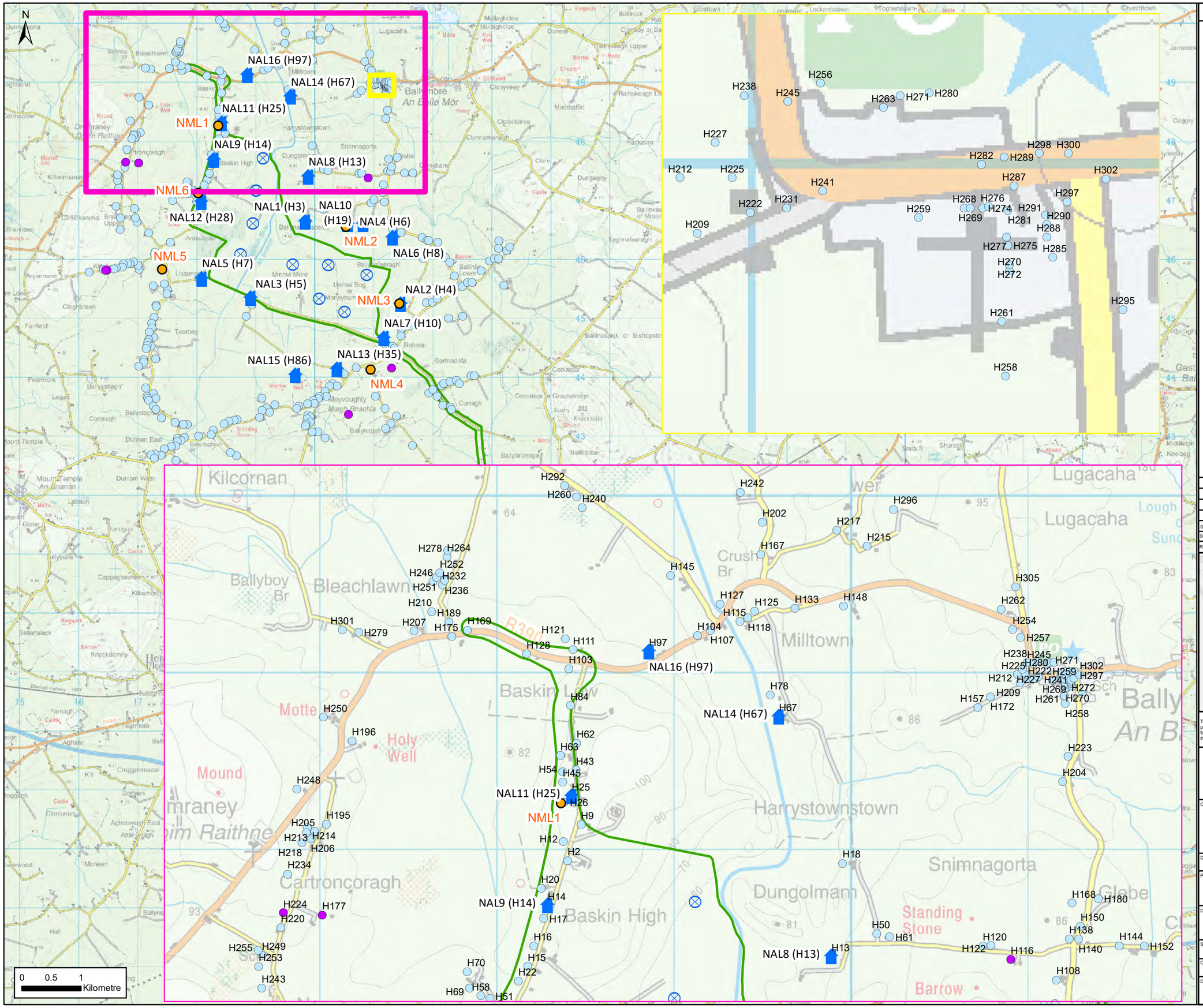
Drawing Title: Figure A1.1b – Noise Sensitive Receptors - Inset B

Scale	Designed	Drawn	Checked	Approved
1:60,000	JCM	JCM	GC	GC
Original Size	**Date**	**Date**	**Date**	**Date**
A3	06/12/2022	06/12/2022	06/12/2022	06/12/2022

Drawing Number: 14373-009

Revision: 1

0 0.5 1 Kilometre



NOTES

- Derelict Property
- Noise Monitoring Location (NML)
- Noise Assessment Location (NAL)
- Noise Sensitive Receptor (NSR)
- EIAR Site Boundary
- Proposed Turbine Location

Rev.	Date	Amendment Details	Drw'n	Chk'd	App'd
01	31/01/23	Minor Updates	GC	JB	JB
00	06/12/22	First Issue	JCM	GC	GC

tnei

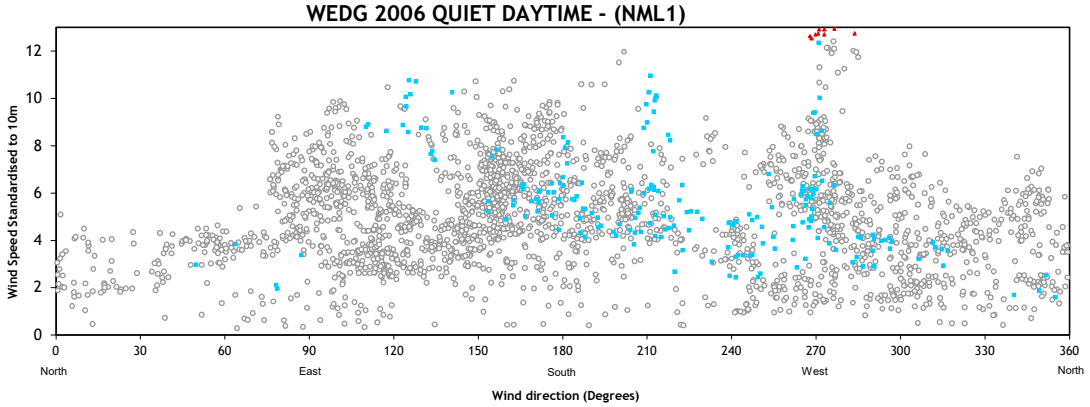
Client	Umma More Ltd
Drawing Status	FOR PLANNING
Project Title	Umma More Renewable Energy Development
Drawing Title	Figure A1.1c – Noise Sensitive Receptors - Inset C

Scale	Designed	Drawn	Checked	Approved
1:60,000	JCM	JCM	GC	GC
Original Size	**Date**	**Date**	**Date**	**Date**
A3	06/12/2022	06/12/2022	06/12/2022	06/12/2022

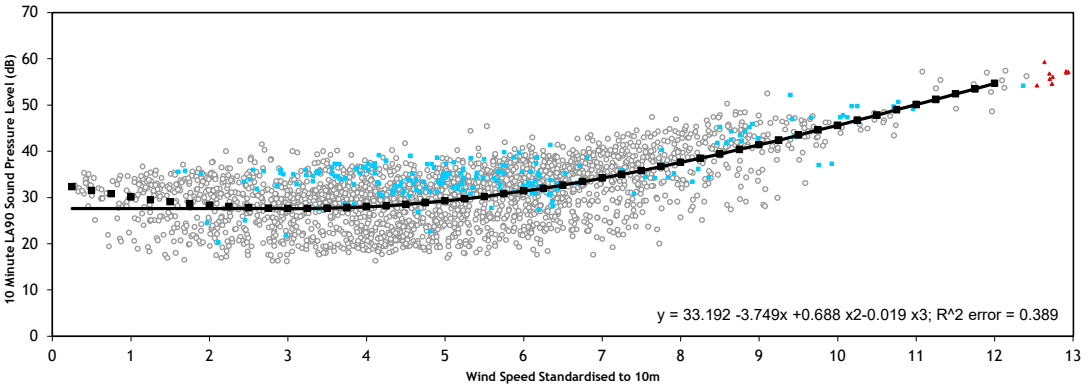
Drawing Number	Revision
14373-010	1

WEDG 2006 QUIET DAYTIME - (NML1)

Wind Conditions Quiet Daytime



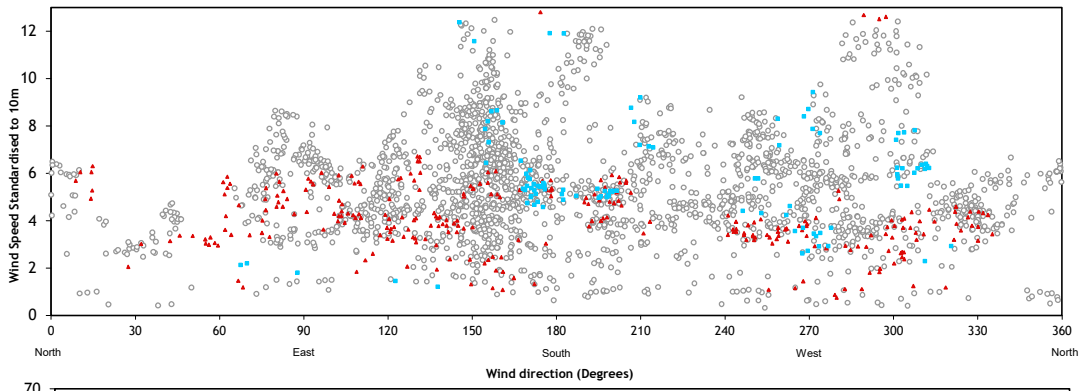
Regression Analysis Quiet Daytime



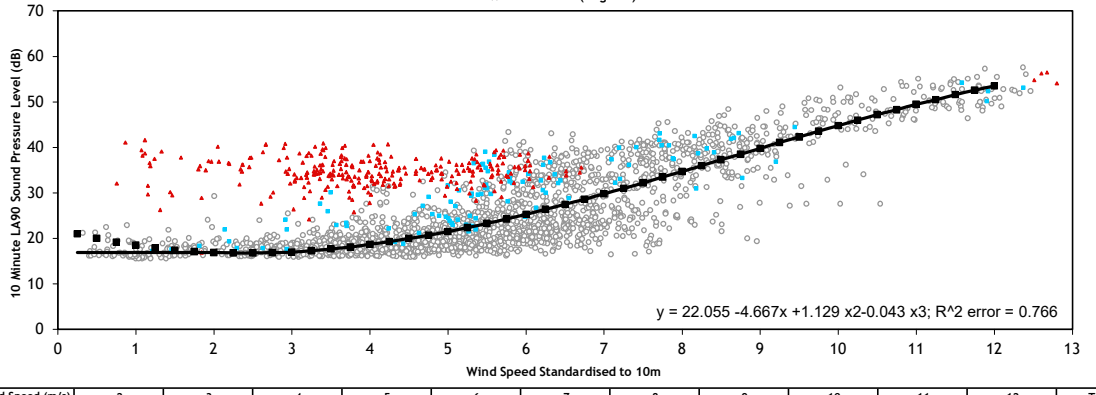
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	207	290	448	382	409	284	154	88	29	9	10	2310
Prevailing Background	27.6	27.6	28	29.3	31.4	34.2	37.6	41.4	45.6	50.1	54.7	

WEDG 2006 NIGHT-TIME - (NML1)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	72	207	423	430	398	292	182	93	53	42	35	2227
Prevailing Background	16.9	17	18.7	21.5	25.3	29.8	34.7	39.8	44.8	49.5	53.5	

Legend:

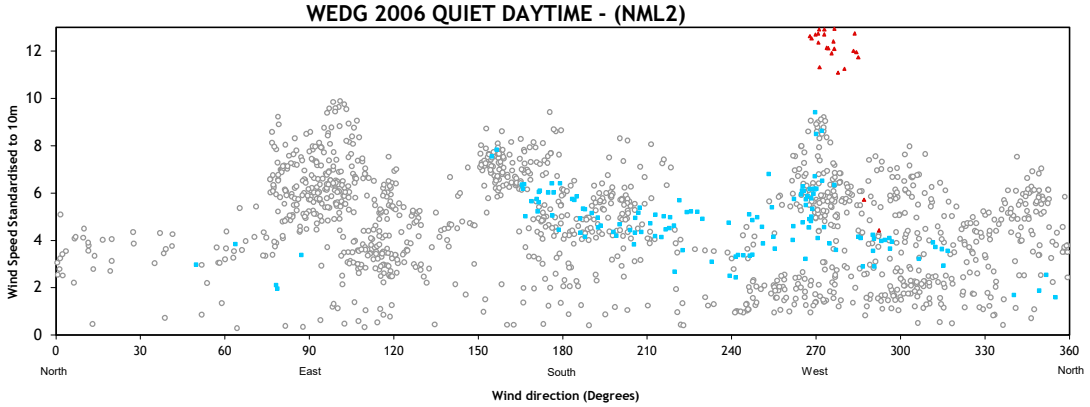
- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2a
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

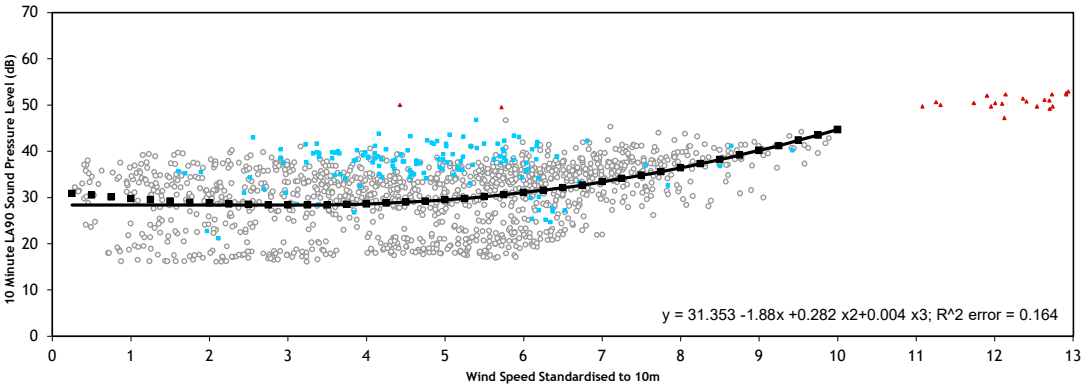
tnei

WEDG 2006 QUIET DAYTIME - (NML2)

Wind Conditions Quiet Daytime



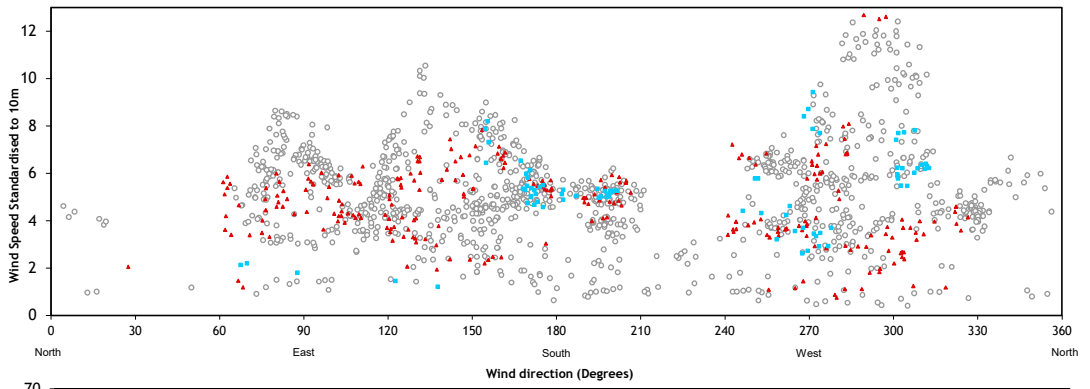
Regression Analysis Quiet Daytime



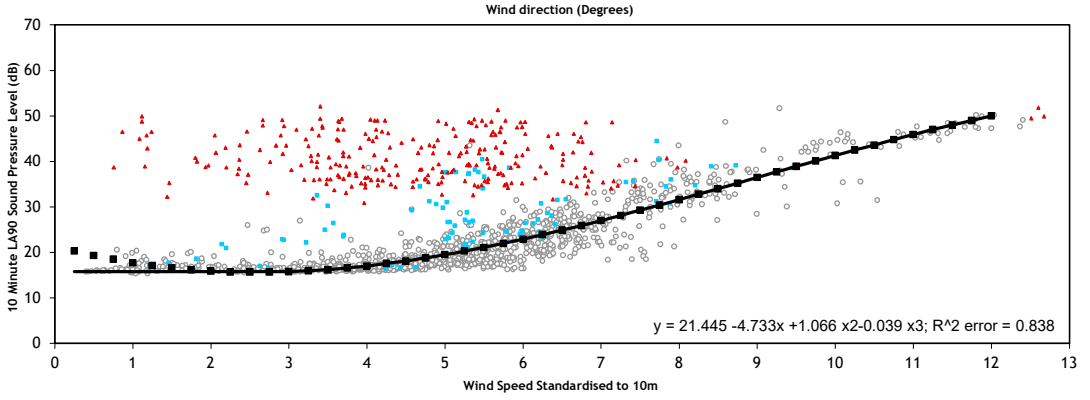
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	130	145	186	192	259	171	79	30	7	0	0	1199
Prevailing Background	28.4	28.4	28.6	29.5	31.1	33.4	36.4	40.2	44.7	-	-	

WEDG 2006 NIGHT-TIME - (NML2)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	55	89	226	253	211	117	73	21	19	16	11	1091
Prevailing Background	15.8	15.8	17	19.5	22.9	27	31.6	36.5	41.3	45.9	50	

Legend:

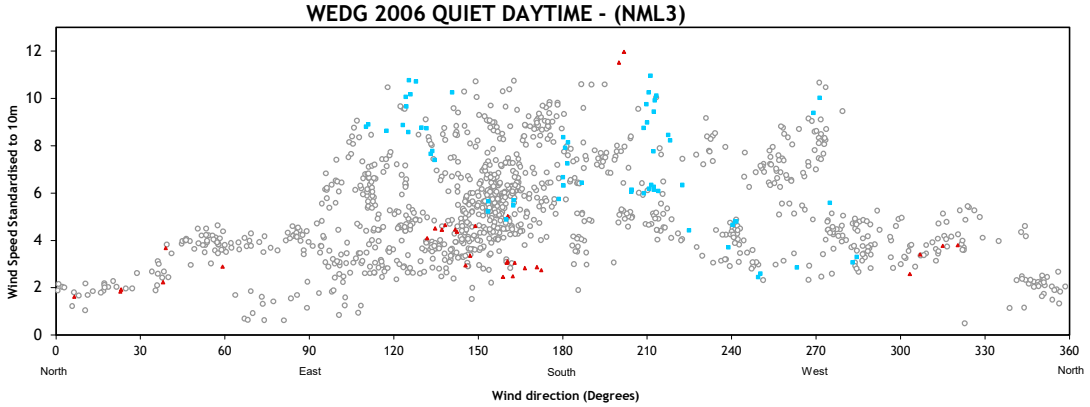
- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2b
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

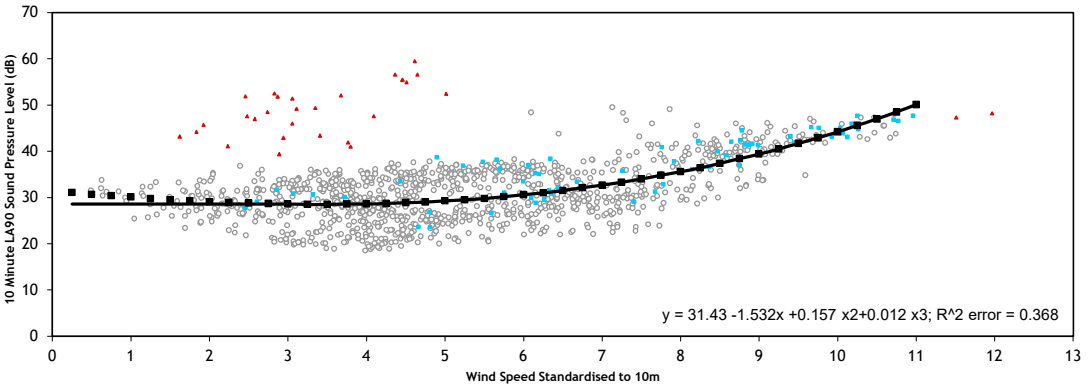
tnei

WEDG 2006 QUIET DAYTIME - (NML3)

Wind Conditions Quiet Daytime



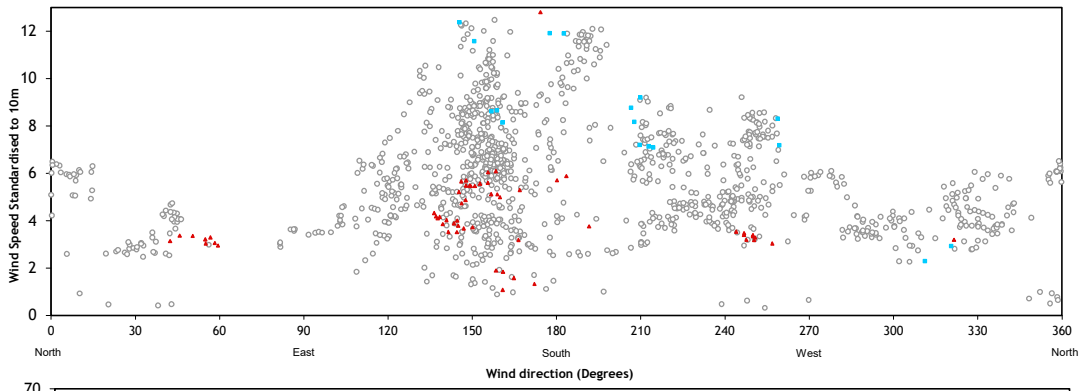
Regression Analysis Quiet Daytime



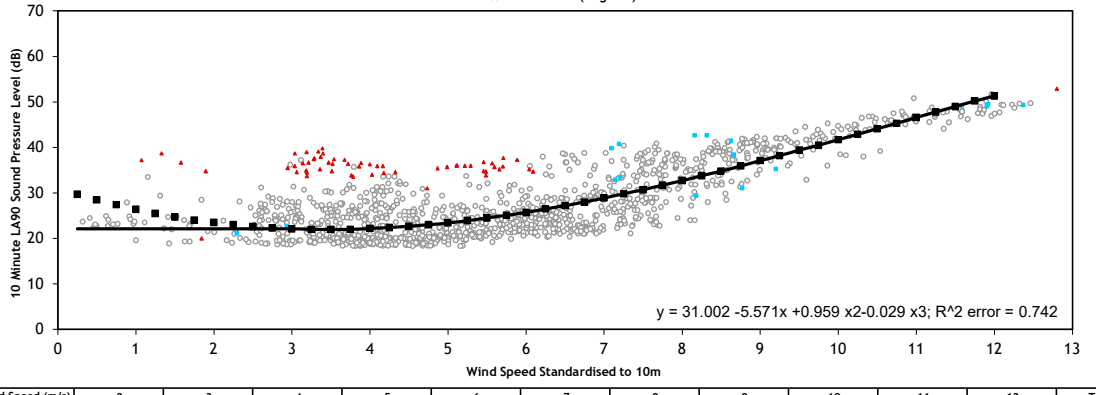
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	71	134	254	190	160	120	81	60	22	6	0	1098
Prevailing Background	28.6	28.6	28.6	29.3	30.6	32.7	35.6	39.4	44.2	50.1	-	

WEDG 2006 NIGHT-TIME - (NML3)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	19	127	215	181	184	155	111	77	37	27	24	1157
Prevailing Background	22.1	22.1	22.2	23.4	25.7	28.9	32.7	37.1	41.7	46.6	51.3	

Legend:

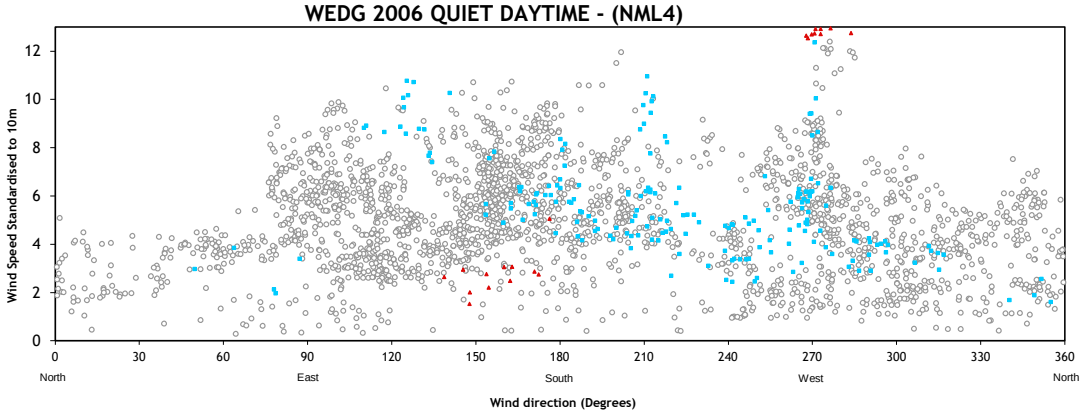
- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2c
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

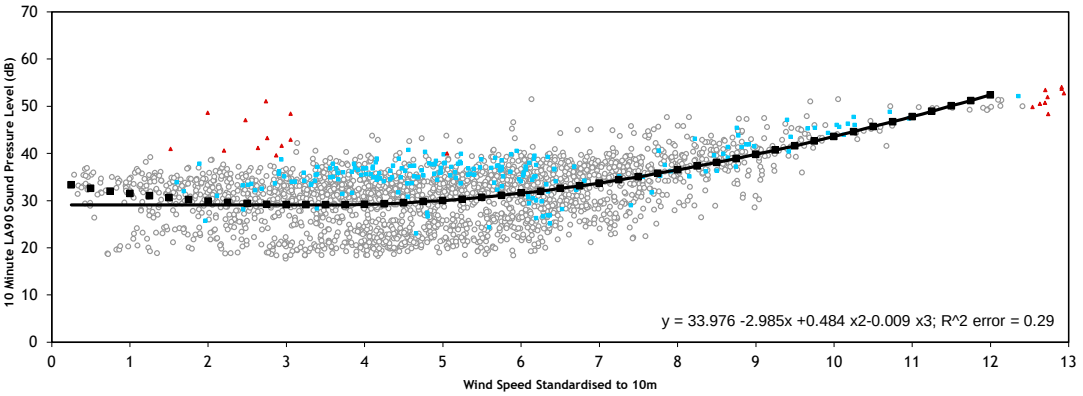
tnei

WEDG 2006 QUIET DAYTIME - (NML4)

Wind Conditions Quiet Daytime



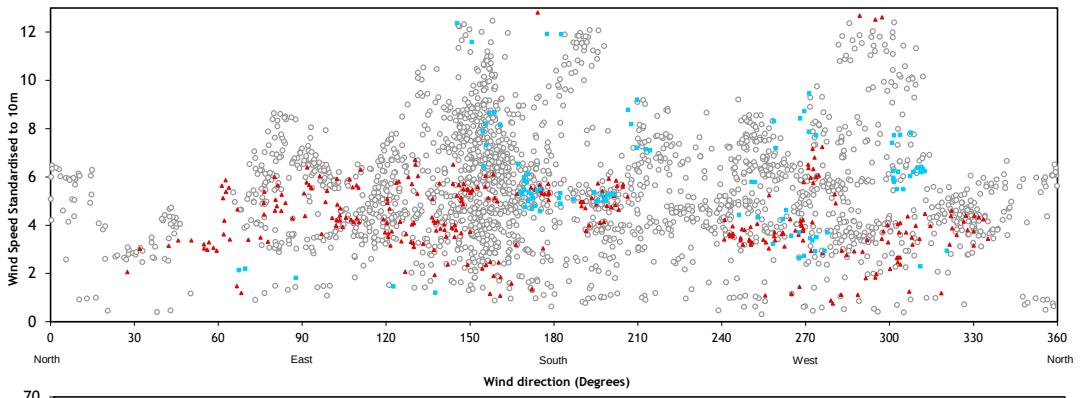
Regression Analysis Quiet Daytime



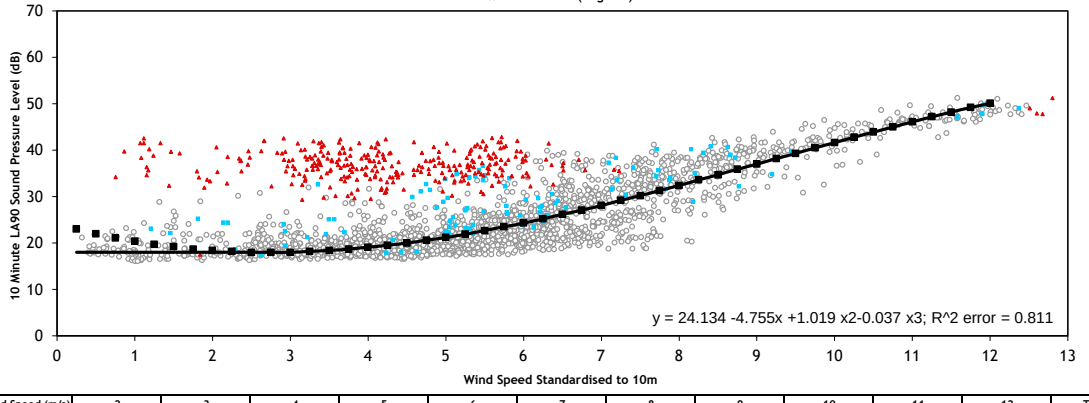
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	203	283	448	382	409	284	154	88	29	9	10	2299
Prevailing Background	29.1	29.1	29.2	30	31.6	33.7	36.5	39.8	43.6	47.8	52.4	

WEDG 2006 NIGHT-TIME - (NML4)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	74	212	423	419	390	289	182	93	53	42	35	2212
Prevailing Background	18	18	19.1	21.2	24.3	28.1	32.4	37	41.6	46.1	50.1	

Legend:

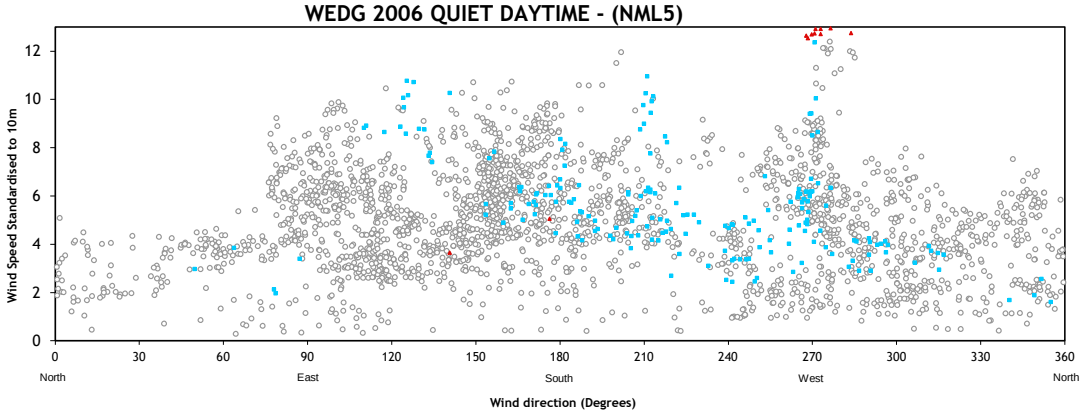
- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2d
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

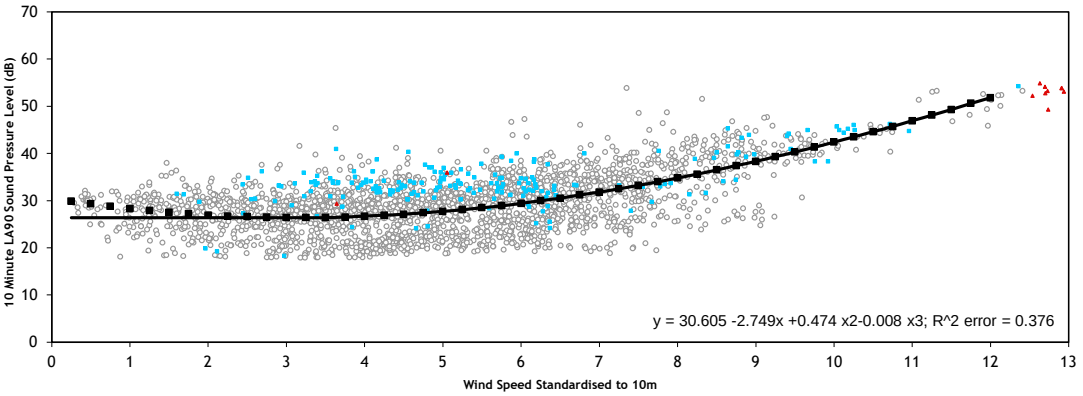
tnei

WEDG 2006 QUIET DAYTIME - (NML5)

Wind Conditions Quiet Daytime



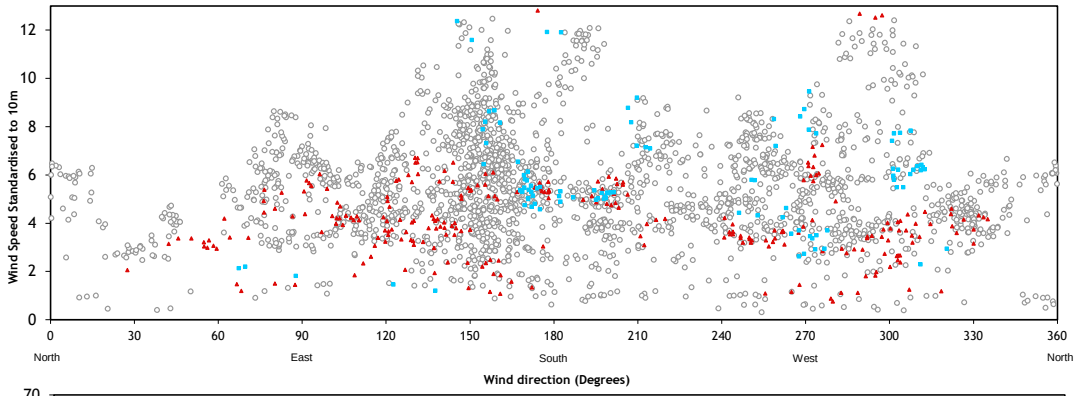
Regression Analysis Quiet Daytime



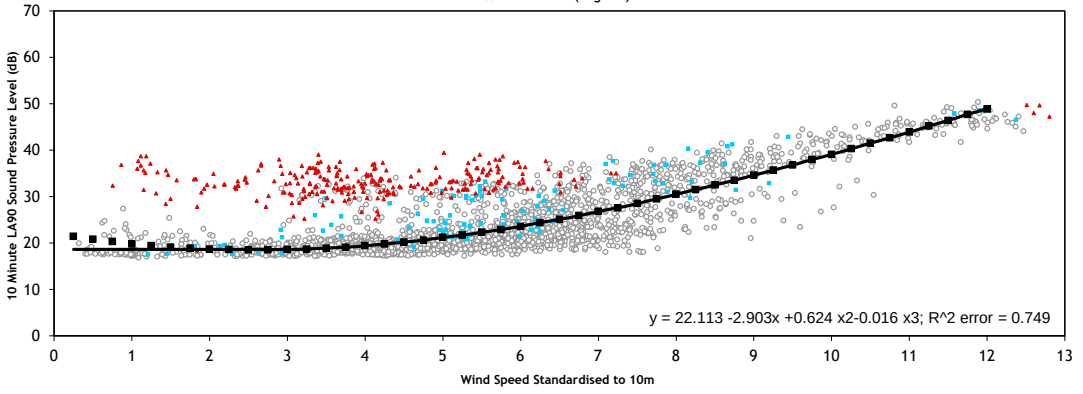
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	207	290	447	382	409	284	154	88	29	9	10	2309
Prevailing Background	26.4	26.4	26.7	27.7	29.4	31.8	34.8	38.3	42.4	46.9	51.8	

WEDG 2006 NIGHT-TIME - (NML5)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	71	213	438	441	403	287	182	93	53	42	35	2258
Prevailing Background	18.6	18.6	19.4	21.2	23.6	26.8	30.5	34.6	39.1	43.9	48.9	

Legend:

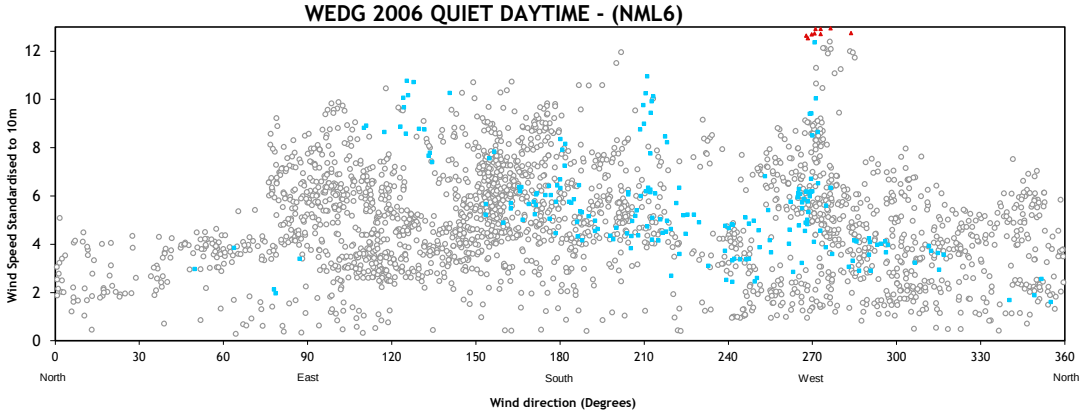
- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2e
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

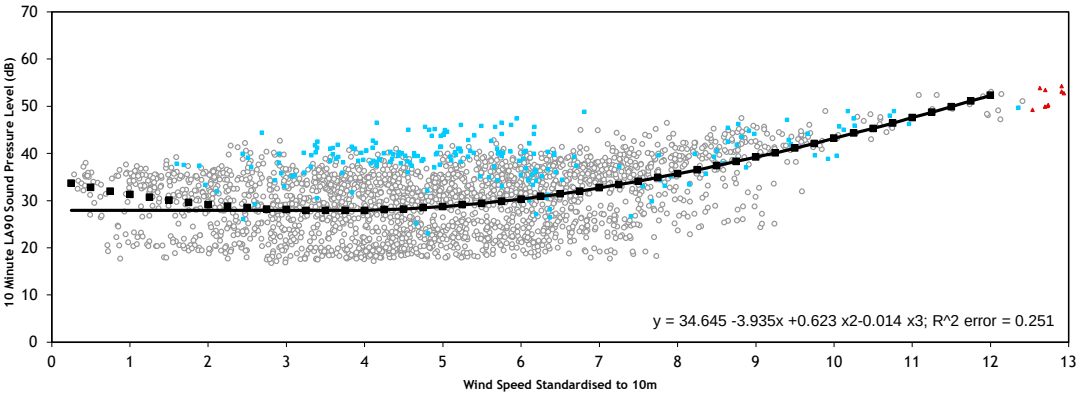
tnei

WEDG 2006 QUIET DAYTIME - (NML6)

Wind Conditions Quiet Daytime



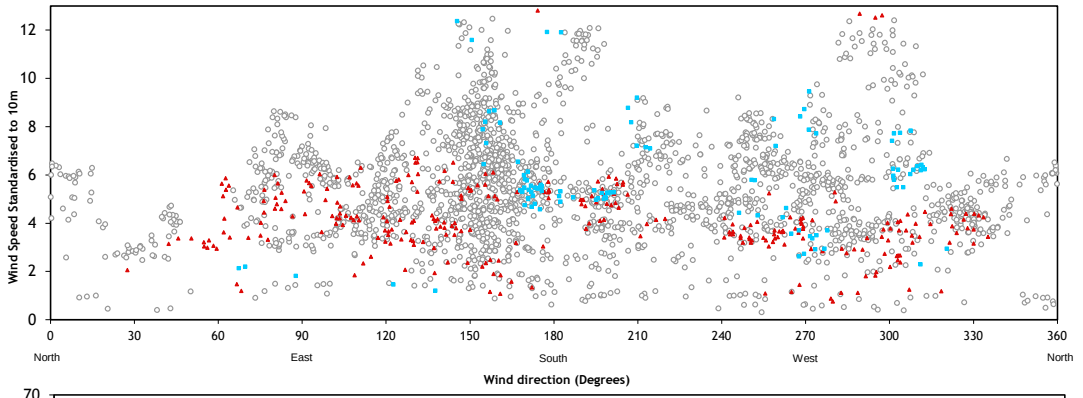
Regression Analysis Quiet Daytime



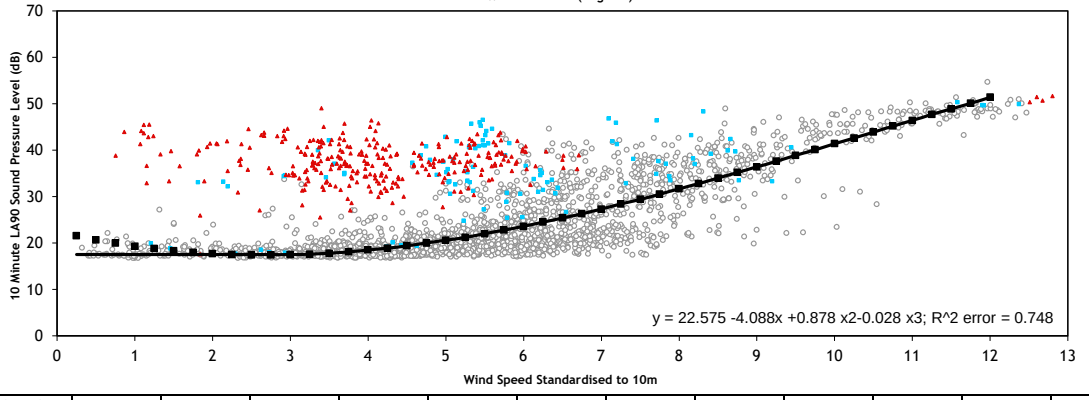
Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	207	290	448	382	409	284	154	88	29	9	10	2310
Prevailing Background	27.9	27.9	27.9	28.7	30.3	32.7	35.7	39.2	43.2	47.6	52.3	

WEDG 2006 NIGHT-TIME - (NML6)

Wind Conditions Night-Time



Regression Analysis Night-Time



Wind Speed (m/s)	2	3	4	5	6	7	8	9	10	11	12	Total
Number of data points	72	207	418	425	399	291	182	93	53	42	35	2217
Prevailing Background	17.5	17.5	18.5	20.6	23.6	27.3	31.7	36.4	41.4	46.4	51.4	

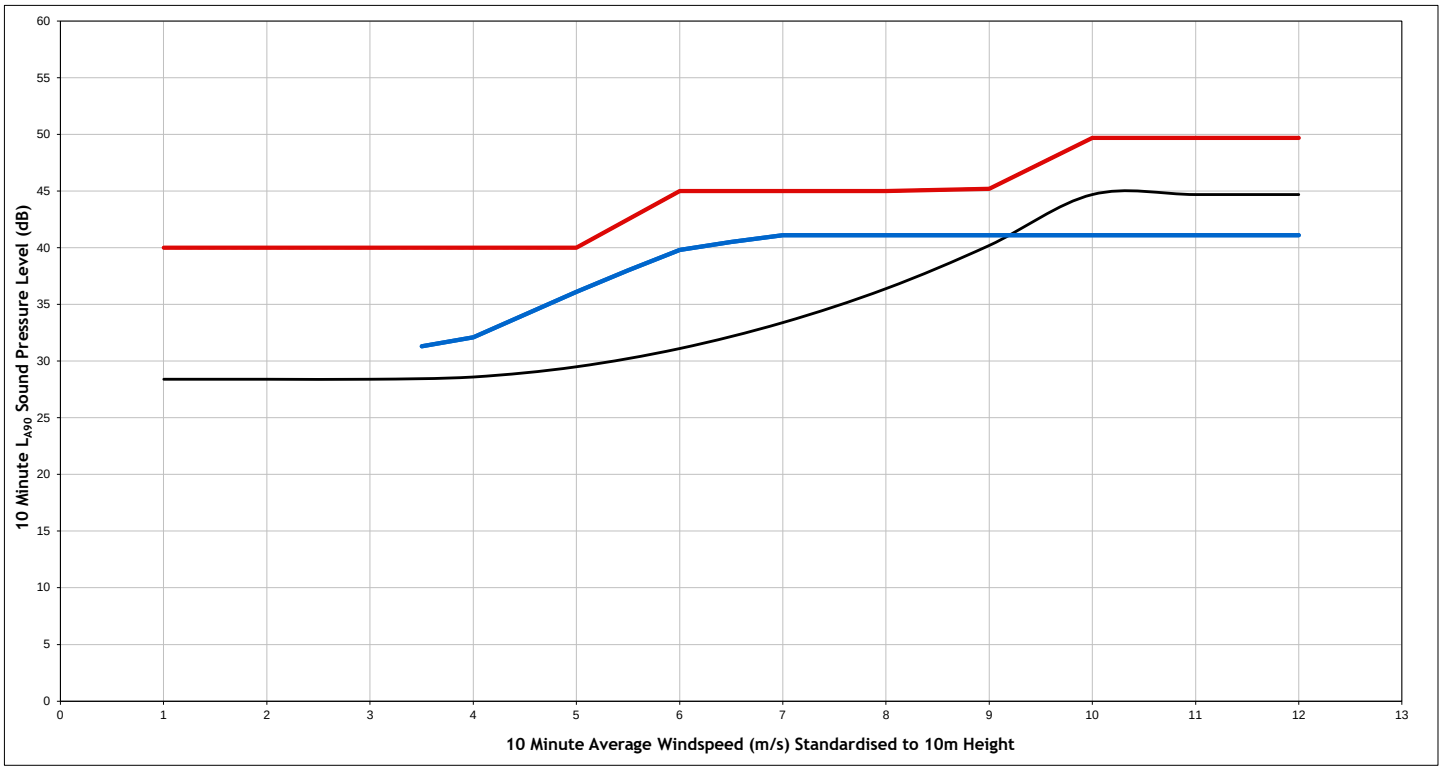
Legend:

- L_{A90} 10 Minute Measurement Point
- Line of best fit
- Line of best fit flat lined where appropriate(Prevailing Background)
- Excluded Data-Manual exclusion
- Excluded Data-Rain

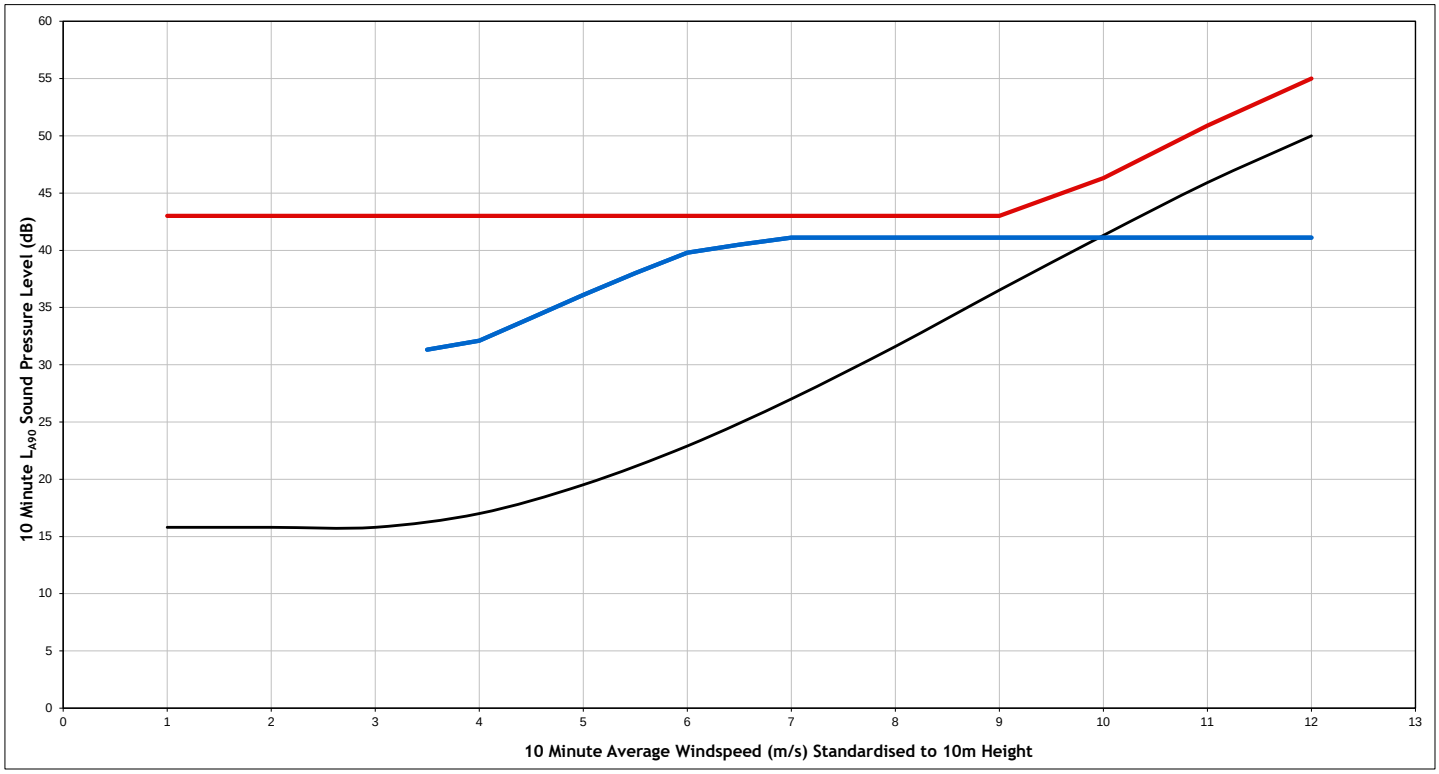
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Wind Conditions&Regression Analysis
Figure Number	A1.2f
Drawn	CB
Checked	GC
Date	23/01/2023
Document Reference	14373 - models

tnei

Daytime - NAL1 (H3)



Night Time - NAL1 (H3)



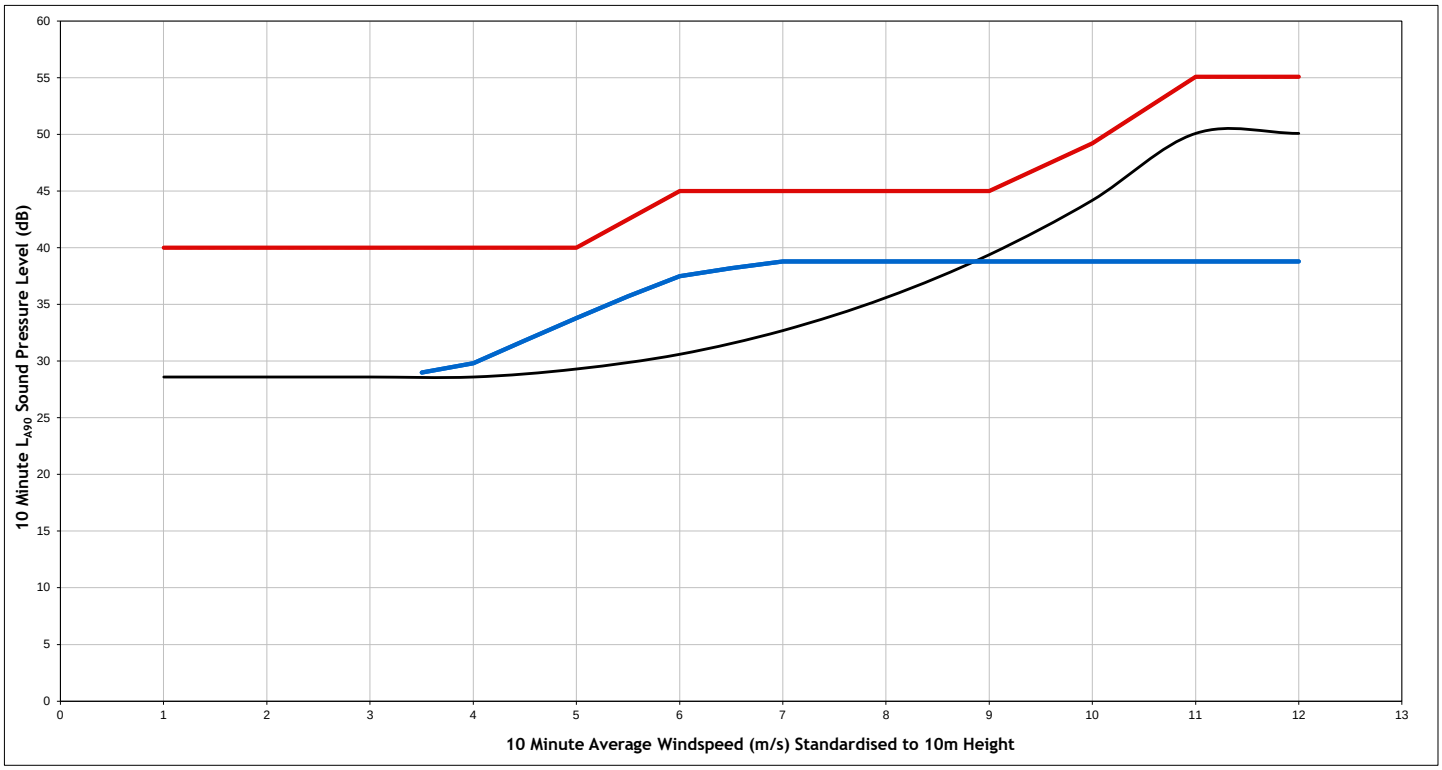
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

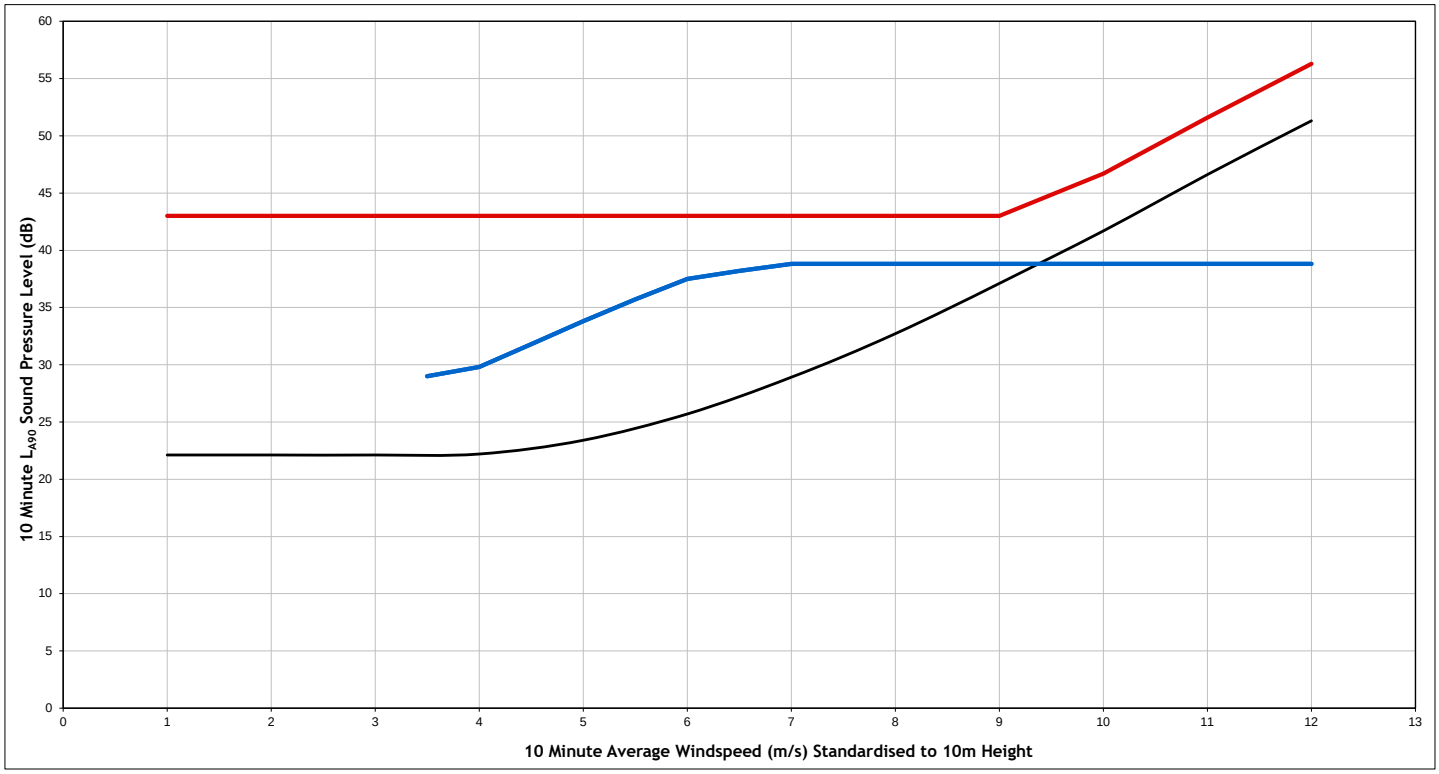
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL1 (H3)
Figure Number	Figure A1.3a
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL2 (H4)



Night Time - NAL2 (H4)



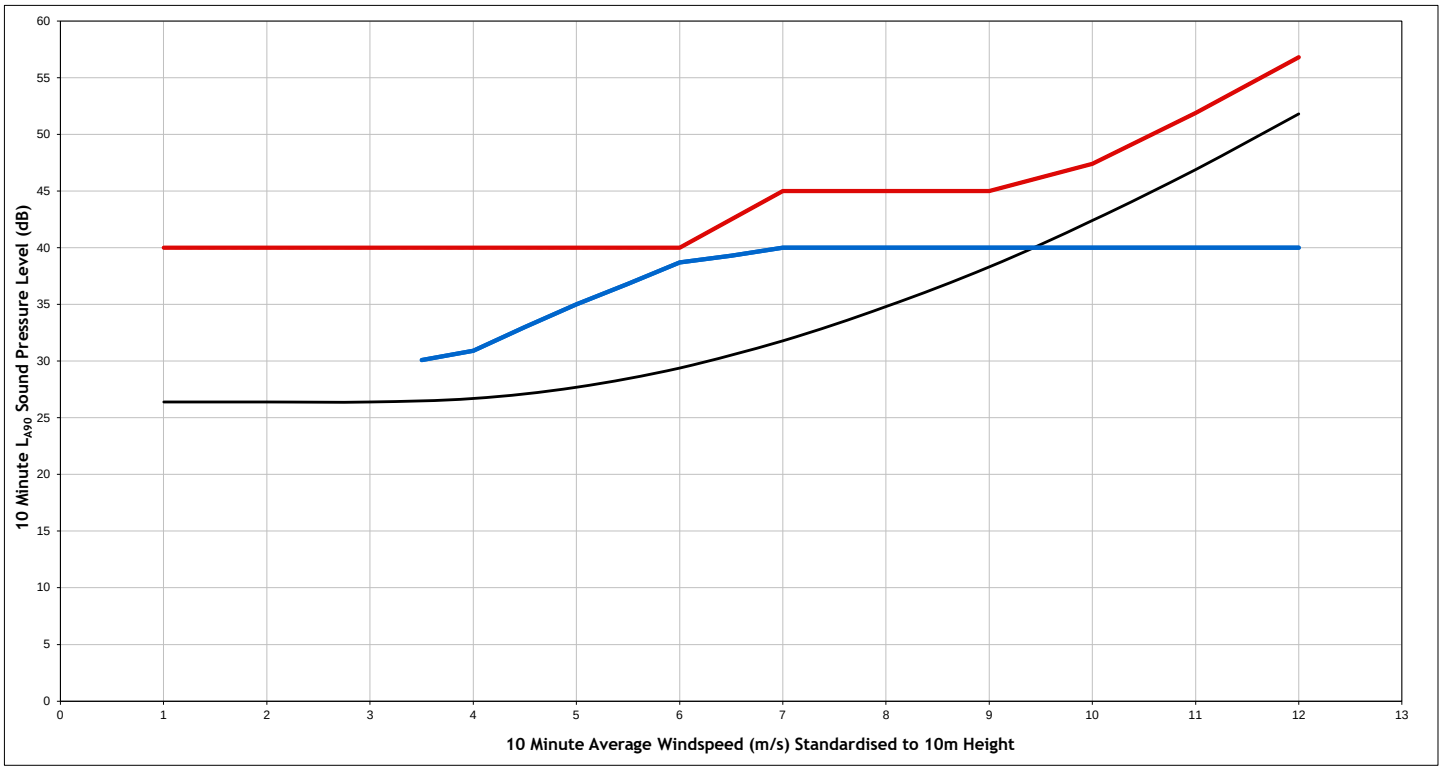
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

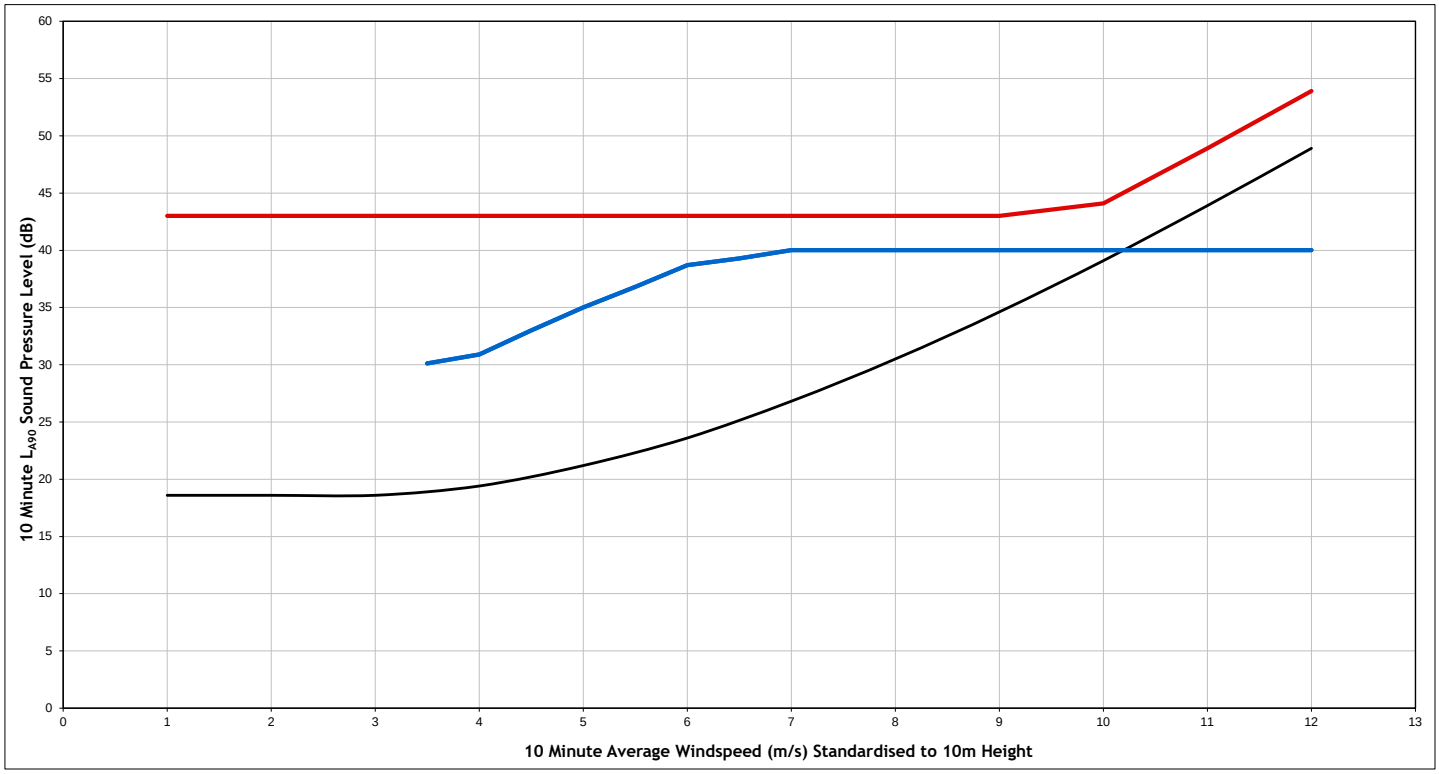
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL2 (H4)
Figure Number	Figure A1.3b
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL3 (H5)



Night Time - NAL3 (H5)



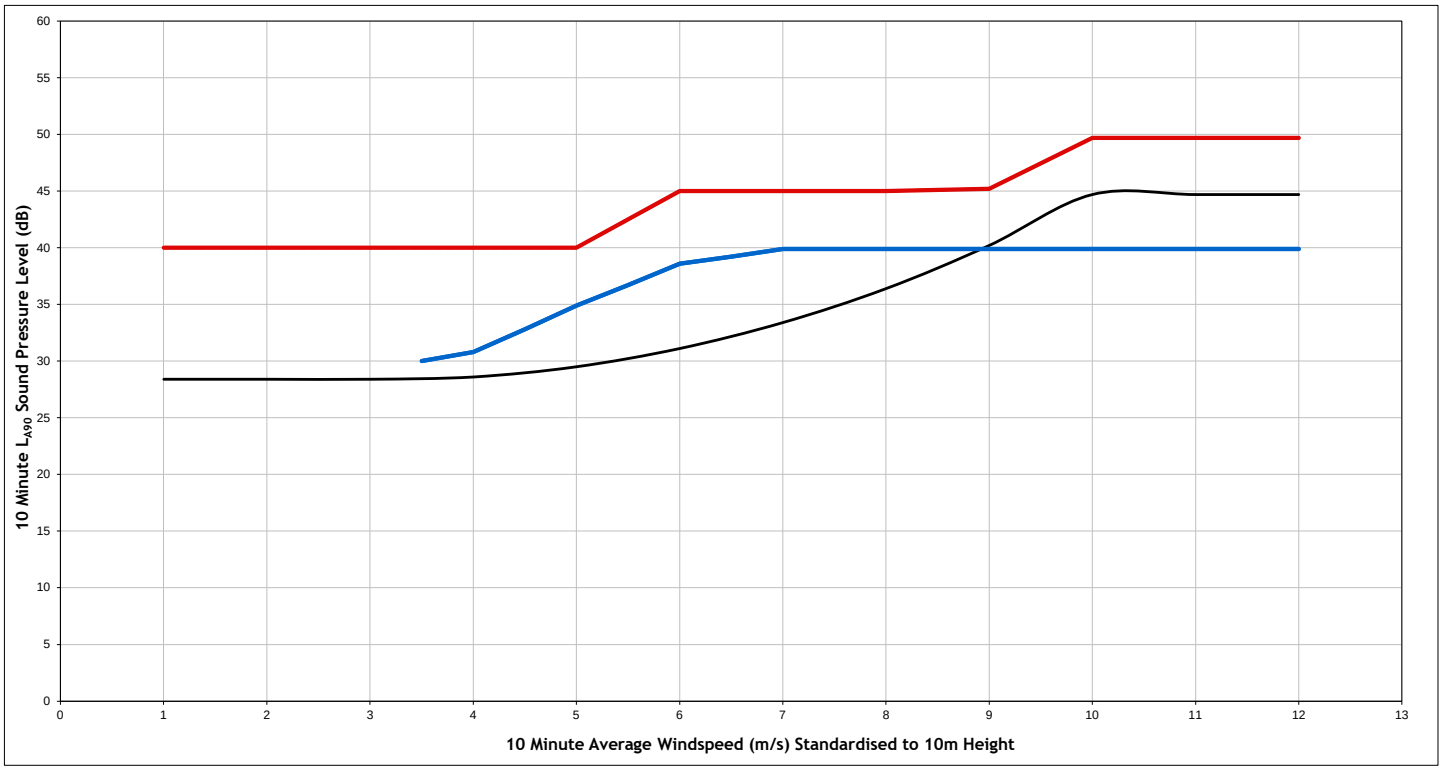
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

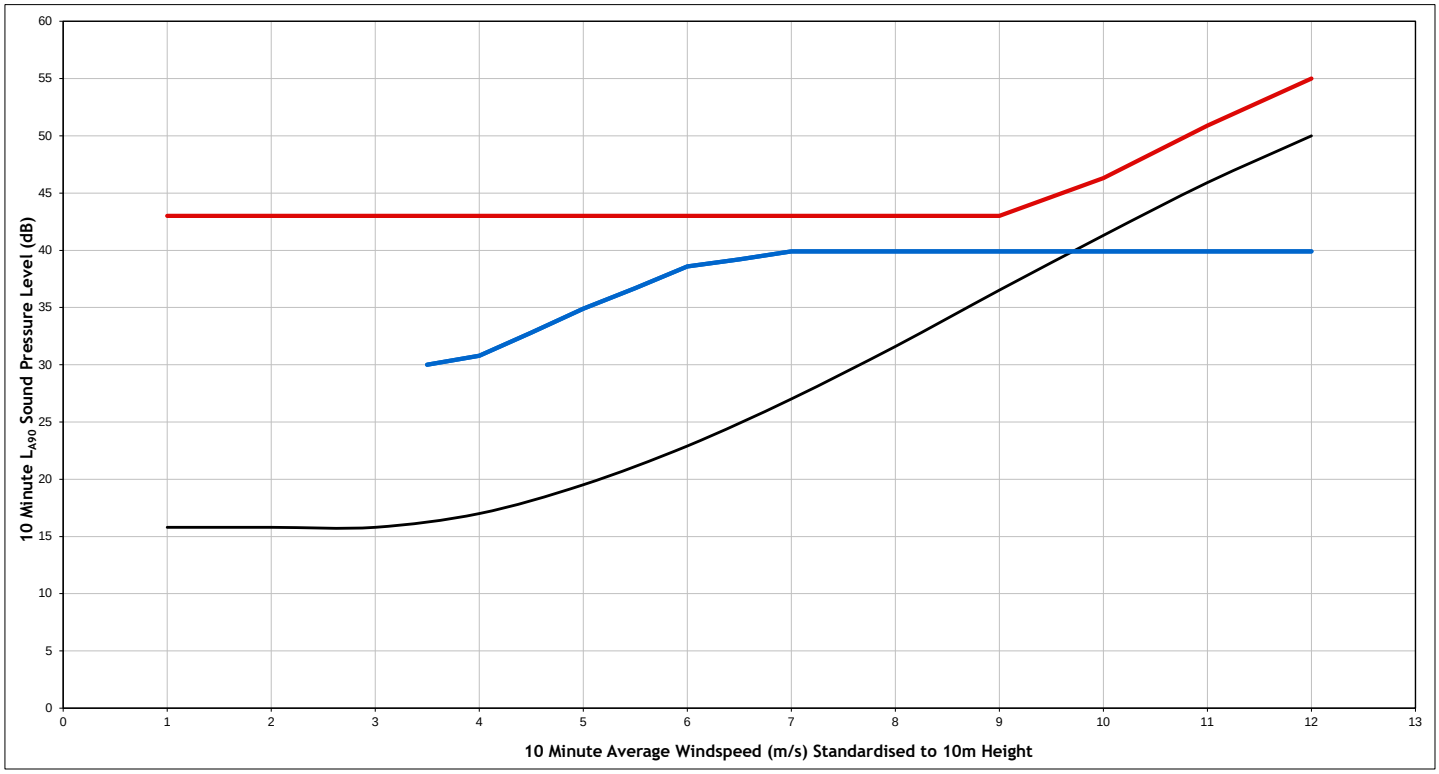
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL3 (H5)
Figure Number	Figure A1.3c
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL4 (H6)



Night Time - NAL4 (H6)



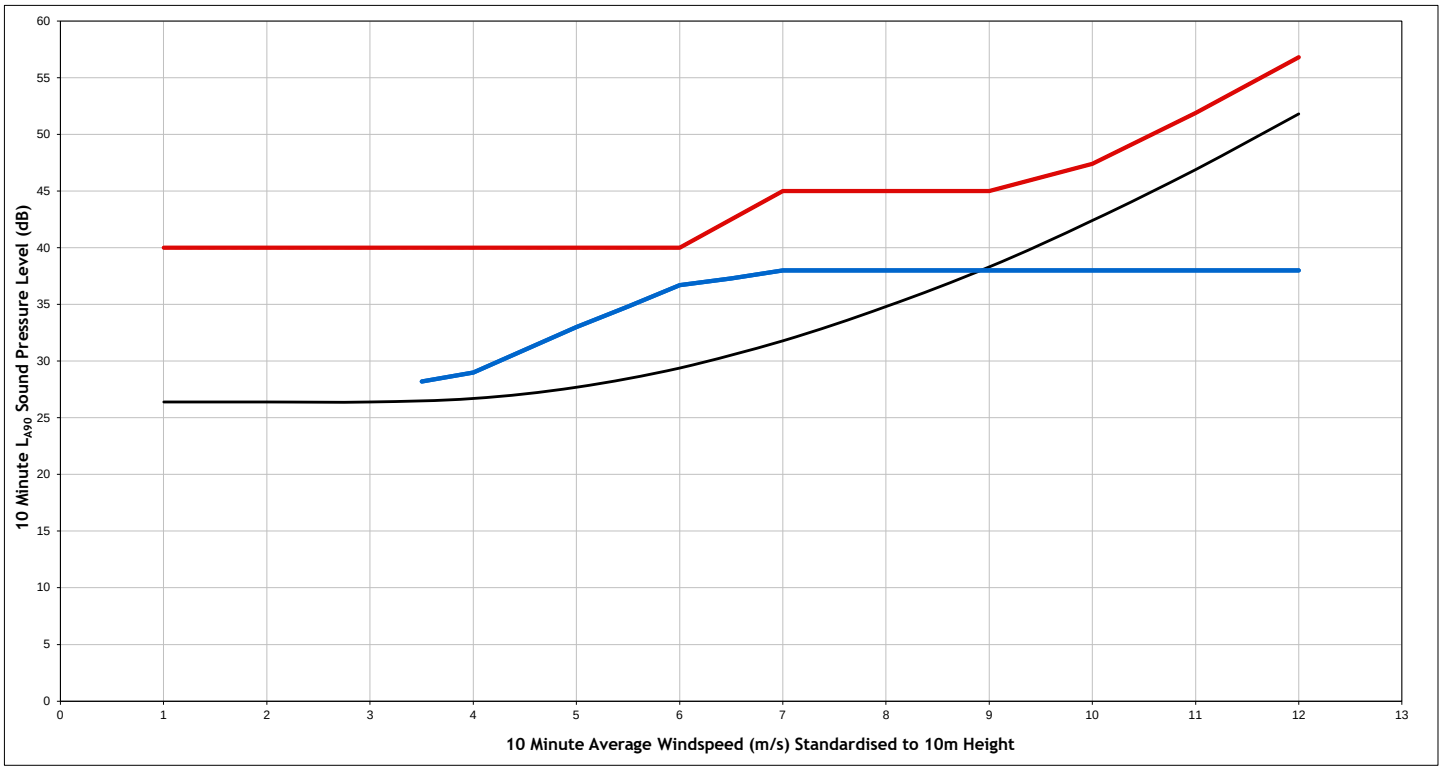
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

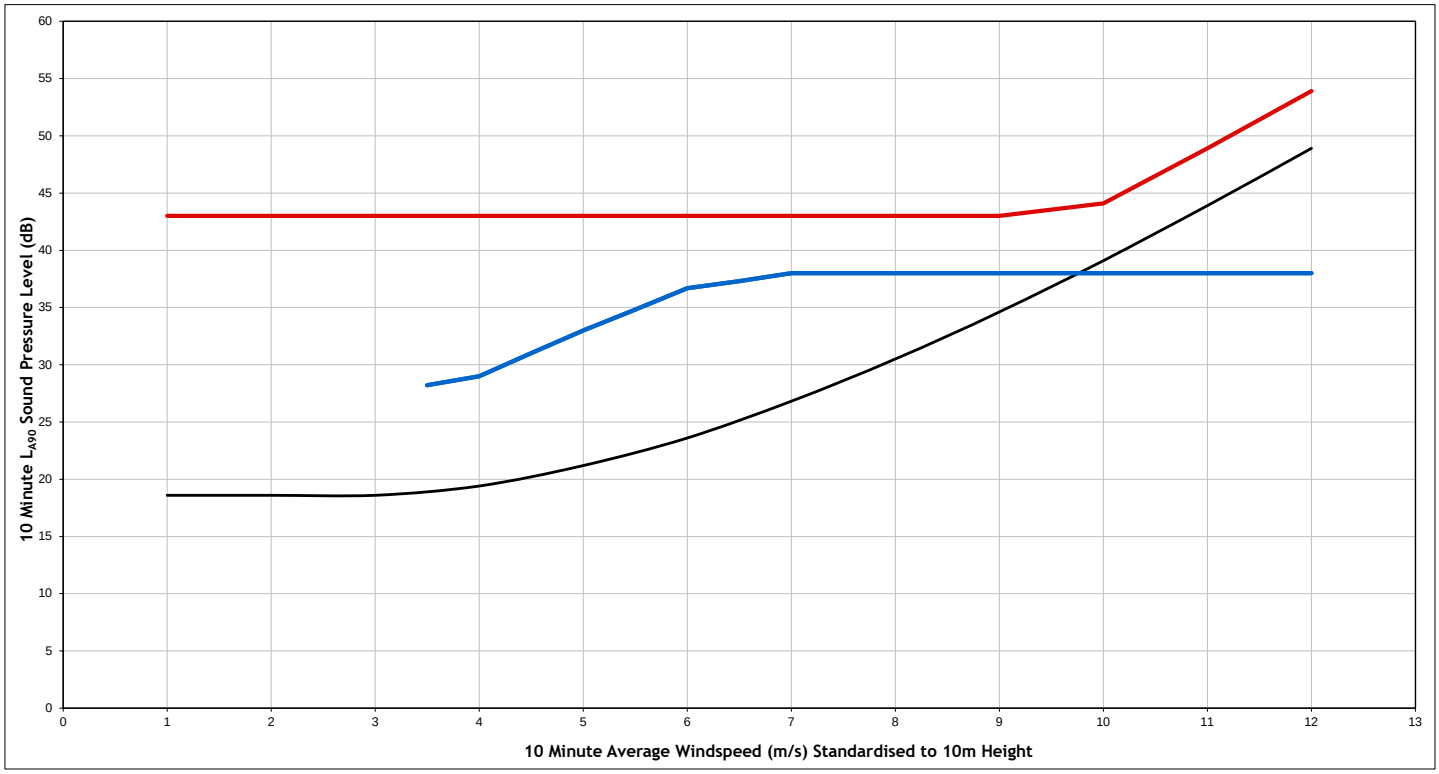
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment
	NAL4 (H6)
Figure Number	Figure A1.3d
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL5 (H7)



Night Time - NAL5 (H7)



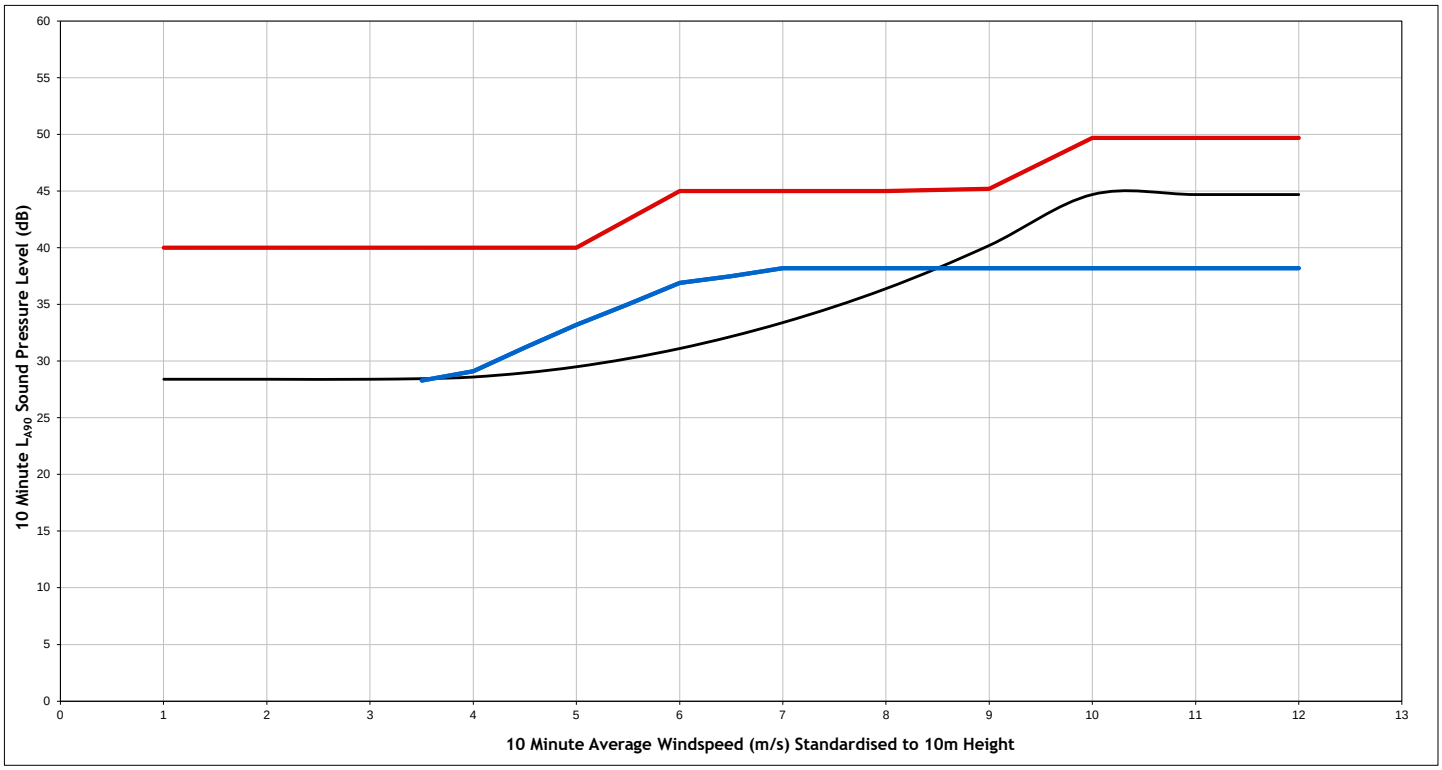
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

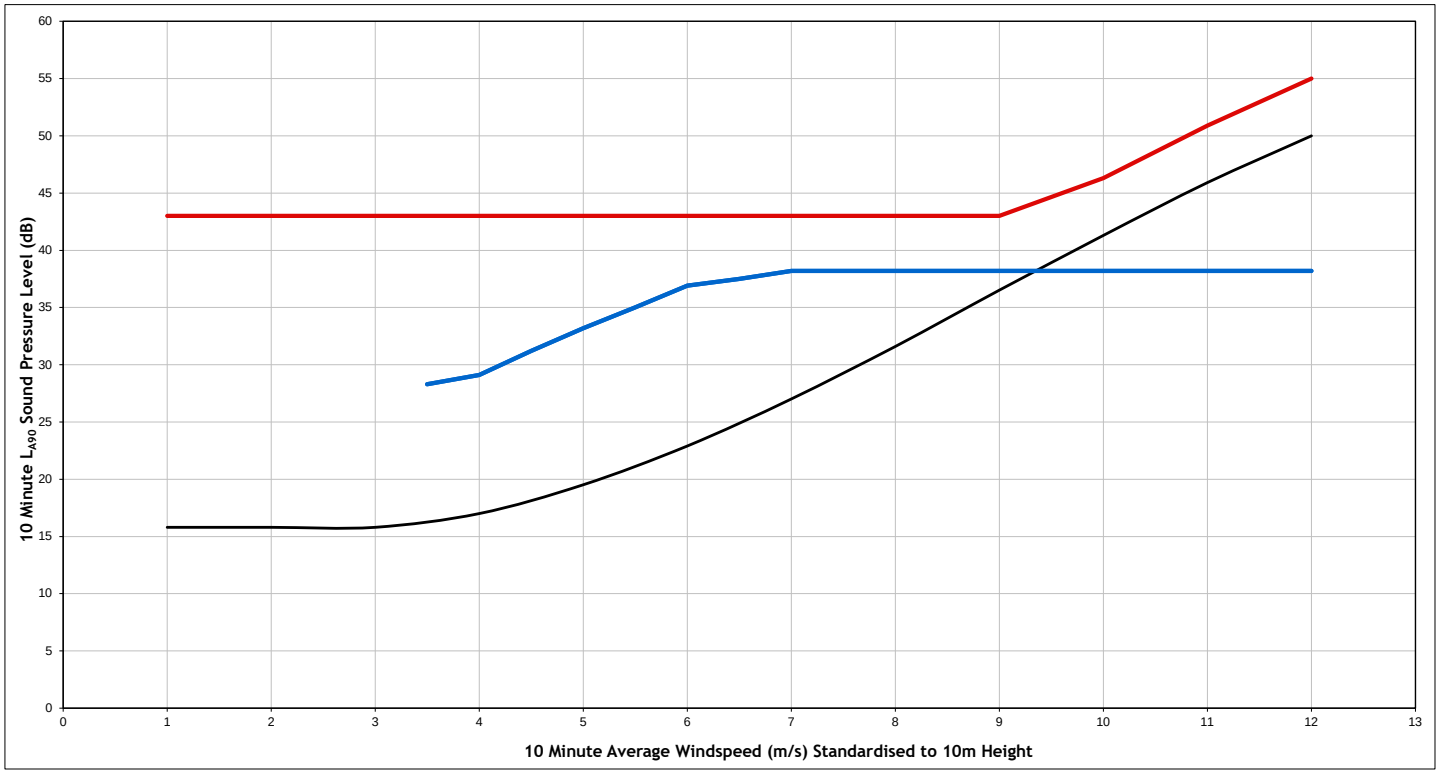
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL5 (H7)
Figure Number	Figure A1.3e
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL6 (H8)



Night Time - NAL6 (H8)



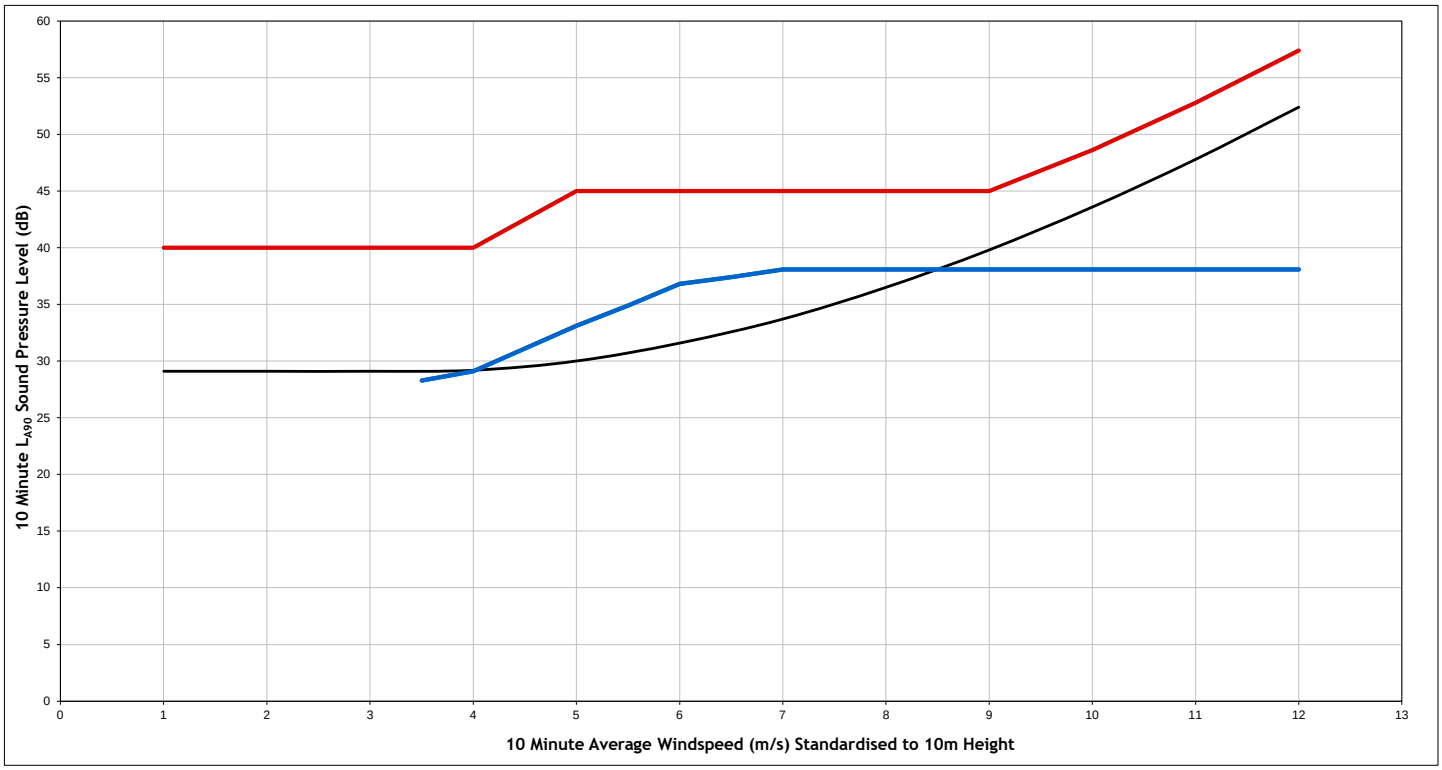
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

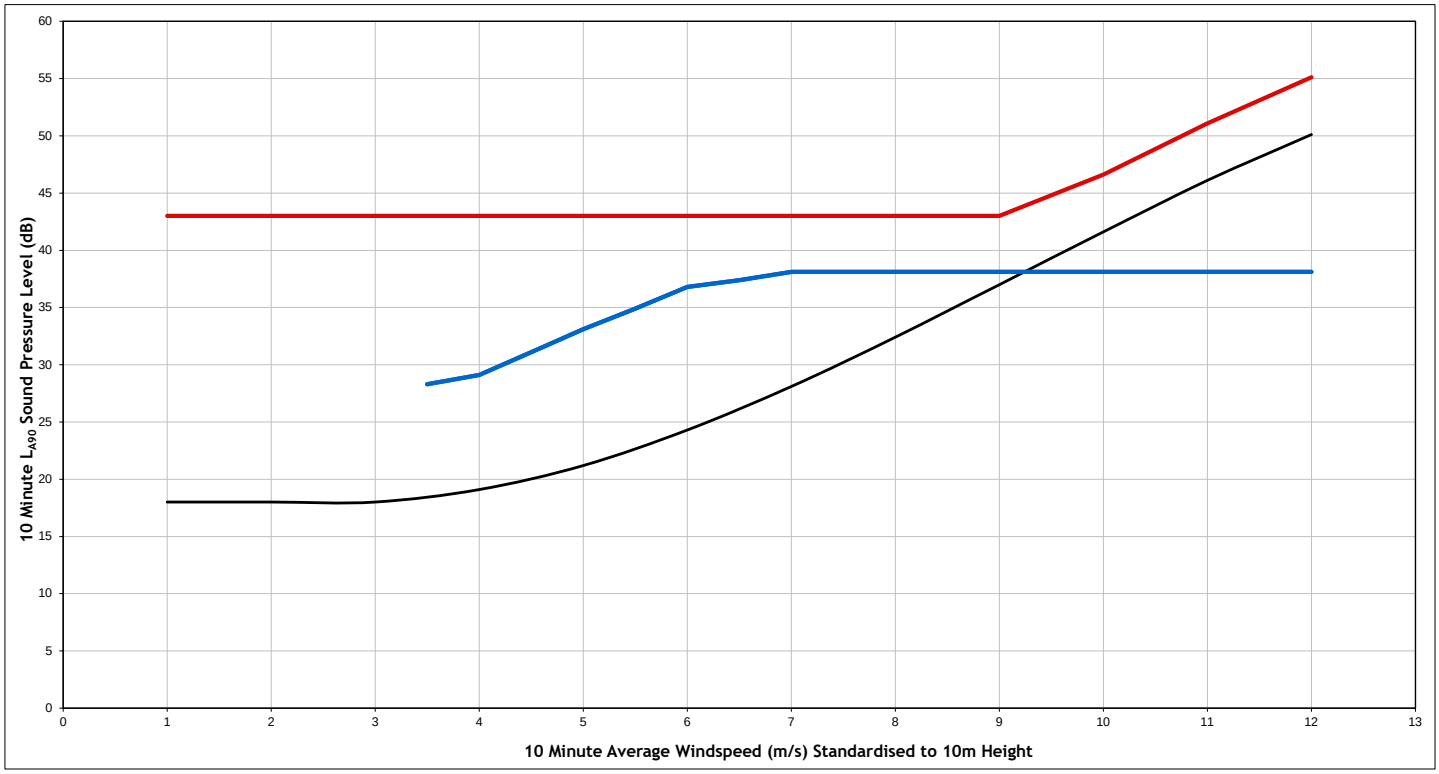
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL6 (H8)
Figure Number	Figure A1.3f
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL7 (H10)



Night Time - NAL7 (H10)



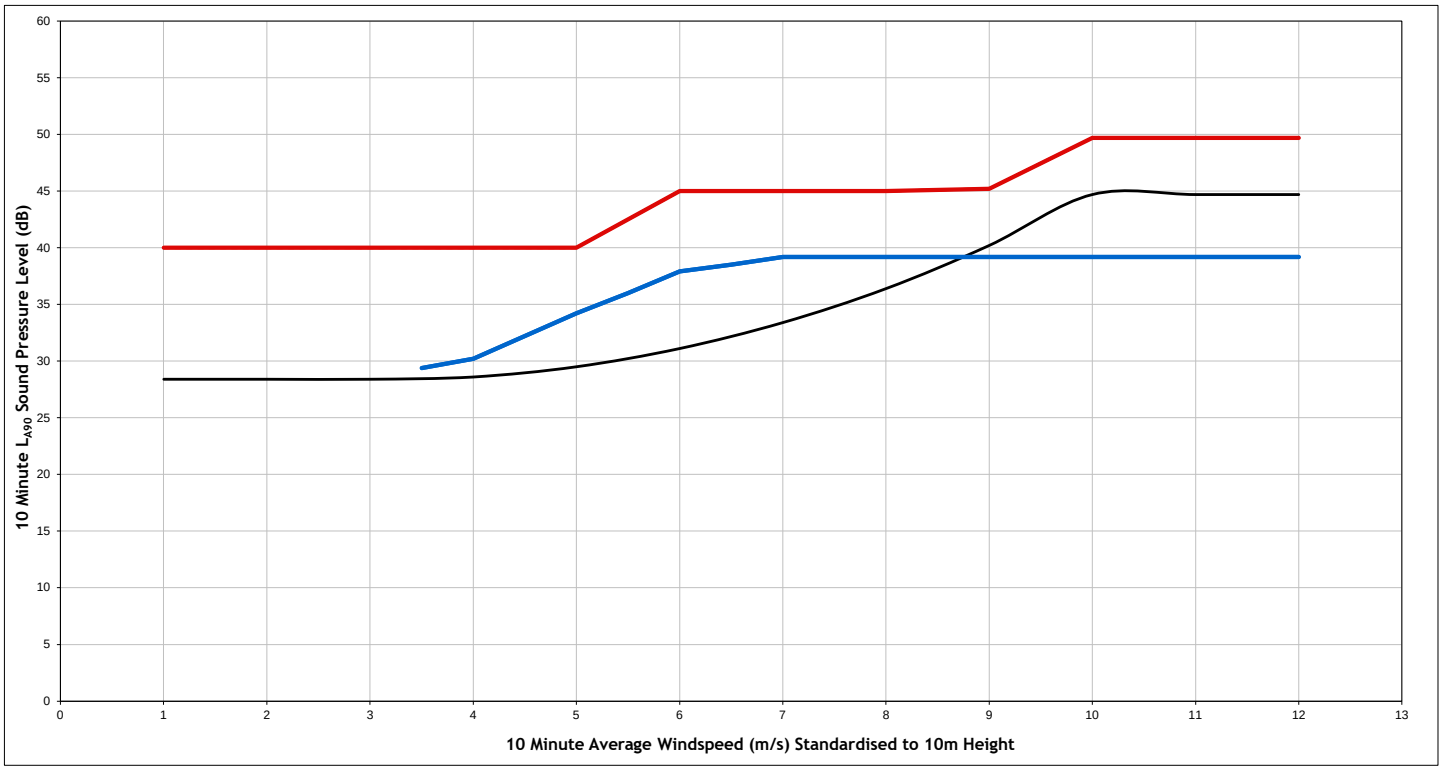
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

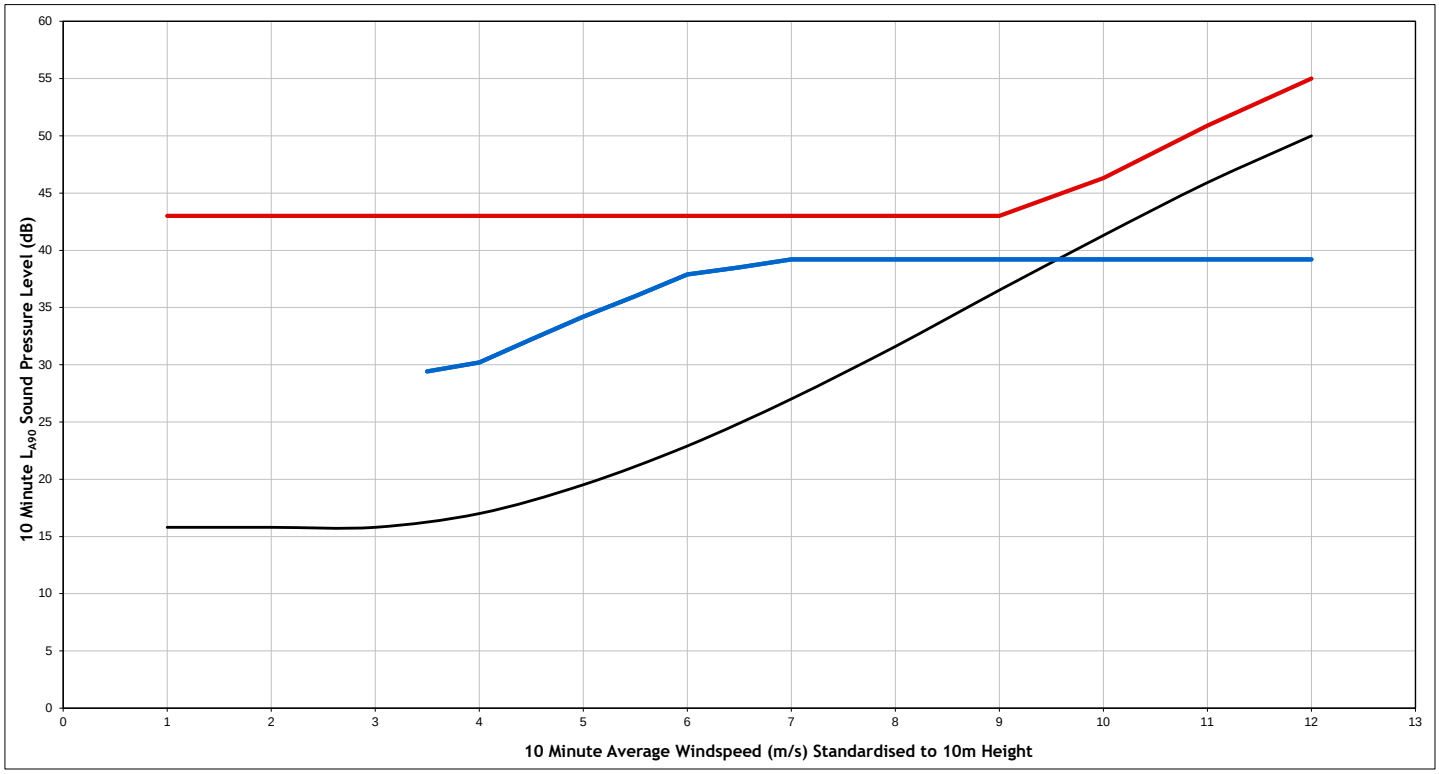
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL7 (H10)
Figure Number	Figure A1.3g
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL8 (H13)



Night Time - NAL8 (H13)



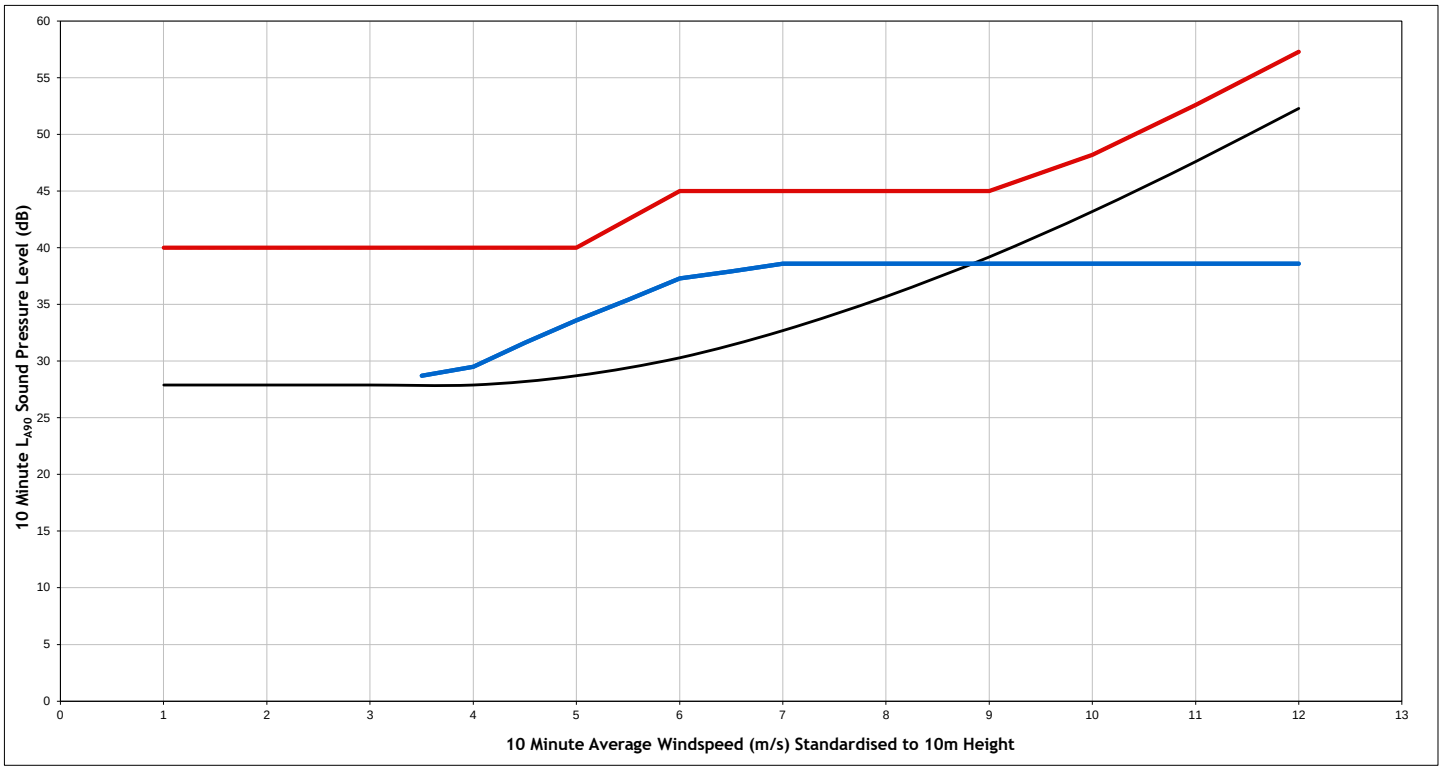
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

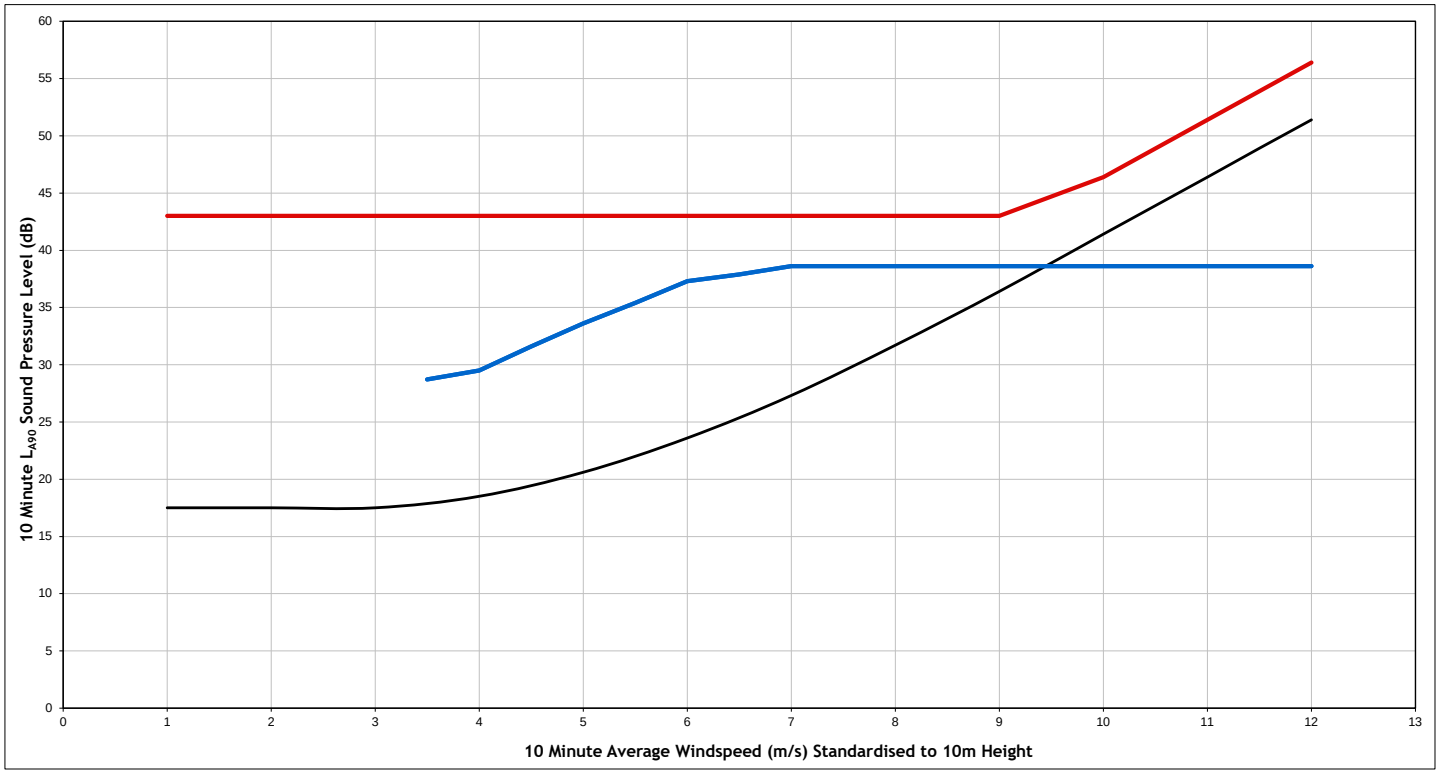
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL8 (H13)
Figure Number	Figure A1.3h
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL9 (H14)



Night Time - NAL9 (H14)



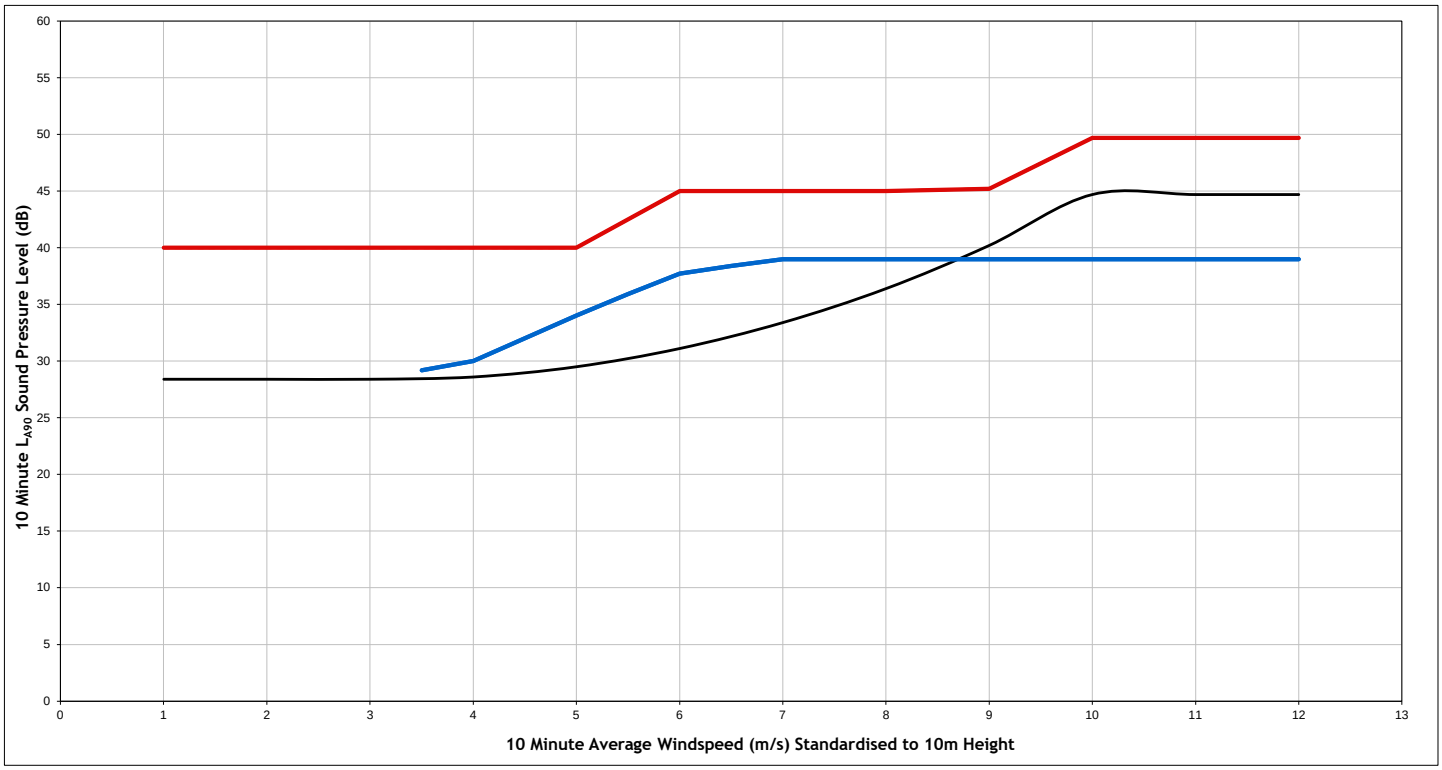
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

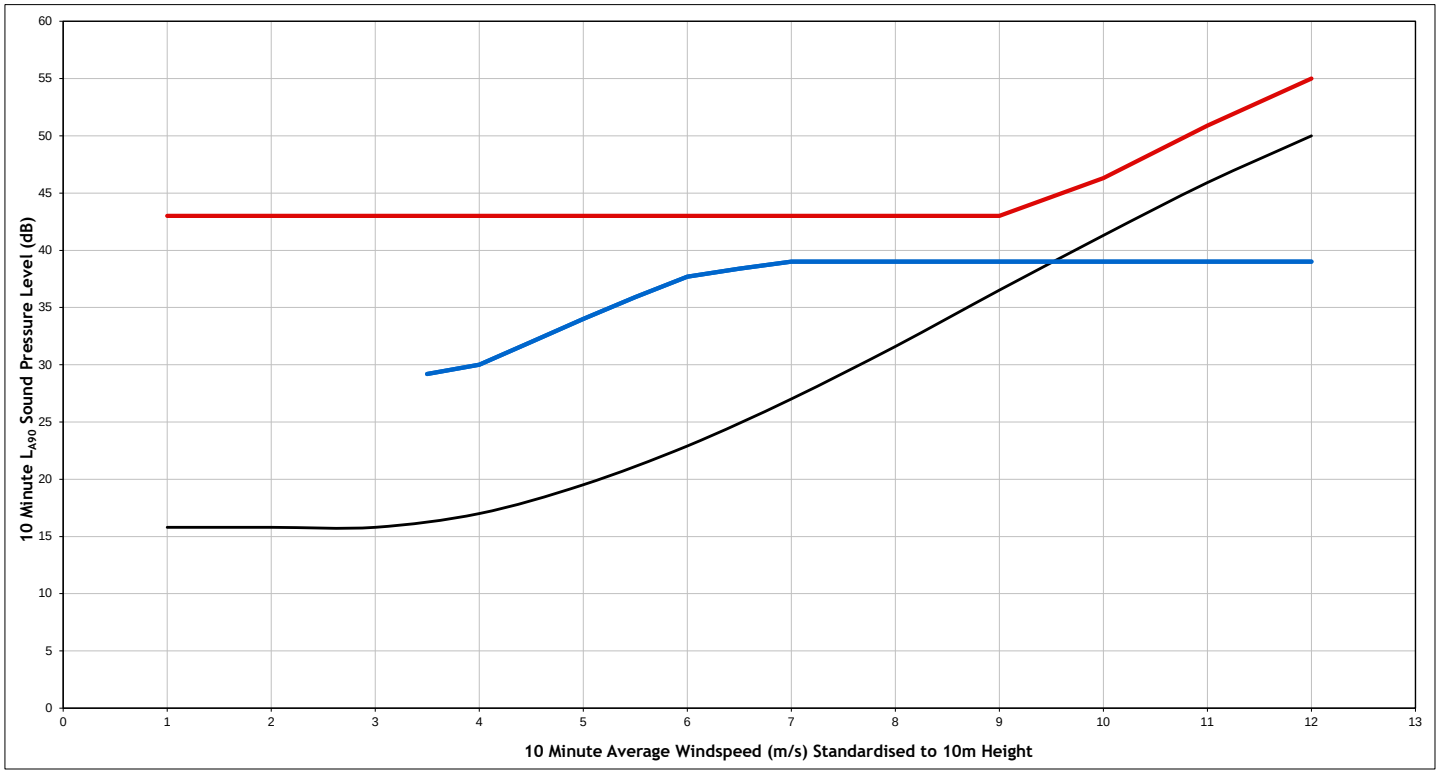
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL9 (H14)
Figure Number	Figure A1.3i
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL10 (H19)



Night Time - NAL10 (H19)



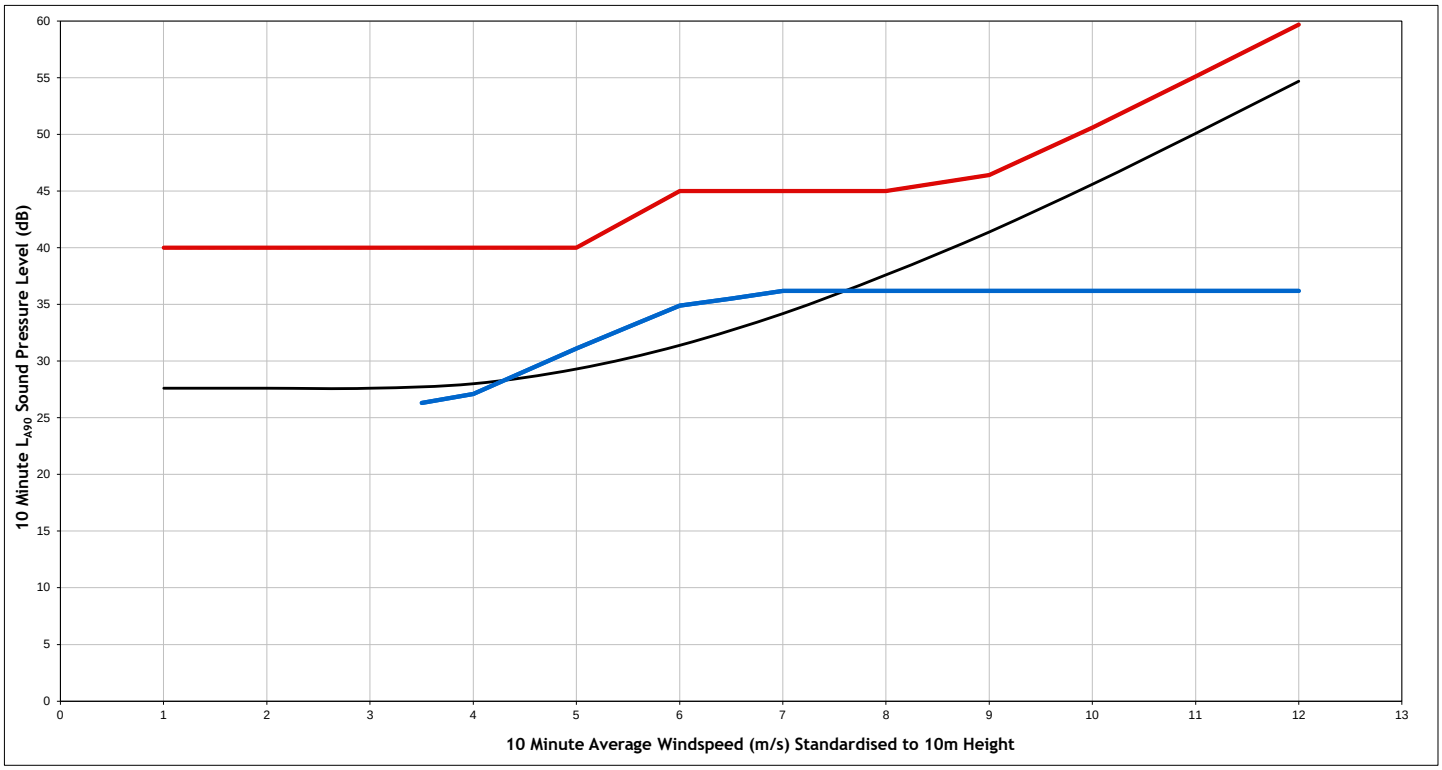
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

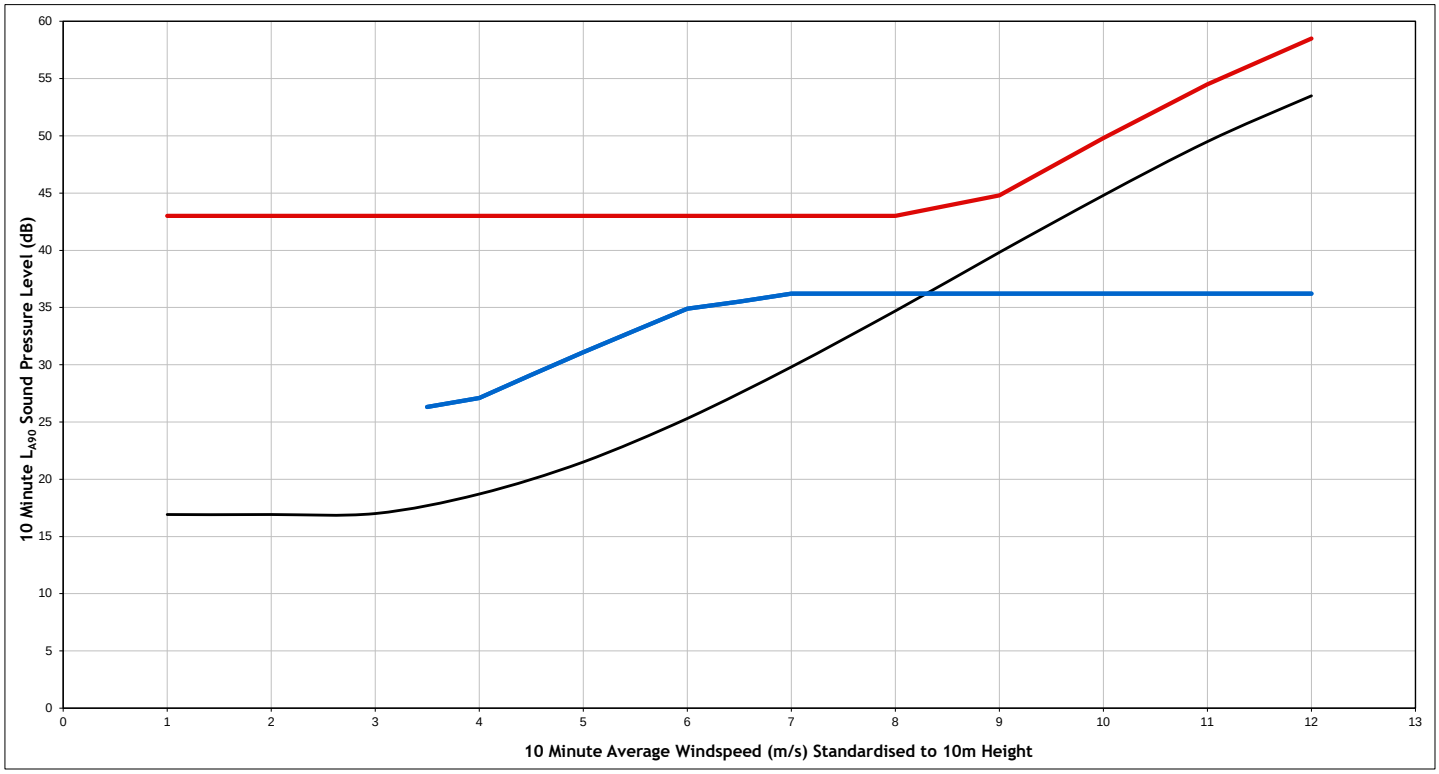
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment
	NAL10 (H19)
Figure Number	Figure A1.3j
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL11 (H25)



Night Time - NAL11 (H25)



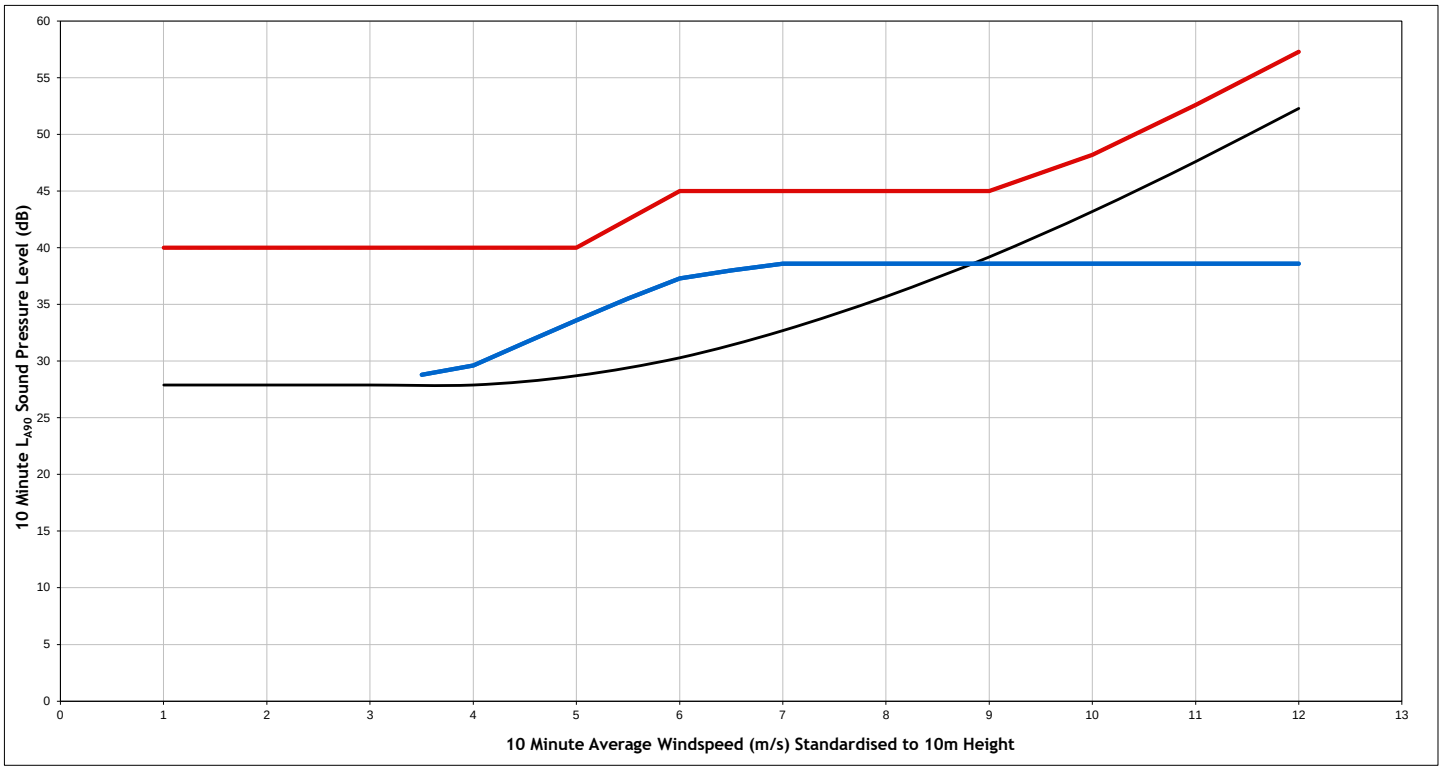
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

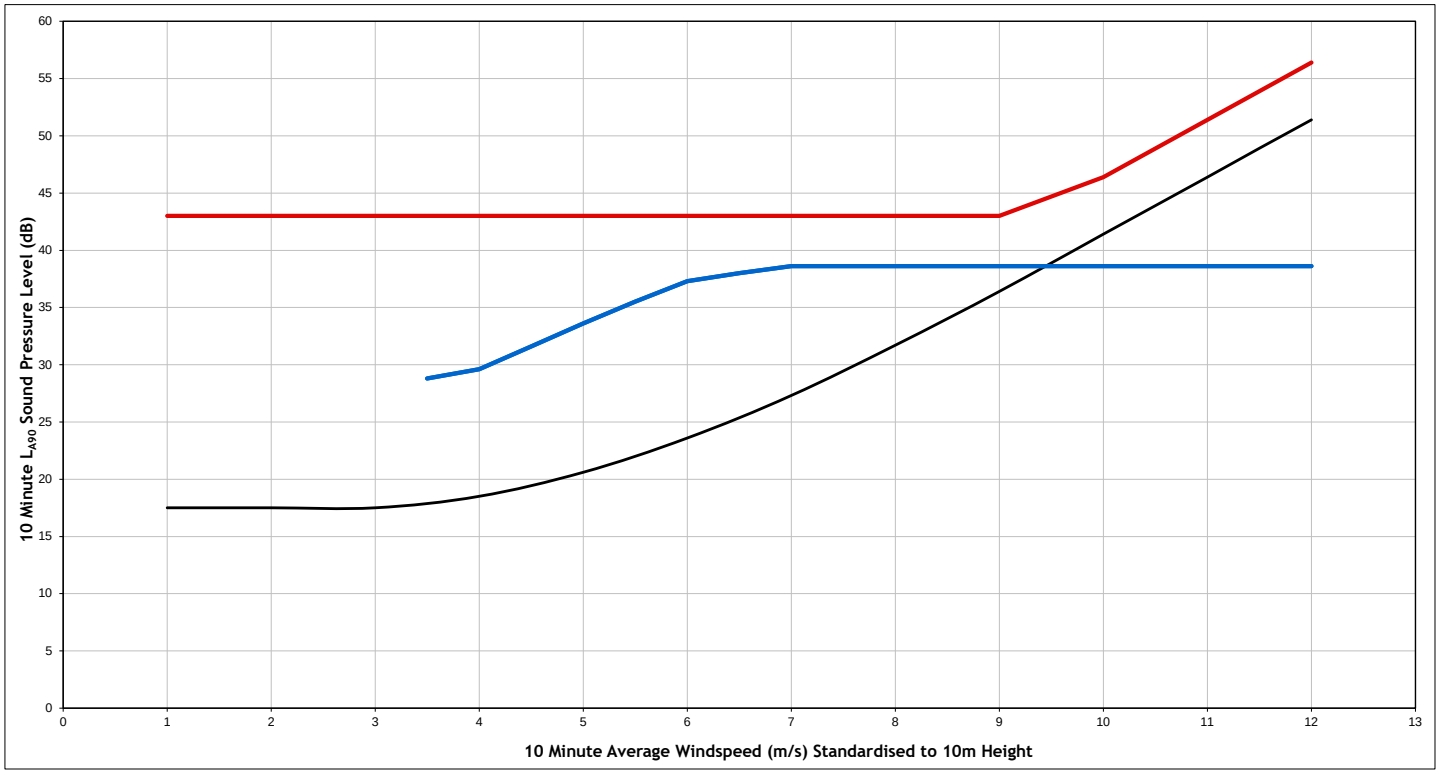
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL11 (H25)
Figure Number	Figure A1.3k
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL12 (H28)



Night Time - NAL12 (H28)



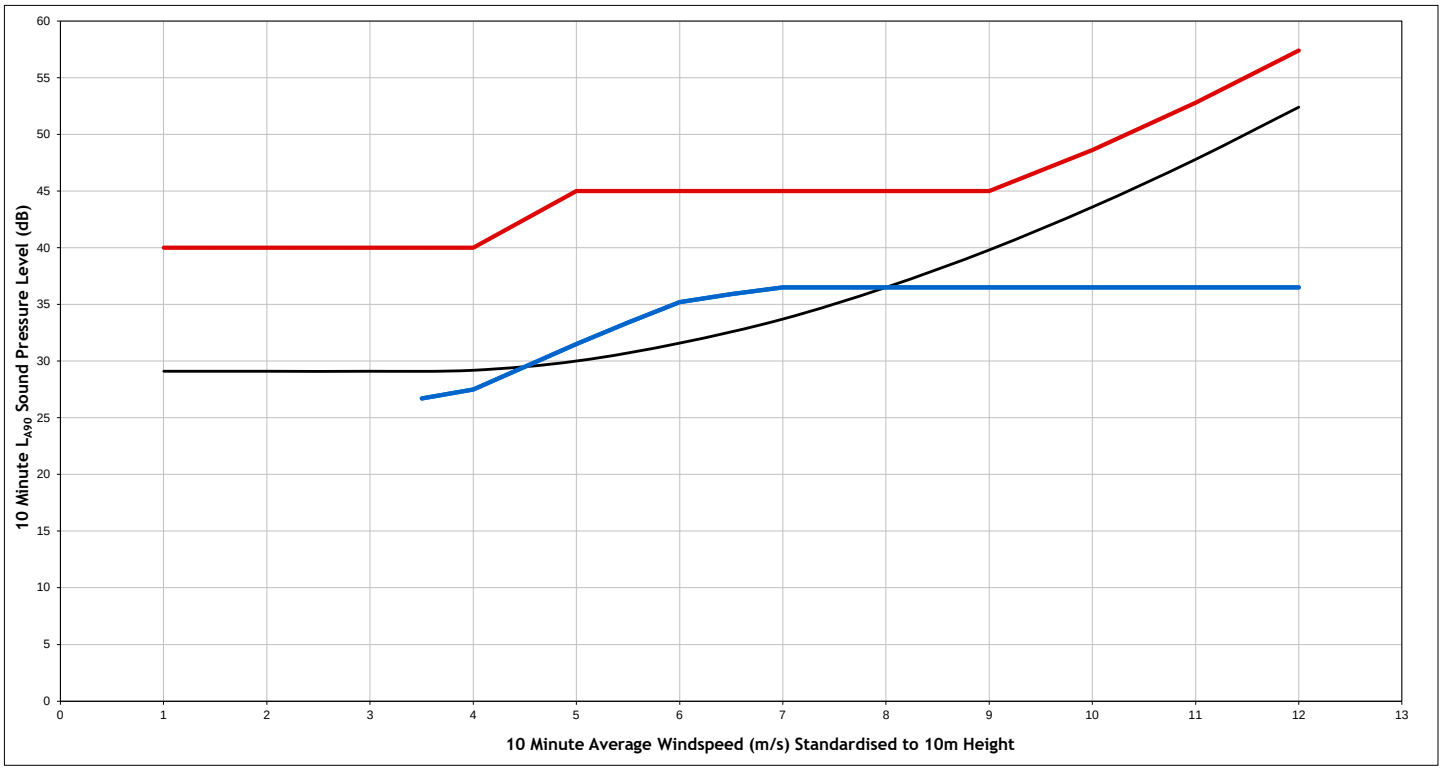
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

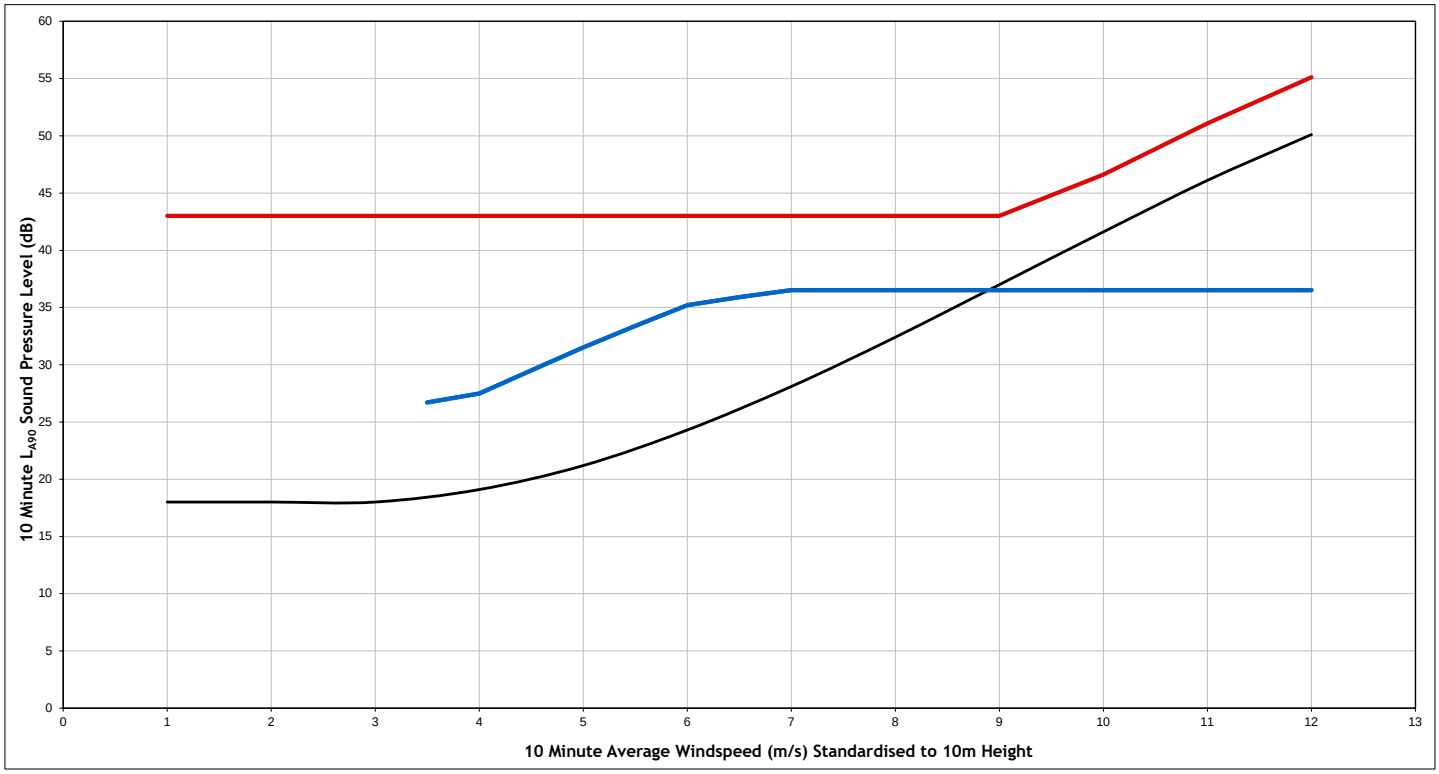
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL12 (H28)
Figure Number	Figure A1.3l
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL13 (H35)



Night Time - NAL13 (H35)



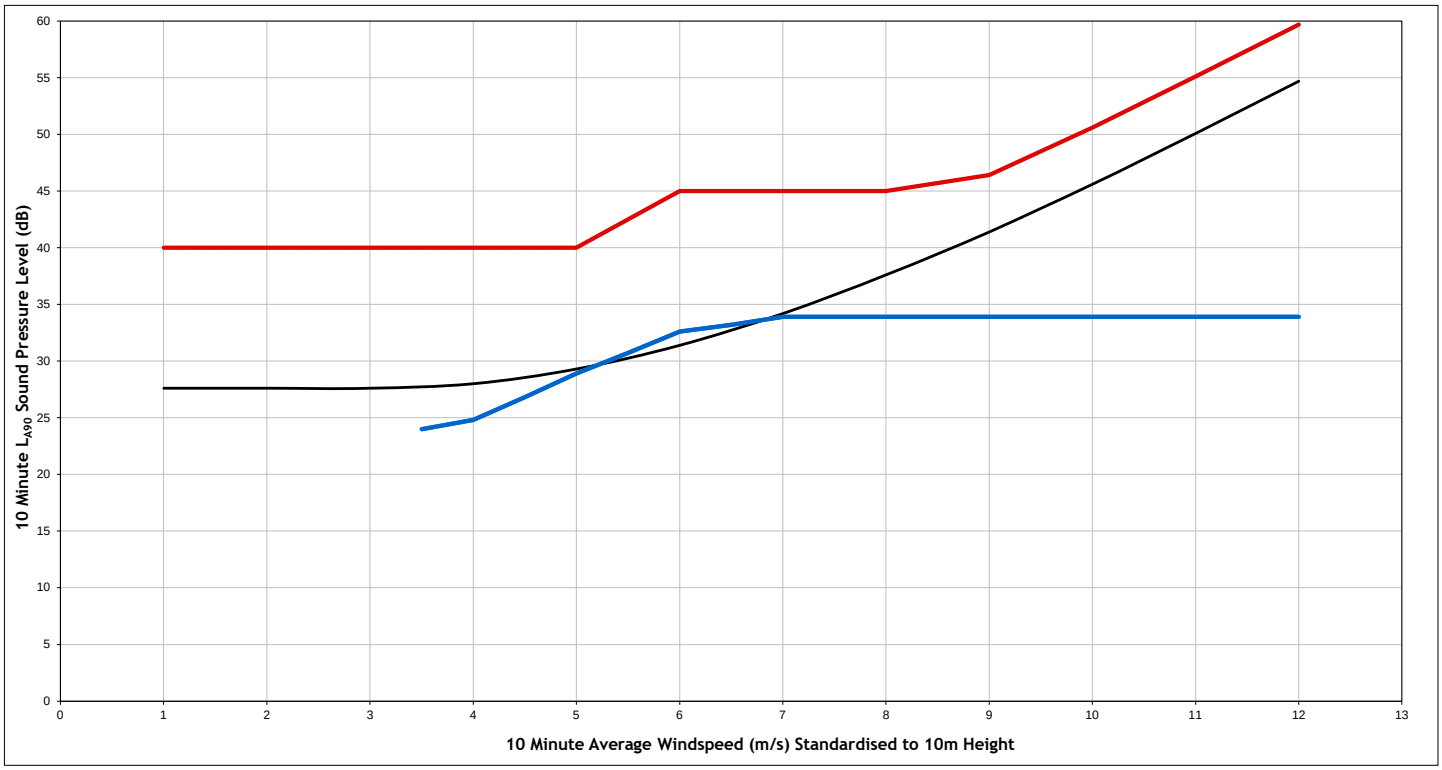
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

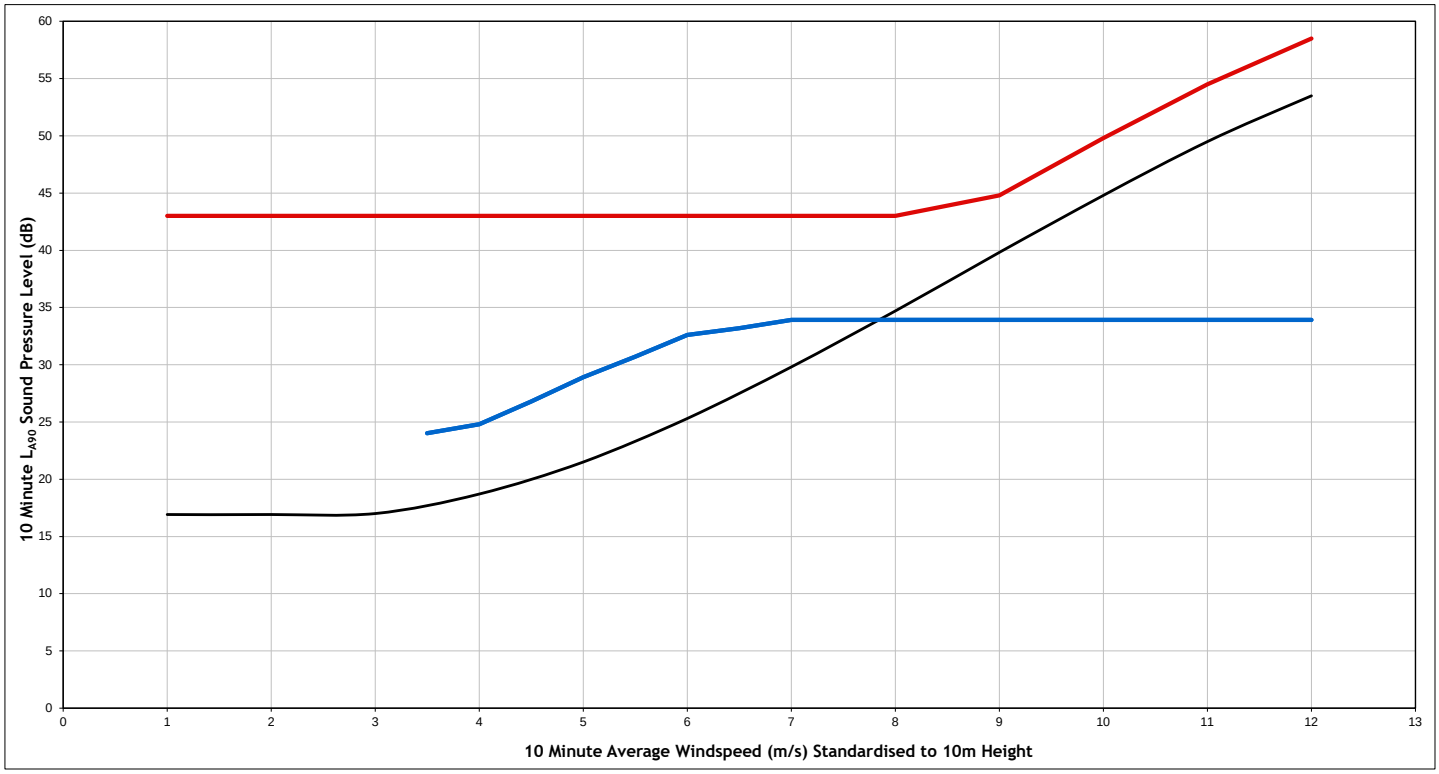
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL13 (H35)
Figure Number	Figure A1.3m
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL14 (H67)



Night Time - NAL14 (H67)



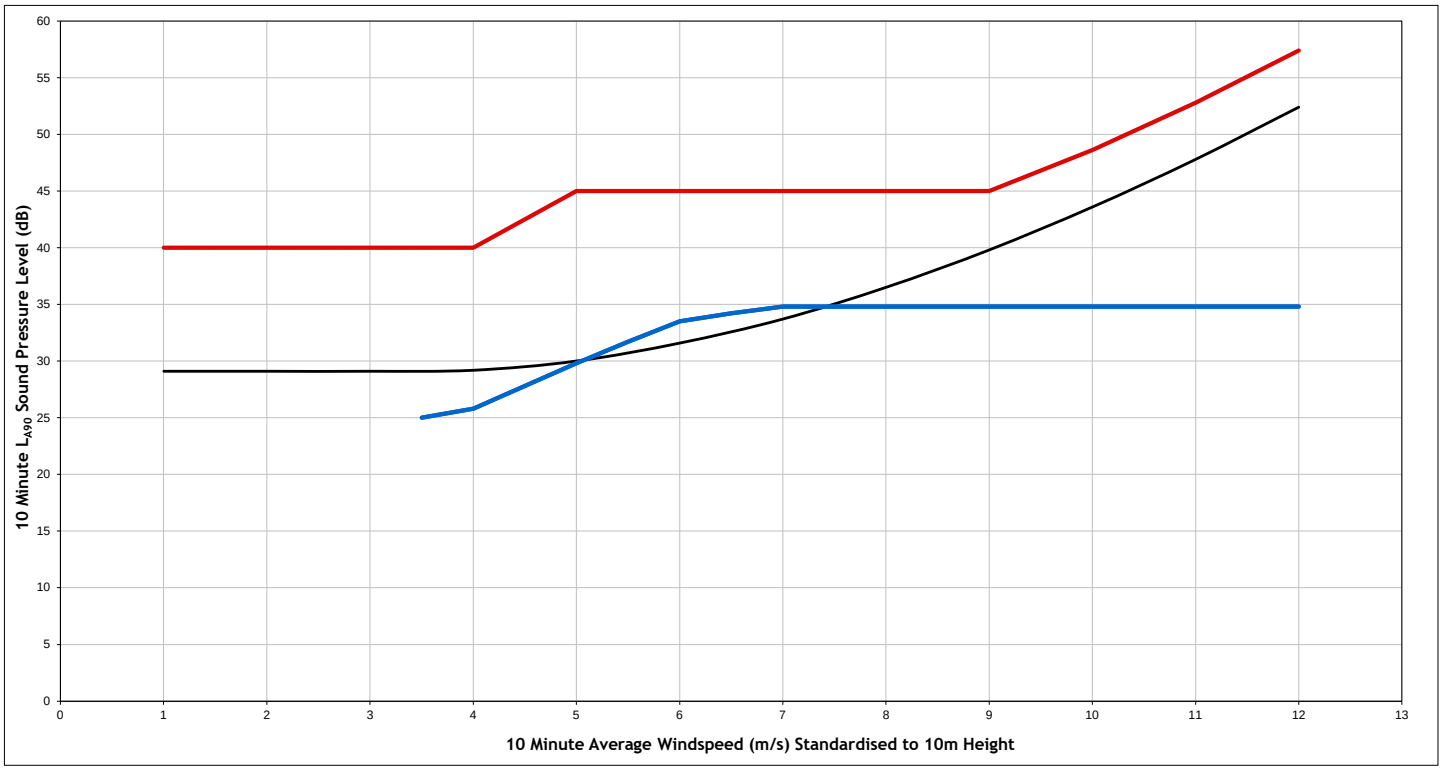
Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

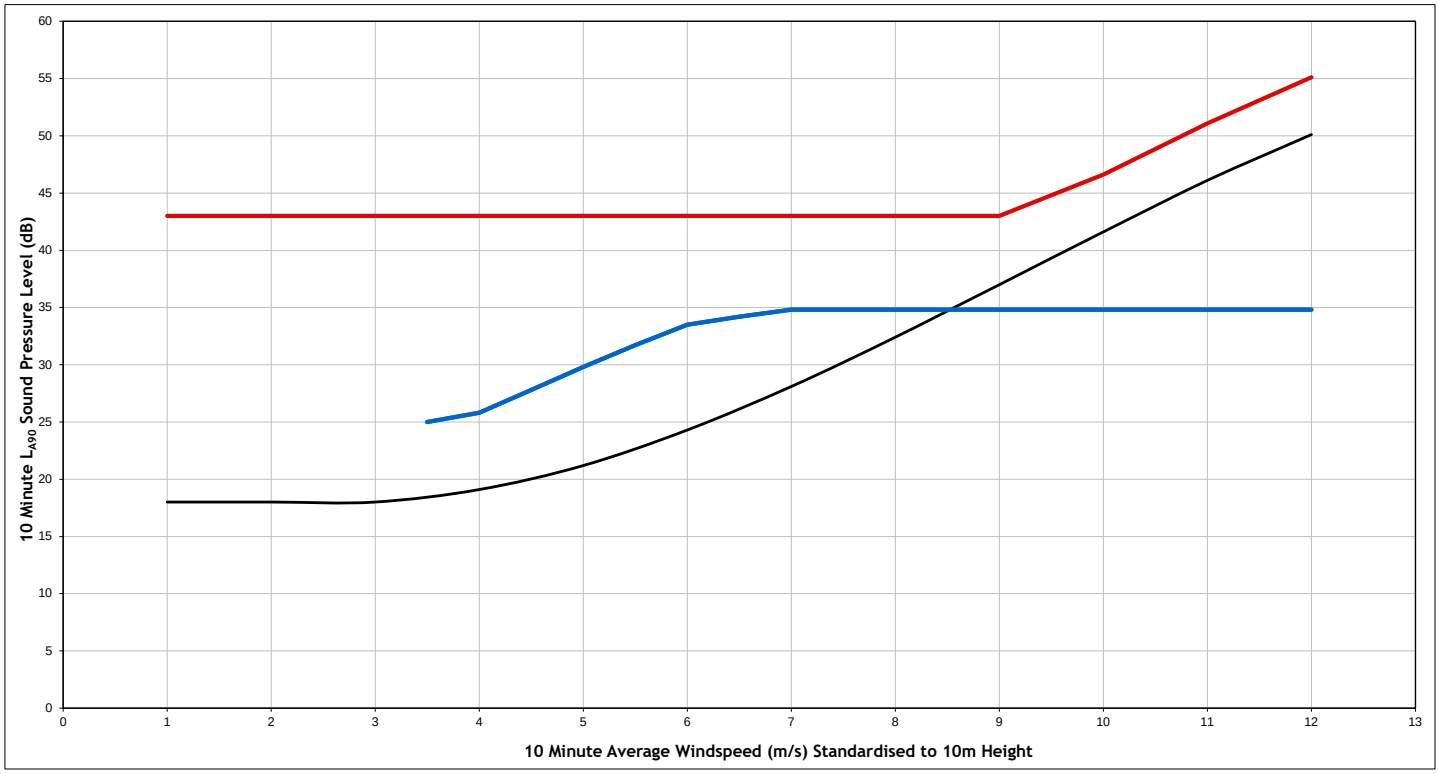
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL14 (H67)
Figure Number	Figure A1.3n
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Daytime - NAL15 (H86)



Night Time - NAL15 (H86)

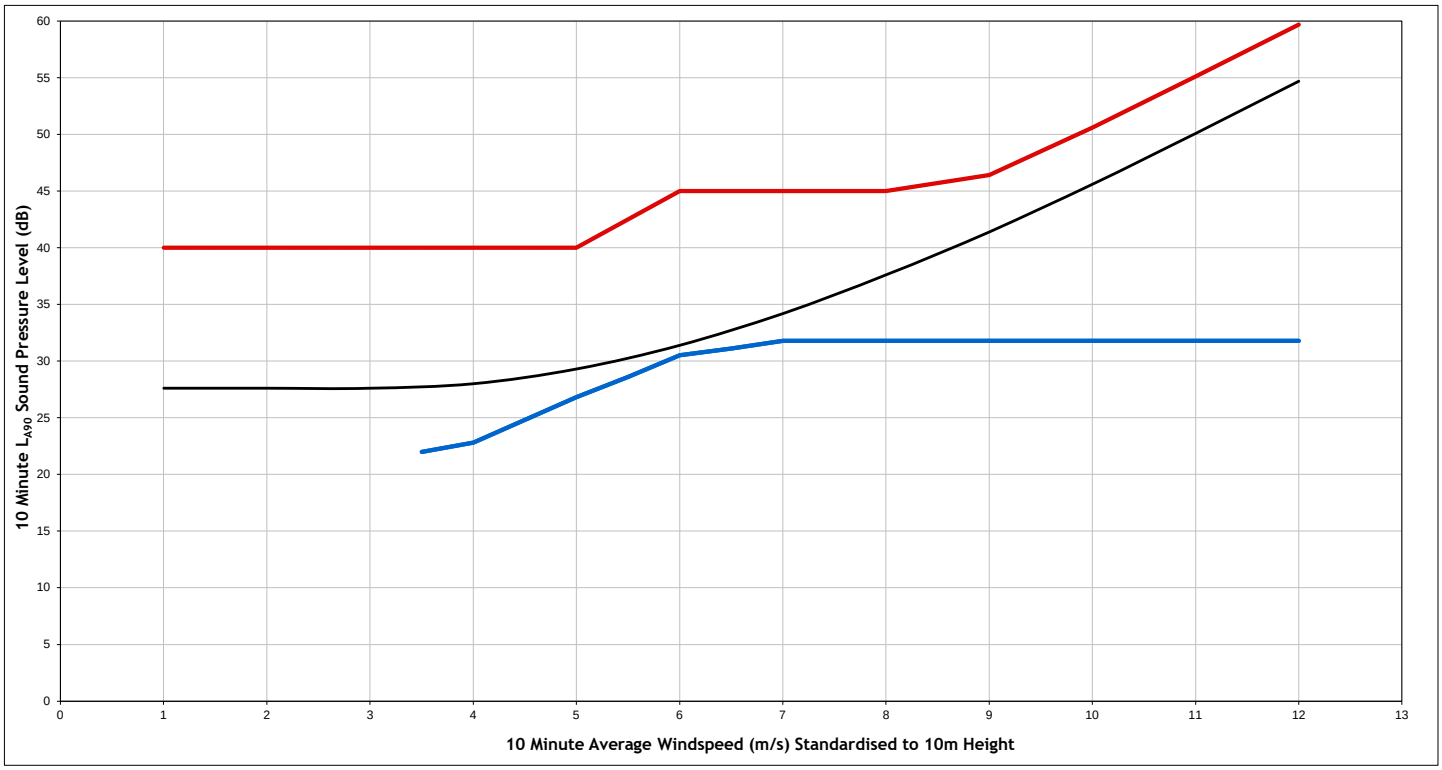


Legend:

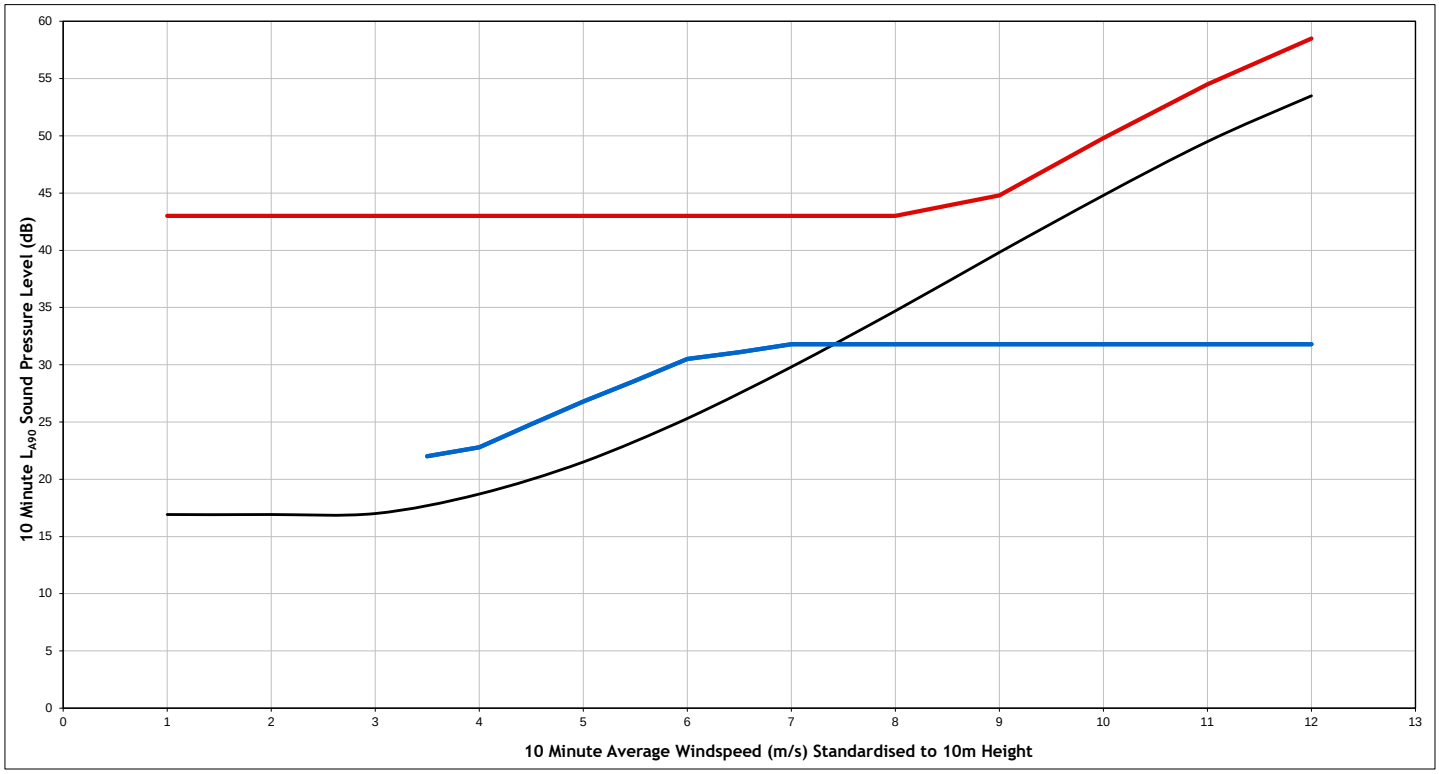
- Background Noise Trendline
- WEDG Noise Limit
- Umma More

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment
	NAL15 (H86)
Figure Number	Figure A1.3o
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

Daytime - NAL16 (H97)



Night Time - NAL16 (H97)



Legend:

- Background Noise Trendline
- WEDG Noise Limit
- Umma More

Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Noise Assessment NAL16 (H97)
Figure Number	Figure A1.3p
Scale	NTS
Drawn	JB
Checked	GC
Date	24/01/2023
Document Reference	14373-Noise Models

tnei

Annex 2 – Field Data Sheets / Installation Report

Umma More Wind Farm Noise Survey - Installed Noise Monitoring Locations

Present during the course of the installation:

- Colum Breslin, TNEI services Ltd

Unless specified, all noise meters were installed at least 3.5 m from any hard-reflecting surface except the ground and less than 20 m from the dwelling and away from obvious noise sources, such as boiler flues.

Detailed information and pictures for each of the installed locations are provided below. The original full-size pictures are available on request.

Noise Monitoring Location (NML) Latitude Longitudes

NML	Lat Long
NML01	53.484048”N, -7.723335”W
NML02	53.468595”N, -7.690864”W
NML03	53.456859”N, -7.677327”W
NML04	53.446785”N, -7.684720”W
NML05	53.462249”N, -7.737837”W
NML06	53.473803”N, -7.728558”W

NML01

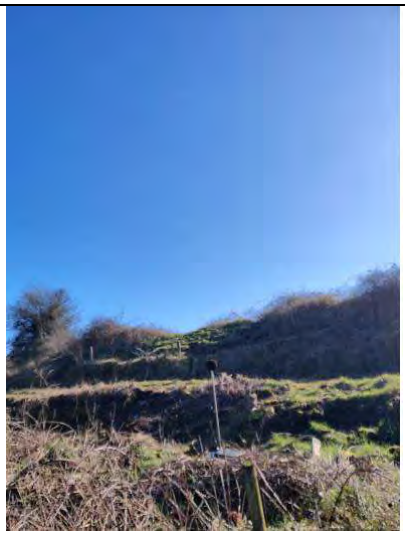
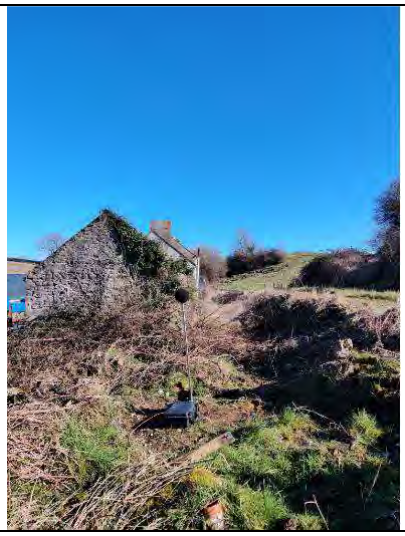
Reproduced under Google Earth pro licence

North	South
	
East	**West**
	

Description
The noise monitoring equipment was installed to the west of the property. The location was chosen due to its proximity to the north-west to the proposed development. The kit was positioned in what was considered to be the residents amenity area, on the more sheltered side of the house with relation to the trees. The location was seen to be representative of the other properties in the area to the north and south. The predominant sounds that were audible during the installation were from birdsong. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground. A rain gauge was installed at this location.

NML02

Reproduced under Google Earth pro licence

North	South
	
East	**West**
	

Description
The noise monitoring equipment was installed in a location considered to provide representative data for the property. The kit was located adjacent to a paddock in which donkeys grazed, to the west of the property. The location was chosen due to its proximity to the east of the proposed development, and was seen to be representative of properties in the area. The predominant sounds that were audible during the installation were from birdsong, and donkeys braying. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground. A rain gauge was installed at this location.

NML03

Reproduced under Google Earth pro licence

North-east	South-west
	
South-east	**North-west**
	

Description
The noise monitoring equipment was installed in a location considered to provide representative data for the property. The kit was located to the north west of the property. The location was chosen due to its proximity to the south-east of the proposed development, and was also seen to be representative of the other properties in the area to the south and east. The predominant sounds that were audible during the installation were from birdsong, dogs barking and a digger being operated. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground.

NML04

Reproduced under Google Earth pro licence

North West	North-east
	
South-east	**South-west**
	

Description
The noise monitoring equipment was installed in a location considered to provide representative data for the property. The kit was located to the north-east of the property. The location was chosen due to its proximity to the south of the proposed development, and was also seen to be representative of the other properties in the area to the east and west. The predominant sounds that were audible during the installation were from birdsong. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground.

NML05

Reproduced under Google Earth pro licence

North

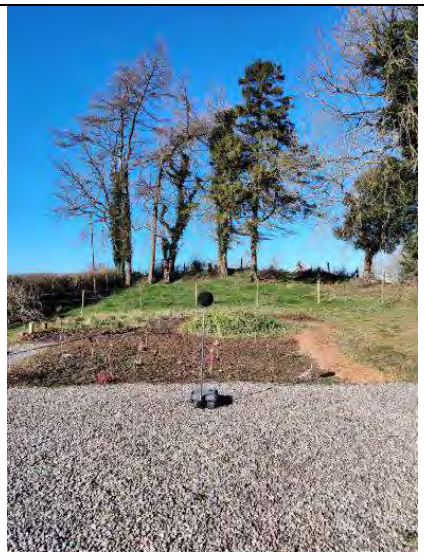
East

West

Description
The noise monitoring equipment was installed in a location considered to provide representative data for the property. The kit was located to the south east of the property. The location was chosen due to issues gaining access at properties to the south of the proposed development. Due to it having a very similar noise environment (which can be described as open, and with very little foliage), it is considered that this property would be representative of the properties further to the east, and directly south of the proposed wind farm. The predominant sounds that were audible during the installation were wind generated noise in the distant vegetation. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground.

NML06

Reproduced under Google Earth pro licence

North	South
	
East	**West**
	

Description
The noise monitoring equipment was installed in a location considered to provide representative data for the property. The kit was located to the west of the property. The location was chosen due to its proximity to the north-west of the proposed development, and was also seen to be representative of the other properties in the area to the west of the proposed development. The predominant sounds that were audible during the installation were from birdsong. The noise meter was located in a free field position, greater than 3.5m from any hard reflecting surface except the ground.

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 1 (NML1)
Description	The noise monitoring equipment was installed to the west of the property in what was considered the main amenity area. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E:618362, N:748260
Noise sources noted during installation, weekly inspection and removal	Wind induced noise, distant road traffic noise, birdsong, occasional noise from nearby quarry and cattle lowing

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM012	Rion NL-31	01273087	10/04/2021
Pre Amplifier	SLM012	NH-21	26006	10/04/2021
Microphone	SLM012	UC-53A	313365	10/04/2021
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0101	10:00 01/03/2022	09:35 01/04/2022	94.0	94.1	0.1	01/03: Installation – Birdsong, occasional car passing, distant road traffic, cattle lowing. Occasional noise from nearby quarry operations. 01/04: Maintenance – Birdsong, distant road traffic, no construction related noise (GMT / IST correction).
0102	11:00 01/04/2022	13:30 03/05/2022	94.0	94.1	0.1	03/05: Decommissioning – Birdsong (prominent), distant road traffic, cattle lowing.

PHOTOGRAPHS

NML1 – N

NML1 – S

NML1 – E

NML1 – W

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 2 (NML2)
Description	The noise monitoring equipment was installed to the west of the property. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E:620525, N:746549
Noise sources noted during installation, weekly inspection and removal	Birdsong (dominant), donkeys braying, airplane overhead.

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM01	Rion NL-32	00661767	06/01/2022
Pre Amplifier	SLM01	NH-21	19771	06/01/2022
Microphone	SLM01	UC-53A	310458	06/01/2022
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

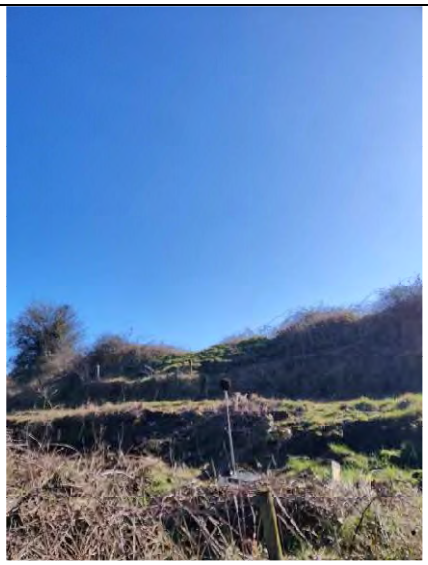
	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0201	13:50 01/03/22	07:40 02/03/22	94.0	93.9	-0.1	01/03: Installation – Birdsong (dominant), donkeys braying. 01/04: Maintenance – Birdsong, airplane overhead (GMT / IST correction). Kit failed after 1 day.
0202	13:10 01/04/22	14:57 03/05/22	94.0	94.2	+0.2	03/05: Decommissioning – Birdsong (dominant), donkeys braying.

PHOTOGRAPHS

NML2 – N



NML2 – S

NML2 – E

NML2 – W

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 3 (NML3)
Description	The noise monitoring equipment was installed to the north west of the property. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E:621430, N:745247
Noise sources noted during installation, weekly inspection and removal	Birdsong (dominant), wind induced noise, dogs barking, airplane overhead and cattle lowing.

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM09	Rion NL-32	00972337	08/06/2021
Pre Amplifier	SLM09	NH-21	25122	08/06/2021
Microphone	SLM09	UC-53A	313228	08/06/2021
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0301	13:00 01/03/22	11:20 01/04/22	94.0	93.9	-0.1	01/03: Installation – Digger noise, birdsong (dominant), dogs barking. 01/04: Maintenance – Birdsong, airplane overhead, distant traffic, wind induced noise. (GMT / IST correction).
0302	12:40 01/04/22	14:38 03/05/22	94.0	94.4	0.4	03/05: Decommissioning – Birdsong (dominant), cattle lowing. Noise kit knocked over by cows. The data collected during this period was discarded.

PHOTOGRAPHS

NML3 – NE

NML3 – SE

NML3 – NW

NML3 – SW

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 4 (NML4)
Description	The noise monitoring equipment was installed to the north east of the property. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E: 620944, N: 744124
Noise sources noted during installation, weekly inspection, and removal	Tree cutting in adjacent fields (installation only), birdsong (dominant), occasional cars passing, airplane overhead and cattle lowing.

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM14	Rion NL-31	01273102	04/08/2021
Pre Amplifier	SLM14	NH-21	26021	04/08/2021
Microphone	SLM14	UC-53A	313359	04/08/2021
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0401	12:10 01/03/22	11:00 01/04/22	94.0	93.9	-0.1	01/03: Installation –Birdsong (dominant), occasional car passing, tree cutting in adjacent fields. 01/04: Maintenance – Birdsong (dominant), occasional car passing, airplane overhead, cattle lowing. (GMT / IST correction).
0402	12:20 01/04/22	14:18 03/05/22	94.0	94.4	0.4	03/05: Decommissioning – Birdsong (dominant), cattle lowing, occasional car passing.

PHOTOGRAPHS

NML4 – NE

NML4 – SE

NML4 – NW

NML4 – SW

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 5 (NML5)
Description	The noise monitoring equipment was installed to the south east of the property. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E: 617409, N: 745830
Noise sources noted during installation, weekly inspection, and removal	Wind induced noise, birdsong, and cattle lowing in the distance.

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
01/03/22 – 01/04/22				
Sound Level Meter	SLM13	Rion NL-31	01273096	03/08/2021
Pre Amplifier	SLM13	NH-21	36881	03/08/2021
Microphone	SLM13	UC-53A	313300	03/08/2021
01/04/22 – 03/05/22				
Sound Level Meter	SLM18	Rion NL-32	01283554	04/08/2021
Pre Amplifier	SLM18	NH-21	29311	04/08/2021
Microphone	SLM18	UC-53A	315581	04/08/2021
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0501	14:30 01/03/22	10:11 01/04/22	94.0	93.9	-0.1	01/03: Installation – Wind induced noise. 01/04: Maintenance – Wind induced noise. (GMT / IST correction). ***SLM 13 swapped for SLM 18 as it would not power on.**
0502	11:40 01/04/22	13:59 03/05/22	94.0	94.2	0.2	03/05: Decommissioning – Birdsong, cattle lowing in distance.

PHOTOGRAPHS

NML5 – N

NML5 – E

NML5 – W

Noise Monitoring Field Data Sheet

Project Title	Umma More Renewable Energy Development	**Project Number**	14373
Client	Umma More Ltd	**Surveyor**	CB

MONITORING LOCATION

Location Name	Noise Monitoring Location 6 (NML6)
Description	The noise monitoring equipment was installed to the north east of the property. The kit was placed greater than 3.5 m away from any reflective surfaces (excluding the ground).
Approximate ITM Reference	E: 618020, N: 747119
Noise sources noted during installation, weekly inspection, and removal	Tree cutting in adjacent fields (installation only), birdsong (dominant), occasional cars passing, airplane overhead and cattle lowing.

NOISE MONITORING EQUIPMENT DETAILS

	Kit Number	Model	Serial Number	Last Calibrated/ Conformance Checked
Sound Level Meter	SLM25	Rion NL-32	00703296	15/11/2021
Pre Amplifier	SLM25	NH-21	33587	15/11/2021
Microphone	SLM25	UC-53A	317048	15/11/2021
Calibrator	CAL003	Rion NC-74	35173441	10/03/2021
Calibrator	CAL001	Rion NC-74	34762316	07/03/2022

NOISE MONITORING EQUIPMENT SETTINGS

	Network (A,B,Z)	Index and Time	Time Weighting (Slow, Fast)	Range (dB)	Audio
Parameters Recorded	A	$L_{A9010min}$, $L_{Aeq10min}$	Fast	20-110	No

DATA

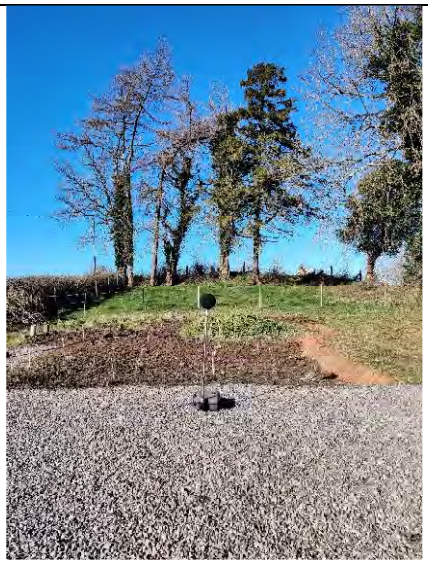
File Name	Start Time	End Time	Cal. at Start	Cal. at End	Drift	Observations
0601	10:40 01/03/22	09:01 01/04/22	94.0	93.9	-0.1	01/03: Installation –Birdsong (dominant), distant road traffic noise, construction noise from a development to the west. 01/04: Maintenance – Birdsong (dominant), cattle lowing. (GMT / IST correction).
0602	10:30 01/04/22	13:43 03/05/22	94.0	94.2	+0.2	03/05: Decommissioning – Birdsong (dominant), cattle lowing, occasional car passing.

PHOTOGRAPHS

NML6 – N

NML6 – S

NML6 – E



NML6 – W

Zephir Campaign Device Installation Checklist

DISTRIBUTION:

Client:

Umma More Ltd.

	Name	Job Title	Signature
Site Engineer	Niall Galvin	Project Engineer	
Prepared by	Niall Galvin	Project Engineer	
Reviewed by	Niall Galvin	Project Engineer	
Authorized by	Thomas Scanlon	Project Engineer	
Date of Issue	25/02/2022	**Classification:**	Confidential

Client	Umma More Ltd.
Site name	Umma More Wind Farm
Project number	0099
Site information	
Deployment start date & time	28/02/2022 @ 12:00
Client contact details	Niall Galvin (+353) 86 8747196
Landowner contact details	Arranged by client
Site access procedure	Contact WFSO operational control number (+353) 21 7355898 before entering site and again when leaving site.
Site access route	Hardcore Surface to the Zephir unit
Nearest town / Postcode	Moate, Co. Westmeath.
Observed conditions	
Wind speed	Good wind. Between 5 & 12 m/s
Wind direction	West – South – West
Precipitation	0%
Visibility	Clear
Deployment information	
Installation Engineer(s)	Niall Galvin & James Crowley
Model of device(s)	Zephir 300 (573)
Serial number of device(s)	
Location information	
Irish Grid coordinates	IG E220352, N245418
Elevation	68m
Location description	Unit is located on a hardcore surface
Road Type	Hardcore Road Track
Distance from Access Road	You can drive within 1m of the Zephir with most vehicles

Vehicle Requirements	Car/Jeep/Van/Tractor	
Terrain Type	Low lying and flat	
Current Land use	Agriculture	
Seasonal Land use (e.g. crops)	Grazing	
Communications		
Router Hardware	Waltz software	
SIM Card Number	No SIM card	
SIM Card IP Address		
Signal strength (-dBm)		
Power supply		
Type	230V standard 3-pin socket	
Distance from Zephir (cable length)	36m	
Fuel level		
Photos (including photo numbers)		
360° from North	Figure 1,2,3 & 4	
Ground conditions	Marginal Land.	
Others	See notes below	
Device configuration		
Alignment (offset from north)	Due North	
Scan type	VAD (Basic)	
Max Range	Met Station is positioned on the Zephir cage. Clear Span is 12m East – 36m South-South-East and 50m+ in all other directions. See images.	
VAD Processing	ON	~~OFF~~

Hourly Scanner Home	ON	~~OFF~~	
Hourly Window Wipe	ON	~~OFF~~	
Auto Clean	ON	~~OFF~~	~~NA~~
Heat up Before Start	ON	~~OFF~~	~~NA~~
Software version	Zephir Lidar ZP573		
Target description	Located along existing farm road between T08 & T09		
Distance to target			
Target coordinates	IG E220352, N245418		
Target elevation	70m		
Settings File			
Segments			
Scan file			
Number of beams			
Azimuth	**Elevation``**		
Notes			

Zephir measurement heights set to:
10m, 33m, 48m, 63m, 78m, 98m, 102m, 108m, 123m, 148m

Site Description:
From the Zephir -
North – Ground level drops – Agricultural Lands.
East – Agricultural Lands – Farm Shed approx. 12m away.
South – Agricultural Lands – slight incline.
West – Agricultural Lands – relatively level..
Note: Zephir is fixed in a secured cage. A **2m offset** is used to allow for height difference in the cage. Reported heights vs. ground level is set in the software.

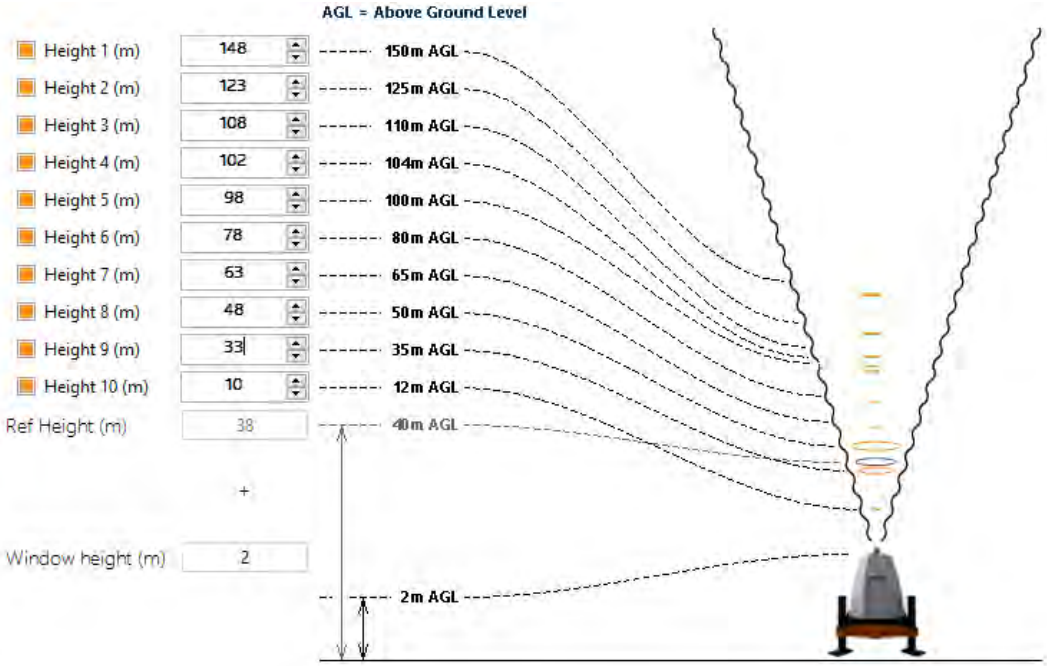
Photo’s

Figure 1 – Zephir from South looking North

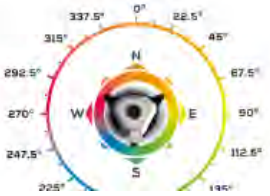
Figure 2 – Zephir from North looking South

Figure 3 – Zephir from West facing East

Figure 4 – Zephir from East facing West



Bearing 0 deg



Waltz v4.7

Logout

TOOLS

Status

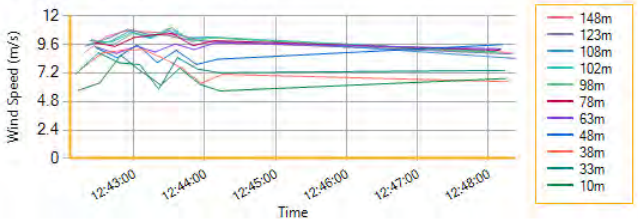
Config

Actions

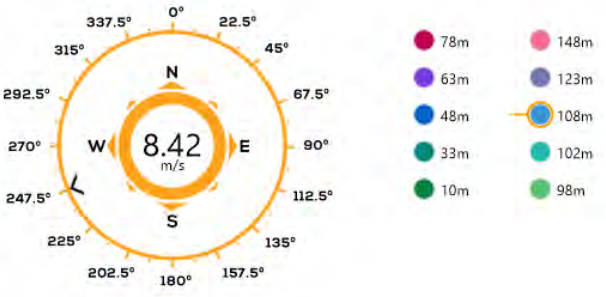
Data

Power...

HISTORY Wind Speed Wind Profile



HORIZONTAL WIND



INFORMATION

Reference	1364
Time and Date	25/02/2022 12:48:23
Filtering Applied	None
Vertical Wind Speed (m/s)	-0.62
Height (m)	108.00
Status Flags	Fully Operational
Info. Flags	I-net Shutter-Open
Battery (V)	11.90
Met Air Temp. (C)	8.60
Met Pressure (mbar)	1016.50
Met Humidity (%)	73.59
Met Tilt (deg)	2
Met Wind Speed (m/s)	6.53
GPS	53.45865 -7.69435

Show Additional Information...

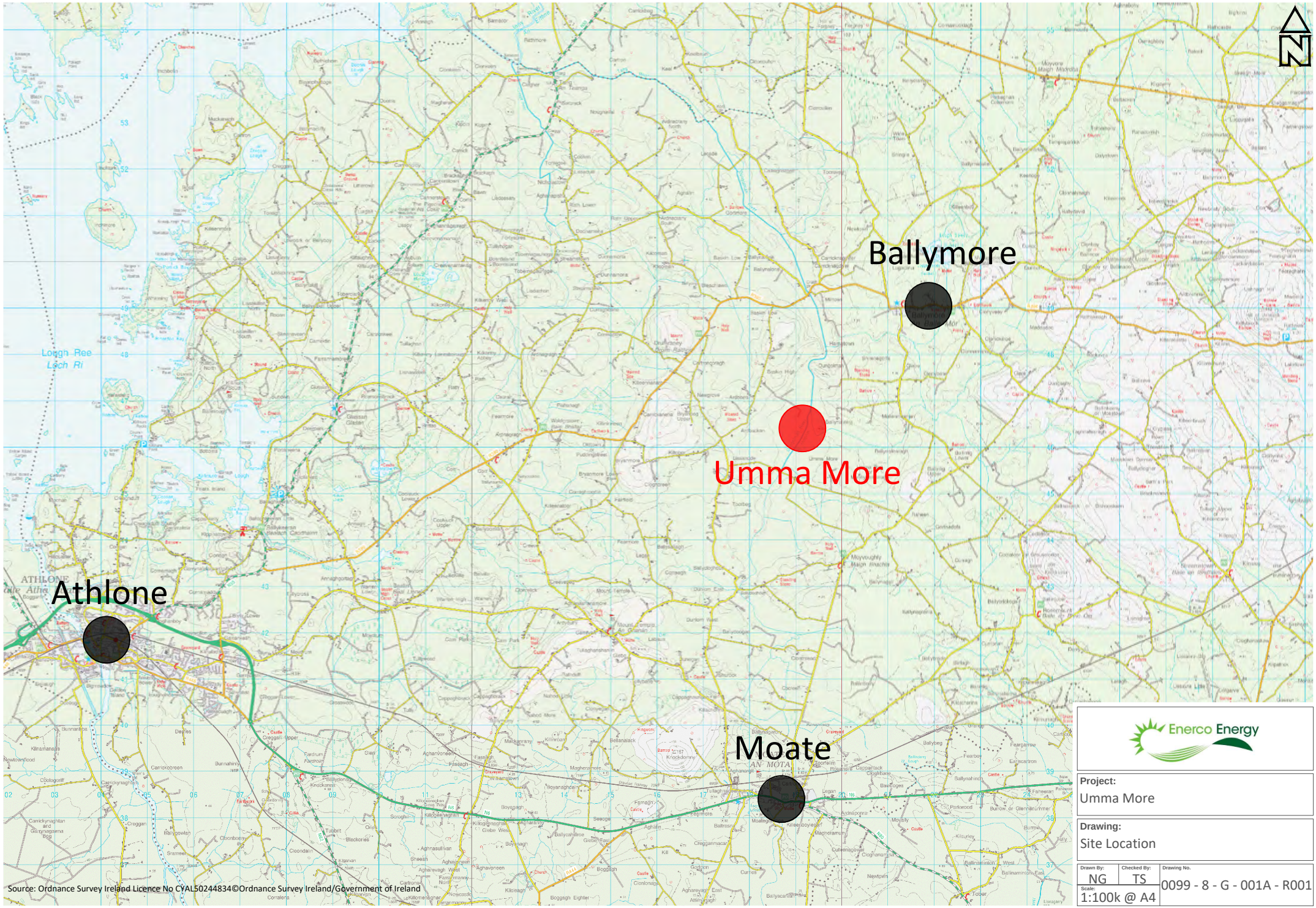
SYSTEM

Unit: 573 Live

STREAM VIEW

WIND INDUSTRY

+44 (0) 1531 651 000 support@zxlidar.com



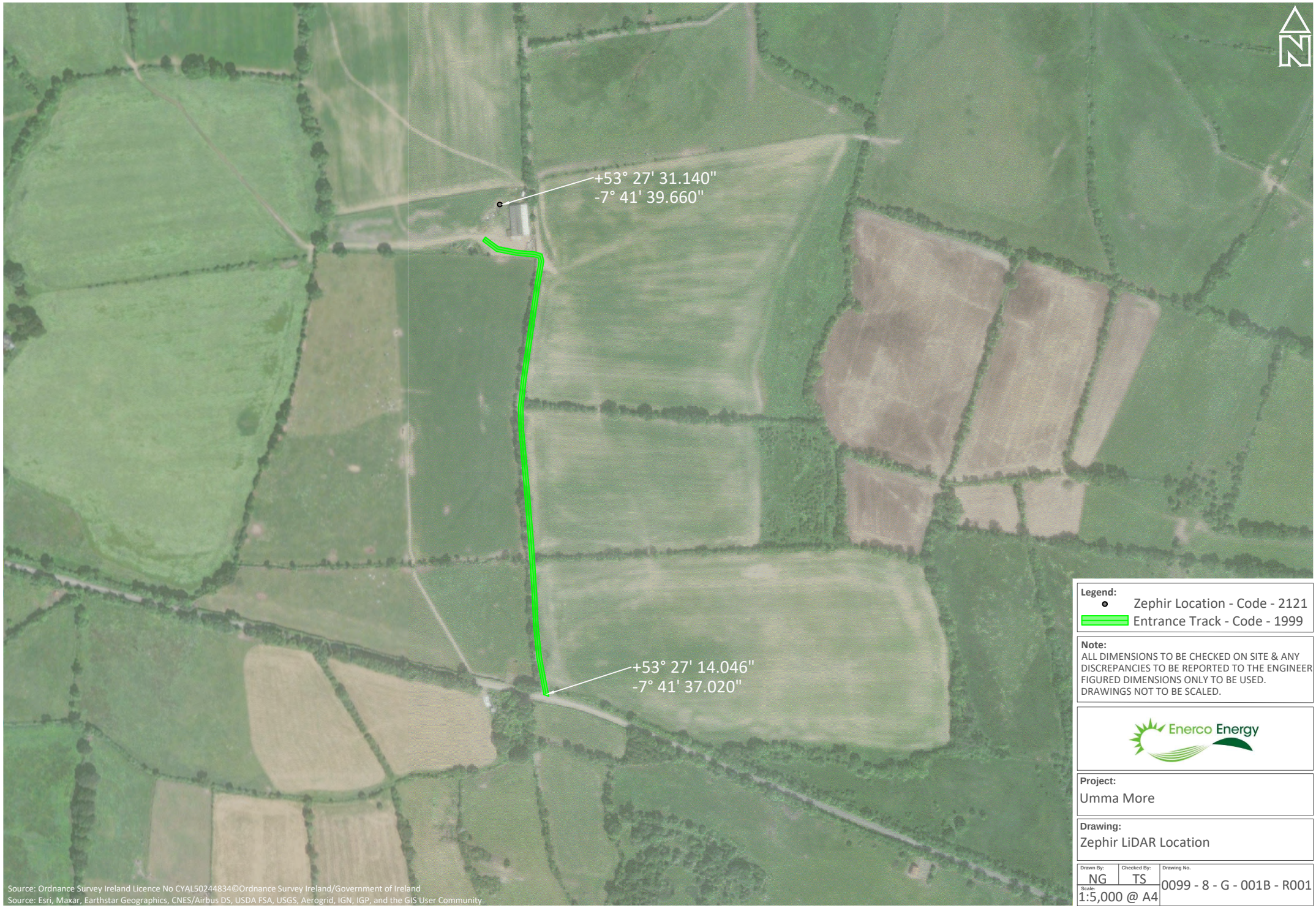
Source: Ordnance Survey Ireland Licence No CYAL50244834©Ordnance Survey Ireland/Government of Ireland

Enerco Energy

Project:
Umma More

Drawing:
Site Location

Drawn By:	Checked By:	Drawing No.
NG	TS	0099 - 8 - G - 001A - R001
Scale: 1:100k @ A4		



Source: Ordnance Survey Ireland Licence No CYAL50244834©Ordnance Survey Ireland/Government of Ireland
Source: Esri, Maxar, Earthstar Geographics, CNES/Airbus DS, USDA FSA, USGS, Aerogrid, IGN, IGP, and the GIS User Community

Legend:
- Zephir Location - Code - 2121
- Entrance Track - Code - 1999

Note:
ALL DIMENSIONS TO BE CHECKED ON SITE & ANY DISCREPANCIES TO BE REPORTED TO THE ENGINEER
FIGURED DIMENSIONS ONLY TO BE USED.
DRAWINGS NOT TO BE SCALED.

Enerco Energy

Project:
Umma More

Drawing:
Zephir LiDAR Location

Drawn By:	Checked By:	Drawing No.
NG	TS	0099 - 8 - G - 001B - R001
Scale: 1:5,000 @ A4		

Annex 3 – Calibration/ Conformance Certificates for Sound Level Meters and Calibrator

NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Ireland Limited Unit S12 Synergy Centre Technological University Dublin Campus Tallaght Dublin D24 A386
Attention of	Ewan Watson

Certificate Number	**215237**
Item Calibrated	Rion NL-32 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	00661767 (Sound Level Meter) and 310458 (Microphone)
ID Number	SLM001
Order Number	4
Date Received	14 Dec 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0744 [Cal Due Date: 03 Jun 2023] B&K 4228 Pistonphone, No. 0740 [Cal Due Date: 04 Jun 2023] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 07 Oct 2022]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	06 Jan 2022	**Date of Issue**	06 Jan 2022

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: **£**	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: **&**	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: **$**	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: **#**	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: **¢**	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	100.0 kPa ± 0.5 kPa
Temperature:	20.7 °C ± 1 °C
Relative Humidity:	35 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was confirmed to be reading correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) [1]

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading[2]
Microphone installed	A	20.2 dB (U/R)[3]
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	17.4 (U/R)[3]
	C	21.4
	Z (Linear)	25.1

Acoustical signal test of a frequency weighting (Test #11) [1]

Range: 40 - 130 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level[4]	Input Freq.	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.2	1.5	0.3
	4000[7]	+0.9	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 40 - 130 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.7 dB	-0.3 dB	1.5 dB	0.20 dB
125	93	92.8	-0.2	1.5	0.20
250	93	92.8	-0.2	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.1	+0.1	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.2	+0.2	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	92.6 dB	-0.4 dB	1.5 dB	0.20 dB
125	93	93.0	0.0	1.5	0.20
250	93	93.0	0.0	1.4	0.20
500	93	93.0	0.0	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.1	+0.1	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.2	+0.2	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	92.6 dB	-0.4 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	92.9	-0.1	2.1, -3.1	0.20
16000	93	92.4	-0.6	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 40 - 130 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty. of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		+0.2	0.4	0.20
	Z		+0.2	0.4	0.20
Slow	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	103.9	-0.1	1.1	0.20
	109	108.9	-0.1	1.1	0.20
	114	113.9	-0.1	1.1	0.20
	119	118.9	-0.1	1.1	0.20
	124	123.9	-0.1	1.1	0.20
	129	128.9	-0.1	1.1	0.20
	131	131.0	0.0	1.1	0.20
	132	132.0	0.0	1.1	0.20
	133	133.0	0.0	1.1	0.20
	134	134.0	0.0	1.1	0.20
	135	135.0	0.0	1.1	0.20
	136	136.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.21
	84	84.0	0.0	1.1	0.21
	79	78.9	-0.1	1.1	0.21
	74	74.0	0.0	1.1	0.21
	69	68.9	-0.1	1.1	0.21
	64	63.9	-0.1	1.1	0.21
	59	58.9	-0.1	1.1	0.21
	54	54.0	0.0	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	93.9 dB	-0.1 dB	1.1 dB	0.20 dB
	115.0	114.9	-0.1	1.1	0.20
110 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	105.0	105.0	0.0	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.0	0.0	1.1	0.20
90 dB	85.0 dB	84.9 dB	-0.1 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	75.0 dB	0.0 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	135.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	118.0	0.0	1.3	0.3
0.25 msec	LAF	109.0	-0.1	1.3, -3.3	0.3
200 ms	LAS	128.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	109.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	129.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	109.3	0.0	1.3	0.3
0.25 ms	SEL	100.0	-0.1	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	130.4 dB	-0.1 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.3 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.1 dB	-	-	-
Negative ½ cycle at 4 kHz	139.1 dB	-	-	-
Level difference of positive & negative pulses	-	0.0 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 215237

Rion
Type: UC-53A

Serial no: 310458

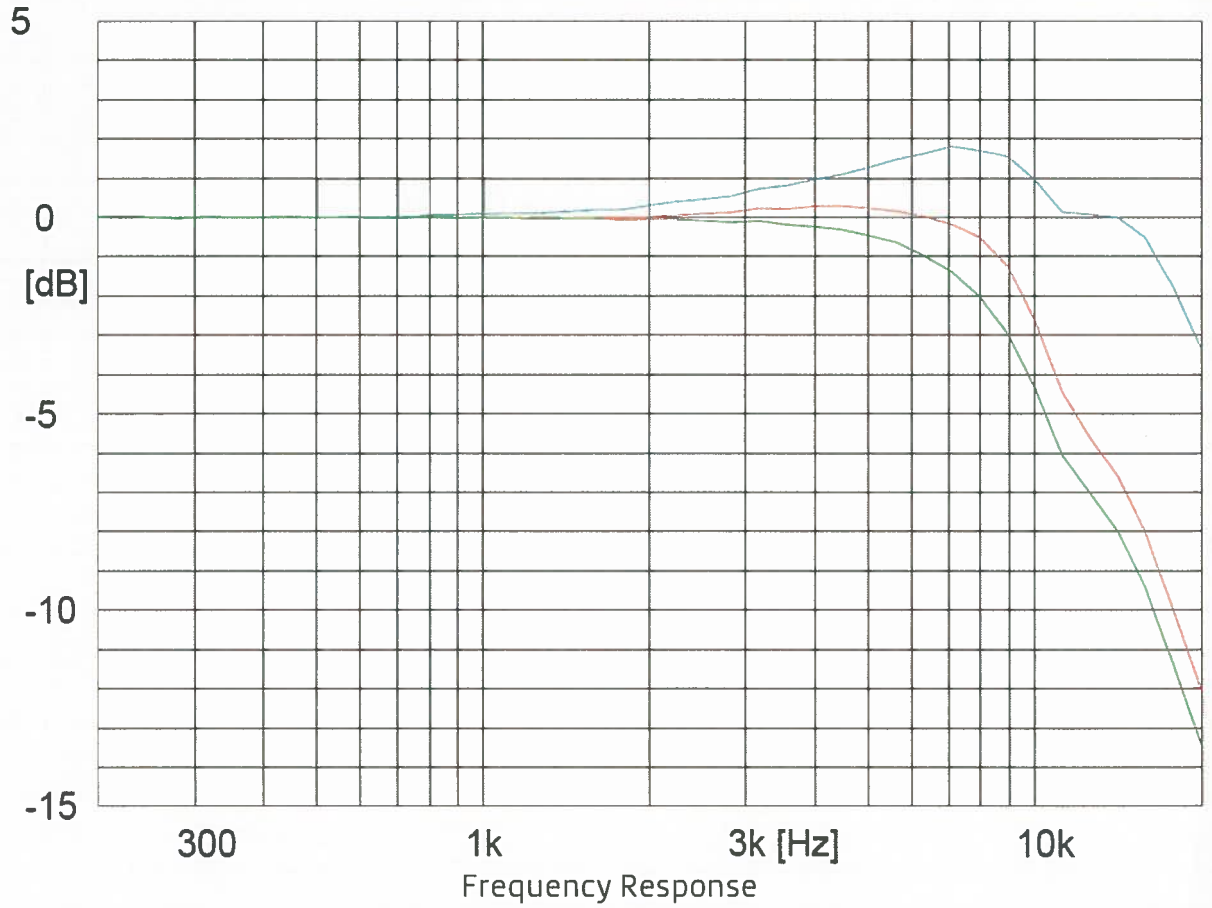
Sensitivity: 40.0 mV/Pa
-28.0 ±0.01 dB re. 1 V/Pa

Date: 06/01/2022

Measurement conditions:	
Polarisation voltage:	0.0 V
Pressure:	100.02 ±0.01 kPa
Temperature:	20.7 ±1.1 °C
Relative humidity:	35.2 ±2.4 %RH

Results are normalized to the reference conditions.

Free field response
Diffuse field response
Pressure (Actuator) response



IAC Ltd
Emerald House
11 Fitzwilliam Terrace
Strand Road, Bray
Co Wicklow A98R8X9

Sysmex Nederland B.V.
Ecustraat 11
4870 AG Etten Leur

CALIBRATION CERTIFICATE

Certificate number: 311465401983

Applicant: TENI
2nd Floor Bainbridge House 86-90 London Road
MANCHESTER M1 2PW
England

Instrument:	Make	Type	Serial number
Sound level meter :	Rion	NL-32	00972337
Microphone :	Rion	UC-55A	316005
Preamplifier :	Rion	NH-21	25122

Calibration date: 08 Jun. 2021

Calibration method: The sound level meter with microphone and microphone preamplifier has been verified against the requirements as specified in the IEC 61672 standards (method AC10 and AC20) for the applicable class of accuracy (class 1 or class 2).
Before and after the tests the sound level meter is calibrated with an acoustic calibrator (nominal sound level 94.0 dB; frequency 1 kHz) and adjusted if necessary.

Results: The results of the verification are stated on page 2 of this certificate. The ambient temperature during the measurements was 23,0 °C ± 3 °C.

Traceability: The measurements have been executed using standards for which the traceability to (inter)national standards has been demonstrated towards the Raad voor Accreditatie.

Executed

Etten Leur, 08 Jun. 2021

Valère van Unen

V. van Unen
Product Application Specialist Calibration

Status of the instrument				
Measurement		Upon receipt (Pass/Fail)	Adjusted (Yes/No)	After adjust-ment (Pass/Fail)
1*	Reading under reference conditions IEC 61672-3 (2013) 10	Fail	Yes	Pass
2	Frequency response (acoustic), C frequency weighting IEC 61672-3 (2013) 12	Pass	No	Pass
3	Supplied acoustic calibrator IEC 61672-3 (2013) 3.6	Refer to separate certificate		
4	Frequency weighting (electrical input), A, C and Lin frequency weigthing IEC 61672-3 (2013) 13	Pass	No	Pass
5	Frequency and Time weighting at 1 kHz (A, C and Lin frequencyweighting) IEC 61672-3 (2013) 14	Pass	No	Pass
6	Accuracy of the attenuator IEC 61672-3 (2013) 16, 17	Pass	No	Pass
7	Toneburst F, S, SEL and Cpeak IEC 61672-3 (2013) 18, 19	Pass	No	Pass
8	Linearity of the indicator IEC 61672-3 (2013) 16	Pass	No	Pass

Measurement uncertainty:
Measurement 1: Reading under reference conditions: ± 0.3 dB
Measurement 2: Frequency response: 125 Hz – 2 kHz: ± 0.3 dB, 8 kHz: ± 0.6 dB
Measurement 4 to 8: Electrical properties: ± 0.15 dB / 0.1 Hz

The reported uncertainty is based on a standard uncertainty multiplied by a coverage factor *k*=2, which provides a confidence level of approximately 95 %. The standard uncertainty has been determined in accordance with EA-4/02.

* Refer to table below for detailed results x: Not applicable

Measurement results before and after adjustment (acoustic calibration)			
Measurement		Upon receipt Deviation (dB)	After adjustment Deviation (dB)
1	Deviation of the reading under reference conditions (at 94.0 dB – 1 kHz). IEC 61672-3 (2013) 10, 15	-,- ***	0,0 **

** After verification of all properties

*** Replaced microphone, historical values are no longer traceable

NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Group Floor 7 West One Forth Banks Newcastle Upon Tyne England
Attention of	Ewan Watson

Certificate Number	**211432**
Item Calibrated	Rion NL-31 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	01273087 (Sound Level Meter) and 313365 (Microphone)
ID Number	SLM012
Order Number	1684
Date Received	13 Apr 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters.* This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 21 May 2021] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 21 May 2021] B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 27 May 2022] B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 26 May 2022] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 02 Sep 2021]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	16 Apr 2021	**Date of Issue**	16 Apr 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:

(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	102.6 kPa ± 0.5 kPa
Temperature:	22.2 °C ± 1 °C
Relative Humidity:	37 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was confirmed to be reading correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) (1)

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading(2)
Microphone installed	A	20.1 dB
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	17.1 (U/R)(3)
	C	24.1
	Z (Linear)	31.1

Acoustical signal test of a frequency weighting (Test #11) (1)

Range: 20 - 110 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level(4)	Input Freq.	SLM Error of Indication(5)	Tolerance(6) (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.2	1.5	0.3
	4000(7)	-0.1	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 20 - 110 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.8 dB	-0.2 dB	1.5 dB	0.20 dB
125	93	92.8	-0.2	1.5	0.20
250	93	92.8	-0.2	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.3	+0.3	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	92.9 dB	-0.1 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	93.0	0.0	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.4	+0.4	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	92.7 dB	-0.3 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	92.9	-0.1	2.1, -3.1	0.20
16000	93	92.4	-0.6	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 30 - 120 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty. of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		0.0	0.4	0.20
	Z		0.0	0.4	0.20
Slow	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	104.0	0.0	1.1	0.20
	109	109.0	0.0	1.1	0.20
	114	114.0	0.0	1.1	0.20
	119	119.0	0.0	1.1	0.20
	124	124.0	0.0	1.1	0.20
	129	129.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.20
	84	84.0	0.0	1.1	0.20
	79	79.0	0.0	1.1	0.20
	74	74.0	0.0	1.1	0.20
	69	69.0	0.0	1.1	0.20
	64	64.0	0.0	1.1	0.20
	59	59.0	0.0	1.1	0.21
	54	54.0	0.0	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	93.9 dB	-0.1 dB	1.1 dB	0.20 dB
	115.0	114.9	-0.1	1.1	0.20
110 dB	94.0 dB	93.9 dB	-0.1 dB	1.1 dB	0.20 dB
	105.0	104.9	-0.1	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.0	0.0	1.1	0.20
90 dB	85.0 dB	85.0 dB	0.0 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	74.9 dB	-0.1 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	116.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	99.0	0.0	1.3	0.3
0.25 msec	LAF	90.0	-0.1	1.3, -3.3	0.3
200 ms	LAS	109.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	90.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	110.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	90.3	0.0	1.3	0.3
0.25 ms	SEL	81.0	-0.2	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	133.4 dB	-0.2 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.3 dB	-	-	-
Negative ½ cycle at 4 kHz	139.2 dB	-	-	-
Level difference of positive & negative pulses	-	0.1 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 211432

Rion
Type: UC53A

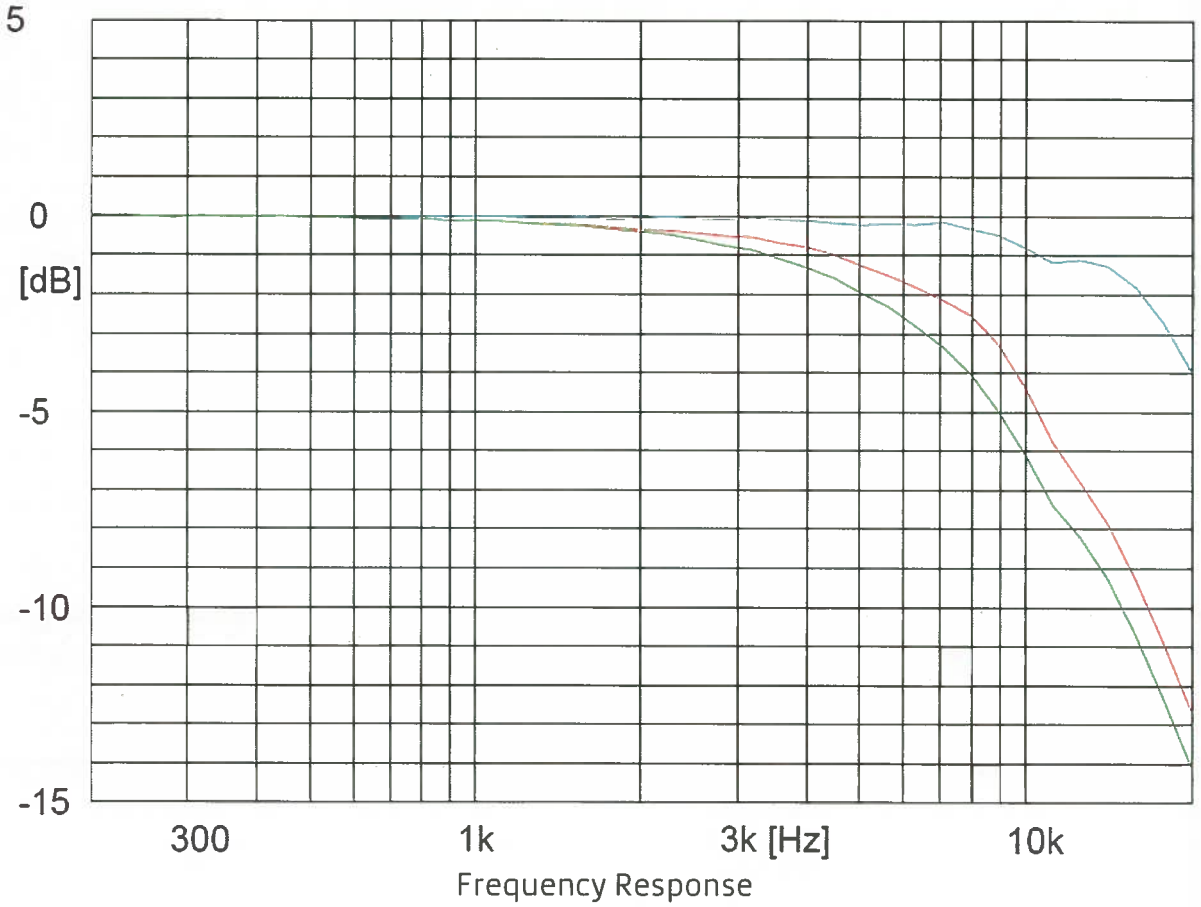
Serial no: 313365

Sensitivity: 46.1 mV/Pa
-26.7 ±0.10 dB re. 1 V/Pa

Date: 16/04/2021

Measurement conditions:	
Polarisation voltage:	0.0 V
Pressure:	102.62 ±0.03 kPa
Temperature:	22.2 ±1.1 °C
Relative humidity:	43.5 ±5.4 %RH
Results are normalized to the reference conditions.	

Free field response
Diffuse field response
Pressure (Actuator) response



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Group Floor 7 West One Forth Banks Newcastle Upon Tyne England
Attention of	Ewan Watson

Certificate Number	**212991**
Item Calibrated	Rion NL-31 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	01273096 (Sound Level Meter) and 313300 (Microphone)
ID Number	SLM013
Order Number	1696
Date Received	20 Jul 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 27 May 2022] B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 26 May 2022] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 02 Sep 2021]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	03 Aug 2021	**Date of Issue**	03 Aug 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org).

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: **£**	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: **&**	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: **$**	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: **#**	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: **¢**	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	100.8 kPa ± 0.5 kPa
Temperature:	22.0 °C ± 1 °C
Relative Humidity:	51 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was adjusted to read correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) (1)

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading(2)
Microphone installed	A	20.1 dB
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	16.7 (U/R)(3)
	C	24.5
	Z (Linear)	29.7

Acoustical signal test of a frequency weighting (Test #11) (1)

Range: 20 - 110 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level(4)	Input Freq.	SLM Error of Indication(5)	Tolerance(6) (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.2	1.5	0.3
	4000(7)	+0.2	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 20 - 110 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.9 dB	-0.1 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.3	+0.3	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	92.8 dB	-0.2 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	93.0	0.0	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.3	+0.3	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	92.8 dB	-0.2 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	92.9	-0.1	2.1, -3.1	0.20
16000	93	92.4	-0.6	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 30 - 120 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty. of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		0.0	0.4	0.20
	Z		0.0	0.4	0.20
Slow	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	104.0	0.0	1.1	0.20
	109	109.0	0.0	1.1	0.20
	114	114.0	0.0	1.1	0.20
	119	118.9	-0.1	1.1	0.20
	124	124.0	0.0	1.1	0.20
	129	129.0	0.0	1.1	0.20
	132	132.0	0.0	1.1	0.20
	133	133.0	0.0	1.1	0.20
	134	134.0	0.0	1.1	0.20
	135	135.0	0.0	1.1	0.20
	136	136.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.20
	84	84.0	0.0	1.1	0.20
	79	79.0	0.0	1.1	0.20
	74	74.0	0.0	1.1	0.20
	69	69.0	0.0	1.1	0.20
	64	64.0	0.0	1.1	0.20
	59	59.0	0.0	1.1	0.21
	54	54.0	0.0	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	115.0	115.0	0.0	1.1	0.20
110 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	105.0	105.0	0.0	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.0	0.0	1.1	0.20
90 dB	85.0 dB	84.9 dB	-0.1 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	74.9 dB	-0.1 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	116.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	99.0	0.0	1.3	0.3
0.25 msec	LAF	90.0	-0.1	1.3, -3.3	0.3
200 ms	LAS	109.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	90.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	110.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	90.3	0.0	1.3	0.3
0.25 ms	SEL	81.0	-0.1	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	133.4 dB	-0.8 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.3 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.3 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.3 dB	-	-	-
Negative ½ cycle at 4 kHz	139.1 dB	-	-	-
Level difference of positive & negative pulses	-	0.2 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 212991

Rion
Type: UC53A

Serial no: 313300

Sensitivity: 41.5 mV/Pa
-27.6 ±0.10 dB re. 1 V/Pa

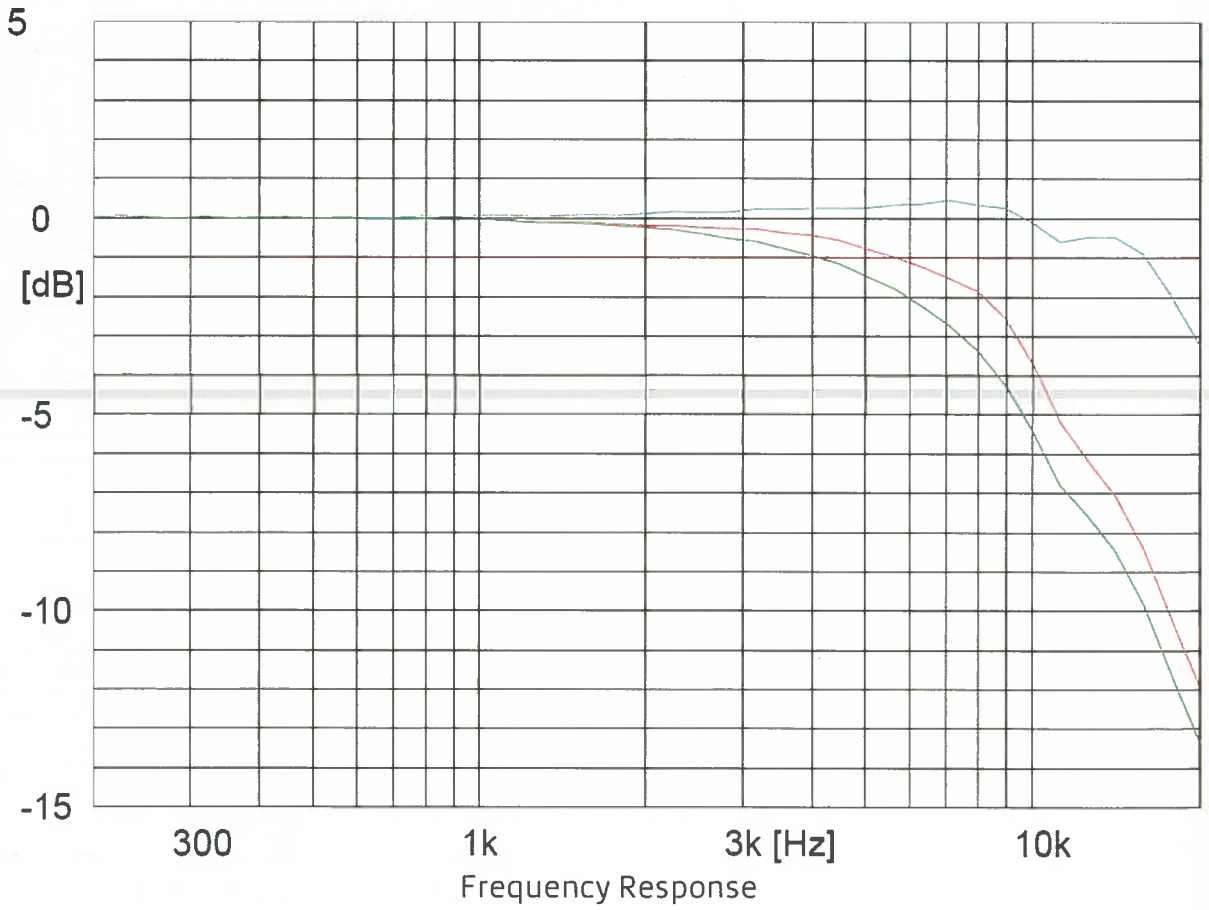
Date: 29/07/2021

Measurement conditions:

Polarisation voltage:	0.0 V
Pressure:	100.38 ±0.02 kPa
Temperature:	22.7 ±1.1 °C
Relative humidity:	45.7 ±2.4 %RH

Results are normalized to the reference conditions.

Free field response
Diffuse field response
Pressure (Actuator) response



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Group Floor 7 West One Forth Banks Newcastle Upon Tyne England
Attention of	Ewan Watson

Certificate Number	**212990**
Item Calibrated	Rion NL-31 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	01273102 (Sound Level Meter) and 313359 (Microphone)
ID Number	SLM014
Order Number	1696
Date Received	20 Jul 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 27 May 2022] B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 26 May 2022] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 02 Sep 2021]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	04 Aug 2021	**Date of Issue**	04 Aug 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org).

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	100.7 kPa ± 0.5 kPa
Temperature:	21.8 °C ± 1 °C
Relative Humidity:	52 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was adjusted to read correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) [1]

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading[2]
Microphone installed	A	19.8 dB
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	17.4 (U/R)[3]
	C	25.1
	Z (Linear)	31.1

Acoustical signal test of a frequency weighting (Test #11) [1]

Range: 20 - 110 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level[4]	Input Freq.	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.1	1.5	0.3
	4000[7]	+0.3	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 20 - 110 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.8 dB	-0.2 dB	1.5 dB	0.20 dB
125	93	92.8	-0.2	1.5	0.20
250	93	92.8	-0.2	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.0	0.0	2.1, -3.1	0.20
16000	93	93.1	+0.1	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	92.9 dB	-0.1 dB	1.5 dB	0.20 dB
125	93	93.1	+0.1	1.5	0.20
250	93	93.1	+0.1	1.4	0.20
500	93	93.1	+0.1	1.4	0.20
1000	93	93.2	+0.2	1.1	0.20
2000	93	93.2	+0.2	1.6	0.20
4000	93	93.3	+0.3	1.6	0.20
8000	93	93.2	+0.2	2.1, -3.1	0.20
16000	93	93.4	+0.4	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	93.1 dB	+0.1 dB	1.5 dB	0.20 dB
125	93	93.1	+0.1	1.5	0.20
250	93	93.1	+0.1	1.4	0.20
500	93	93.2	+0.2	1.4	0.20
1000	93	93.3	+0.3	1.1	0.20
2000	93	93.3	+0.3	1.6	0.20
4000	93	93.4	+0.4	1.6	0.20
8000	93	93.2	+0.2	2.1, -3.1	0.20
16000	93	92.7	-0.3	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 30 - 120 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty. of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		+0.1	0.4	0.20
	Z		+0.2	0.4	0.20
Slow	A	94.0 dB	-0.1 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	103.9	-0.1	1.1	0.20
	109	108.9	-0.1	1.1	0.20
	114	113.9	-0.1	1.1	0.20
	119	118.9	-0.1	1.1	0.20
	124	123.9	-0.1	1.1	0.20
	129	128.9	-0.1	1.1	0.20
	132	131.9	-0.1	1.1	0.20
	133	132.9	-0.1	1.1	0.20
	134	133.9	-0.1	1.1	0.20
	135	134.9	-0.1	1.1	0.20
	136	135.9	-0.1	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	88.9	-0.1	1.1	0.20
	84	83.9	-0.1	1.1	0.20
	79	78.9	-0.1	1.1	0.20
	74	73.9	-0.1	1.1	0.20
	69	68.9	-0.1	1.1	0.20
	64	63.9	-0.1	1.1	0.20
	59	58.9	-0.1	1.1	0.21
	54	53.9	-0.1	1.1	0.21
	49	48.9	-0.1	1.1	0.21
	44	43.9	-0.1	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	115.0	115.0	0.0	1.1	0.20
110 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	105.0	105.0	0.0	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.1	+0.1	1.1	0.20
90 dB	85.0 dB	84.9 dB	-0.1 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	74.9 dB	-0.1 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	116.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	99.0	0.0	1.3	0.3
0.25 msec	LAF	90.0	-0.1	1.3, -3.3	0.3
200 ms	LAS	109.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	90.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	110.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	90.3	0.0	1.3	0.3
0.25 ms	SEL	81.0	-0.1	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	133.4 dB	-0.2 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.3 dB	-	-	-
Negative ½ cycle at 4 kHz	139.2 dB	-	-	-
Level difference of positive & negative pulses	-	0.1 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 212990

Rion
Type: UC53A

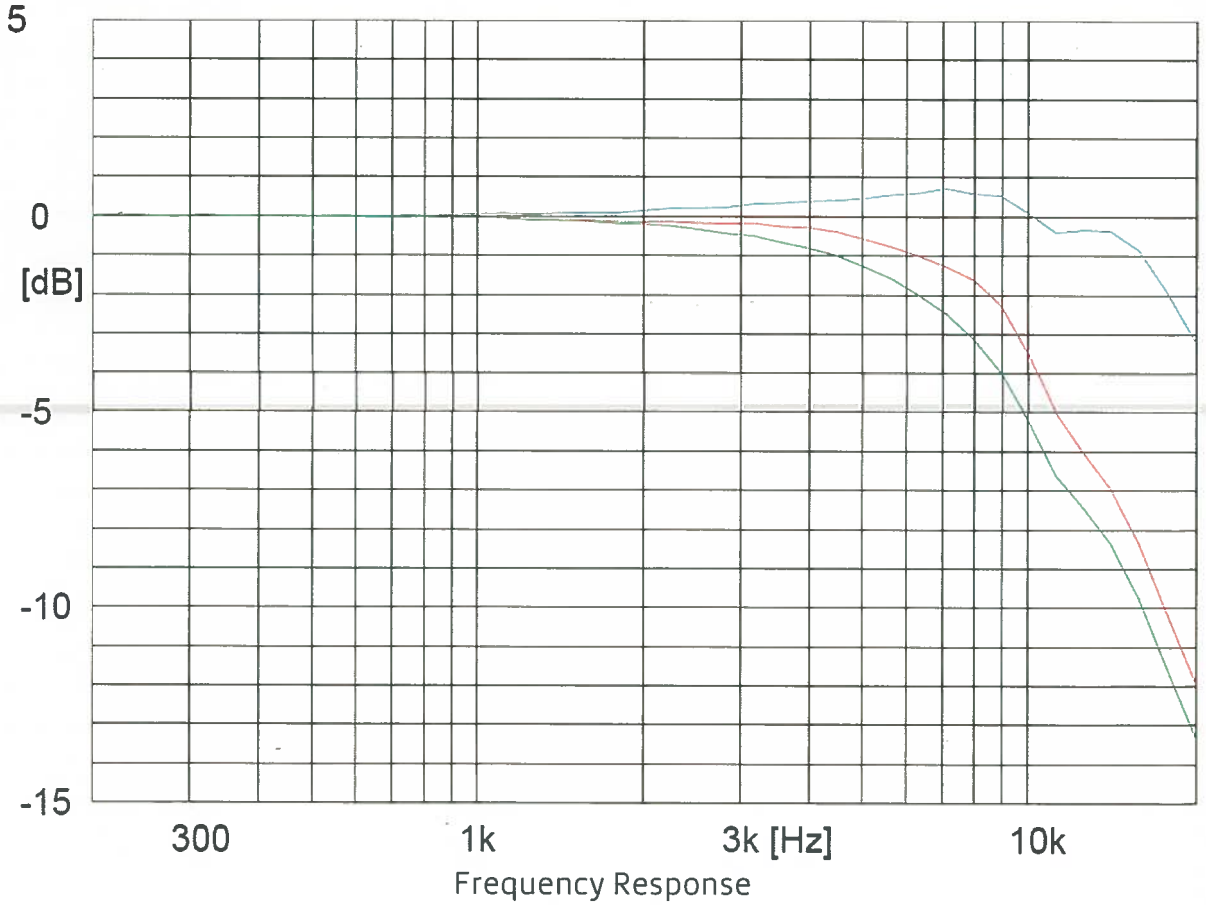
Serial no: 313359

Sensitivity: 43.0 mV/Pa
-27.3 ±0.10 dB re. 1 V/Pa

Date: 03/08/2021

Measurement conditions:	
Polarisation voltage:	0.0 V
Pressure:	100.82 ±0.02 kPa
Temperature:	22.1 ±1.0 °C
Relative humidity:	50.7 ±2.6 %RH
Results are normalized to the reference conditions.	

Free field response
Diffuse field response
Pressure (Actuator) response



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Group Floor 7 West One Forth Banks Newcastle Upon Tyne England
Attention of	Ewan Watson

Certificate Number	**212989**
Item Calibrated	Rion NL-31 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	01283554 (Sound Level Meter) and 315581 (Microphone)
ID Number	SLM018
Order Number	1696
Date Received	20 Jul 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters.* This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0743 [Cal Due Date: 27 May 2022] B&K 4228 Pistonphone, No. 0741 [Cal Due Date: 26 May 2022] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 02 Sep 2021]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	04 Aug 2021	**Date of Issue**	04 Aug 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org).

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: **£**	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: **&**	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: **$**	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: **#**	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: **¢**	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	100.6 kPa ± 0.5 kPa
Temperature:	22.4 °C ± 1 °C
Relative Humidity:	53 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was adjusted to read correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) (1)

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading(2)
Microphone installed	A	12.9 dB
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	16.8 (U/R)(3)
	C	24.1
	Z (Linear)	29.1

Acoustical signal test of a frequency weighting (Test #11)(1)

Range: 20 - 110 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level(4)	Input Freq.	SLM Error of Indication(5)	Tolerance(6) (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.1	1.5	0.3
	4000(7)	+0.5	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 20 - 110 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.7 dB	-0.3 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	93.0	0.0	1.4	0.20
1000	93	93.1	+0.1	1.1	0.20
2000	93	93.1	+0.1	1.6	0.20
4000	93	93.2	+0.2	1.6	0.20
8000	93	93.2	+0.2	2.1, -3.1	0.20
16000	93	93.4	+0.4	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	92.9 dB	-0.1 dB	1.5 dB	0.20 dB
125	93	93.1	+0.1	1.5	0.20
250	93	93.1	+0.1	1.4	0.20
500	93	93.2	+0.2	1.4	0.20
1000	93	93.2	+0.2	1.1	0.20
2000	93	93.2	+0.2	1.6	0.20
4000	93	93.3	+0.3	1.6	0.20
8000	93	93.3	+0.3	2.1, -3.1	0.20
16000	93	93.5	+0.5	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	92.7 dB	-0.3 dB	1.5 dB	0.20 dB
125	93	92.9	-0.1	1.5	0.20
250	93	93.0	0.0	1.4	0.20
500	93	93.1	+0.1	1.4	0.20
1000	93	93.1	+0.1	1.1	0.20
2000	93	93.2	+0.2	1.6	0.20
4000	93	93.3	+0.3	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	92.6	-0.4	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 30 - 120 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty. of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		+0.1	0.4	0.20
	Z		+0.1	0.4	0.20
Slow	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	104.0	0.0	1.1	0.20
	109	109.0	0.0	1.1	0.20
	114	114.0	0.0	1.1	0.20
	119	119.0	0.0	1.1	0.20
	124	124.0	0.0	1.1	0.20
	129	129.0	0.0	1.1	0.20
	132	132.0	0.0	1.1	0.20
	133	133.0	0.0	1.1	0.20
	134	134.0	0.0	1.1	0.20
	135	135.0	0.0	1.1	0.20
	136	136.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.20
	84	84.0	0.0	1.1	0.20
	79	79.0	0.0	1.1	0.20
	74	74.0	0.0	1.1	0.20
	69	69.0	0.0	1.1	0.20
	64	64.0	0.0	1.1	0.20
	59	59.0	0.0	1.1	0.21
	54	54.0	0.0	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	115.0	115.1	+0.1	1.1	0.20
110 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	105.0	105.0	0.0	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.0	0.0	1.1	0.20
90 dB	85.0 dB	84.9 dB	-0.1 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	74.9 dB	-0.1 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	116.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	99.0	0.0	1.3	0.3
0.25 msec	LAF	90.0	-0.1	1.3, -3.3	0.3
200 ms	LAS	109.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	90.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	110.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	90.3	0.0	1.3	0.3
0.25 ms	SEL	81.0	0.0	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	133.4 dB	-0.7 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.3 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.1 dB	-	-	-
Negative ½ cycle at 4 kHz	139.1 dB	-	-	-
Level difference of positive & negative pulses	-	0.0 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 212989

Rion
Type: UC53A

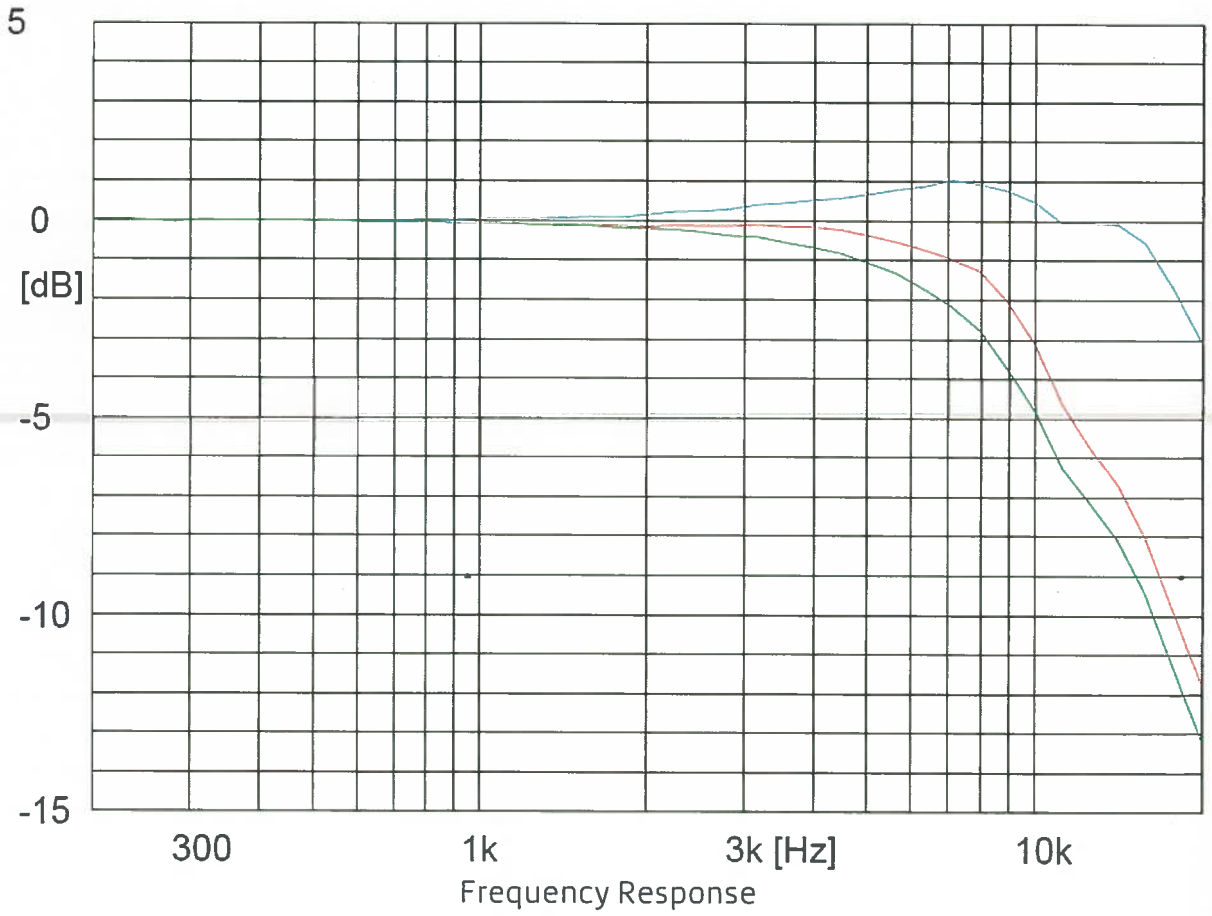
Serial no: 315581

Sensitivity: 42.0 mV/Pa
-27.5 ±0.10 dB re. 1 V/Pa

Date: 04/08/2021

Measurement conditions:	
Polarisation voltage:	0.0 V
Pressure:	100.72 ±0.02 kPa
Temperature:	21.9 ±1.1 °C
Relative humidity:	53.5 ±2.4 %RH
Results are normalized to the reference conditions.	

Free field response
Diffuse field response
Pressure (Actuator) response



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Ireland Limited Unit S12 Synergy Centre Technological University Dublin Campus Tallaght Dublin D24 A386
Attention of	Ewan Watson

Certificate Number	**214283**
Item Calibrated	Rion NL-32 Sound Level Meter, complete with Rion UC53A Microphone
Serial Numbers	00703296 (Sound Level Meter) and 617048 (Microphone)
ID Number	SLM025
Order Number	3
Date Received	18 Oct 2021
NML Procedure Number	AP-NM-09
Method	The above sound level meter was allowed to stabilise for a suitable period in laboratory conditions. It was then calibrated by carrying out the verification tests detailed in IEC 61672-3 (2006), *Periodic tests, specification for the verification of sound level meters*. This standard specifies a procedure for the periodic verification of conformance of a sound level meter or integrating-averaging meter to IEC 61672-1 (2003).
Calibration Standards	Norsonic 1504A Calibration System incorporating: SR DS360 Signal Generator, No. 0735 [Cal Due Date: 10 Jun 2022] Agilent 34401A Digital Multimeter, No. 0736 [Cal Due Date: 10 Jun 2022] B&K 4134 Measuring Microphone, No. 0744 [Cal Due Date: 03 Jun 2023] B&K 4228 Pistonphone, No. 0740 [Cal Due Date: 04 Jun 2023] B&K 4226 Acoustical Calibrator, No. 0150 [Cal Due Date: 07 Oct 2022]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	15 Nov 2021	**Date of Issue**	15 Nov 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Ambient laboratory conditions:

Barometric Pressure:	102.3 kPa ± 0.5 kPa
Temperature:	21.4 °C ± 1 °C
Relative Humidity:	48 %RH ± 5%RH

Summary of Results:

The following table summarises the results of the verification tests. The detailed results are given in the subsequent tables.

IEC 61672 Test	Test Title	Status
10	Self-generated Noise (Electrical)	/
11	Acoustical Signal	PASS
12	Frequency Weighting	PASS
13	Frequency and Time Weighting @ 1 kHz	PASS
14	Level Linearity Test on Reference Level Range	PASS
15	Level Linearity including Range Control	PASS
16	Toneburst Response	PASS
17	Peak C	PASS
18	Overload Indication	PASS

Detailed Results.

Prior to carrying out the verification tests the sound level meter was adjusted to read correctly for pressure response through application of a reference acoustical calibrator.

Self-generated Noise Test (Electrical Input) (Test #10) (1)

Range: 20 - 80 dB
Mode: Leq

SLM Configuration	Freq. Weighting Network	SLM Reading(2)
Microphone installed	A	19.5 dB (U/R)(3)
Microphone replaced by electrical signal device and Fitted with a short-circuit	A	17.1 (U/R)(3)
	C	21.1
	Z (Linear)	24.7

Acoustical signal test of a frequency weighting (Test #11) (1)

Range: 20 - 110 dB
Frequency Weighting setting: C
Time Weighting response: Slow

Input Level(4)	Input Freq.	SLM Error of Indication(5)	Tolerance(6) (±)	Uncertainty of Measurement (±)
94.0 dB	1000 Hz	0.0 dB (Ref)	1.1 dB	0.3 dB
	125	+0.2	1.5	0.3
	4000(7)	+0.1	1.6	0.5

Electrical signal tests of frequency weightings (Test #12)[1]

Range: 20 - 110 dB

Freq. (nominal)	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
A-Weighting					
63 Hz	93 dB	92.7 dB	-0.3 dB	1.5 dB	0.20 dB
125	93	92.8	-0.2	1.5	0.20
250	93	92.8	-0.2	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.0	0.0	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.3	+0.3	3.5, -17	0.20
C-Weighting					
63 Hz	93 dB	93.0 dB	0.0 dB	1.5 dB	0.20 dB
125	93	93.0	0.0	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	93.0	0.0	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.1	+0.1	1.6	0.20
4000	93	93.1	+0.1	1.6	0.20
8000	93	93.1	+0.1	2.1, -3.1	0.20
16000	93	93.3	+0.3	3.5, -17	0.20
LIN Weighting					
63 Hz	93 dB	92.8 dB	-0.2 dB	1.5 dB	0.20 dB
125	93	92.8	-0.2	1.5	0.20
250	93	92.9	-0.1	1.4	0.20
500	93	92.9	-0.1	1.4	0.20
1000	93	93.0	0.0	1.1	0.20
2000	93	93.1	+0.1	1.6	0.20
4000	93	93.2	+0.2	1.6	0.20
8000	93	93.0	0.0	2.1, -3.1	0.20
16000	93	92.6	-0.4	3.5, -17	0.20

Frequency and time weightings at 1 kHz (Test #13)[1]

Range: 30 - 120 dB

Time Weighting Setting	Frequency Weighting Setting	Input Level[4]	Deviation from Reference	Tolerance[6] (±)	Uncertainty of Measurement (±)
Fast	A	94.0 dB	0.0 dB	0.4 dB	0.20 dB
	C		+0.1	0.4	0.20
	Z		0.0	0.4	0.20
Slow	A	94.0 dB	-0.1 dB	0.3 dB	0.20 dB
Leq.	A	94.0 dB	0.0 dB	0.3 dB	0.20 dB
SEL	A	114.0 dB	0.0 dB	0.3 dB	0.20 dB

Linearity level on the reference range (Test #14)[1]

Range: 40 to 130 dB
Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[4]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	99	99.0	0.0	1.1	0.20
	104	104.0	0.0	1.1	0.20
	109	109.0	0.0	1.1	0.20
	114	113.9	-0.1	1.1	0.20
	119	118.9	-0.1	1.1	0.20
	124	123.9	-0.1	1.1	0.20
	129	129.0	0.0	1.1	0.20
	132	132.0	0.0	1.1	0.20
	133	133.0	0.0	1.1	0.20
	134	134.0	0.0	1.1	0.20
	135	135.0	0.0	1.1	0.20
	136	136.0	0.0	1.1	0.20
	94	94.0	0.0	1.1	0.20
	89	89.0	0.0	1.1	0.20
	84	84.0	0.0	1.1	0.20
	79	79.0	0.0	1.1	0.20
	74	74.0	0.0	1.1	0.20
	69	69.0	0.0	1.1	0.20
	64	64.0	0.0	1.1	0.20
	59	59.0	0.0	1.1	0.21
	54	54.0	0.0	1.1	0.21
	49	49.0	0.0	1.1	0.21
	44	44.0	0.0	1.1	0.21

Level Linearity including Range Control (Test #15)[1]

Input Frequency: 1 kHz
SLM Measuring Mode: SPL

Range	Input Level[3]	SLM Reading	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
130 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	125.0	125.0	0.0	1.1	0.20
120 dB	94.0 dB	93.9 dB	-0.1 dB	1.1 dB	0.20 dB
	115.0	115.0	0.0	1.1	0.20
110 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	105.0	105.0	0.0	1.1	0.20
100 dB	94.0 dB	94.0 dB	0.0 dB	1.1 dB	0.20 dB
	95.0	95.0	0.0	1.1	0.20
90 dB	85.0 dB	85.0 dB	0.0 dB	1.1 dB	0.20 dB
80 dB	75.0 dB	75.0 dB	0.0 dB	1.1 dB	0.20 dB

Toneburst response (Test #16)[1]

Range: 40 to 130 dB

Burst Type	SLM Mode	Input Level[4]	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
200 ms	LAF	135.0 dB	0.0 dB	0.8 dB	0.3 dB
2.0 ms	LAF	118.0	-0.1	1.3	0.3
0.25 msec	LAF	109.0	-0.2	1.3, -3.3	0.3
200 ms	LAS	128.6 dB	-0.1 dB	0.8 dB	0.3 dB
2.0 ms	LAS	109.0	-0.1	1.3, -1.8	0.3
200 ms	SEL	129.0 dB	0.0 dB	0.8 dB	0.3 dB
2 .0 ms	SEL	109.3	0.0	1.3	0.3
0.25 ms	SEL	100.0	-0.2	1.3, -3.3	0.3

Peak C sound level (Test #17)[1]

Range: 40 to 130 dB

Pulse Type	Pulse Frequency	Input Level[4] (peak value)	SLM Error of Indication[5]	Tolerance[6] (±)	Uncertainty of Measurement (±)
1 cycle	8 kHz	130.4 dB	-0.8 dB	2.4 dB	0.35 dB
Pos. ½ cycle	500 Hz	132.4 dB	-0.5 dB	1.4 dB	0.35 dB
Neg. ½ cycle	500 Hz	132.4 dB	-0.4 dB	1.4 dB	0.35 dB

Overload indication (Test #18)[1]

Range: 40 to 130 dB
SLM Measuring Mode: LAEq

Test description	Overload occurred at (±)	Meas. Diff. (Pos – Neg)	Tolerance[6] (±)	Uncertainty of Measurement (±)
Positive ½ cycle at 4 kHz	139.4 dB	-	-	-
Negative ½ cycle at 4 kHz	139.1 dB	-	-	-
Level difference of positive & negative pulses	-	0.3 dB	1.8 dB	0.30 dB

Notes:

(1) The test number, given in parentheses after the section heading, refers to the relevant clause in IEC 61672-3 (2006).

(2) SLM denotes Sound Level Meter

(3) U/R denotes Under Range

(4) All input levels are given in dB relative to a 20 µPa reference level.

(5) The SLM Error of Indication is defined as follows:
SLM Error of Indication = SLM Reading - Input Level

(6) The figures in the column labelled 'Tolerance' are the acceptance limits given in IEC 61672-1(2003). These tolerance limits include an allowance for the maximum expanded uncertainty of the test laboratory. The criteria for compliance with the tolerance is that the measurement result, extended by its associated uncertainty, lies within the specified limits.

(7) Microphone response at 4 kHz was measured using an electrostatic actuator. A Free Field correction of +1.2 dB was applied to the measured actuator response.
This measurement is not included in NML's tables of Calibration and Measurement Capabilities, approved under the CIPM MRA.
For information, the measured sensitivity and frequency response of the microphone is given in an addendum to this certificate.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the requirements of IEC 61672-1 (2003) in accordance with the verification procedures set out in IEC 61672-3 (2006) at the time of calibration.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Addendum to Certificate 214283

Rion
Type: UC53A

Serial no: 617048

Sensitivity: 41.4 mV/Pa
-27.7 ±0.01 dB re. 1 V/Pa

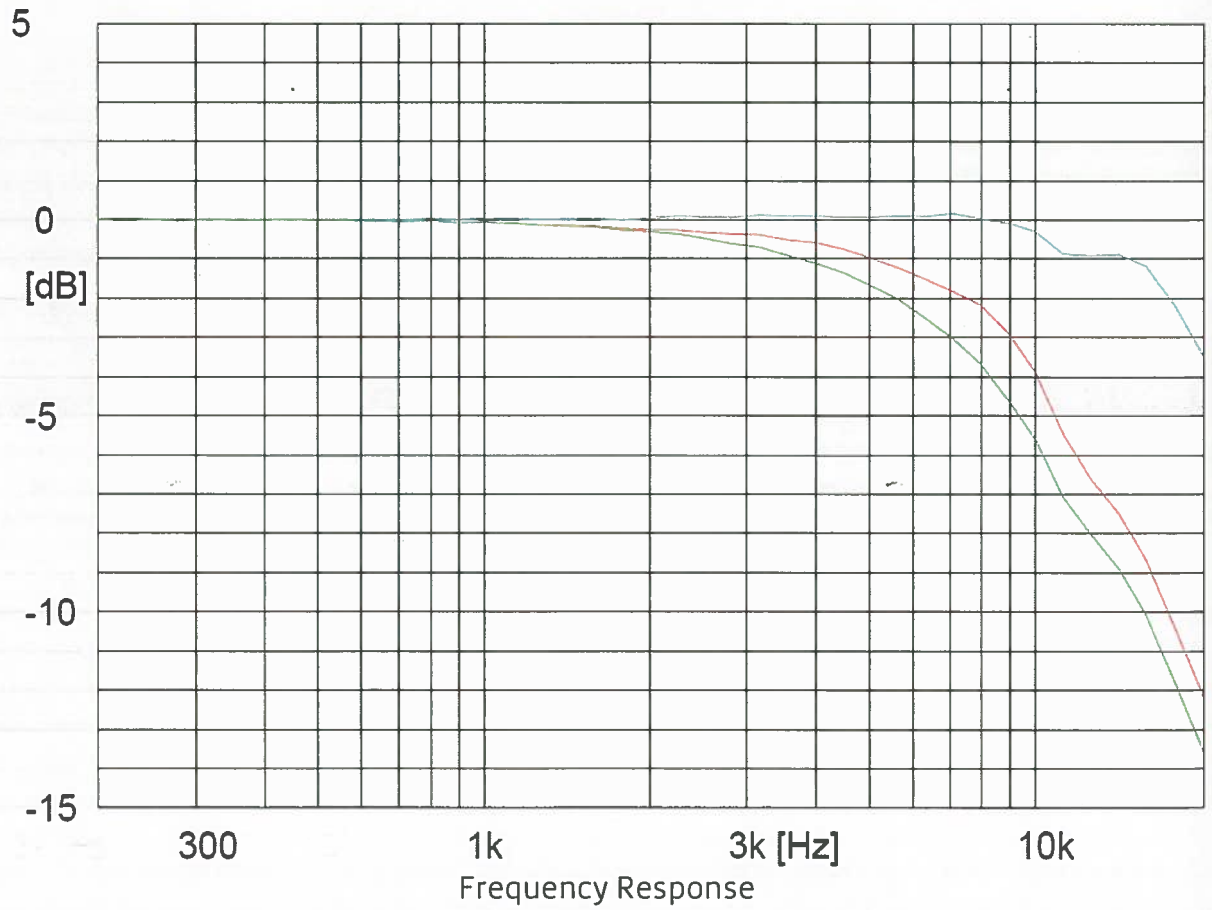
Date: 15/11/2021

Measurement conditions:

Polarisation voltage:	0.0 V
Pressure:	102.28 ±0.01 kPa
Temperature:	21.2 ±1.0 °C
Relative humidity:	48.2 ±2.1 %RH

Results are normalized to the reference conditions.

Free field response
Diffuse field response
Pressure (Actuator) response



NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Ireland Limited Unit S12 Synergy Centre Technological University Dublin Campus Tallaght Dublin 24
Attention of	Ewan Watson

Certificate Number	**221079**
Item Calibrated	RION NC-74 Sound Level Calibrator
Serial Number	34762316
ID Number	None
Order Number	5
Date Received	07 Mar 2022
NML Procedure Number	AP-NM-13
Method	The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity. The calibrator's operating frequency was also measured.
Calibration Standards	Norsonic 1504A Calibration System incorporating: Agilent 34401A Digital Multimeter, File No. 0736 [Cal Due: 10 Jun 2022] B & K 4134 Measuring Microphone, File No. 0744 [Cal Due: 03 Jun 2023] B & K 4228 Pistonphone, File No. 0740 [Cal Due: 04 Jun 2023]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	09 Mar 2022	**Date of Issue**	09 Mar 2022

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: **£**	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: **&**	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: **$**	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: **#**	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: **¢**	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Measuring Conditions:

Ambient Pressure:	(99.8 ± 0.5) kPa
Ambient Temperature:	(22.0 ± 1.0) °C
Ambient Rel. Humidity:	(36 ± 5) %RH

Results:

The measured sound pressure levels (SPL) reported below refer to the ambient laboratory conditions at the time of calibration.

Calibrator Setting	Measured Parameter	Measured Value (1)		Tolerance (3) (±)	Meas. Uncertainty (±)
		Before Adj.	After Adj.		
94 dB	Sound Pressure Level(2)	93.99 dB	*	0.30 dB	0.15 dB
	Frequency	1002.5 Hz	*	20 Hz	0.30 Hz

Notes: (1) * indicates that no calibration adjustment was made.
(2) The measured sound pressure level was that generated in the calibrator's cavity when loaded by the microphone specified on page 1 of this certificate (including protection grid).
(3) Tolerances set out in IEC:60942 (1997).

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to meet the specifications set out in IEC:60942 (1997) for the sound pressure level and frequency outputs measured at the time of calibration.

Note that the measured values refer to the ambient conditions given above.

When using the calibrator with a sound level meter any manufacturer's guidelines regarding free-field corrections should be observed.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI

National Metrology Laboratory

Certificate of Calibration

Issued to	TNEI Ireland Limited Unit S12 Synergy Centre Technological University Campus Tallaght Dublin 24
Attention of	Ewan Watson

Certificate Number	221332
Item Calibrated	RION NC-74 Sound Level Calibrator
Serial Number	35173441
ID Number	None
Order Number	6
Date Received	24 Mar 2022
NML Procedure Number	AP-NM-13
Method	The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity. The calibrator's operating frequency was also measured.
Calibration Standards	Norsonic 1504A Calibration System incorporating: Agilent 34401A Digital Multimeter, File No. 0736 [Cal Due: 10 Jun 2022] B & K 4134 Measuring Microphone, File No. 0744 [Cal Due: 03 Jun 2023] B & K 4228 Pistonphone, File No. 0740 [Cal Due: 04 Jun 2023]

Calibrated by David Fleming

Approved by Paul Hetherington

Date of Calibration 01 Apr 2022

Date of Issue 01 Apr 2022

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Measuring Conditions:

Ambient Pressure:	(102.0 ± 0.5) kPa
Ambient Temperature:	(21.5 ± 1.0) °C
Ambient Rel. Humidity:	(32 ± 5) %RH

Results:

The measured sound pressure levels (SPL) reported below refer to the ambient laboratory conditions at the time of calibration.

Calibrator Setting	Measured Parameter	Measured Value (1)		Tolerance (3) (±)	Meas. Uncertainty (±)
		Before Adj.	After Adj.		
94 dB	Sound Pressure Level(2)	93.95 dB	*	0.40 dB	0.15 dB
	Frequency	1001.8 Hz	*	10 Hz	0.25 Hz

Notes: (1) * indicates that no calibration adjustment was made.
(2) The measured sound pressure level was that generated in the calibrator's cavity when loaded by the microphone specified on page 1 of this certificate (including protection grid).
(3) Tolerance limits set out in IEC 60942:2003, Sound Calibrators, Class 1.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to comply with the requirements of IEC 60942 (2003), Class 1, for the sound pressure level and frequency outputs measured at the time of calibration.

Note that for acoustic calibrators which meet IEC 60942 (2003), the instrument is considered out of tolerance if the measured deviation from the set level, extended by it associated uncertainty, exceeds the specified tolerance limits.

Note that the measured values refer to the ambient conditions given above.

When using the calibrator with a sound level meter any manufacturer's guidelines regarding free-field corrections should be observed.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

NSAI
National Metrology Laboratory

Certificate of Calibration

Issued to

TNEI Group
Floor 7
West One
Forth Banks
Newcastle Upon Tyne
England
NE1 3PA

Attention of Ewan Watson

Certificate Number	**210913**
Item Calibrated	RION NC-74 Sound Level Calibrator
Serial Number	35173441
ID Number	None
Order Number	1679
Date Received	09 Mar 2021
NML Procedure Number	AP-NM-13
Method	The above calibrator was allowed to stabilize for a suitable period in laboratory conditions. It was then calibrated by measuring the sound pressure level generated in its measuring cavity. The calibrator's operating frequency was also measured.
Calibration Standards	Norsonic 1504A Calibration System incorporating: Agilent 34401A Digital Multimeter, File No. 0736 [Cal Due: 24 Apr 2021] B & K 4134 Measuring Microphone, File No. 0743 [Cal Due: 27 May 2022] B & K 4228 Pistonphone, File No. 0741 [Cal Due: 26 May 2022]

Calibrated by	David Fleming	**Approved by**	Paul Hetherington
Date of Calibration	10 Mar 2021	**Date of Issue**	10 Mar 2021

CIPM MRA

This certificate is consistent with Calibration and Measurement Capabilities (CMC's) that are included in Appendix C of the Mutual Recognition Arrangement (MRA) drawn up by the International Committee for Weights and Measures. Under the MRA, all participating institutes recognize the validity of each other's calibration certificates and measurement reports for quantities, ranges and measurement uncertainties specified in Appendix C (for details see www.bipm.org)

Standard Terms & Conditions for Calibration, Testing and Consultancy Assignments

1. Reports issued by the National Metrology Laboratory Division of NSAI are copyright to NSAI and shall not be used, either in whole or in part, for the purposes of advertising, publicity or litigation without the written consent of the Chief Executive or his nominee.
2. No action or legal proceeding shall be taken (except in the case of wilful neglect or default) against NSAI or the Board or any member of the Board or any committee appointed by the Board or any officer or servant of NSAI, by reason of or arising out of the carrying out of any research, investigation, test or analysis or the publication of the results thereof in the name of NSAI.
3. NSAI will not release any information received from or provided to the client in relation to this report except as may be required by law, including the Freedom of Information Act 1997, or as specified by the client.
4. This certificate relates only to the item(s) described on the front page and shall not be reproduced, except in full.
5. This contract is governed by the laws of Ireland whose courts shall have exclusive jurisdiction.

Decision Rule and Compliance Statement

The rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement is known as a decision rule. The rule used by NSAI NML follows the guidelines set out in the document ILAC-G8:09/2019 published by the International Laboratory Accreditation Co-operation. Further information on the decision rule is available on the NSAI website:
(https://www.nsai.ie/images/uploads/metrology/Decision_Rule.pdf).

The symbols used to indicate the state of compliance of the instrument calibration and their meanings are given in the following table.

Statement of compliance and associated symbol	Description
PASS	The absence of a symbol indicates that the measurement result is inside the specification limit by a margin greater than its associated expanded uncertainty; the instrument meets its accuracy specification.
Conditional PASS Symbol: £	The measurement result is inside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state compliance. There is a risk that the instrument fails to meet its specification.
Conditional FAIL Symbol: &	The measurement result is on the specification limit or is outside the specification limit by a margin less than or equal to its associated expanded measurement uncertainty; it is therefore not possible to state non-compliance.
FAIL Symbol: $	The measurement result is outside the specification limit by a margin greater than its associated measurement uncertainty; the instrument fails to meet its accuracy specification.
Unc. > Spec Symbol: #	The expanded measurement uncertainty is greater than the instrument's accuracy specification. It is not possible to determine compliance or otherwise with the specification. The user should expand the in-use accuracy specification to make allowance for the calibration uncertainty.
Outside CIPM MRA Symbol: ¢	Indicates that the calibration result is traceable to SI units but is not currently included in the table of NSAI NML's calibration and measurement capabilities approved under the CIPM MRA.

Where no specification exists, and none is prescribed by the client, the Decision Rule policy of the NSAI NML does not apply and results are provided without a statement of compliance.

Measuring Conditions:

Ambient Pressure:	(99.3 ± 0.5) kPa
Ambient Temperature:	(20.5 ± 1.0) °C
Ambient Rel. Humidity:	(38 ± 5) %RH

Results:

The measured sound pressure levels (SPL) reported below refer to the ambient laboratory conditions at the time of calibration.

Calibrator Setting	Measured Parameter	Measured Value (1)		Tolerance (3) (±)	Meas. Uncertainty (±)
		Before Adj.	After Adj.		
94 dB	Sound Pressure Level(2)	94.00 dB	*	0.40 dB	0.15 dB
	Frequency	1001.8 Hz	*	10 Hz	0.25 Hz

Notes: (1) * indicates that no calibration adjustment was made.
(2) The measured sound pressure level was that generated in the calibrator's cavity when loaded by the microphone specified on page 1 of this certificate (including protection grid).
(3) Tolerance limits set out in IEC 60942:2003, Sound Calibrators, Class 1.

Comments:

Where used in the results table, further information on the meaning of symbols is given in the table on page 2 of this certificate.

The instrument was found to comply with the requirements of IEC 60942 (2003), Class 1, for the sound pressure level and frequency outputs measured at the time of calibration.

Note that for acoustic calibrators which meet IEC 60942 (2003), the instrument is considered out of tolerance if the measured deviation from the set level, extended by it associated uncertainty, exceeds the specified tolerance limits.

Note that the measured values refer to the ambient conditions given above.

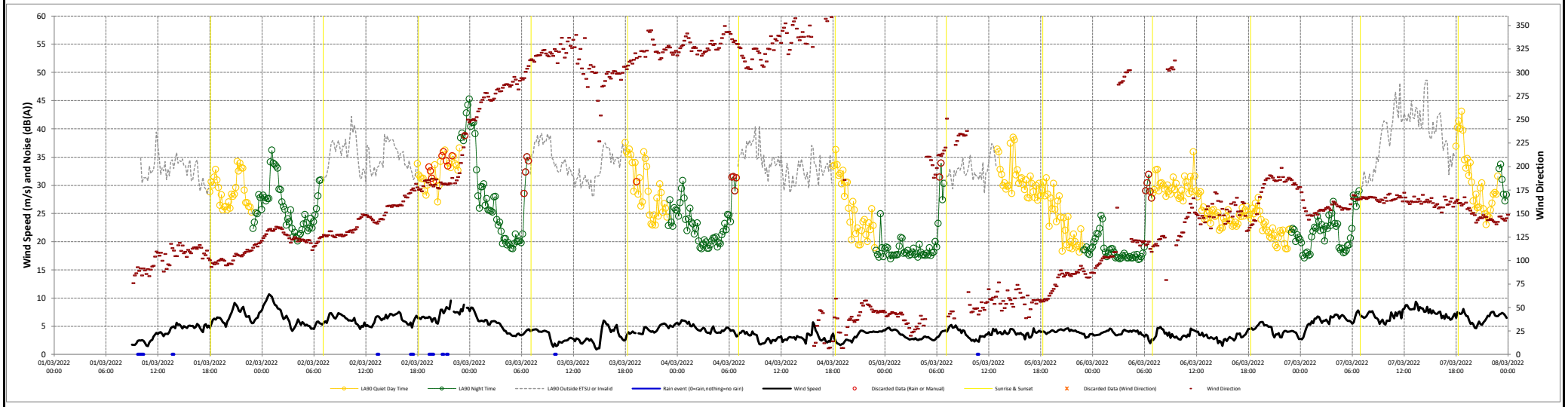
When using the calibrator with a sound level meter any manufacturer's guidelines regarding free-field corrections should be observed.

The reported measurement results are traceable, via national standards maintained by NSAI National Metrology Laboratory (NML) or by other national metrology institutes, to internationally accepted realisations of the SI units.

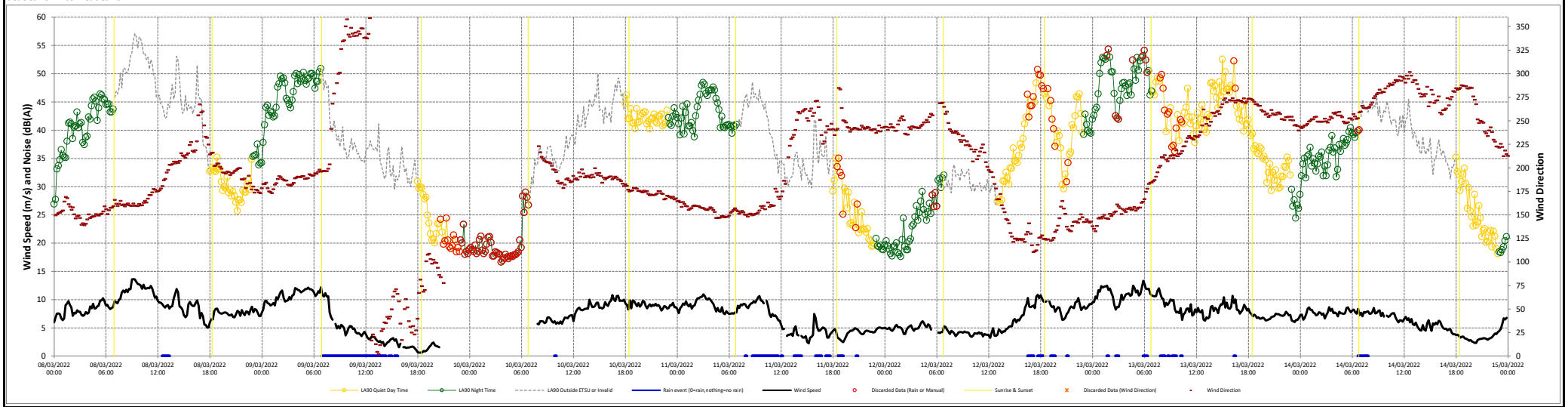
The reported expanded uncertainty is based on the standard uncertainty multiplied by a coverage factor $k = 2$ which, for a normal probability distribution, corresponds to a coverage probability of approximately 95%. It has been determined in accordance with the "Guide to the Expression of Uncertainty in Measurement (GUM)". These uncertainties apply only to the measured values and do not carry any implication regarding the long-term stability of the instrument.

Annex 4 – Time Series Graphs

01/03/2022 to 08/03/2022

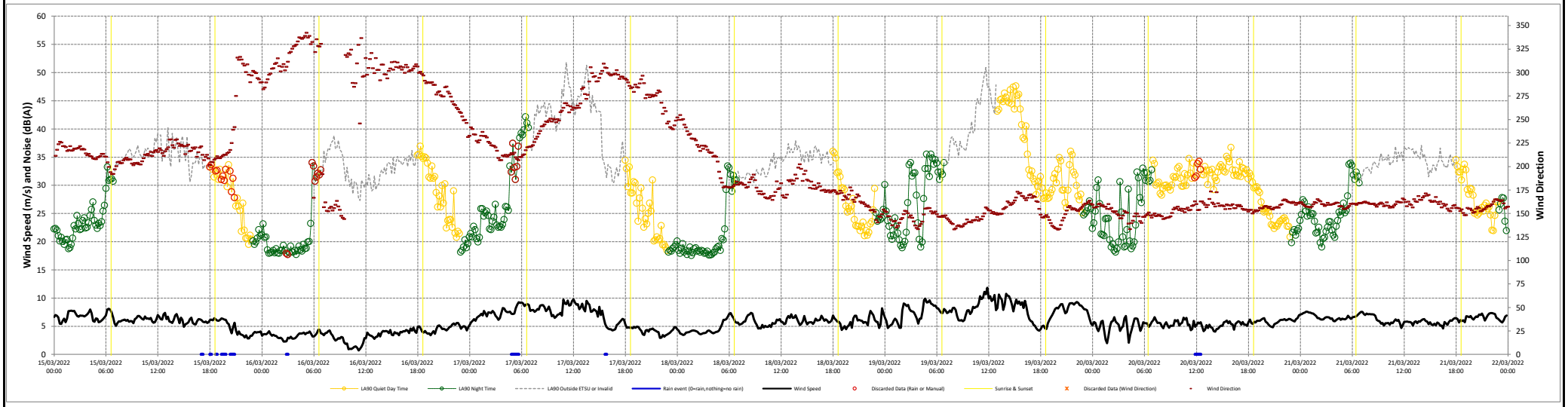


08/03/2022 to 15/03/2022

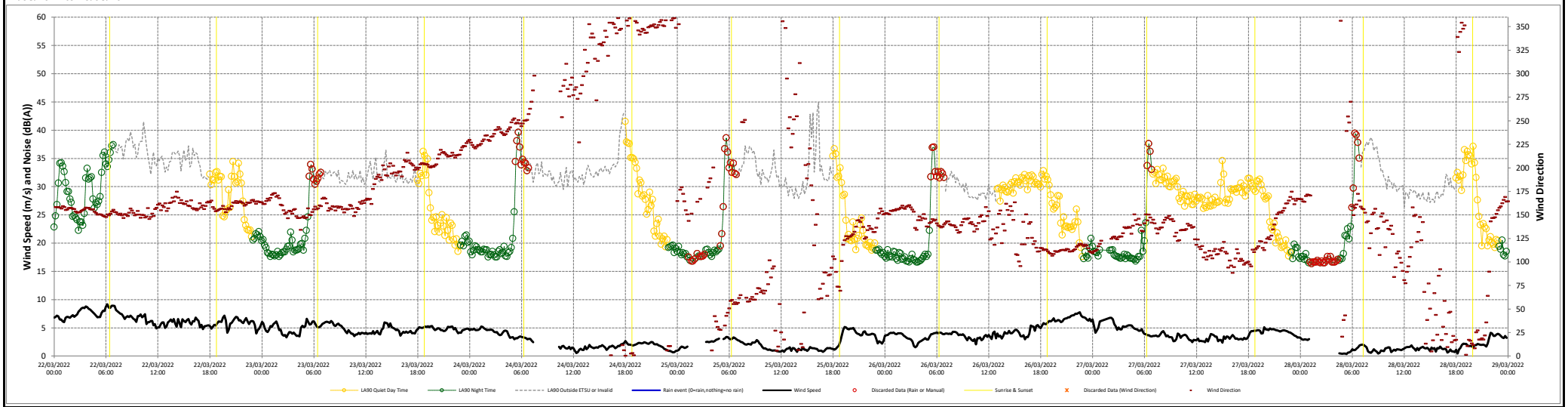


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML1 Page 1 of 5
Date	06/12/2022

15/03/2022 to 22/03/2022

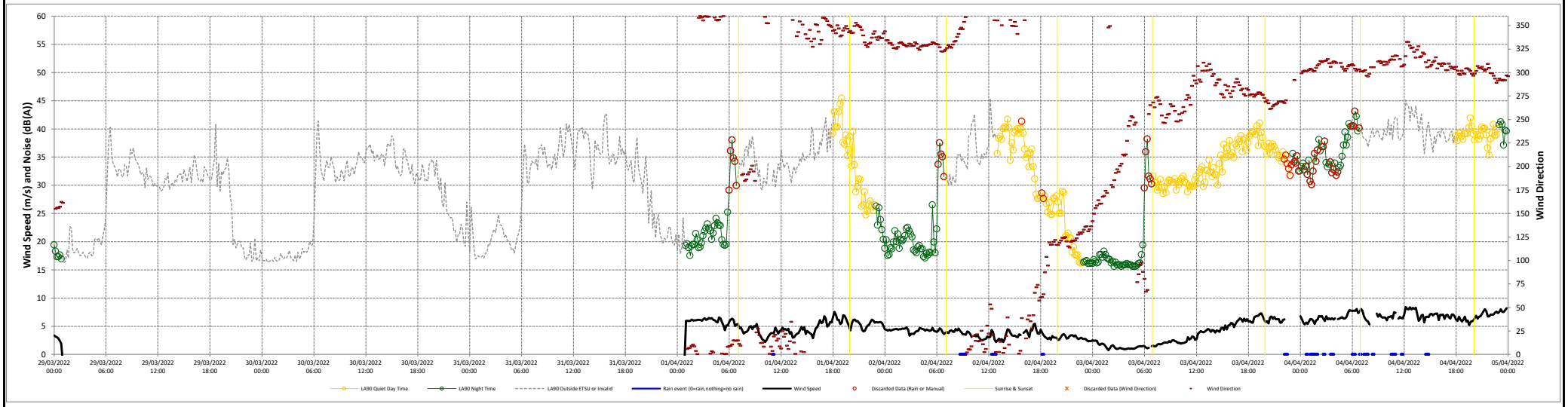


22/03/2022 to 29/03/2022

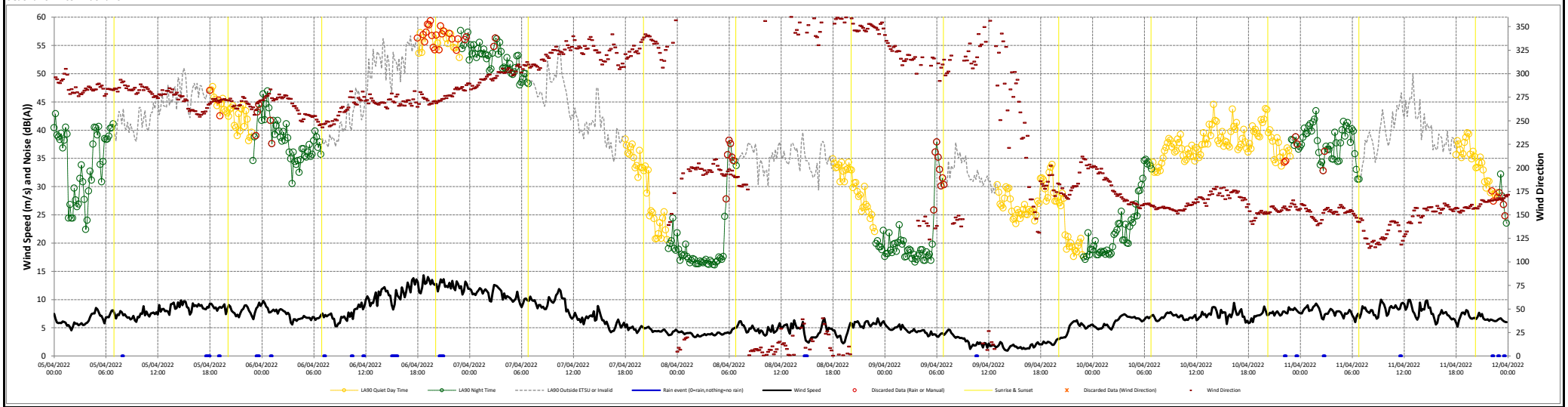


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML1 Page 2 of 5
Date	06/12/2022

29/03/2022 to 05/04/2022



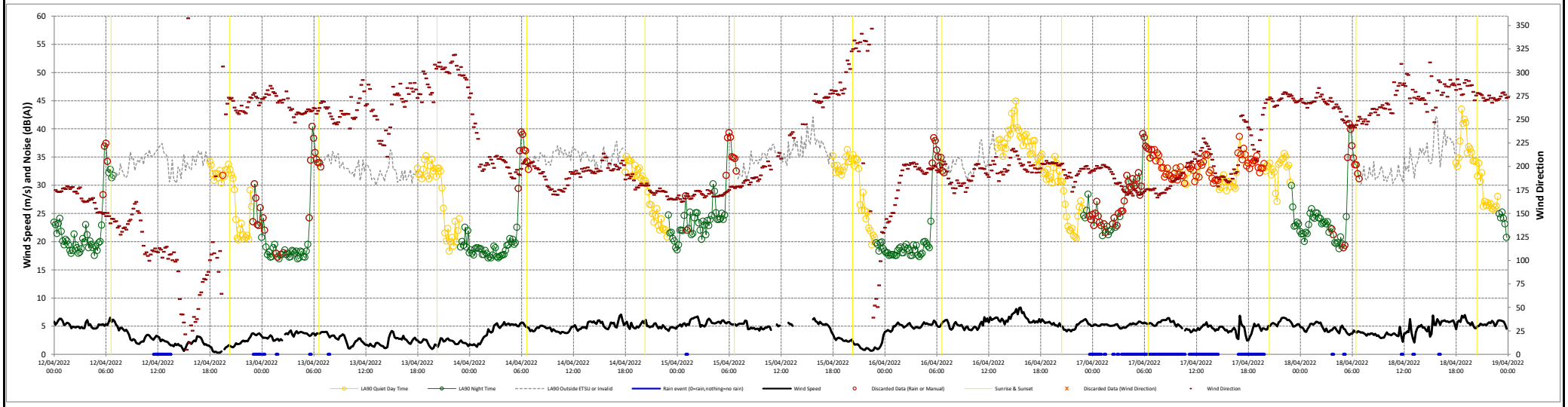
05/04/2022 to 12/04/2022



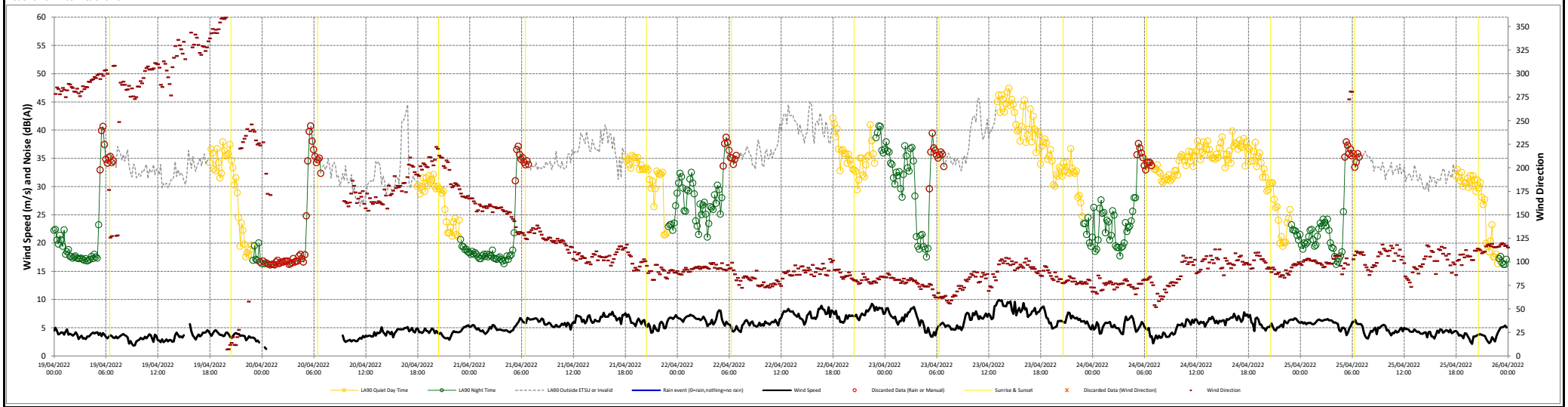
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML1 Page 3 of 5
Date	06/12/2022

tnei

12/04/2022 to 19/04/2022

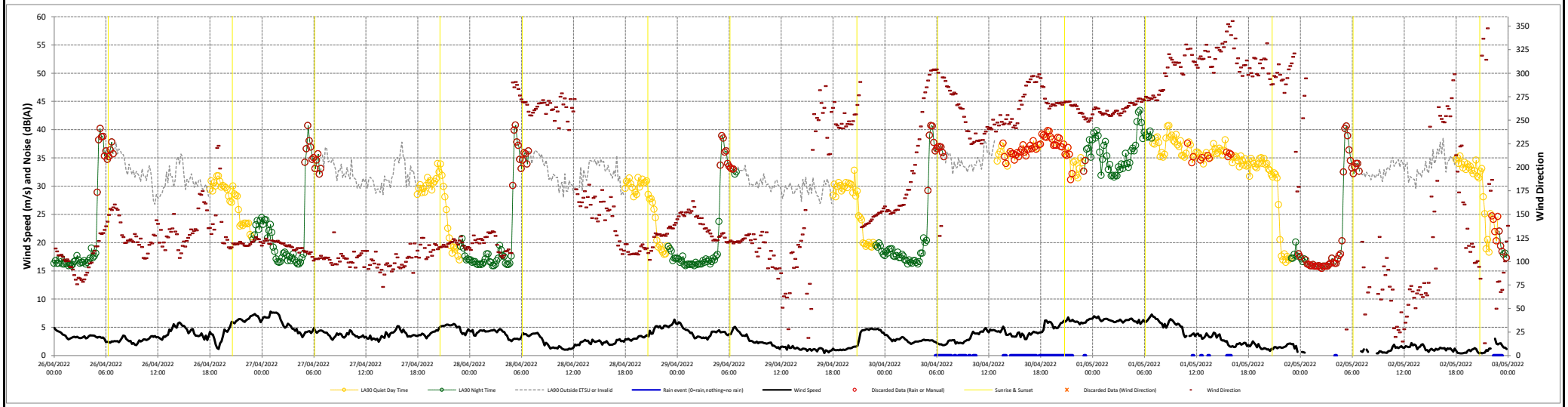


19/04/2022 to 26/04/2022

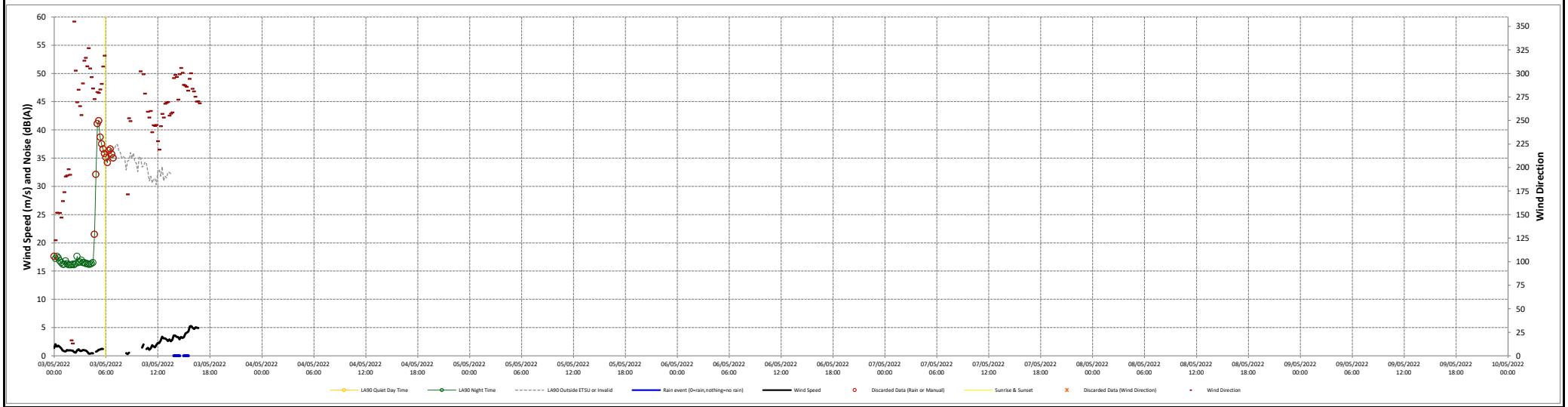


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML1 Page 4 of 5
Date	06/12/2022

26/04/2022 to 03/05/2022

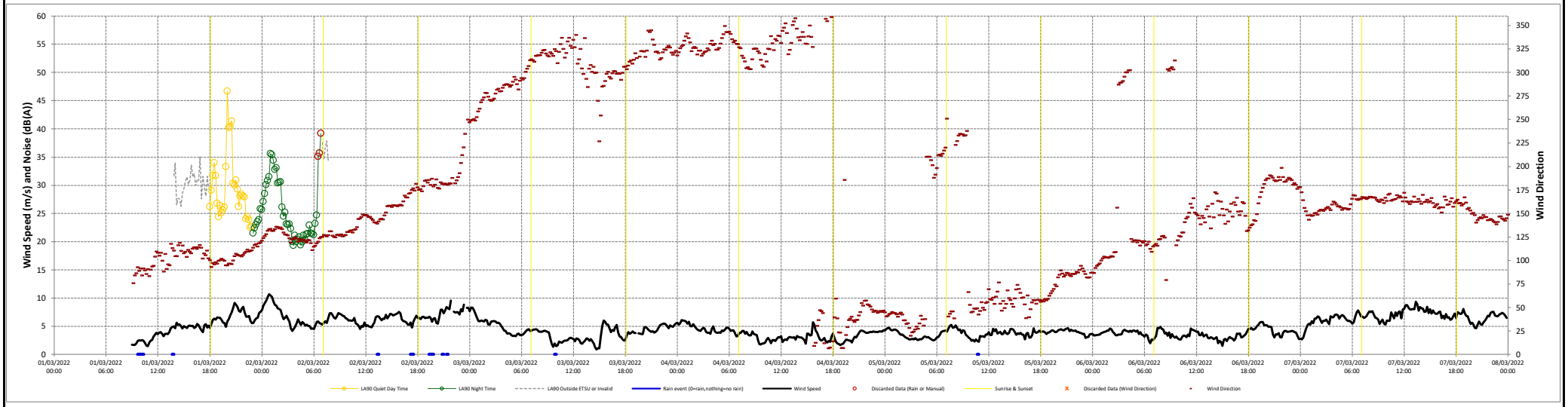


03/05/2022 to 10/05/2022

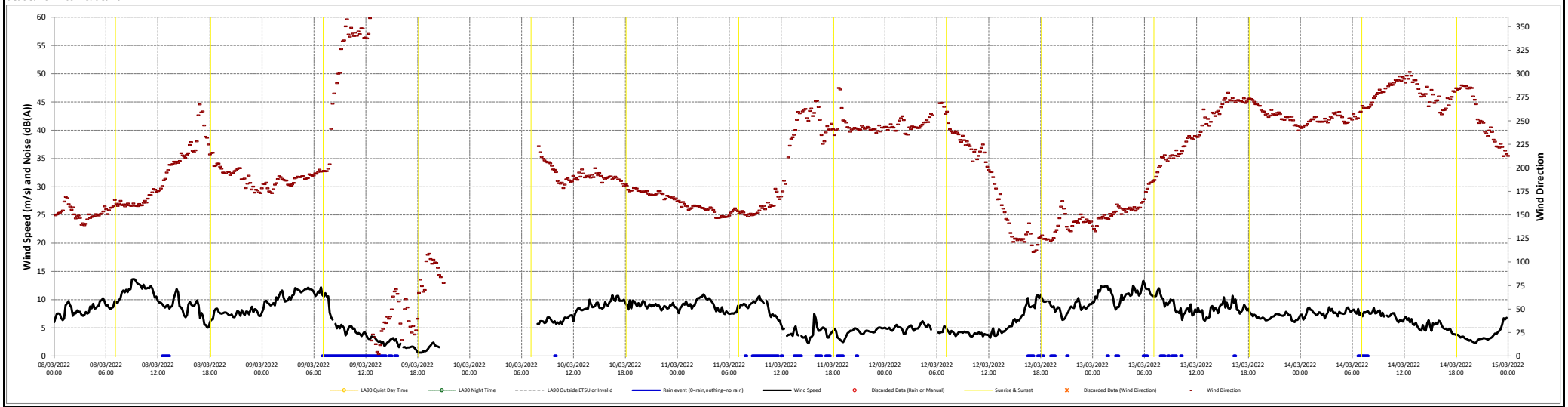


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML1 Page 5 of 5
Date	06/12/2022

01/03/2022 to 08/03/2022

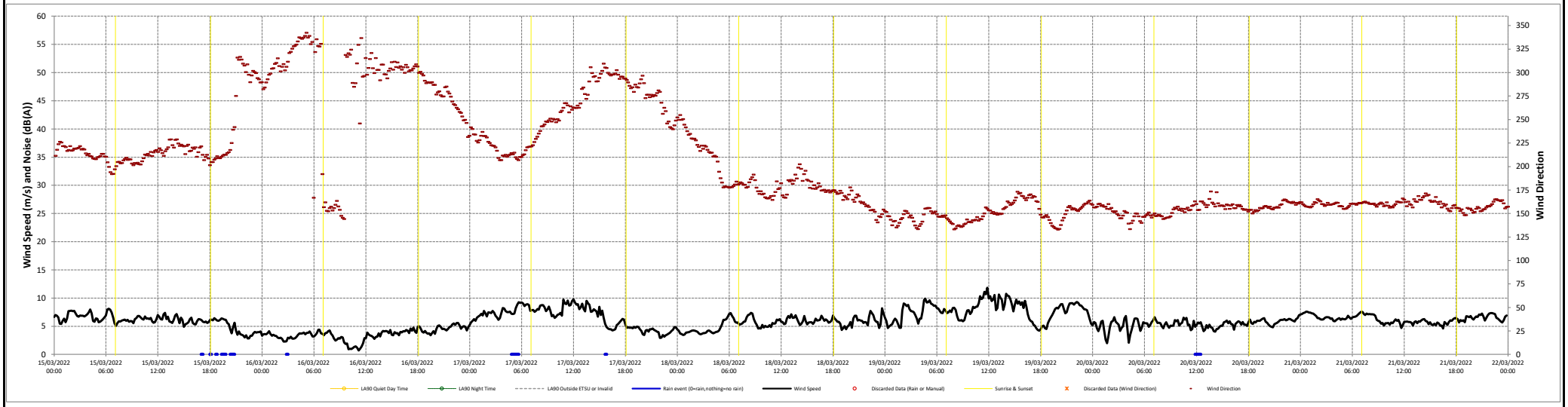


08/03/2022 to 15/03/2022

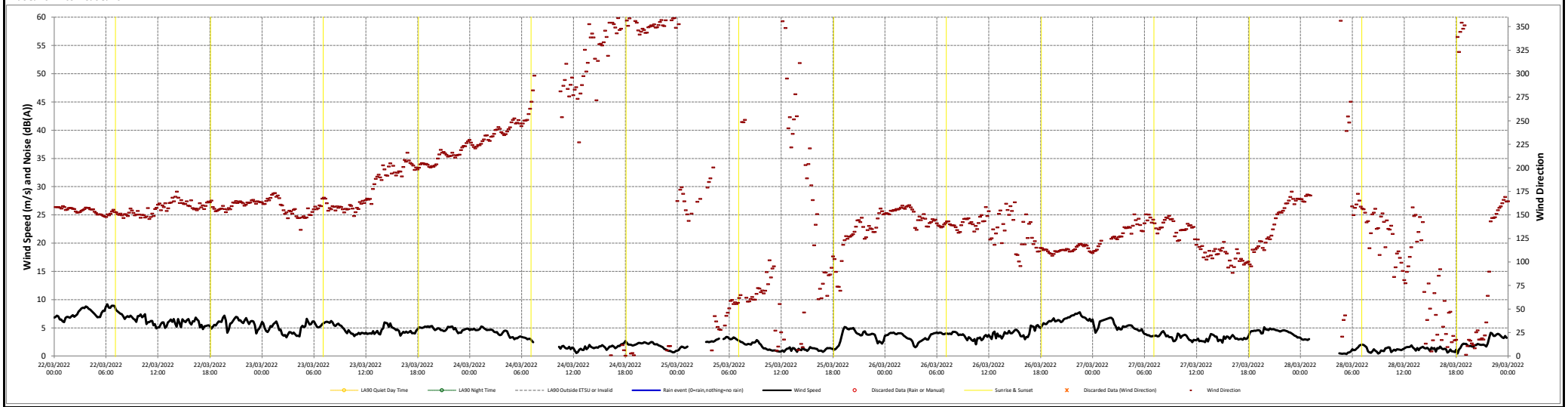


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML2 Page 1 of 5
Date	06/12/2022

15/03/2022 to 22/03/2022

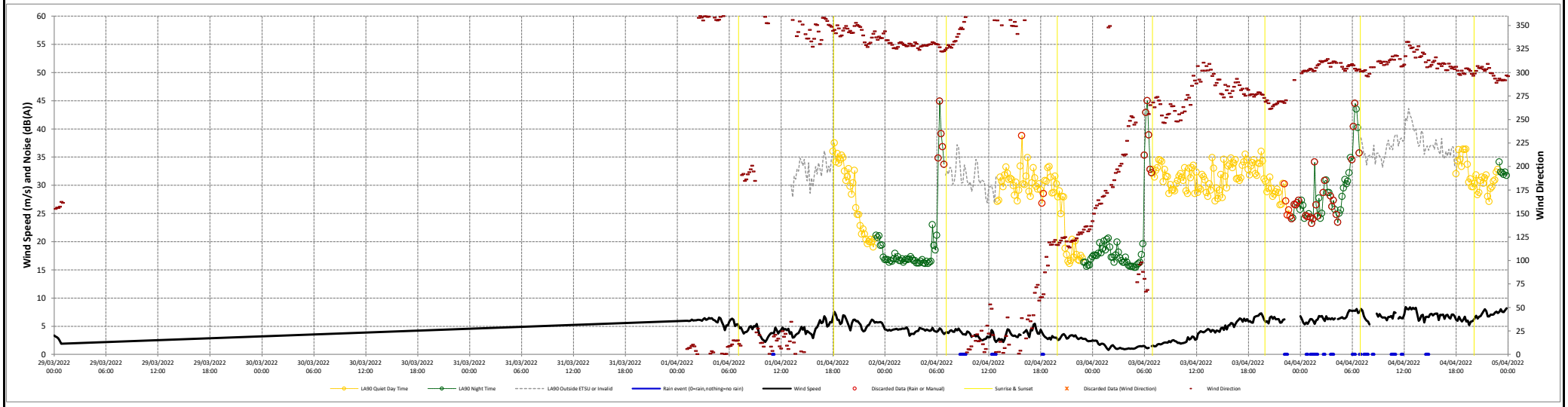


22/03/2022 to 29/03/2022

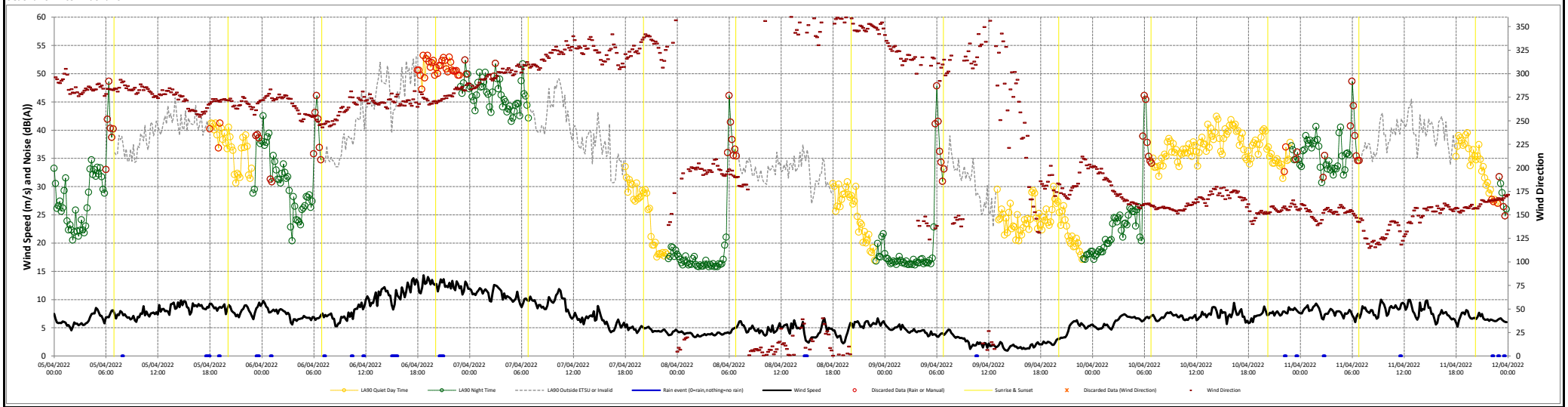


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML2 Page 2 of 5
Date	06/12/2022

29/03/2022 to 05/04/2022

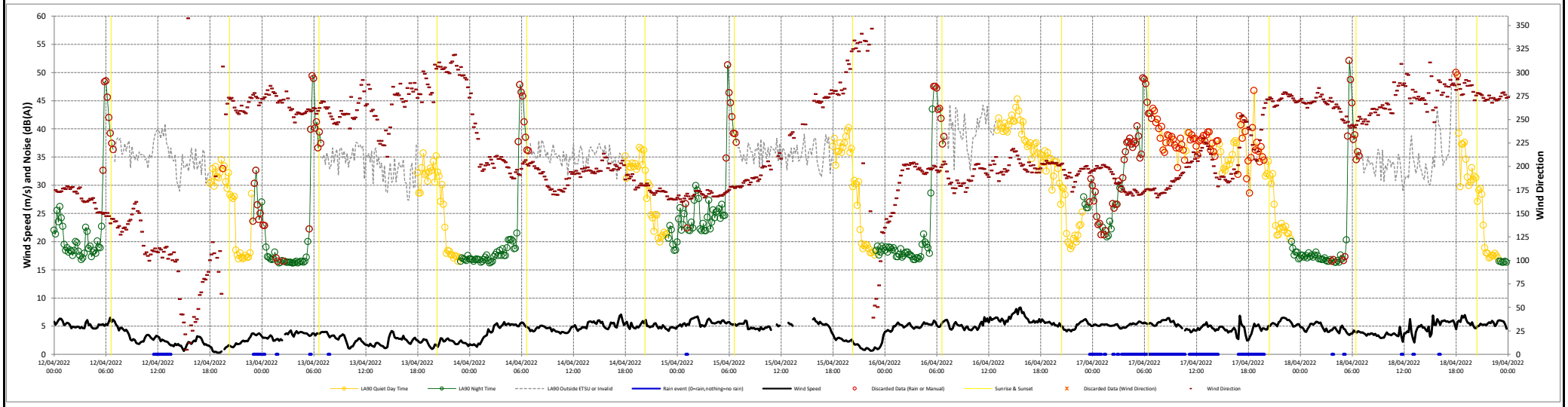


05/04/2022 to 12/04/2022

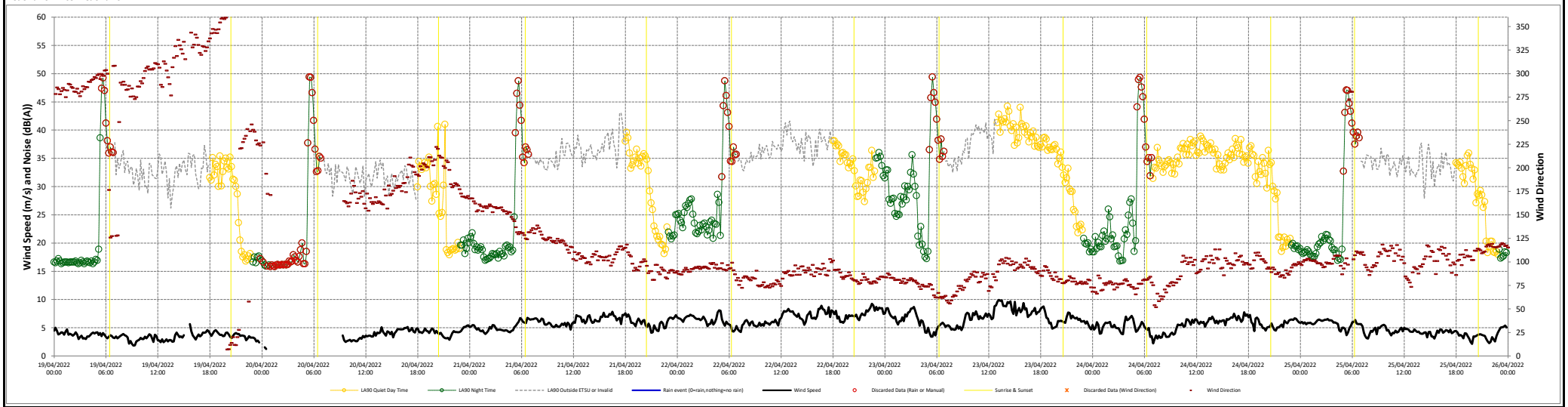


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML2 Page 3 of 5
Date	06/12/2022

12/04/2022 to 19/04/2022

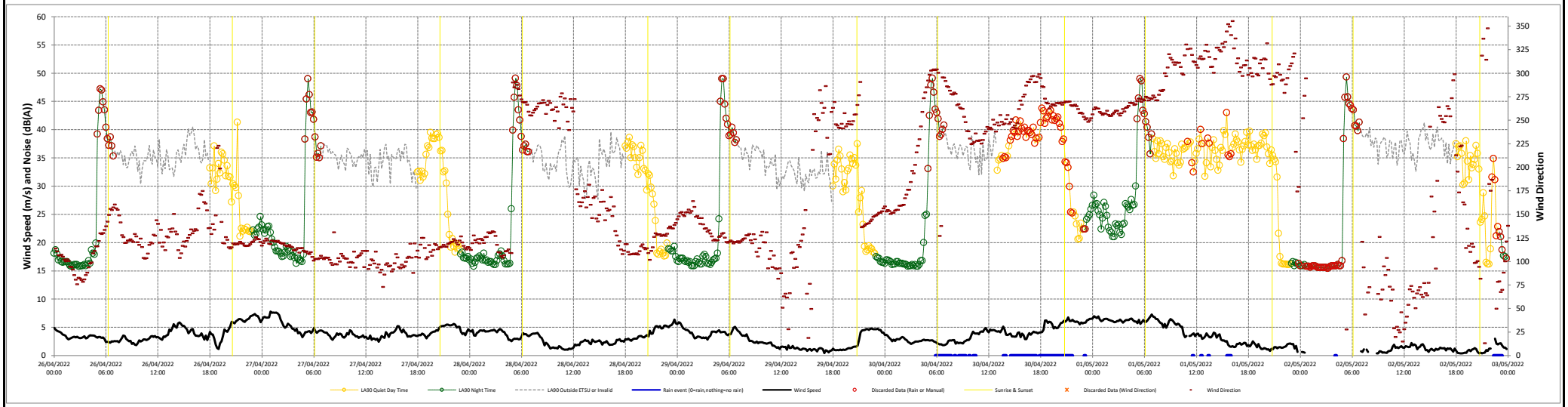


19/04/2022 to 26/04/2022

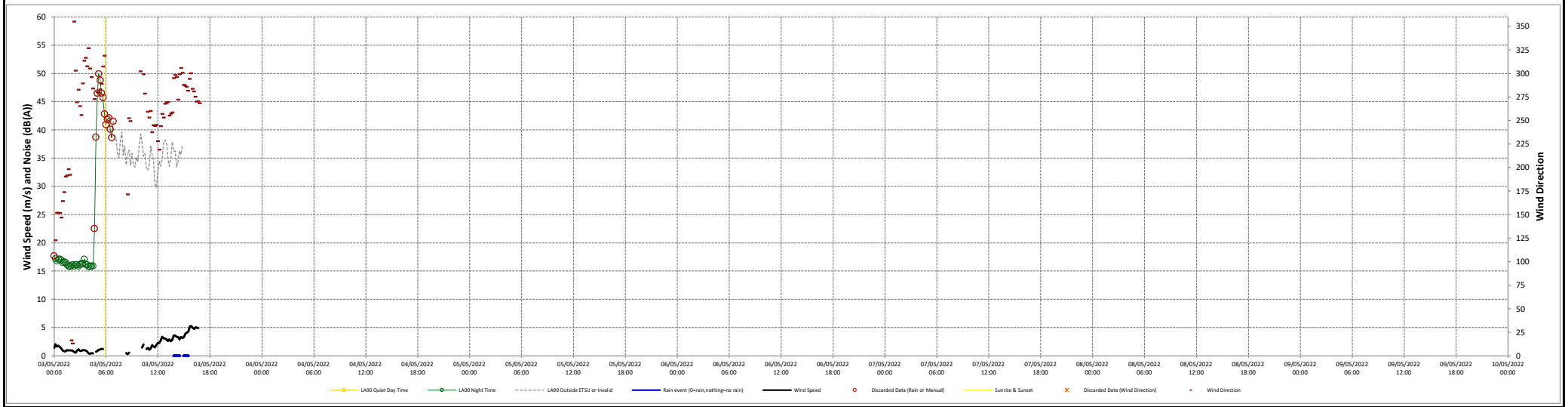


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML2 Page 4 of 5
Date	06/12/2022

26/04/2022 to 03/05/2022



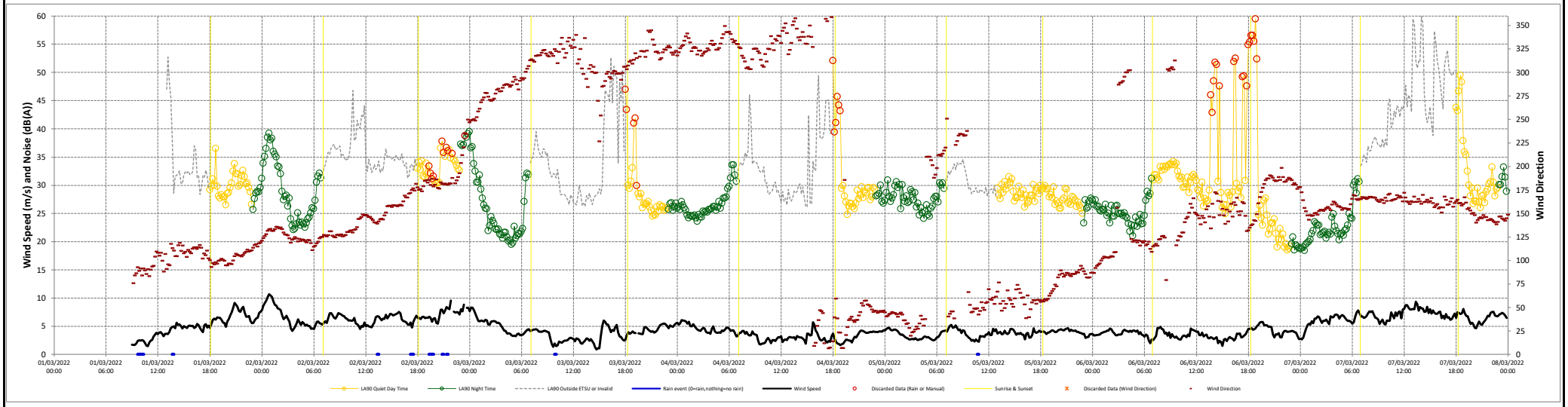
03/05/2022 to 10/05/2022



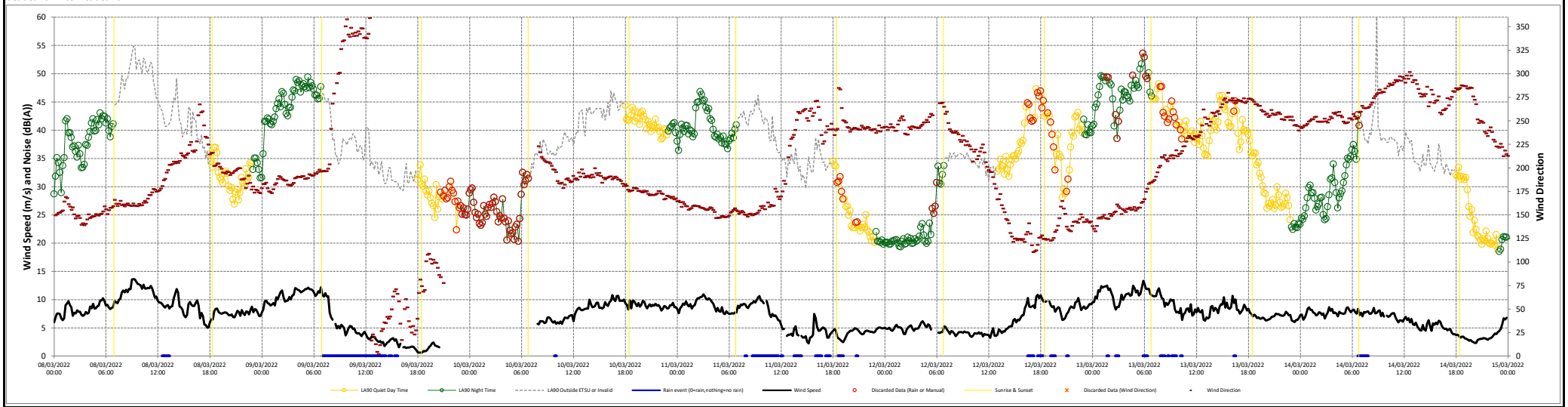
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML2 Page 5 of 5
Date	06/12/2022

tnei

01/03/2022 to 08/03/2022

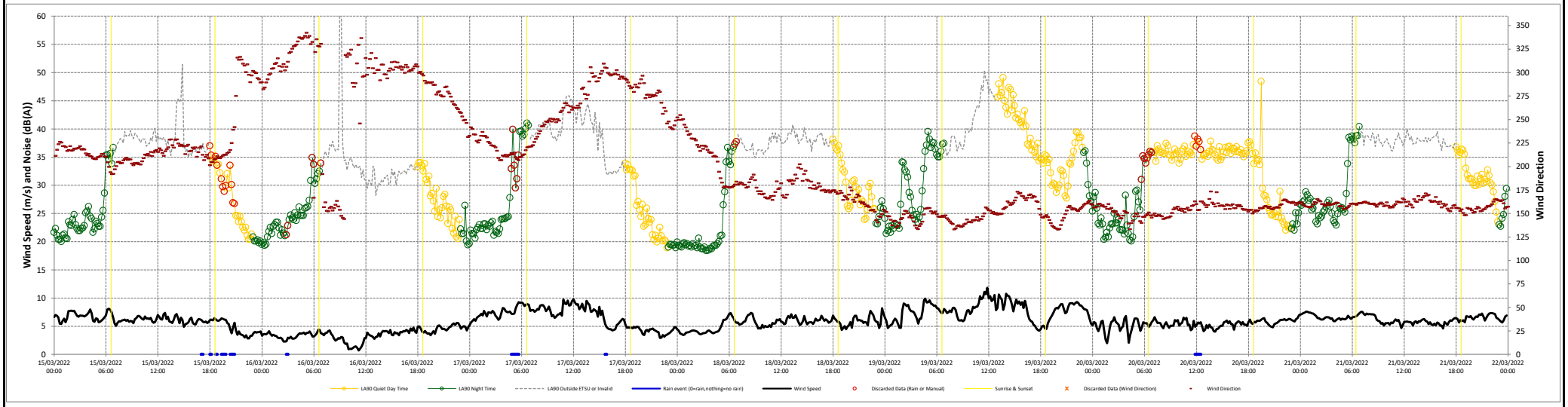


08/03/2022 to 15/03/2022

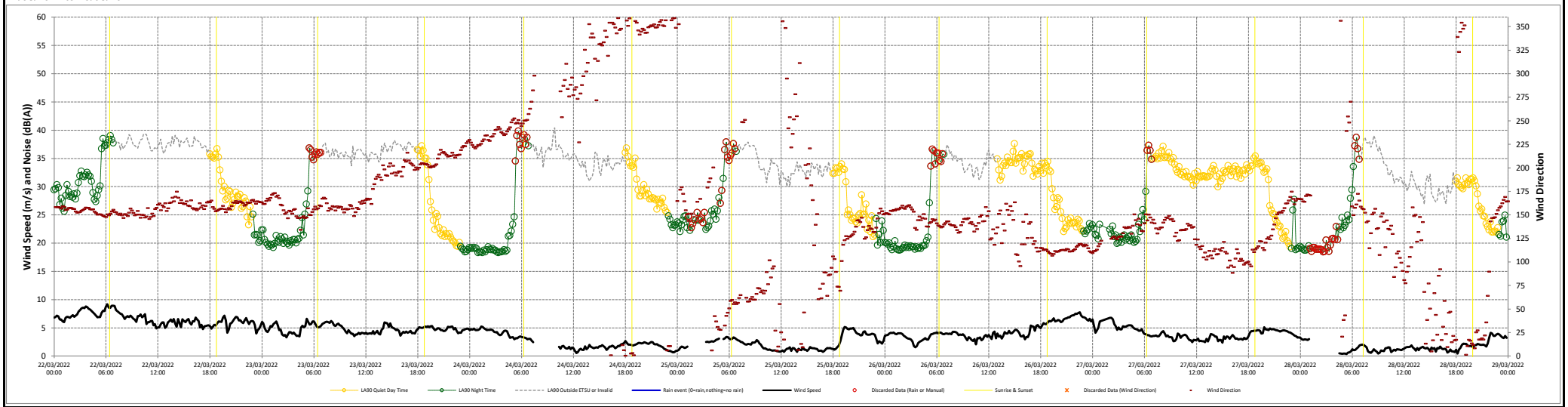


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML3 Page 1 of 3
Date	06/12/2022

15/03/2022 to 22/03/2022

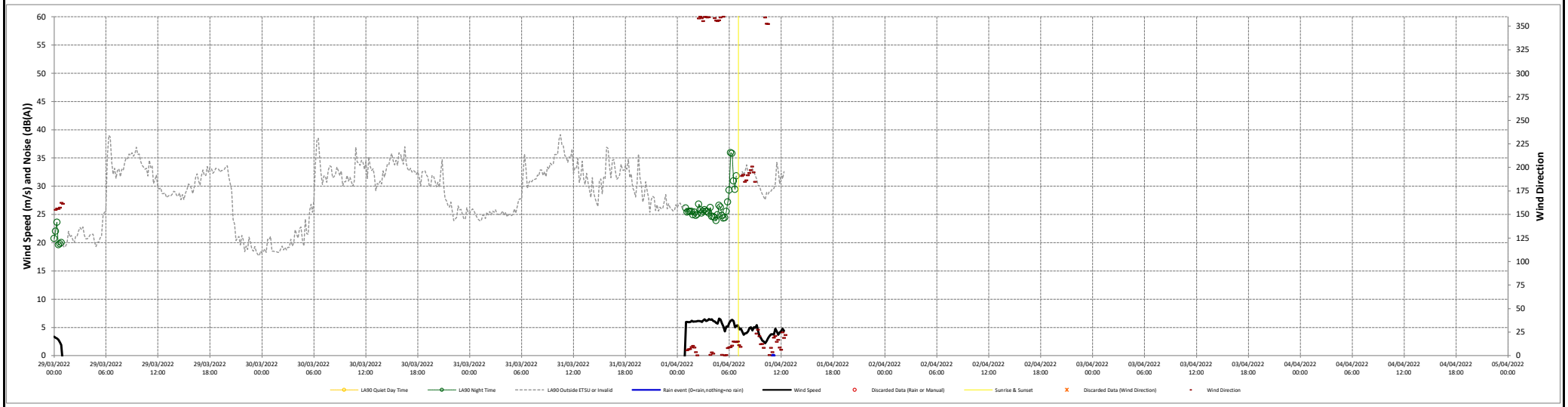


22/03/2022 to 29/03/2022



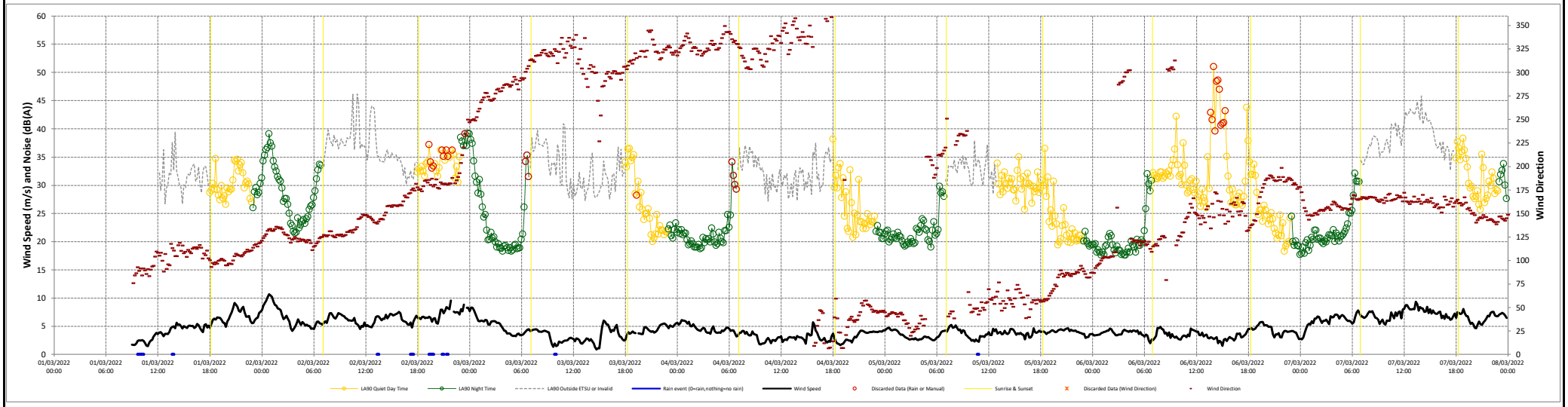
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML3 Page 2 of 3
Date	06/12/2022

29/03/2022 to 05/04/2022

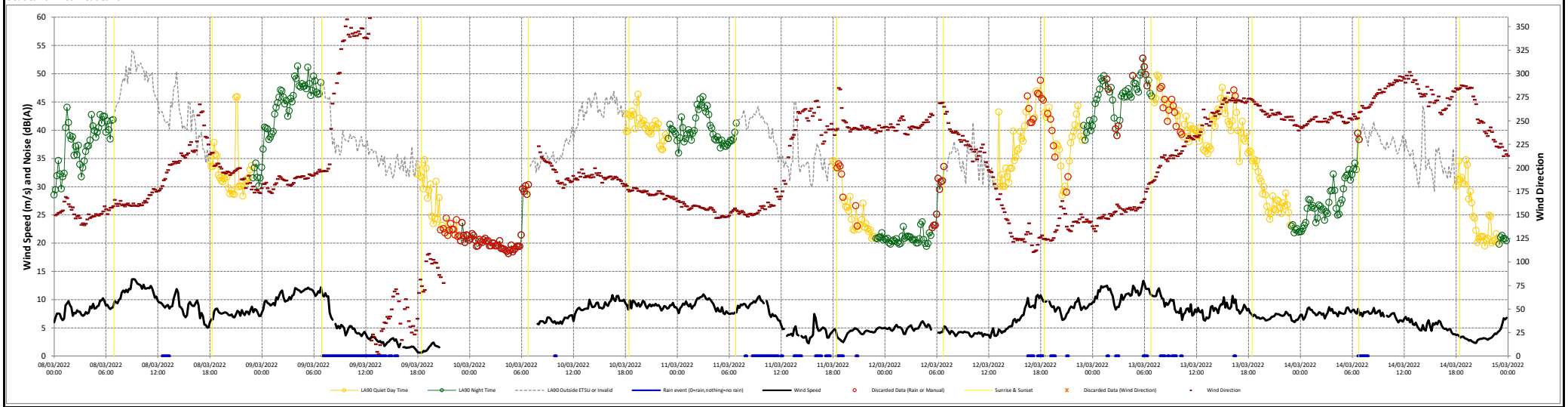


Project	Umma More Renewable Energy Development	
Client	Umma More Ltd	
Title	Time Series for NML3 Page 3 of 3	
Date	06/12/2022	

01/03/2022 to 08/03/2022

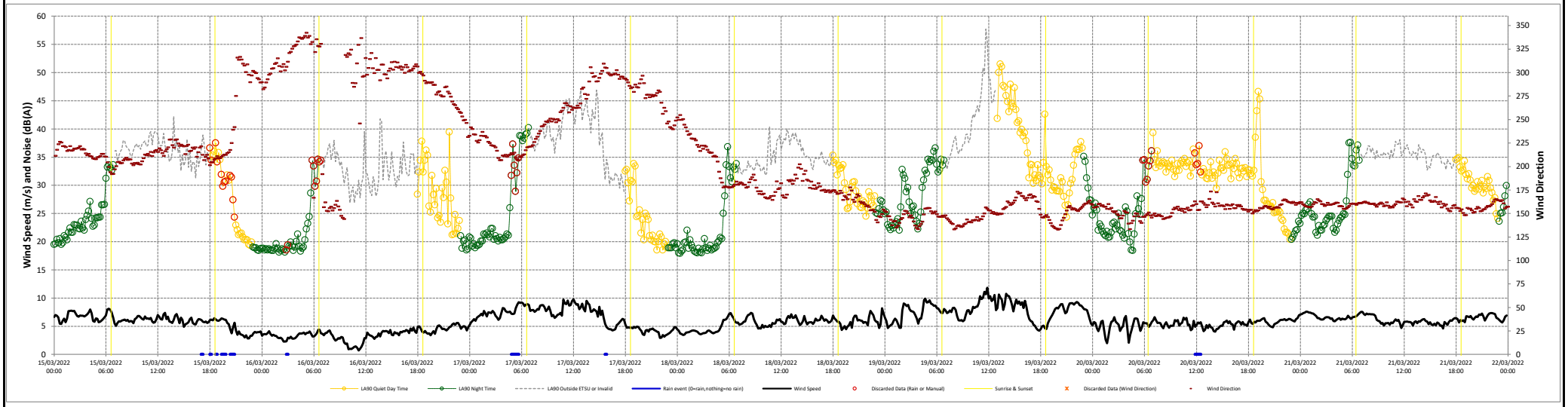


08/03/2022 to 15/03/2022

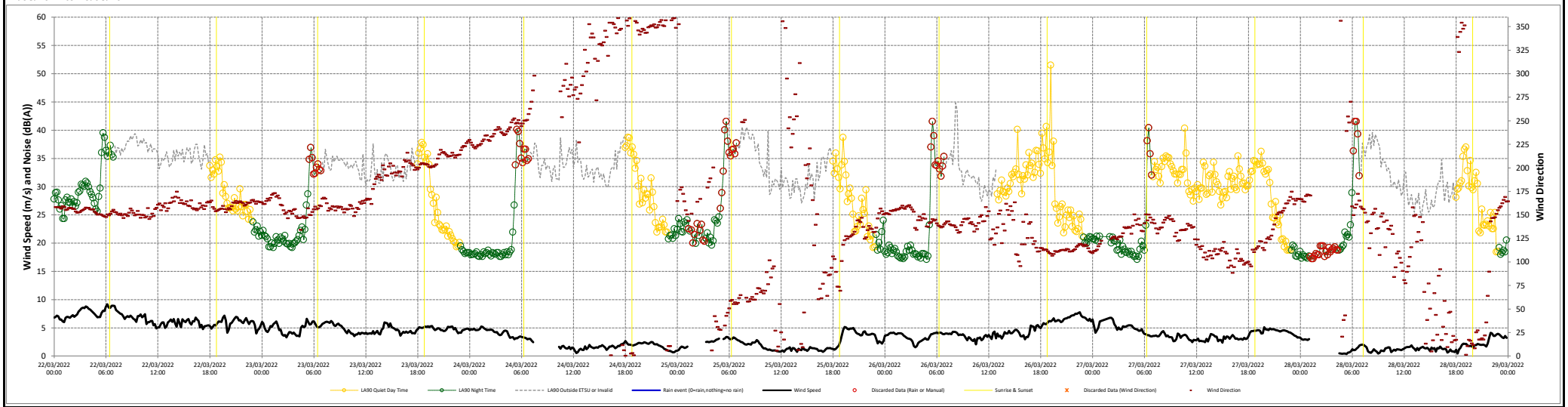


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML4 Page 1 of 5
Date	06/12/2022

15/03/2022 to 22/03/2022

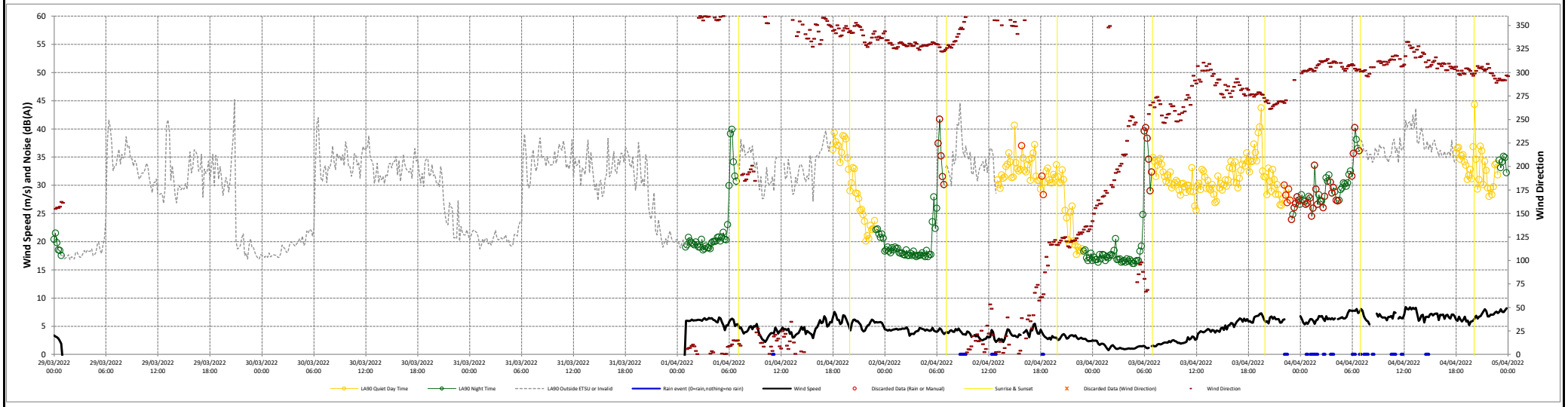


22/03/2022 to 29/03/2022

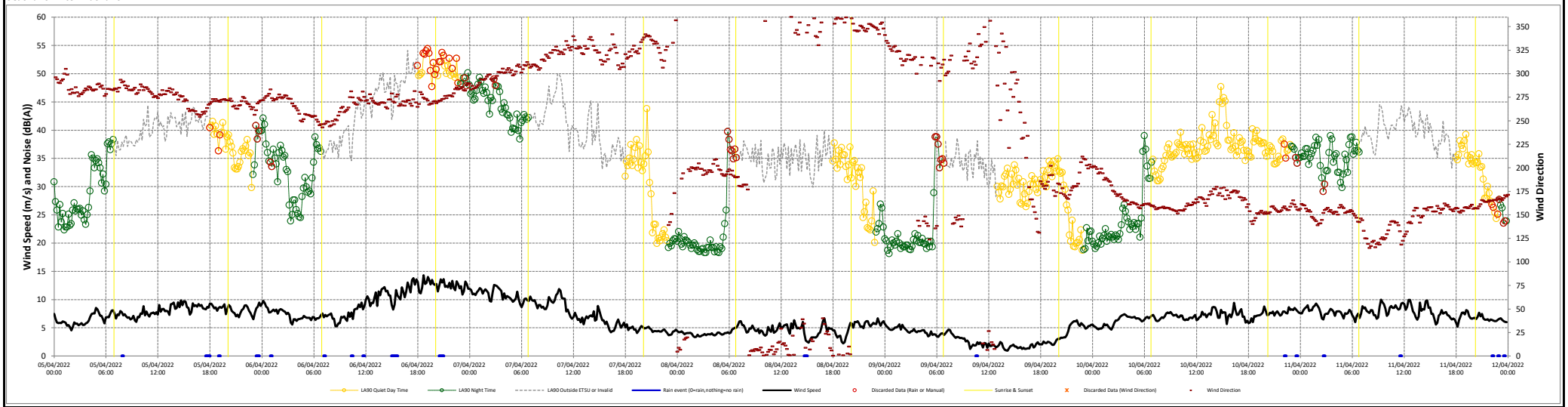


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML4 Page 2 of 5
Date	06/12/2022

29/03/2022 to 05/04/2022

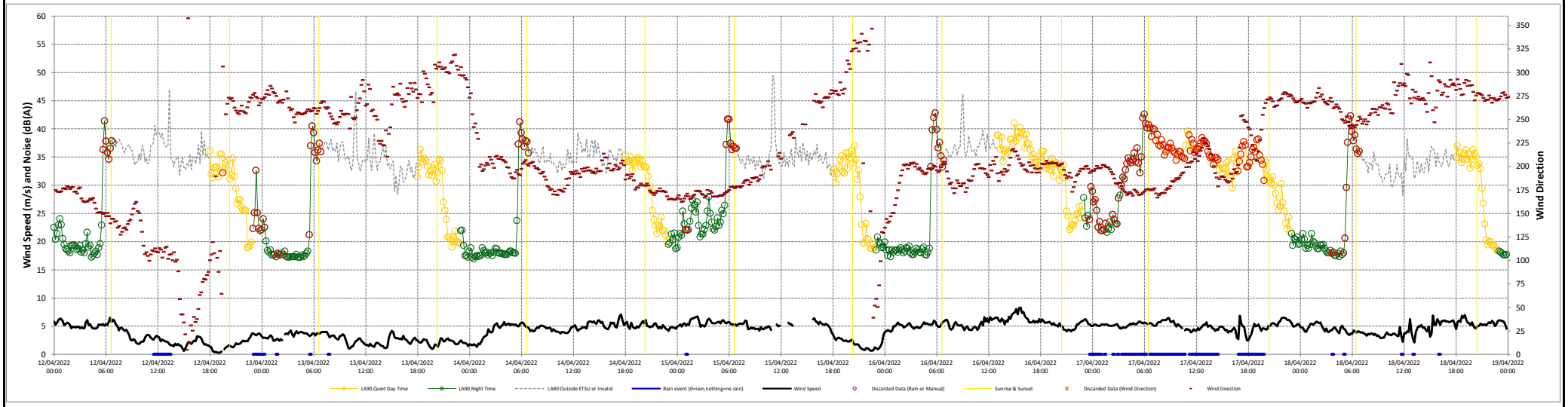


05/04/2022 to 12/04/2022

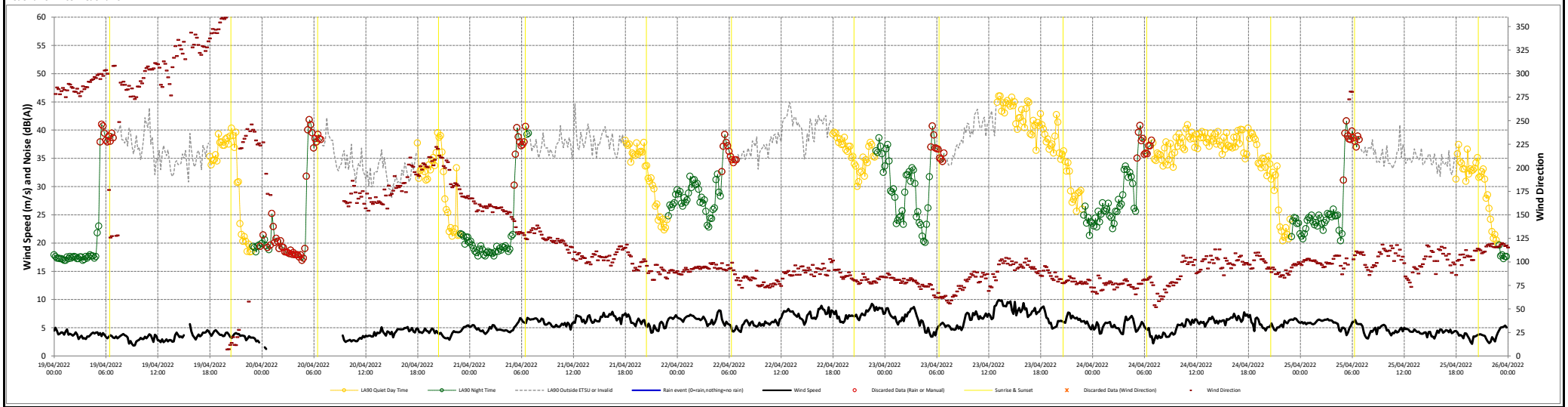


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML4 Page 3 of 5
Date	06/12/2022

12/04/2022 to 19/04/2022

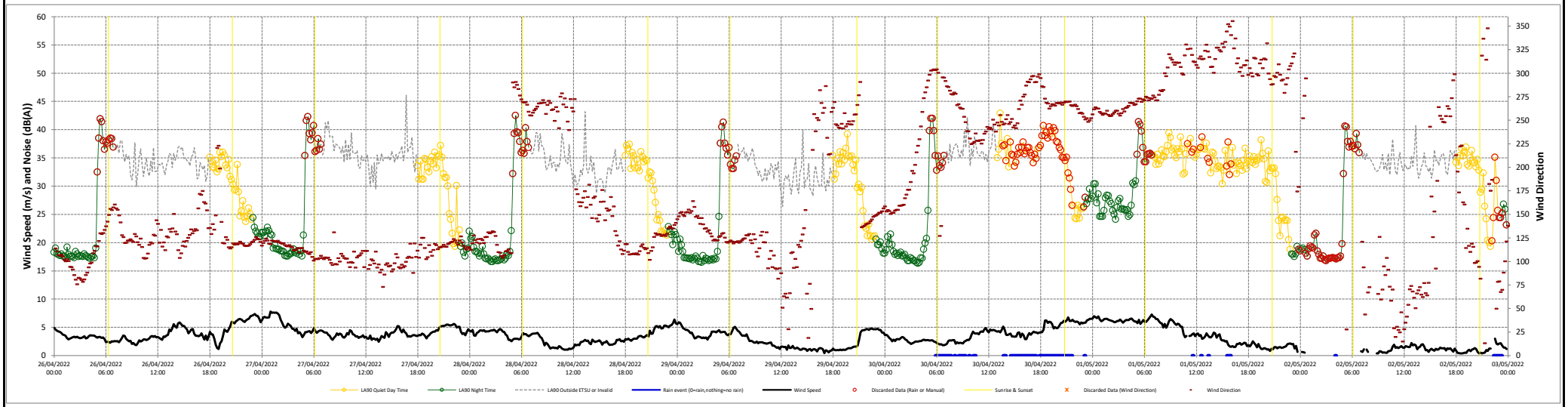


19/04/2022 to 26/04/2022

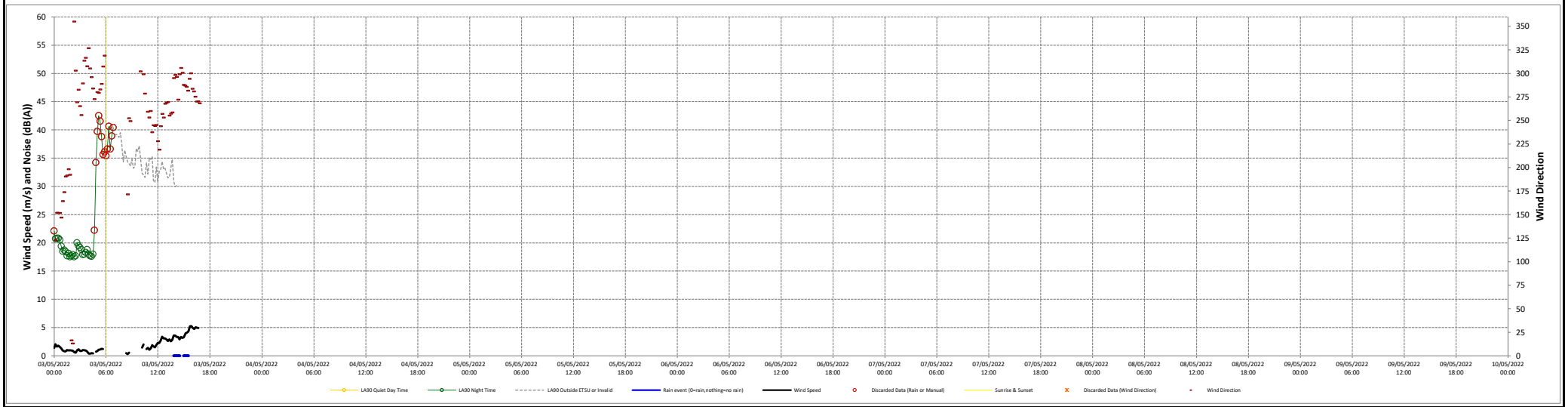


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML4 Page 4 of 5
Date	06/12/2022

26/04/2022 to 03/05/2022



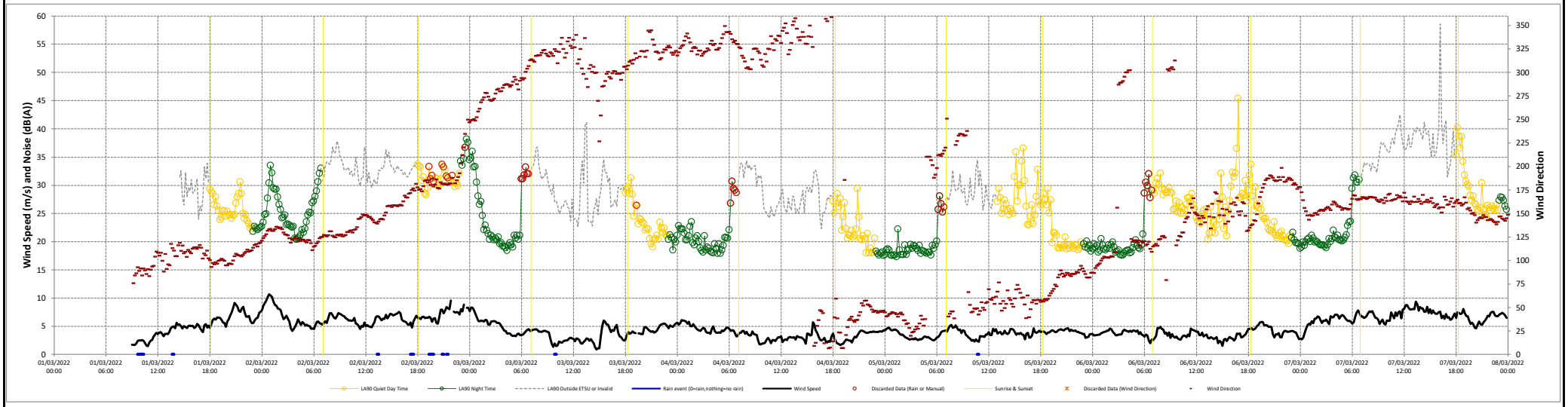
03/05/2022 to 10/05/2022



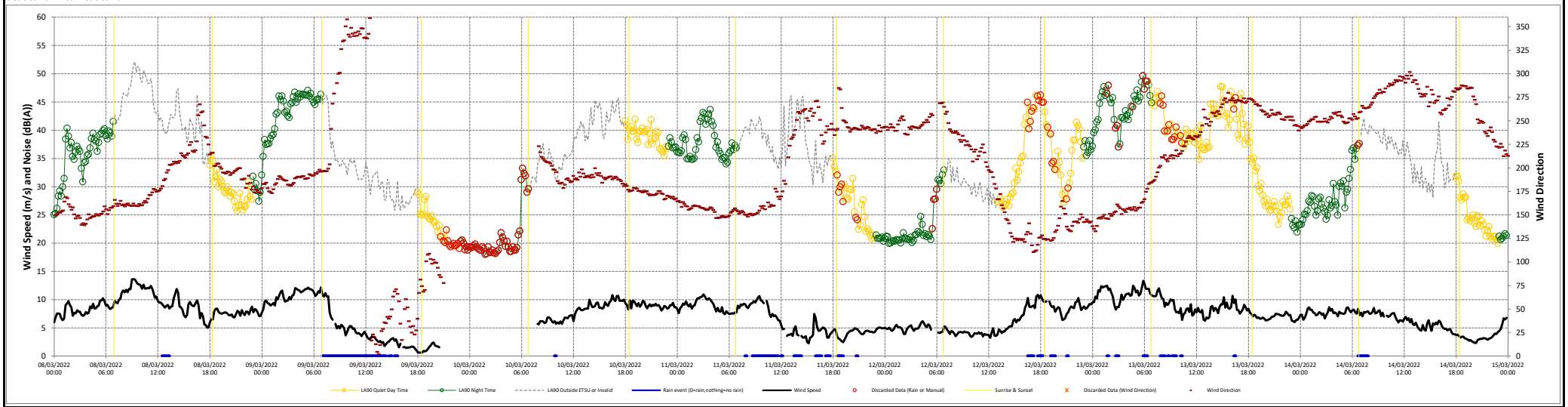
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML4 Page 5 of 5
Date	06/12/2022

tnei

01/03/2022 to 08/03/2022

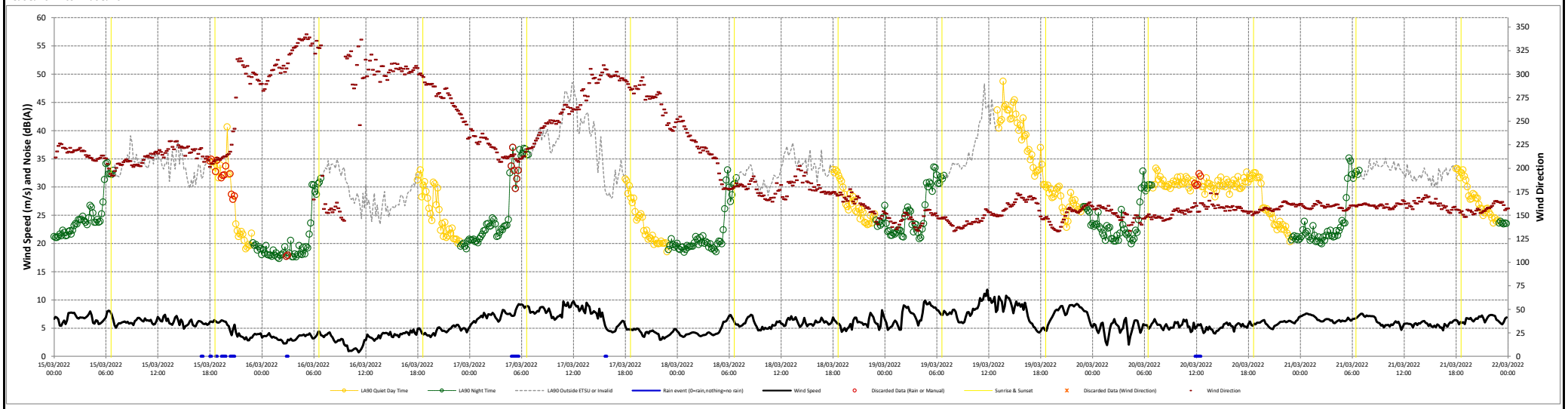


08/03/2022 to 15/03/2022

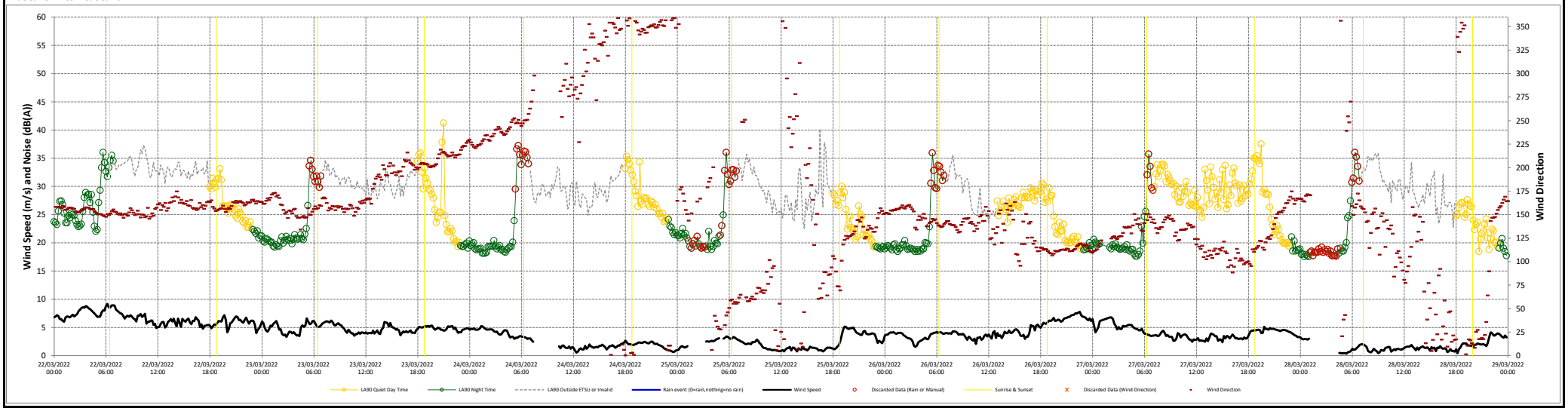


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML5 Page 1 of 5
Date	06/12/2022

15/03/2022 to 22/03/2022



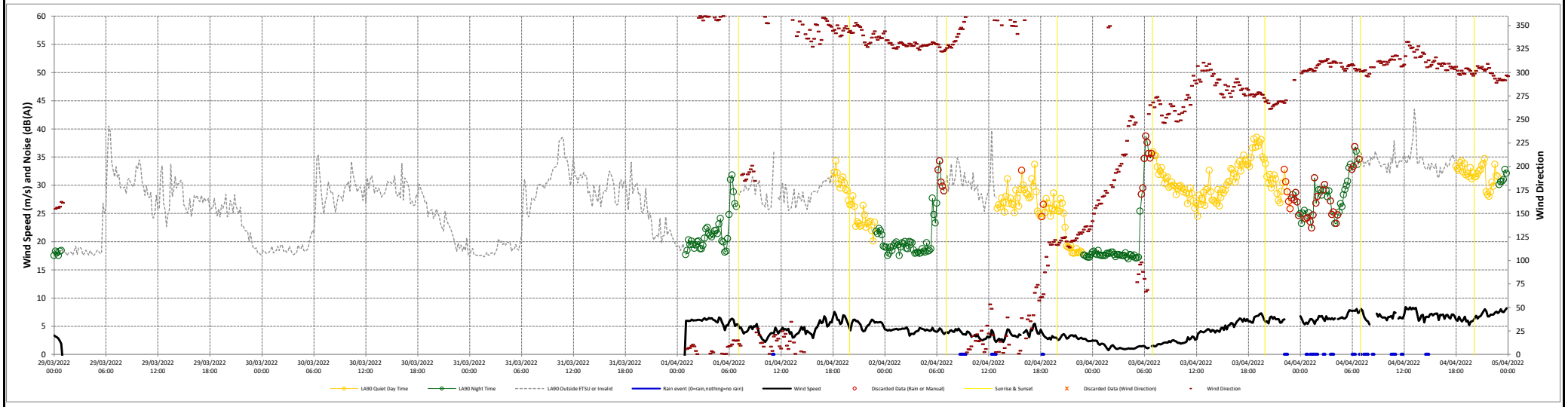
22/03/2022 to 29/03/2022



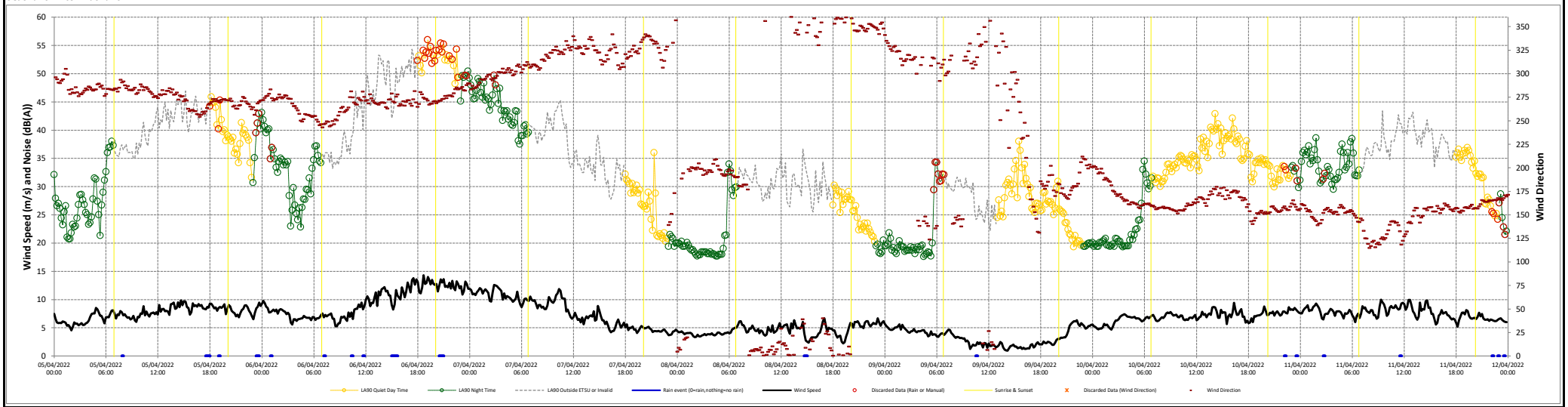
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML5 Page 2 of 5
Date	06/12/2022

tnei

29/03/2022 to 05/04/2022

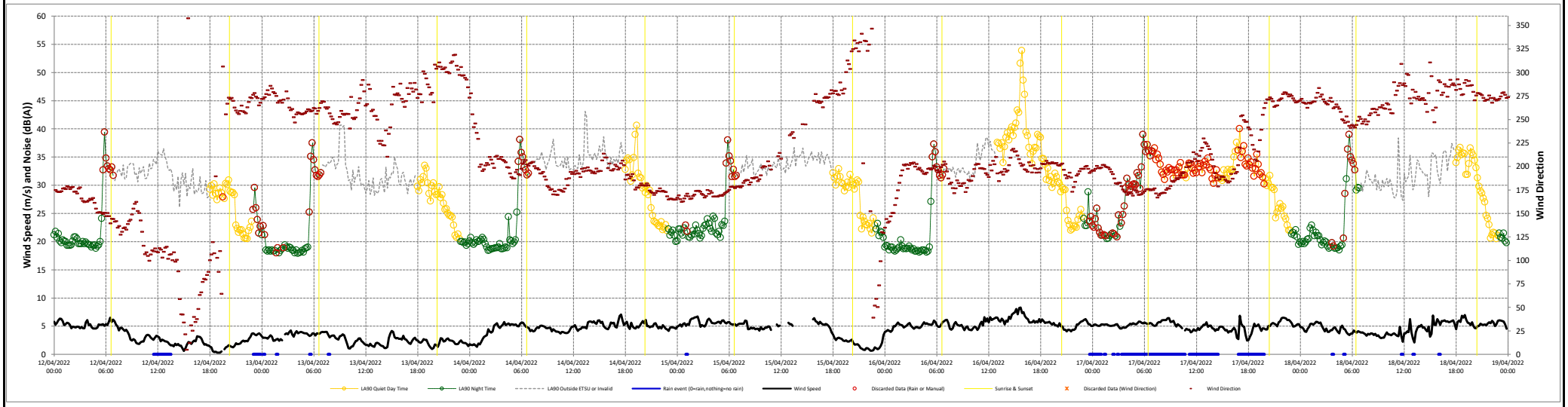


05/04/2022 to 12/04/2022

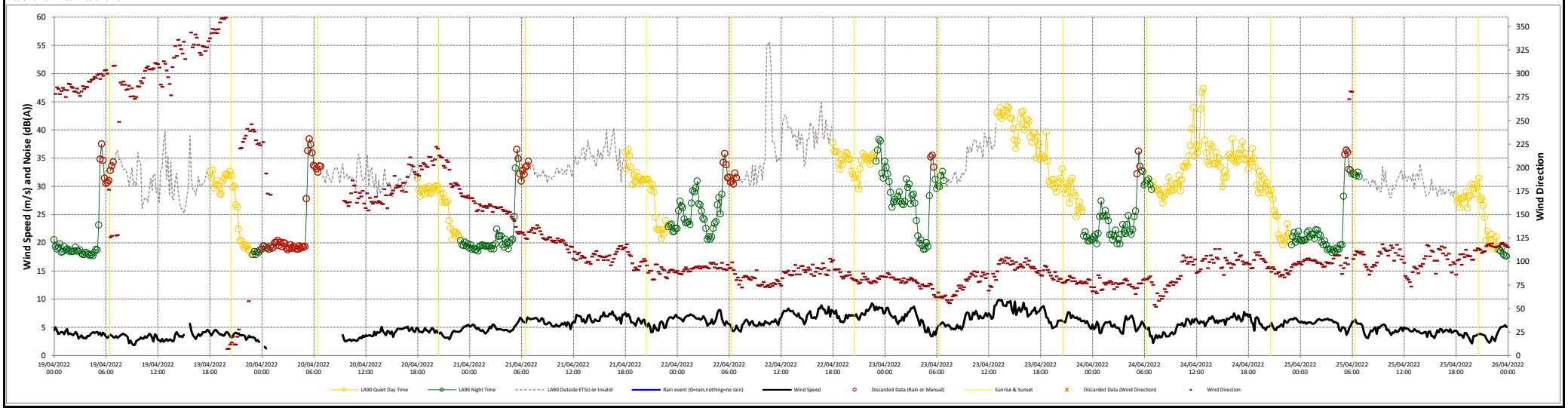


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML5 Page 3 of 5
Date	06/12/2022

12/04/2022 to 19/04/2022

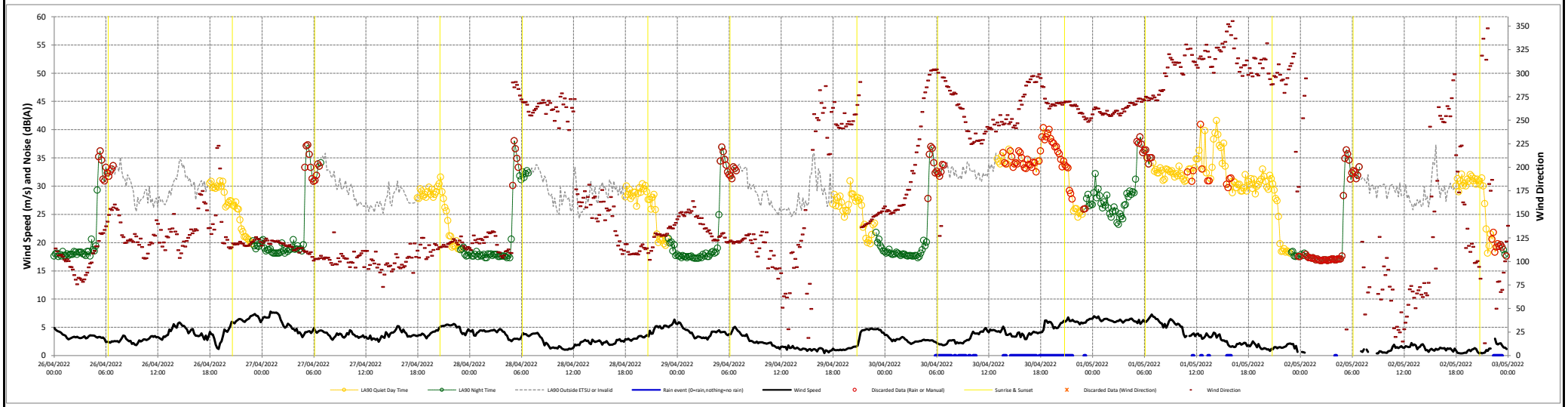


19/04/2022 to 26/04/2022

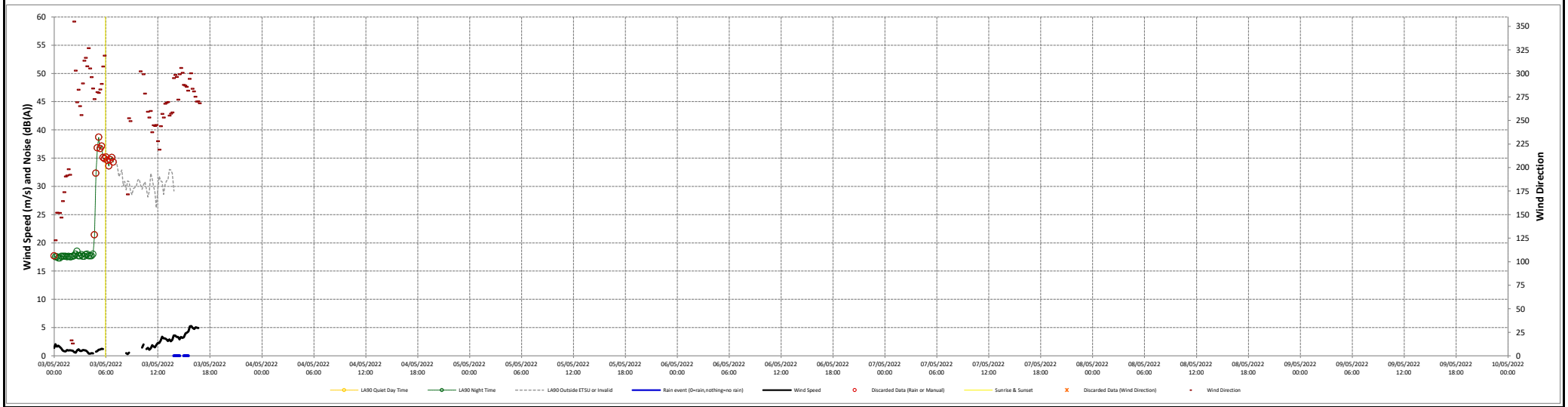


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML5 Page 4 of 5
Date	06/12/2022

26/04/2022 to 03/05/2022

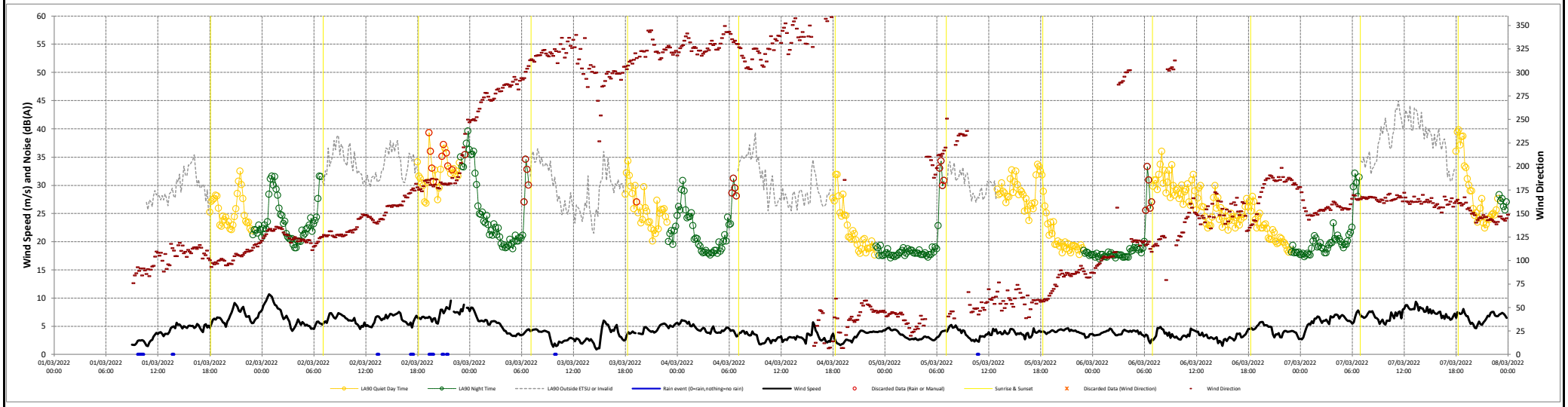


03/05/2022 to 10/05/2022

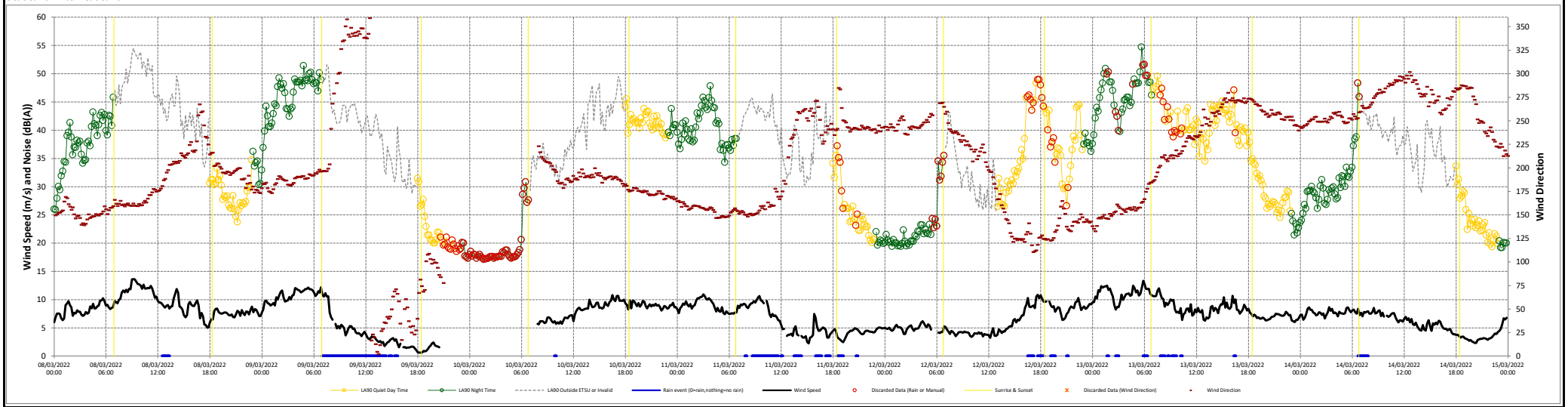


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML5 Page 5 of 5
Date	06/12/2022

01/03/2022 to 08/03/2022



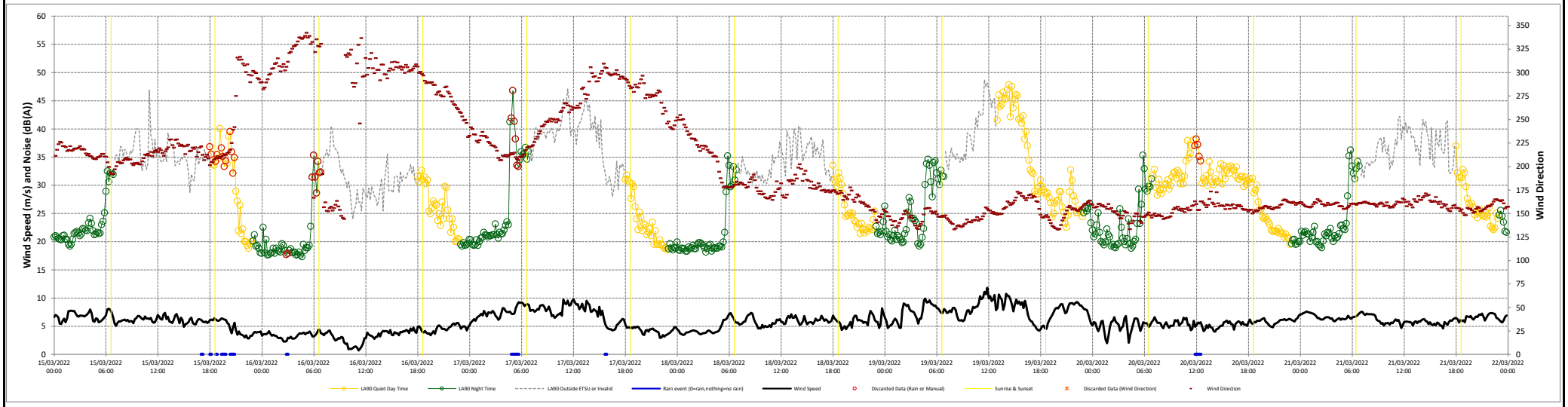
08/03/2022 to 15/03/2022



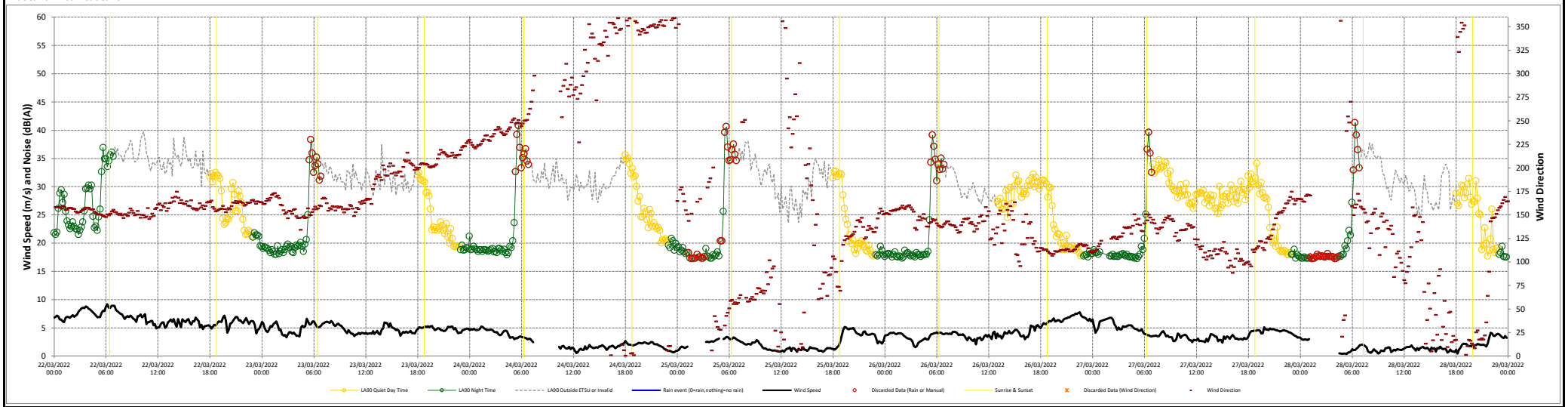
Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML6 Page 1 of 5
Date	06/12/2022

tnei

15/03/2022 to 22/03/2022

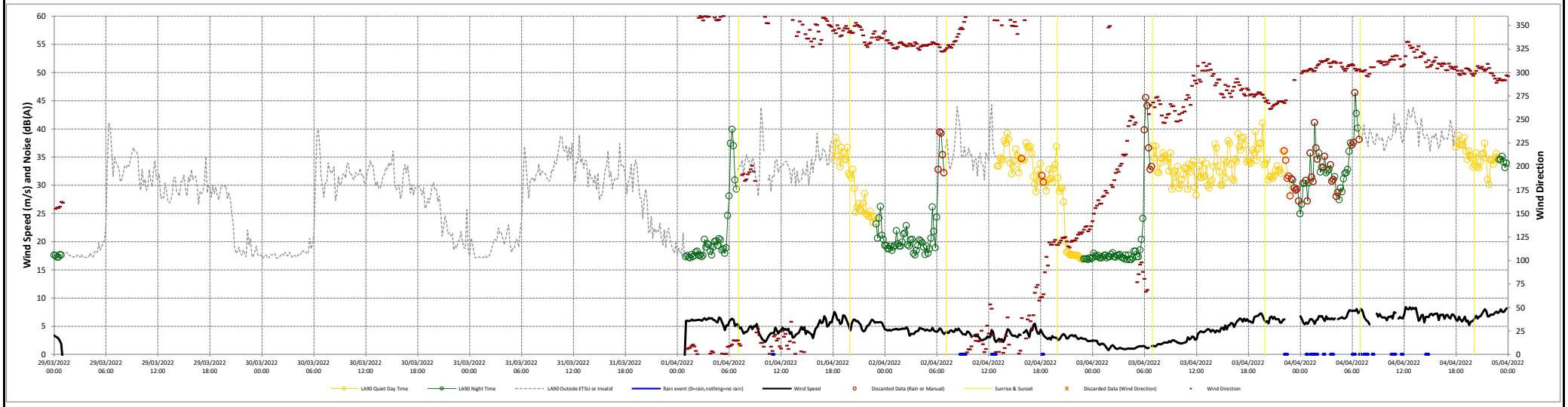


22/03/2022 to 29/03/2022

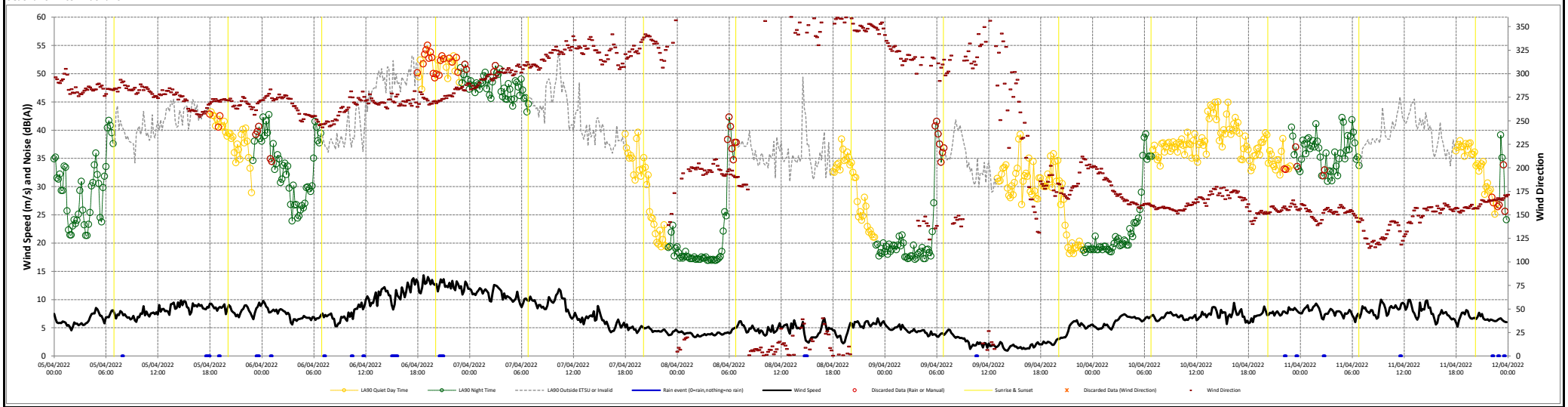


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML6 Page 2 of 5
Date	06/12/2022

29/03/2022 to 05/04/2022

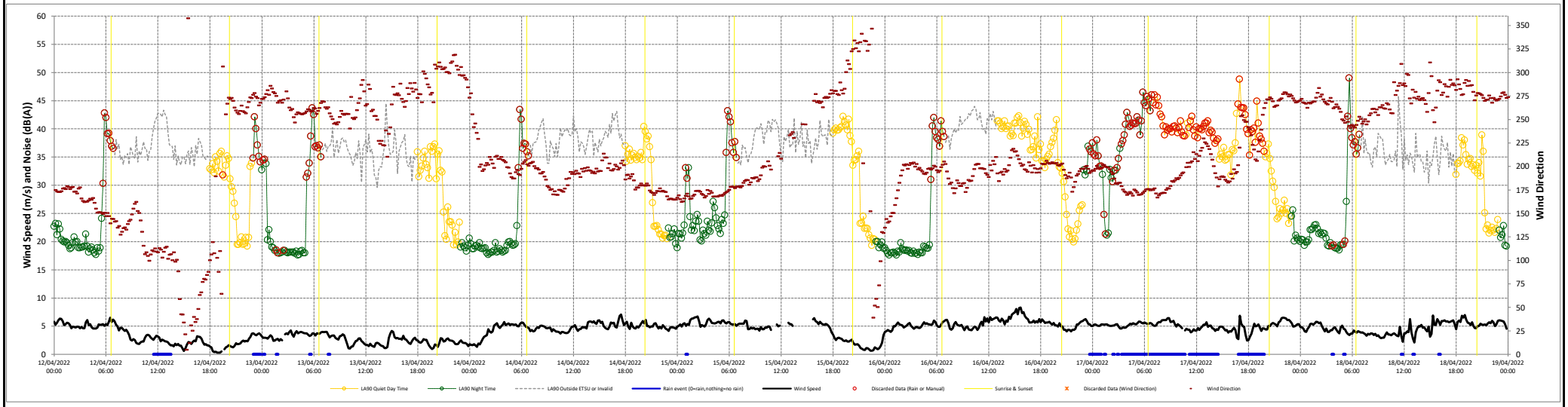


05/04/2022 to 12/04/2022

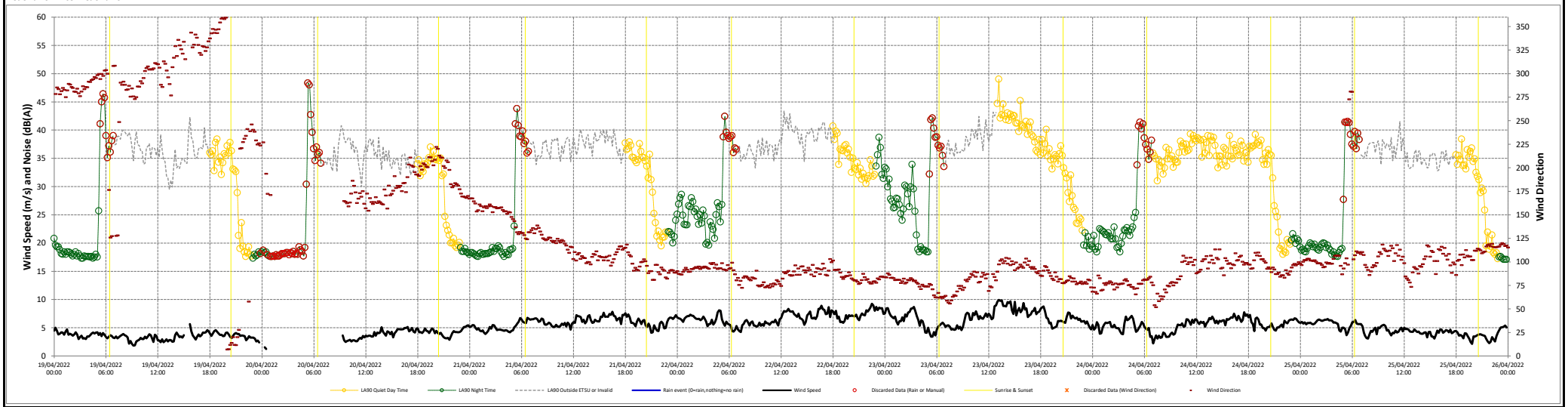


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML6 Page 3 of 5
Date	06/12/2022

12/04/2022 to 19/04/2022

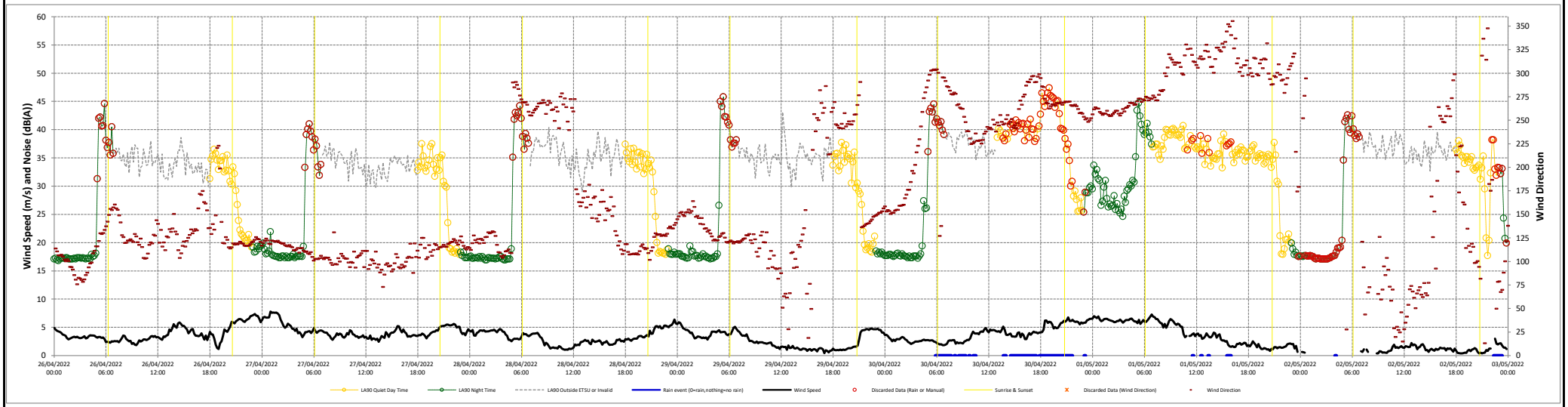


19/04/2022 to 26/04/2022

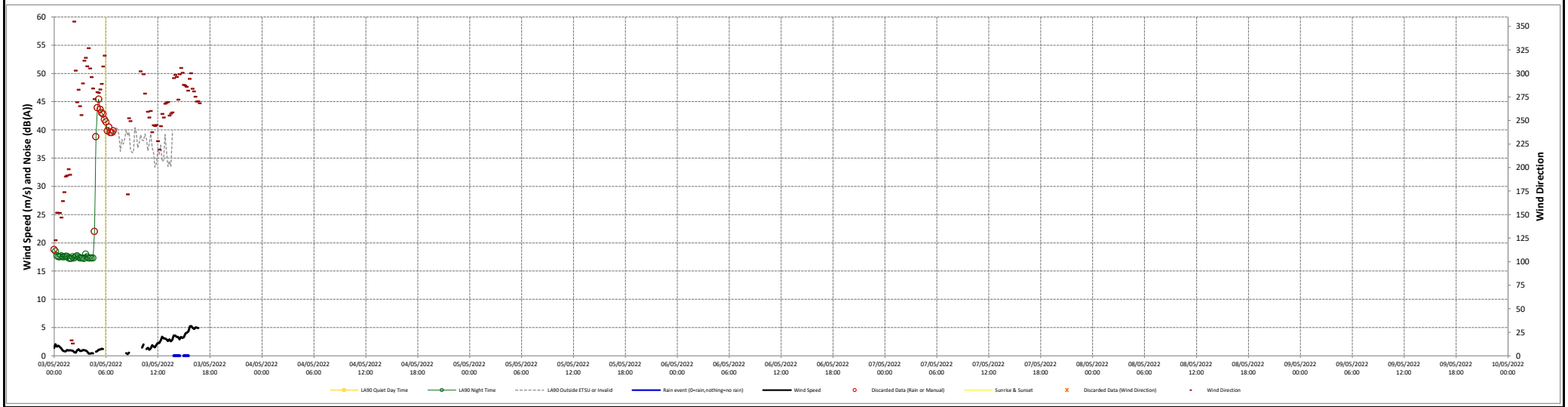


Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML6 Page 4 of 5
Date	06/12/2022

26/04/2022 to 03/05/2022



03/05/2022 to 10/05/2022



Project	Umma More Renewable Energy Development
Client	Umma More Ltd
Title	Time Series for NML6 Page 5 of 5
Date	06/12/2022

Annex 5 – NSR Coordinates and Prediction Modelling Results

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H1	618185	745935	68	NML5	Derelict	No
H2	618399	747936	95	NML1	Dwelling	No
H3	619841	746630	60	NML2	Dwelling	Yes - NAL1
H4	621453	745239	109	NML3	Dwelling	Yes - NAL2
H5	618915	745338	60	NML5	Dwelling	Yes - NAL3
H6	620556	746589	70	NML2	Dwelling	Yes - NAL4
H7	618087	745667	65	NML5	Dwelling	Yes - NAL5
H8	621320	746366	71	NML2	Dwelling	Yes - NAL6
H9	618475	748140	100	NML1	Dwelling	No
H10	621172	744654	90	NML4	Dwelling	Yes - NAL7
H11	618036	745676	66	NML5	Dwelling	No
H12	618376	748045	99	NML1	Dwelling	No
H13	619889	747394	69	NML2	Dwelling	Yes - NAL8
H14	618287	747683	85	NML6	Dwelling	Yes - NAL9
H15	618174	747340	80	NML6	Dwelling	No
H16	618208	747455	80	NML6	Dwelling	No
H17	618264	747610	82	NML6	Dwelling	No
H18	619952	747921	63	NML2	Dwelling	No
H19	620818	746596	83	NML2	Dwelling	Yes - NAL10
H20	618250	747779	87	NML6	Dwelling	No
H21	618929	745223	60	NML5	Dwelling	No
H22	618121	747256	78	NML6	Dwelling	No
H23	621200	744540	90	NML4	Dwelling	No
H24	621312	746517	80	NML2	Dwelling	No
H25	618422	748301	100	NML1	Dwelling	Yes - NAL11
H26	618380	748267	100	NML1	Dwelling	No
H27	621461	746453	80	NML2	Dwelling	No
H28	618077	746968	78	NML6	Dwelling	Yes - NAL12
H29	621434	744955	104	NML3	Dwelling	No
H30	621149	744413	95	NML4	Dwelling	No
H31	620140	746850	75	NML2	Dwelling	No
H32	621238	744491	90	NML4	Dwelling	No
H33	618042	747109	79	NML6	Dwelling	No
H34	620699	744161	89	NML4	Dwelling	No
H35	620376	744130	81	NML4	Dwelling	Yes - NAL13
H36	621274	744492	90	NML4	Dwelling	No
H37	621203	744407	94	NML4	Dwelling	No
H38	621233	746652	80	NML2	Dwelling	No
H39	621280	746636	80	NML2	Dwelling	No
H40	621314	744527	90	NML4	Dwelling	No
H41	617957	746743	79	NML6	Dwelling	No
H42	621833	746010	84	NML3	Dwelling	No
H43	618447	748447	99	NML1	Dwelling	No
H44	621462	744804	99	NML3	Dwelling	No
H45	618372	748380	98	NML1	Dwelling	No
H46	621478	744839	100	NML3	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H47	617996	746982	80	NML6	Dwelling	No
H48	621453	744698	96	NML3	Dwelling	No
H49	620423	744066	84	NML4	Dwelling	No
H50	620144	747524	75	NML2	Dwelling	No
H51	617960	747157	80	NML6	Dwelling	No
H52	620494	744059	85	NML4	Dwelling	No
H53	621347	744492	90	NML4	Dwelling	No
H54	618372	748440	95	NML1	Dwelling	No
H55	618835	745029	60	NML5	Dwelling	No
H56	620477	746929	84	NML2	Dwelling	No
H57	620936	744114	90	NML4	Dwelling	No
H58	617910	747172	80	NML6	Dwelling	No
H59	621651	744955	104	NML3	Dwelling	No
H60	621886	745261	100	NML3	Dwelling	No
H61	620218	747506	77	NML2	Dwelling	No
H62	618449	748599	97	NML1	Dwelling	No
H63	618359	748530	92	NML1	Dwelling	No
H64	621608	744868	101	NML3	Dwelling	No
H65	621814	746367	80	NML2	Dwelling	No
H66	621953	746099	83	NML3	Dwelling	No
H67	619592	748749	60	NML1	Dwelling	Yes - NAL14
H68	617851	747114	80	NML6	Dwelling	No
H69	617846	747216	80	NML6	Dwelling	No
H70	617831	747309	80	NML6	Dwelling	No
H71	621896	746322	80	NML2	Dwelling	No
H72	621926	746313	80	NML2	Dwelling	No
H73	621990	745273	99	NML3	Dwelling	No
H74	617548	746289	75	NML5	Dwelling	No
H75	620952	746948	91	NML2	Dwelling	No
H76	620298	743884	81	NML4	Dwelling	No
H77	621296	744152	90	NML4	Derelict	No
H78	619544	748873	60	NML1	Dwelling	No
H79	620373	743851	82	NML4	Dwelling	No
H80	622071	745331	98	NML3	Dwelling	No
H81	621174	746964	80	NML2	Dwelling	No
H82	621000	747004	85	NML2	Dwelling	No
H83	620245	743844	81	NML4	Dwelling	No
H84	618416	748813	91	NML1	Dwelling	No
H85	622082	746291	80	NML2	Dwelling	No
H86	619669	744029	70	NML4	Dwelling	Yes - NAL15
H87	617397	745840	88	NML5	Dwelling	No
H88	622205	746027	82	NML3	Dwelling	No
H89	617498	745482	80	NML5	Dwelling	No
H90	620170	743767	80	NML4	Dwelling	No
H91	617444	745580	83	NML5	Dwelling	No
H92	617494	745416	80	NML5	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H93	617586	746998	80	NML6	Dwelling	No
H94	621151	747129	80	NML2	Dwelling	No
H95	622285	745942	82	NML3	Dwelling	No
H96	622295	745509	100	NML3	Dwelling	No
H97	618860	749119	69	NML1	Dwelling	Yes - NAL16
H98	617289	746117	85	NML5	Dwelling	No
H99	617278	746093	87	NML5	Dwelling	No
H100	620195	743672	81	NML4	Dwelling	No
H101	622364	745714	93	NML3	Dwelling	No
H102	620071	743671	80	NML4	Dwelling	No
H103	618406	749020	80	NML1	Dwelling	No
H104	619132	749208	60	NML1	Dwelling	No
H105	621024	743677	89	NML4	Dwelling	No
H106	620058	743635	80	NML4	Dwelling	No
H107	619204	749238	60	NML1	Dwelling	No
H108	621159	747263	81	NML2	Dwelling	No
H109	622263	745001	90	NML3	Dwelling	No
H110	617260	745546	84	NML5	Dwelling	No
H111	618430	749128	76	NML1	Dwelling	No
H112	622455	745549	91	NML3	Dwelling	No
H113	619965	743600	80	NML4	Dwelling	No
H114	617184	746449	81	NML5	Dwelling	No
H115	619373	749288	60	NML1	Dwelling	No
H116	620901	747378	88	NML2	Derelict	No
H117	619986	743558	80	NML4	Dwelling	No
H118	619416	749308	61	NML1	Dwelling	No
H119	622499	745533	90	NML3	Dwelling	No
H120	620743	747454	87	NML2	Dwelling	No
H121	618385	749190	75	NML1	Dwelling	No
H122	620790	747458	88	NML2	Dwelling	No
H123	617304	745225	80	NML5	Dwelling	No
H124	619873	743551	80	NML4	Dwelling	No
H125	619455	749346	62	NML1	Dwelling	No
H126	617308	745196	80	NML5	Dwelling	No
H127	619260	749386	60	NML1	Dwelling	No
H128	618167	749104	76	NML1	Dwelling	No
H129	622583	745605	89	NML3	Dwelling	No
H130	617020	745829	90	NML5	Dwelling	No
H131	620567	743369	85	NML4	Derelict	No
H132	617004	745897	90	NML5	Dwelling	No
H133	619682	749362	67	NML1	Dwelling	No
H134	622500	745035	90	NML3	Dwelling	No
H135	621187	743472	90	NML4	Dwelling	No
H136	619721	743511	80	NML4	Dwelling	No
H137	622660	745602	88	NML3	Dwelling	No
H138	621232	747495	83	NML2	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H139	617273	745020	80	NML5	Dwelling	No
H140	621284	747492	83	NML2	Dwelling	No
H141	619694	743471	80	NML4	Dwelling	No
H142	616921	745956	92	NML5	Dwelling	No
H143	616985	746625	88	NML5	Dwelling	No
H144	621515	747456	80	NML2	Dwelling	No
H145	618979	749547	60	NML1	Dwelling	No
H146	619881	743357	80	NML4	Dwelling	No
H147	619920	743330	80	NML4	Dwelling	No
H148	619957	749376	69	NML1	Dwelling	No
H149	616865	745925	94	NML5	Dwelling	No
H150	621296	747565	83	NML2	Dwelling	No
H151	616956	746698	89	NML5	Dwelling	No
H152	621656	747456	80	NML2	Dwelling	No
H153	617233	744911	80	NML5	Dwelling	No
H154	619866	743296	80	NML4	Dwelling	No
H155	616827	745925	95	NML5	Dwelling	No
H156	619323	743538	79	NML5	Dwelling	No
H157	620715	748801	80	NML2	Dwelling	No
H158	619097	743644	73	NML5	Dwelling	No
H159	622817	745804	83	NML3	Dwelling	No
H160	617237	744831	80	NML5	Dwelling	No
H161	619919	743235	80	NML4	Dwelling	No
H162	616942	746861	87	NML5	Dwelling	No
H163	621377	743339	90	NML4	Dwelling	No
H164	621928	743736	90	NML4	Dwelling	No
H165	616755	745926	97	NML5	Dwelling	No
H166	621999	743791	90	NML4	Dwelling	No
H167	619490	749666	66	NML1	Dwelling	No
H168	621246	747697	83	NML2	Dwelling	No
H169	617833	749239	70	NML1	Dwelling	No
H170	619847	743205	80	NML4	Dwelling	No
H171	616733	745865	95	NML5	Dwelling	No
H172	620786	748861	80	NML2	Dwelling	No
H173	617267	744678	78	NML5	Dwelling	No
H174	617190	744763	80	NML5	Dwelling	No
H175	617746	749203	70	NML1	Dwelling	No
H176	619837	743174	80	NML4	Dwelling	No
H177	617014	747629	86	NML5	Derelict	No
H178	621285	743211	90	NML4	Dwelling	No
H179	619179	743479	80	NML5	Dwelling	No
H180	621396	747721	81	NML2	Dwelling	No
H181	622139	743857	90	NML4	Dwelling	No
H182	622182	743890	90	NML4	Dwelling	No
H183	616698	746502	103	NML5	Dwelling	No
H184	620047	743067	80	NML4	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H185	619228	743411	80	NML5	Dwelling	No
H186	622957	745968	82	NML3	Dwelling	No
H187	621197	743124	90	NML4	Dwelling	No
H188	619949	743075	80	NML4	Dwelling	No
H189	617729	749285	70	NML1	Dwelling	No
H190	616632	745851	95	NML5	Dwelling	No
H191	619102	743437	80	NML5	Dwelling	No
H192	622071	743677	90	NML4	Dwelling	No
H193	617183	744634	80	NML5	Dwelling	No
H194	616705	746694	99	NML5	Dwelling	No
H195	617038	748142	83	NML5	Dwelling	No
H196	617182	748612	79	NML5	Dwelling	No
H197	622290	743923	90	NML4	Dwelling	No
H198	620168	742971	81	NML4	Dwelling	No
H199	616593	745833	95	NML5	Dwelling	No
H200	617165	744594	80	NML5	Dwelling	No
H201	617222	744527	79	NML5	Dwelling	No
H202	619500	749848	65	NML1	Dwelling	No
H203	623039	746008	88	NML3	Dwelling	No
H204	621194	748384	80	NML2	Dwelling	No
H205	616971	748102	87	NML5	Dwelling	No
H206	616949	748060	88	NML5	Dwelling	No
H207	617532	749233	70	NML1	Dwelling	No
H208	617155	744543	80	NML5	Dwelling	No
H209	620953	748941	82	NML2	Dwelling	No
H210	617632	749342	70	NML1	Dwelling	No
H211	622397	743950	90	NML4	Dwelling	No
H212	620939	748987	82	NML2	Dwelling	No
H213	616931	748122	88	NML5	Dwelling	No
H214	616925	748096	89	NML5	Dwelling	No
H215	620090	749714	78	NML1	Dwelling	No
H216	619064	743317	80	NML5	Dwelling	No
H217	619920	749802	75	NML1	Dwelling	No
H218	616898	748038	91	NML5	Dwelling	No
H219	623112	746004	90	NML3	Dwelling	No
H220	616781	747557	90	NML5	Dwelling	No
H221	617141	744483	81	NML5	Dwelling	No
H222	620997	748958	83	NML2	Dwelling	No
H223	621224	748525	80	NML2	Dwelling	No
H224	616793	747641	90	NML5	Derelict	No
H225	620982	748987	83	NML2	Dwelling	No
H226	616626	746894	100	NML5	Dwelling	No
H227	620968	749016	83	NML2	Dwelling	No
H228	616478	745810	95	NML5	Derelict	No
H229	617297	744310	75	NML5	Dwelling	No
H230	623113	746181	90	NML3	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H231	621027	748962	84	NML2	Dwelling	No
H232	617692	749494	70	NML1	Dwelling	No
H233	622445	743893	90	NML4	Dwelling	No
H234	616818	747861	95	NML5	Dwelling	No
H235	622168	743524	88	NML4	Dwelling	No
H236	617704	749519	69	NML1	Dwelling	No
H237	616448	745812	94	NML5	Derelict	No
H238	620992	749055	84	NML2	Dwelling	No
H239	623118	746308	90	NML3	Dwelling	No
H240	618482	749931	62	NML1	Dwelling	No
H241	621057	748976	85	NML2	Dwelling	No
H242	619374	750018	62	NML1	Dwelling	No
H243	616672	747215	90	NML5	Dwelling	No
H244	623201	745551	90	NML3	Dwelling	No
H245	621028	749050	85	NML2	Dwelling	No
H246	617638	749511	69	NML1	Dwelling	No
H247	616414	745822	96	NML5	Dwelling	No
H248	616870	748341	93	NML5	Dwelling	No
H249	616673	747402	90	NML5	Dwelling	No
H250	617021	748747	81	NML5	Dwelling	No
H251	617659	749537	69	NML1	Dwelling	No
H252	617677	749561	68	NML1	Dwelling	No
H253	616655	747337	90	NML5	Dwelling	No
H254	620912	749243	81	NML2	Dwelling	No
H255	616651	747431	90	NML5	Dwelling	No
H256	621055	749065	86	NML2	Dwelling	No
H257	620957	749198	83	NML2	Dwelling	No
H258	621208	748823	85	NML2	Dwelling	No
H259	621136	748954	87	NML2	Dwelling	No
H260	618450	749992	61	NML1	Dwelling	No
H261	621205	748868	86	NML2	Dwelling	No
H262	620847	749355	86	NML2	Dwelling	No
H263	621107	749045	88	NML2	Dwelling	No
H264	617718	749653	67	NML1	Dwelling	No
H265	622645	744023	90	NML4	Dwelling	No
H266	622291	743493	87	NML4	Dwelling	No
H267	623248	746141	90	NML3	Dwelling	No
H268	621174	748962	89	NML2	Dwelling	No
H269	621179	748962	89	NML2	Dwelling	No
H270	621211	748910	88	NML2	Dwelling	No
H271	621121	749055	88	NML2	Dwelling	No
H272	621211	748915	88	NML2	Dwelling	No
H273	617095	744299	78	NML5	Dwelling	No
H274	621189	748962	89	NML2	Dwelling	No
H275	621210	748931	88	NML2	Dwelling	No
H276	621194	748963	89	NML2	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H277	621209	748938	89	NML2	Dwelling	No
H278	617721	749688	67	NML1	Dwelling	No
H279	617218	749226	73	NML5	Dwelling	No
H280	621145	749057	89	NML2	Dwelling	No
H281	621210	748960	89	NML2	Dwelling	No
H282	621188	748998	90	NML2	Dwelling	No
H283	617099	744259	77	NML5	Dwelling	No
H284	622701	744024	90	NML4	Dwelling	No
H285	621247	748921	89	NML2	Dwelling	No
H286	622314	743450	86	NML4	Dwelling	No
H287	621215	748980	90	NML2	Dwelling	No
H288	621242	748938	89	NML2	Dwelling	No
H289	621207	749004	90	NML2	Dwelling	No
H290	621242	748948	89	NML2	Dwelling	No
H291	621241	748956	90	NML2	Dwelling	No
H292	618382	750055	61	NML1	Dwelling	No
H293	618681	743280	80	NML5	Dwelling	No
H294	623299	746202	90	NML3	Dwelling	No
H295	621305	748878	86	NML2	Dwelling	No
H296	620239	749921	85	NML1	Dwelling	No
H297	621259	748967	90	NML2	Dwelling	No
H298	621236	749007	90	NML2	Dwelling	No
H299	618632	743273	80	NML5	Dwelling	No
H300	621260	749007	90	NML2	Dwelling	No
H301	617128	749240	74	NML5	Dwelling	No
H302	621291	748986	90	NML2	Dwelling	No
H303	619513	750200	63	NML1	Dwelling	No
H304	621651	742845	85	NML4	Dwelling	No
H305	620929	749482	88	NML2	Dwelling	No
H306	617013	744188	77	NML5	Dwelling	No
H307	618546	743257	79	NML5	Dwelling	No
H308	616170	745781	98	NML5	Dwelling	No
H309	618456	743208	78	NML5	Dwelling	No
H310	617129	743821	73	NML5	Dwelling	No
H311	617263	743721	72	NML5	Dwelling	No
H312	617302	743641	73	NML5	Dwelling	No
H313	618274	743103	80	NML5	Dwelling	No
H314	617152	743671	74	NML5	Dwelling	No
H315	617168	743642	74	NML5	Dwelling	No
H316	617184	743609	74	NML5	Dwelling	No
H317	618241	743025	79	NML5	Dwelling	No
H318	617257	743509	74	NML5	Dwelling	No
H319	617305	743455	74	NML5	Dwelling	No
H320	618669	742667	80	NML5	Dwelling	No
H321	618565	742723	80	NML5	Dwelling	No
H322	617837	743197	70	NML5	Dwelling	No

Table A5.1: Noise Sensitive Receptors

Noise Sensitive Receptor (H)	Easting (m)	Northing (m)	Elevation (m AOD)	Background Noise Data Used **	Building Status - Dwelling/ Derelict ***	Is this NSR also an NAL?
H323	619241	742355	80	NML5	Dwelling	No
H324	617767	743194	70	NML5	Dwelling	No
H325	617628	743231	72	NML5	Dwelling	No
H326	617399	743314	75	NML5	Dwelling	No
H327	618942	742448	80	NML5	Dwelling	No
H328	618029	743000	71	NML5	Dwelling	No
H329	618881	742444	80	NML5	Dwelling	No
H330	617784	742977	72	NML5	Dwelling	No
H331	617670	742963	73	NML5	Dwelling	No
H332	617729	742927	73	NML5	Dwelling	No
H333	617666	742912	74	NML5	Dwelling	No
H334	617640	742836	75	NML5	Dwelling	No
H335	617564	742826	76	NML5	Dwelling	No
H336	617446	742784	79	NML5	Dwelling	No
H337	617645	742585	80	NML5	Dwelling	No
H338	617396	742670	81	NML5	Dwelling	No
H339	617288	742696	83	NML5	Dwelling	No
H340	617223	742681	87	NML5	Dwelling	No
H341	617279	742624	88	NML5	Dwelling	No

* The assessment results for these receptors are included within Tables 6.4 and 6.5 of the main report.

** Shown on Figures A1.1 and A1.1a-c, Annex 1

*** Predictions have not been undertaken at buildings classified as derelict, and are marked as grey text

Table A5.2 WEDG Noise Limits Compliance Table – Daytime

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H1	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H2	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	27.7	29.3	33.4	37.1	38.4	38.4	38.4	38.4	38.4	38.4
	Exceedance Level	-	-	-12.3	-10.7	-6.6	-7.9	-6.6	-6.6	-8	-12.2	-16.7	-21.3
H9	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.6	36.4	37.7	37.7	37.7	37.7	37.7	37.7
	Exceedance Level	-	-	-13	-11.4	-7.4	-8.6	-7.3	-7.3	-8.7	-12.9	-17.4	-22
H11	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.6	36.3	37.6	37.6	37.6	37.6	37.6	37.6
	Exceedance Level	-	-	-13	-11.4	-7.4	-3.7	-7.4	-7.4	-7.4	-9.8	-14.3	-19.2
H12	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.9	28.5	32.5	36.3	37.6	37.6	37.6	37.6	37.6	37.6
	Exceedance Level	-	-	-13.1	-11.5	-7.5	-8.7	-7.4	-7.4	-8.8	-13	-17.5	-22.1
H15	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	28.1	29.6	33.7	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-11.9	-10.4	-6.3	-7.6	-6.3	-6.3	-6.3	-9.5	-13.9	-18.6
H16	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	28	29.6	33.7	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-12	-10.4	-6.3	-7.6	-6.3	-6.3	-6.3	-9.5	-13.9	-18.6
H17	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	28	29.6	33.6	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-12	-10.4	-6.4	-7.6	-6.3	-6.3	-6.3	-9.5	-13.9	-18.6
H18	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.2	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-13.4	-11.8	-7.8	-9	-7.7	-7.7	-7.9	-12.4	-12.4	-12.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H20	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.2	28.8	32.9	36.6	37.9	37.9	37.9	37.9	37.9	37.9
	Exceedance Level	-	-	-12.8	-11.2	-7.1	-8.4	-7.1	-7.1	-7.1	-10.3	-14.7	-19.4
H21	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	28.6	30.2	34.2	37.9	39.2	39.2	39.2	39.2	39.2	39.2
	Exceedance Level	-	-	-11.4	-9.8	-5.8	-2.1	-5.8	-5.8	-5.8	-8.2	-12.7	-17.6
H22	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.8	29.4	33.4	37.1	38.4	38.4	38.4	38.4	38.4	38.4
	Exceedance Level	-	-	-12.2	-10.6	-6.6	-7.9	-6.6	-6.6	-6.6	-9.8	-14.2	-18.9
H23	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26.5	28.1	32.1	35.9	37.2	37.2	37.2	37.2	37.2	37.2
	Exceedance Level	-	-	-13.5	-11.9	-7.9	-9.1	-7.8	-7.8	-7.8	-11.4	-15.6	-20.2
H24	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.2	35.9	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-13.4	-11.8	-7.8	-9.1	-7.7	-7.7	-7.9	-12.4	-12.4	-12.4
H26	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.2	34.9	36.2	36.2	36.2	36.2	36.2	36.2
	Exceedance Level	-	-	-14.5	-12.9	-8.8	-10.1	-8.8	-8.8	-10.2	-14.4	-18.9	-23.5
H27	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.1	27.6	31.7	35.4	36.7	36.7	36.7	36.7	36.7	36.7
	Exceedance Level	-	-	-13.9	-12.4	-8.3	-9.6	-8.3	-8.3	-8.5	-13	-13	-13
H29	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	27.1	28.7	32.7	36.5	37.8	37.8	37.8	37.8	37.8	37.8
	Exceedance Level	-	-	-12.9	-11.3	-7.3	-8.5	-7.2	-7.2	-7.2	-11.4	-17.3	-17.3
H30	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-14	-12.4	-8.4	-9.7	-8.4	-8.4	-8.4	-12	-16.2	-20.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H31	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	28.8	30.4	34.4	38.1	39.4	39.4	39.4	39.4	39.4	39.4
	Exceedance Level	-	-	-11.2	-9.6	-5.6	-6.9	-5.6	-5.6	-5.8	-10.3	-10.3	-10.3
H32	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-14	-12.4	-8.4	-9.7	-8.4	-8.4	-8.4	-12	-16.2	-20.8
H33	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29	33.1	36.8	38.1	38.1	38.1	38.1	38.1	38.1
	Exceedance Level	-	-	-12.6	-11	-6.9	-8.2	-6.9	-6.9	-6.9	-10.1	-14.5	-19.2
H34	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-14.2	-12.6	-8.6	-9.9	-8.6	-8.6	-8.6	-12.2	-16.4	-21
H36	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-14.2	-12.6	-8.6	-9.9	-8.6	-8.6	-8.6	-12.2	-16.4	-21
H37	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.6	27.2	31.3	35	36.3	36.3	36.3	36.3	36.3	36.3
	Exceedance Level	-	-	-14.4	-12.8	-8.7	-10	-8.7	-8.7	-8.7	-12.3	-16.5	-21.1
H38	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.2	27.7	31.8	35.5	36.8	36.8	36.8	36.8	36.8	36.8
	Exceedance Level	-	-	-13.8	-12.3	-8.2	-9.5	-8.2	-8.2	-8.4	-12.9	-12.9	-12.9
H39	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.4	36.7	36.7	36.7	36.7	36.7	36.7
	Exceedance Level	-	-	-14	-12.4	-8.4	-9.6	-8.3	-8.3	-8.5	-13	-13	-13
H40	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.7	27.3	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-14.3	-12.7	-8.6	-9.9	-8.6	-8.6	-8.6	-12.2	-16.4	-21

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H41	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.3	28.9	33	36.7	38	38	38	38	38	38
	Exceedance Level	-	-	-12.7	-11.1	-7	-8.3	-7	-7	-7	-10.2	-14.6	-19.3
H42	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25	26.6	30.7	34.4	35.7	35.7	35.7	35.7	35.7	35.7
	Exceedance Level	-	-	-15	-13.4	-9.3	-10.6	-9.3	-9.3	-9.3	-13.5	-19.4	-19.4
H43	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.6	26.2	30.3	34	35.3	35.3	35.3	35.3	35.3	35.3
	Exceedance Level	-	-	-15.4	-13.8	-9.7	-11	-9.7	-9.7	-11.1	-15.3	-19.8	-24.4
H44	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	26.2	27.8	31.8	35.5	36.8	36.8	36.8	36.8	36.8	36.8
	Exceedance Level	-	-	-13.8	-12.2	-8.2	-9.5	-8.2	-8.2	-8.2	-12.4	-18.3	-18.3
H45	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.8	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-15.2	-13.7	-9.6	-10.9	-9.6	-9.6	-11	-15.2	-19.7	-24.3
H46	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-13.7	-12.1	-8.1	-9.4	-8.1	-8.1	-8.1	-12.3	-18.2	-18.2
H47	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.3	28.9	32.9	36.6	37.9	37.9	37.9	37.9	37.9	37.9
	Exceedance Level	-	-	-12.7	-11.1	-7.1	-8.4	-7.1	-7.1	-7.1	-10.3	-14.7	-19.4
H48	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-14.2	-12.6	-8.6	-9.9	-8.6	-8.6	-8.6	-12.8	-18.7	-18.7
H49	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.3	26.9	31	34.7	36	36	36	36	36	36
	Exceedance Level	-	-	-14.7	-13.1	-9	-10.3	-9	-9	-9	-12.6	-16.8	-21.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H50	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.3	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-13.4	-11.8	-7.7	-9	-7.7	-7.7	-7.9	-12.4	-12.4	-12.4
H51	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	26.7	28.3	32.3	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-13.3	-11.7	-7.7	-9	-7.7	-7.7	-7.7	-10.9	-15.3	-20
H52	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.2	26.8	30.9	34.6	35.9	35.9	35.9	35.9	35.9	35.9
	Exceedance Level	-	-	-14.8	-13.2	-9.1	-10.4	-9.1	-9.1	-9.1	-12.7	-16.9	-21.5
H53	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.3	26.9	31	34.7	36	36	36	36	36	36
	Exceedance Level	-	-	-14.7	-13.1	-9	-10.3	-9	-9	-9	-12.6	-16.8	-21.4
H54	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.3	25.9	29.9	33.7	35	35	35	35	35	35
	Exceedance Level	-	-	-15.7	-14.1	-10.1	-11.3	-10	-10	-11.4	-15.6	-20.1	-24.7
H55	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.7	36.4	37.7	37.7	37.7	37.7	37.7	37.7
	Exceedance Level	-	-	-13	-11.4	-7.3	-3.6	-7.3	-7.3	-7.3	-9.7	-14.2	-19.1
H56	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29	33	36.7	38	38	38	38	38	38
	Exceedance Level	-	-	-12.6	-11	-7	-8.3	-7	-7	-7.2	-11.7	-11.7	-11.7
H57	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	24.8	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-15.2	-13.7	-9.6	-10.9	-9.6	-9.6	-9.6	-13.2	-17.4	-22
H58	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-13.7	-12.1	-8.1	-9.4	-8.1	-8.1	-8.1	-11.3	-15.7	-20.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H59	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-14.5	-12.9	-8.9	-10.2	-8.9	-8.9	-8.9	-13.1	-19	-19
H60	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	24.6	26.2	30.3	34	35.3	35.3	35.3	35.3	35.3	35.3
	Exceedance Level	-	-	-15.4	-13.8	-9.7	-11	-9.7	-9.7	-9.7	-13.9	-19.8	-19.8
H61	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-13.7	-12.1	-8.1	-9.4	-8.1	-8.1	-8.3	-12.8	-12.8	-12.8
H62	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.2	29.3	33	34.3	34.3	34.3	34.3	34.3	34.3
	Exceedance Level	-	-	-16.3	-14.8	-10.7	-12	-10.7	-10.7	-12.1	-16.3	-20.8	-25.4
H63	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-16.3	-14.7	-10.7	-11.9	-10.6	-10.6	-12	-16.2	-20.7	-25.3
H64	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-14.5	-12.9	-8.9	-10.2	-8.9	-8.9	-8.9	-13.1	-19	-19
H65	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.8	33.5	34.8	34.8	34.8	34.8	34.8	34.8
	Exceedance Level	-	-	-15.8	-14.2	-10.2	-11.5	-10.2	-10.2	-10.4	-14.9	-14.9	-14.9
H66	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.6	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-16	-14.4	-10.4	-11.6	-10.3	-10.3	-10.3	-14.5	-20.4	-20.4
H68	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-14	-12.4	-8.4	-9.7	-8.4	-8.4	-8.4	-11.6	-16	-20.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H69	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25.7	27.3	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-14.3	-12.7	-8.6	-9.9	-8.6	-8.6	-8.6	-11.8	-16.2	-20.9
H70	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25.4	27	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-14.6	-13	-8.9	-10.2	-8.9	-8.9	-8.9	-12.1	-16.5	-21.2
H71	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.8	25.4	29.4	33.2	34.5	34.5	34.5	34.5	34.5	34.5
	Exceedance Level	-	-	-16.2	-14.6	-10.6	-11.8	-10.5	-10.5	-10.7	-15.2	-15.2	-15.2
H72	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33	34.3	34.3	34.3	34.3	34.3	34.3
	Exceedance Level	-	-	-16.3	-14.7	-10.7	-12	-10.7	-10.7	-10.9	-15.4	-15.4	-15.4
H73	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	23.9	25.5	29.5	33.2	34.5	34.5	34.5	34.5	34.5	34.5
	Exceedance Level	-	-	-16.1	-14.5	-10.5	-11.8	-10.5	-10.5	-10.5	-14.7	-20.6	-20.6
H74	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	24.4	26	30	33.7	35	35	35	35	35	35
	Exceedance Level	-	-	-15.6	-14	-10	-6.3	-10	-10	-10	-12.4	-16.9	-21.8
H75	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	25.6	27.2	31.3	35	36.3	36.3	36.3	36.3	36.3	36.3
	Exceedance Level	-	-	-14.4	-12.8	-8.7	-10	-8.7	-8.7	-8.9	-13.4	-13.4	-13.4
H76	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.6	33.3	34.6	34.6	34.6	34.6	34.6	34.6
	Exceedance Level	-	-	-16	-14.4	-10.4	-11.7	-10.4	-10.4	-10.4	-14	-18.2	-22.8
H77	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H78	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.1	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-17.5	-15.9	-11.9	-13.2	-11.9	-11.9	-13.3	-17.5	-22	-26.6
H79	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	23.8	25.4	29.4	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-16.2	-14.6	-10.6	-11.9	-10.6	-10.6	-10.6	-14.2	-18.4	-23
H80	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	23.4	25	29.1	32.8	34.1	34.1	34.1	34.1	34.1	34.1
	Exceedance Level	-	-	-16.6	-15	-10.9	-12.2	-10.9	-10.9	-10.9	-15.1	-21	-21
H81	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.7	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-15.3	-13.7	-9.6	-10.9	-9.6	-9.6	-9.8	-14.3	-14.3	-14.3
H82	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	25.2	26.8	30.9	34.6	35.9	35.9	35.9	35.9	35.9	35.9
	Exceedance Level	-	-	-14.8	-13.2	-9.1	-10.4	-9.1	-9.1	-9.3	-13.8	-13.8	-13.8
H83	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-16.3	-14.7	-10.7	-11.9	-10.6	-10.6	-10.6	-14.2	-18.4	-23
H84	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-17.8	-16.2	-12.2	-13.5	-12.2	-12.2	-13.6	-17.8	-22.3	-26.9
H85	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	22.8	24.4	28.4	32.1	33.4	33.4	33.4	33.4	33.4	33.4
	Exceedance Level	-	-	-17.2	-15.6	-11.6	-12.9	-11.6	-11.6	-11.8	-16.3	-16.3	-16.3
H87	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.9	24.5	28.5	32.3	33.6	33.6	33.6	33.6	33.6	33.6
	Exceedance Level	-	-	-17.1	-15.5	-11.5	-7.7	-11.4	-11.4	-11.4	-13.8	-18.3	-23.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H88	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22.4	24	28	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-17.6	-16	-12	-13.2	-11.9	-11.9	-11.9	-16.1	-22	-22
H89	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.7	24.3	28.3	32	33.4	33.4	33.4	33.4	33.4	33.4
	Exceedance Level	-	-	-17.3	-15.7	-11.7	-8	-11.6	-11.6	-11.6	-14	-18.5	-23.4
H90	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	23.2	24.8	28.8	32.5	33.8	33.8	33.8	33.8	33.8	33.8
	Exceedance Level	-	-	-16.8	-15.2	-11.2	-12.5	-11.2	-11.2	-11.2	-14.8	-19	-23.6
H91	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.7	24.3	28.3	32	33.3	33.3	33.3	33.3	33.3	33.3
	Exceedance Level	-	-	-17.3	-15.7	-11.7	-8	-11.7	-11.7	-11.7	-14.1	-18.6	-23.5
H92	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.1	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-17.5	-15.9	-11.9	-8.2	-11.9	-11.9	-11.9	-14.3	-18.8	-23.7
H93	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.2	52.6	57.3
	Predicted Wind Turbine Noise L_{A90}	-	-	24.3	25.9	29.9	33.6	34.9	34.9	34.9	34.9	34.9	34.9
	Exceedance Level	-	-	-15.7	-14.1	-10.1	-11.4	-10.1	-10.1	-10.1	-13.3	-17.7	-22.4
H94	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.1	25.7	29.7	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-15.9	-14.3	-10.3	-11.6	-10.3	-10.3	-10.5	-15	-15	-15
H95	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22	23.6	27.6	31.4	32.7	32.7	32.7	32.7	32.7	32.7
	Exceedance Level	-	-	-18	-16.4	-12.4	-13.6	-12.3	-12.3	-12.3	-16.5	-22.4	-22.4
H96	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22.1	23.7	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-17.9	-16.3	-12.2	-13.5	-12.2	-12.2	-12.2	-16.4	-22.3	-22.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H98	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.6	24.2	28.3	32	33.3	33.3	33.3	33.3	33.3	33.3
	Exceedance Level	-	-	-17.4	-15.8	-11.7	-8	-11.7	-11.7	-11.7	-14.1	-18.6	-23.5
H99	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-17.5	-15.9	-11.8	-8.1	-11.8	-11.8	-11.8	-14.2	-18.7	-23.6
H100	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	22.6	24.2	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-17.4	-15.8	-11.8	-13.1	-11.8	-11.8	-11.8	-15.4	-19.6	-24.2
H101	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-18.3	-16.7	-12.6	-13.9	-12.6	-12.6	-12.6	-16.8	-22.7	-22.7
H102	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-17.5	-15.9	-11.8	-13.1	-11.8	-11.8	-11.8	-15.4	-19.6	-24.2
H103	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-19	-17.4	-13.4	-14.7	-13.4	-13.4	-14.8	-19	-23.5	-28.1
H104	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.4	30.1	31.4	31.4	31.4	31.4	31.4	31.4
	Exceedance Level	-	-	-19.3	-17.7	-13.6	-14.9	-13.6	-13.6	-15	-19.2	-23.7	-28.3
H105	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	21.8	23.4	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-18.2	-16.6	-12.6	-13.9	-12.6	-12.6	-12.6	-16.2	-20.4	-25
H106	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	22.3	23.9	27.9	31.6	32.9	32.9	32.9	32.9	32.9	32.9
	Exceedance Level	-	-	-17.7	-16.1	-12.1	-13.4	-12.1	-12.1	-12.1	-15.7	-19.9	-24.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H107	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20.6	22.2	26.2	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-19.4	-17.8	-13.8	-15.1	-13.8	-13.8	-15.2	-19.4	-23.9	-28.5
H108	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	23.5	25.1	29.1	32.9	34.2	34.2	34.2	34.2	34.2	34.2
	Exceedance Level	-	-	-16.5	-14.9	-10.9	-12.1	-10.8	-10.8	-11	-15.5	-15.5	-15.5
H109	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-18.3	-16.7	-12.6	-13.9	-12.6	-12.6	-12.6	-16.8	-22.7	-22.7
H110	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.2	27.2	30.9	32.2	32.2	32.2	32.2	32.2	32.2
	Exceedance Level	-	-	-18.4	-16.8	-12.8	-9.1	-12.8	-12.8	-12.8	-15.2	-19.7	-24.6
H111	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-19.6	-18	-13.9	-15.2	-13.9	-13.9	-15.3	-19.5	-24	-28.6
H112	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.2	22.8	26.8	30.5	31.8	31.8	31.8	31.8	31.8	31.8
	Exceedance Level	-	-	-18.8	-17.2	-13.2	-14.5	-13.2	-13.2	-13.2	-17.4	-23.3	-23.3
H113	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	22	23.6	27.7	31.4	32.7	32.7	32.7	32.7	32.7	32.7
	Exceedance Level	-	-	-18	-16.4	-12.3	-13.6	-12.3	-12.3	-12.3	-15.9	-20.1	-24.7
H114	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-17.8	-16.2	-12.2	-8.5	-12.2	-12.2	-12.2	-14.6	-19.1	-24
H115	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20.2	21.8	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-19.8	-18.2	-14.2	-15.5	-14.2	-14.2	-15.6	-19.8	-24.3	-28.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H116	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H117	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	21.8	23.4	27.4	31.2	32.5	32.5	32.5	32.5	32.5	32.5
	Exceedance Level	-	-	-18.2	-16.6	-12.6	-13.8	-12.5	-12.5	-12.5	-16.1	-20.3	-24.9
H118	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-19.9	-18.3	-14.3	-15.6	-14.3	-14.3	-15.7	-19.9	-24.4	-29
H119	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-19	-17.4	-13.4	-14.7	-13.4	-13.4	-13.4	-17.6	-23.5	-23.5
H120	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.9	33.6	34.9	34.9	34.9	34.9	34.9	34.9
	Exceedance Level	-	-	-15.8	-14.2	-10.1	-11.4	-10.1	-10.1	-10.3	-14.8	-14.8	-14.8
H121	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-20	-18.4	-14.4	-15.6	-14.3	-14.3	-15.7	-19.9	-24.4	-29
H122	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.7	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-16	-14.4	-10.3	-11.6	-10.3	-10.3	-10.5	-15	-15	-15
H123	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-9.6	-13.3	-13.3	-13.3	-15.7	-20.2	-25.1
H124	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.3	31	32.3	32.3	32.3	32.3	32.3	32.3
	Exceedance Level	-	-	-18.3	-16.7	-12.7	-14	-12.7	-12.7	-12.7	-16.3	-20.5	-25.1

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H125	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.8	21.4	25.5	29.2	30.5	30.5	30.5	30.5	30.5	30.5
	Exceedance Level	-	-	-20.2	-18.6	-14.5	-15.8	-14.5	-14.5	-15.9	-20.1	-24.6	-29.2
H126	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-19	-17.4	-13.4	-9.7	-13.4	-13.4	-13.4	-15.8	-20.3	-25.2
H127	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-20.3	-18.7	-14.6	-15.9	-14.6	-14.6	-16	-20.2	-24.7	-29.3
H128	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.5	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-20	-18.5	-14.4	-15.7	-14.4	-14.4	-15.8	-20	-24.5	-29.1
H129	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-19.5	-17.9	-13.9	-15.1	-13.8	-13.8	-13.8	-18	-23.9	-23.9
H130	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.8	22.4	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-19.2	-17.6	-13.5	-9.8	-13.5	-13.5	-13.5	-15.9	-20.4	-25.3
H131	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H132	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.8	22.4	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-19.2	-17.6	-13.5	-9.8	-13.5	-13.5	-13.5	-15.9	-20.4	-25.3
H133	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21.1	25.1	28.9	30.2	30.2	30.2	30.2	30.2	30.2
	Exceedance Level	-	-	-20.5	-18.9	-14.9	-16.1	-14.8	-14.8	-16.2	-20.4	-24.9	-29.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H134	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-19.5	-17.9	-13.9	-15.2	-13.9	-13.9	-13.9	-18.1	-24	-24
H135	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-19.6	-18	-14	-15.3	-14	-14	-14	-17.6	-21.8	-26.4
H136	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	21.3	22.9	26.9	30.7	32	32	32	32	32	32
	Exceedance Level	-	-	-18.7	-17.1	-13.1	-14.3	-13	-13	-13	-16.6	-20.8	-25.4
H137	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-20	-18.4	-14.4	-15.6	-14.3	-14.3	-14.3	-18.5	-24.4	-24.4
H138	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	22.4	24	28	31.7	33	33	33	33	33	33
	Exceedance Level	-	-	-17.6	-16	-12	-13.3	-12	-12	-12.2	-16.7	-16.7	-16.7
H139	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-19.6	-18	-14	-10.3	-14	-14	-14	-16.4	-20.9	-25.8
H140	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.6	32.9	32.9	32.9	32.9	32.9	32.9
	Exceedance Level	-	-	-17.8	-16.2	-12.2	-13.4	-12.1	-12.1	-12.3	-16.8	-16.8	-16.8
H141	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-14.6	-13.3	-13.3	-13.3	-16.9	-21.1	-25.7
H142	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-19.5	-17.9	-13.9	-10.2	-13.9	-13.9	-13.9	-16.3	-20.8	-25.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H143	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-9.6	-13.3	-13.3	-13.3	-15.7	-20.2	-25.1
H144	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.1	27.2	30.9	32.2	32.2	32.2	32.2	32.2	32.2
	Exceedance Level	-	-	-18.4	-16.9	-12.8	-14.1	-12.8	-12.8	-13	-17.5	-17.5	-17.5
H145	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-16.8	-15.5	-15.5	-16.9	-21.1	-25.6	-30.2
H146	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.3	30	31.3	31.3	31.3	31.3	31.3	31.3
	Exceedance Level	-	-	-19.3	-17.7	-13.7	-15	-13.7	-13.7	-13.7	-17.3	-21.5	-26.1
H147	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	20.6	22.1	26.2	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-19.4	-17.9	-13.8	-15.1	-13.8	-13.8	-13.8	-17.4	-21.6	-26.2
H148	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-20.9	-19.3	-15.3	-16.6	-15.3	-15.3	-16.7	-20.9	-25.4	-30
H149	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.2	21.8	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-19.8	-18.2	-14.2	-10.5	-14.2	-14.2	-14.2	-16.6	-21.1	-26
H150	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.9	23.5	27.5	31.3	32.6	32.6	32.6	32.6	32.6	32.6
	Exceedance Level	-	-	-18.1	-16.5	-12.5	-13.7	-12.4	-12.4	-12.6	-17.1	-17.1	-17.1
H151	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-19.1	-17.5	-13.5	-9.8	-13.5	-13.5	-13.5	-15.9	-20.4	-25.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H152	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-14.6	-13.3	-13.3	-13.5	-18	-18	-18
H153	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.9	21.5	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-20.1	-18.5	-14.4	-10.7	-14.4	-14.4	-14.4	-16.8	-21.3	-26.2
H154	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	20.3	21.9	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-19.7	-18.1	-14	-15.3	-14	-14	-14	-17.6	-21.8	-26.4
H155	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-20	-18.4	-14.4	-10.7	-14.4	-14.4	-14.4	-16.8	-21.3	-26.2
H156	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-19.1	-17.5	-13.5	-9.8	-13.5	-13.5	-13.5	-15.9	-20.4	-25.3
H157	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.6	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-20.4	-18.8	-14.7	-16	-14.7	-14.7	-14.9	-19.4	-19.4	-19.4
H158	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-19.1	-17.5	-13.4	-9.7	-13.4	-13.4	-13.4	-15.8	-20.3	-25.2
H159	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-20.8	-19.2	-15.1	-16.4	-15.1	-15.1	-15.1	-19.3	-25.2	-25.2
H160	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-20.3	-18.7	-14.6	-10.9	-14.6	-14.6	-14.6	-17	-21.5	-26.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H161	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-19.9	-18.3	-14.3	-15.6	-14.3	-14.3	-14.3	-17.9	-22.1	-26.7
H162	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.4	30.1	31.4	31.4	31.4	31.4	31.4	31.4
	Exceedance Level	-	-	-19.3	-17.7	-13.6	-9.9	-13.6	-13.6	-13.6	-16	-20.5	-25.4
H163	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	20.9	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-20.6	-19.1	-15	-16.3	-15	-15	-15	-18.6	-22.8	-27.4
H164	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-20.6	-19	-14.9	-16.2	-14.9	-14.9	-14.9	-18.5	-22.7	-27.3
H165	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-20.3	-18.8	-14.7	-11	-14.7	-14.7	-14.7	-17.1	-21.6	-26.5
H166	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-20.6	-19	-15	-16.3	-15	-15	-15	-18.6	-22.8	-27.4
H167	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.1	-16.1	-17.4	-16.1	-16.1	-17.5	-21.7	-26.2	-30.8
H168	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.2	27.3	31	32.3	32.3	32.3	32.3	32.3	32.3
	Exceedance Level	-	-	-18.4	-16.8	-12.7	-14	-12.7	-12.7	-12.9	-17.4	-17.4	-17.4
H169	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-21.5	-19.9	-15.9	-17.2	-15.9	-15.9	-17.3	-21.5	-26	-30.6

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H170	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.9	21.5	25.5	29.2	30.5	30.5	30.5	30.5	30.5	30.5
	Exceedance Level	-	-	-20.1	-18.5	-14.5	-15.8	-14.5	-14.5	-14.5	-18.1	-22.3	-26.9
H171	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21.1	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-20.5	-18.9	-14.9	-11.2	-14.9	-14.9	-14.9	-17.3	-21.8	-26.7
H172	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-20.8	-19.2	-15.1	-16.4	-15.1	-15.1	-15.3	-19.8	-19.8	-19.8
H173	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-20.6	-19	-14.9	-11.2	-14.9	-14.9	-14.9	-17.3	-21.8	-26.7
H174	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-20.6	-19	-15	-11.3	-15	-15	-15	-17.4	-21.9	-26.8
H175	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-21.6	-20	-16	-17.2	-15.9	-15.9	-17.3	-21.5	-26	-30.6
H176	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-20.3	-18.7	-14.6	-15.9	-14.6	-14.6	-14.6	-18.2	-22.4	-27
H177	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H178	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21	-19.4	-15.4	-16.7	-15.4	-15.4	-15.4	-19	-23.2	-27.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H179	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	21.9	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-19.6	-18.1	-14	-10.3	-14	-14	-14	-16.4	-20.9	-25.8
H180	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-14.6	-13.3	-13.3	-13.5	-18	-18	-18
H181	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.8	28.5	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-20.9	-19.3	-15.2	-16.5	-15.2	-15.2	-15.2	-18.8	-23	-27.6
H182	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-20.9	-19.3	-15.3	-16.6	-15.3	-15.3	-15.3	-18.9	-23.1	-27.7
H183	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-20.3	-18.8	-14.7	-11	-14.7	-14.7	-14.7	-17.1	-21.6	-26.5
H184	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-20.7	-19.1	-15.1	-16.3	-15	-15	-15	-18.6	-22.8	-27.4
H185	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-19.9	-18.3	-14.2	-10.5	-14.2	-14.2	-14.2	-16.6	-21.1	-26
H186	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-21.5	-19.9	-15.8	-17.1	-15.8	-15.8	-15.8	-20	-25.9	-25.9
H187	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.1	29.4	29.4	29.4	29.4	29.4	29.4
	Exceedance Level	-	-	-21.2	-19.6	-15.6	-16.9	-15.6	-15.6	-15.6	-19.2	-23.4	-28

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H188	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-20.7	-19.1	-15	-16.3	-15	-15	-15	-18.6	-22.8	-27.4
H189	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-17.6	-16.3	-16.3	-17.7	-21.9	-26.4	-31
H190	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-21	-19.4	-15.3	-11.6	-15.3	-15.3	-15.3	-17.7	-22.2	-27.1
H191	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-20	-18.4	-14.3	-10.6	-14.3	-14.3	-14.3	-16.7	-21.2	-26.1
H192	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.1	29.4	29.4	29.4	29.4	29.4	29.4
	Exceedance Level	-	-	-21.2	-19.6	-15.6	-16.9	-15.6	-15.6	-15.6	-19.2	-23.4	-28
H193	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-21	-19.4	-15.3	-11.6	-15.3	-15.3	-15.3	-17.7	-22.2	-27.1
H194	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-20.3	-18.7	-14.7	-11	-14.7	-14.7	-14.7	-17.1	-21.6	-26.5
H195	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-20.7	-19.1	-15.1	-11.4	-15.1	-15.1	-15.1	-17.5	-22	-26.9
H196	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.2	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-21.4	-19.8	-15.8	-12	-15.7	-15.7	-15.7	-18.1	-22.6	-27.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H197	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.2	-19.6	-15.6	-16.8	-15.5	-15.5	-15.5	-19.1	-23.3	-27.9
H198	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-16.8	-15.5	-15.5	-15.5	-19.1	-23.3	-27.9
H199	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.2	-19.6	-15.5	-11.8	-15.5	-15.5	-15.5	-17.9	-22.4	-27.3
H200	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-11.8	-15.5	-15.5	-15.5	-17.9	-22.4	-27.3
H201	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.2	-19.6	-15.5	-11.8	-15.5	-15.5	-15.5	-17.9	-22.4	-27.3
H202	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-22.5	-21	-16.9	-18.2	-16.9	-16.9	-18.3	-22.5	-27	-31.6
H203	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-17.4	-16.1	-16.1	-16.1	-20.3	-26.2	-26.2
H204	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.6	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-20.4	-18.8	-14.7	-16	-14.7	-14.7	-14.9	-19.4	-19.4	-19.4
H205	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-21	-19.4	-15.3	-11.6	-15.3	-15.3	-15.3	-17.7	-22.2	-27.1

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H206	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-21	-19.4	-15.3	-11.6	-15.3	-15.3	-15.3	-17.7	-22.2	-27.1
H207	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.3	-20.7	-16.6	-17.9	-16.6	-16.6	-18	-22.2	-26.7	-31.3
H208	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.3	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-21.4	-19.8	-15.7	-12	-15.7	-15.7	-15.7	-18.1	-22.6	-27.5
H209	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-21.5	-19.9	-15.8	-17.1	-15.8	-15.8	-16	-20.5	-20.5	-20.5
H210	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-18	-16.7	-16.7	-18.1	-22.3	-26.8	-31.4
H211	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-21.5	-19.9	-15.9	-17.1	-15.8	-15.8	-15.8	-19.4	-23.6	-28.2
H212	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.7	29	29	29	29	29	29
	Exceedance Level	-	-	-21.6	-20	-16	-17.3	-16	-16	-16.2	-20.7	-20.7	-20.7
H213	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.2	-19.6	-15.5	-11.8	-15.5	-15.5	-15.5	-17.9	-22.4	-27.3
H214	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-11.7	-15.4	-15.4	-15.4	-17.8	-22.3	-27.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H215	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19.1	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-22.5	-20.9	-16.9	-18.2	-16.9	-16.9	-18.3	-22.5	-27	-31.6
H216	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-20.5	-19	-14.9	-11.2	-14.9	-14.9	-14.9	-17.3	-21.8	-26.7
H217	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-22.7	-21.1	-17.1	-18.4	-17.1	-17.1	-18.5	-22.7	-27.2	-31.8
H218	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21.1	-19.5	-15.4	-11.7	-15.4	-15.4	-15.4	-17.8	-22.3	-27.2
H219	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.5	-20.7	-26.6	-26.6
H220	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-20.7	-19.1	-15.1	-11.4	-15.1	-15.1	-15.1	-17.5	-22	-26.9
H221	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20	24.1	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-21.5	-20	-15.9	-12.2	-15.9	-15.9	-15.9	-18.3	-22.8	-27.7
H222	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.7	29	29	29	29	29	29
	Exceedance Level	-	-	-21.6	-20	-16	-17.3	-16	-16	-16.2	-20.7	-20.7	-20.7
H223	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-20.9	-19.3	-15.3	-16.6	-15.2	-15.2	-15.4	-19.9	-19.9	-19.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H224	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H225	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.1	-16.1	-17.4	-16.1	-16.1	-16.3	-20.8	-20.8	-20.8
H226	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.8	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-20.8	-19.2	-15.2	-11.4	-15.1	-15.1	-15.1	-17.5	-22	-26.9
H227	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.8	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.2	-16.1	-17.4	-16.1	-16.1	-16.3	-20.8	-20.8	-20.8
H228	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H229	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-21.5	-19.9	-15.8	-12.1	-15.8	-15.8	-15.8	-18.2	-22.7	-27.6
H230	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.6	-20.8	-26.7	-26.7
H231	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.1	-16.1	-17.4	-16.1	-16.1	-16.3	-20.8	-20.8	-20.8
H232	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.8	22.8	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-22.8	-21.2	-17.2	-18.4	-17.1	-17.1	-18.5	-22.7	-27.2	-31.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H233	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-17.5	-16.2	-16.2	-16.2	-19.8	-24	-28.6
H234	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21.1	-19.5	-15.4	-11.7	-15.4	-15.4	-15.4	-17.8	-22.3	-27.2
H235	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-17.7	-16.4	-16.4	-16.4	-20	-24.2	-28.8
H236	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.7	22.8	26.5	27.8	27.8	27.8	27.8	27.8	27.8
	Exceedance Level	-	-	-22.8	-21.3	-17.2	-18.5	-17.2	-17.2	-18.6	-22.8	-27.3	-31.9
H237	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H238	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-17.6	-16.3	-16.3	-16.5	-21	-21	-21
H239	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-18	-16.7	-16.7	-16.7	-20.9	-26.8	-26.8
H240	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-23.2	-21.6	-17.5	-18.8	-17.5	-17.5	-18.9	-23.1	-27.6	-32.2
H241	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-17.5	-16.2	-16.2	-16.4	-20.9	-20.9	-20.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H242	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-23.2	-21.6	-17.6	-18.9	-17.6	-17.6	-19	-23.2	-27.7	-32.3
H243	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.8	28.5	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-20.8	-19.2	-15.2	-11.5	-15.2	-15.2	-15.2	-17.6	-22.1	-27
H244	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-18.1	-16.8	-16.8	-16.8	-21	-26.9	-26.9
H245	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-17.7	-16.4	-16.4	-16.6	-21.1	-21.1	-21.1
H246	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.7	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-23	-21.4	-17.3	-18.6	-17.3	-17.3	-18.7	-22.9	-27.4	-32
H247	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-16.3	-16.3	-16.3	-18.7	-23.2	-28.1
H248	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-12.5	-16.2	-16.2	-16.2	-18.6	-23.1	-28
H249	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21	-19.4	-15.4	-11.7	-15.4	-15.4	-15.4	-17.8	-22.3	-27.2
H250	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-13	-16.7	-16.7	-16.7	-19.1	-23.6	-28.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H251	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-23	-21.4	-17.4	-18.7	-17.4	-17.4	-18.8	-23	-27.5	-32.1
H252	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-23.1	-21.5	-17.4	-18.7	-17.4	-17.4	-18.8	-23	-27.5	-32.1
H253	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-21	-19.4	-15.4	-11.7	-15.4	-15.4	-15.4	-17.8	-22.3	-27.2
H254	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-18	-16.7	-16.7	-16.9	-21.4	-21.4	-21.4
H255	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-11.8	-15.5	-15.5	-15.5	-17.9	-22.4	-27.3
H256	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H257	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-18	-16.7	-16.7	-16.9	-21.4	-21.4	-21.4
H258	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.8	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.2	-16.1	-17.4	-16.1	-16.1	-16.3	-20.8	-20.8	-20.8
H259	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-22	-20.4	-16.3	-17.6	-16.3	-16.3	-16.5	-21	-21	-21

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H260	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-23.4	-21.8	-17.8	-19.1	-17.8	-17.8	-19.2	-23.4	-27.9	-32.5
H261	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-21.9	-20.3	-16.2	-17.5	-16.2	-16.2	-16.4	-20.9	-20.9	-20.9
H262	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.4	19	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-22.6	-21	-16.9	-18.2	-16.9	-16.9	-17.1	-21.6	-21.6	-21.6
H263	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.2	-20.6	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H264	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.7	18.3	22.3	26	27.3	27.3	27.3	27.3	27.3	27.3
	Exceedance Level	-	-	-23.3	-21.7	-17.7	-19	-17.7	-17.7	-19.1	-23.3	-27.8	-32.4
H265	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.8	-16.5	-16.5	-16.5	-20.1	-24.3	-28.9
H266	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19.1	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-22.5	-20.9	-16.9	-18.2	-16.9	-16.9	-16.9	-20.5	-24.7	-29.3
H267	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.8	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-22.8	-21.2	-17.1	-18.4	-17.1	-17.1	-17.1	-21.3	-27.2	-27.2
H268	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.7	-16.4	-16.4	-16.6	-21.1	-21.1	-21.1

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H269	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H270	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-17.7	-16.4	-16.4	-16.6	-21.1	-21.1	-21.1
H271	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H272	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-17.7	-16.4	-16.4	-16.6	-21.1	-21.1	-21.1
H273	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-12.8	-16.5	-16.5	-16.5	-18.9	-23.4	-28.3
H274	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H275	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.7	-16.4	-16.4	-16.6	-21.1	-21.1	-21.1
H276	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H277	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H278	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-23.4	-21.8	-17.8	-19.1	-17.8	-17.8	-19.2	-23.4	-27.9	-32.5
H279	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-23.1	-21.5	-17.5	-13.7	-17.4	-17.4	-17.4	-19.8	-24.3	-29.2
H280	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-18	-16.7	-16.7	-16.9	-21.4	-21.4	-21.4
H281	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.2	-20.6	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H282	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H283	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-12.9	-16.6	-16.6	-16.6	-19	-23.5	-28.4
H284	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-18	-16.7	-16.7	-16.7	-20.3	-24.5	-29.1
H285	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H286	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.7	28	28	28	28	28	28
	Exceedance Level	-	-	-22.7	-21.1	-17.1	-18.3	-17	-17	-17	-20.6	-24.8	-29.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H287	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H288	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.2	-20.6	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2
H289	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H290	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H291	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-22.2	-20.6	-16.6	-17.9	-16.6	-16.6	-16.8	-21.3	-21.3	-21.3
H292	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.8	21.9	25.6	26.9	26.9	26.9	26.9	26.9	26.9
	Exceedance Level	-	-	-23.7	-22.2	-18.1	-19.4	-18.1	-18.1	-19.5	-23.7	-28.2	-32.8
H293	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.3	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-21.4	-19.8	-15.7	-12	-15.7	-15.7	-15.7	-18.1	-22.6	-27.5
H294	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	49.2	55.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-23	-21.4	-17.4	-18.6	-17.3	-17.3	-17.3	-21.5	-27.4	-27.4
H295	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-22.1	-20.6	-16.5	-17.8	-16.5	-16.5	-16.7	-21.2	-21.2	-21.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H296	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-19.2	-17.9	-17.9	-19.3	-23.5	-28	-32.6
H297	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-18	-16.7	-16.7	-16.9	-21.4	-21.4	-21.4
H298	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-22.4	-20.8	-16.7	-18	-16.7	-16.7	-16.9	-21.4	-21.4	-21.4
H299	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-21.5	-19.9	-15.9	-12.1	-15.8	-15.8	-15.8	-18.2	-22.7	-27.6
H300	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-18.1	-16.8	-16.8	-17	-21.5	-21.5	-21.5
H301	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.3	26	27.3	27.3	27.3	27.3	27.3	27.3
	Exceedance Level	-	-	-23.4	-21.8	-17.7	-14	-17.7	-17.7	-17.7	-20.1	-24.6	-29.5
H302	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-18.1	-16.8	-16.8	-17	-21.5	-21.5	-21.5
H303	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	46.4	50.6	55.1	59.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.1	17.7	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-23.9	-22.3	-18.3	-19.6	-18.3	-18.3	-19.7	-23.9	-28.4	-33
H304	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45	48.6	52.8	57.4
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-23.1	-21.5	-17.5	-18.8	-17.5	-17.5	-17.5	-21.1	-25.3	-29.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H305	WEDG Noise Limit L_{A90}	40	40	40	40	40	45	45	45	45.2	49.7	49.7	49.7
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-23.1	-21.5	-17.5	-18.8	-17.5	-17.5	-17.7	-22.2	-22.2	-22.2
H306	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.4	19	23	26.7	28	28	28	28	28	28
	Exceedance Level	-	-	-22.6	-21	-17	-13.3	-17	-17	-17	-19.4	-23.9	-28.8
H307	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-21.7	-20.1	-16.1	-12.4	-16.1	-16.1	-16.1	-18.5	-23	-27.9
H308	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.1	18.7	22.7	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-22.9	-21.3	-17.3	-13.6	-17.3	-17.3	-17.3	-19.7	-24.2	-29.1
H309	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-12.7	-16.4	-16.4	-16.4	-18.8	-23.3	-28.2
H310	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-23.2	-21.6	-17.6	-13.9	-17.6	-17.6	-17.6	-20	-24.5	-29.4
H311	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-23.1	-21.5	-17.5	-13.8	-17.5	-17.5	-17.5	-19.9	-24.4	-29.3
H312	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-23.2	-21.6	-17.6	-13.9	-17.6	-17.6	-17.6	-20	-24.5	-29.4
H313	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-22.7	-21.1	-17.1	-13.4	-17.1	-17.1	-17.1	-19.5	-24	-28.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H314	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H315	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H316	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.4	18	22	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.6	-22	-18	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H317	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-23	-21.4	-17.4	-13.7	-17.4	-17.4	-17.4	-19.8	-24.3	-29.2
H318	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.9	22	25.7	27	27	27	27	27	27
	Exceedance Level	-	-	-23.7	-22.1	-18	-14.3	-18	-18	-18	-20.4	-24.9	-29.8
H319	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.9	21.9	25.6	26.9	26.9	26.9	26.9	26.9	26.9
	Exceedance Level	-	-	-23.7	-22.1	-18.1	-14.4	-18.1	-18.1	-18.1	-20.5	-25	-29.9
H320	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H321	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H322	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.7	18.3	22.3	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-23.3	-21.7	-17.7	-13.9	-17.6	-17.6	-17.6	-20	-24.5	-29.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H323	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-24	-22.4	-18.3	-14.6	-18.3	-18.3	-18.3	-20.7	-25.2	-30.1
H324	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-23.4	-21.8	-17.8	-14.1	-17.8	-17.8	-17.8	-20.2	-24.7	-29.6
H325	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.4	18	22	25.7	27	27	27	27	27	27
	Exceedance Level	-	-	-23.6	-22	-18	-14.3	-18	-18	-18	-20.4	-24.9	-29.8
H326	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.2	17.8	21.8	25.5	26.8	26.8	26.8	26.8	26.8	26.8
	Exceedance Level	-	-	-23.8	-22.2	-18.2	-14.5	-18.2	-18.2	-18.2	-20.6	-25.1	-30
H327	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.1	17.7	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-23.9	-22.3	-18.3	-14.6	-18.3	-18.3	-18.3	-20.7	-25.2	-30.1
H328	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-17.9	-17.9	-17.9	-20.3	-24.8	-29.7
H329	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.6	25.3	26.6	26.6	26.6	26.6	26.6	26.6
	Exceedance Level	-	-	-24	-22.4	-18.4	-14.7	-18.4	-18.4	-18.4	-20.8	-25.3	-30.2
H330	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.6	25.3	26.6	26.6	26.6	26.6	26.6	26.6
	Exceedance Level	-	-	-24	-22.4	-18.4	-14.7	-18.4	-18.4	-18.4	-20.8	-25.3	-30.2
H331	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	15.8	17.4	21.4	25.1	26.4	26.4	26.4	26.4	26.4	26.4
	Exceedance Level	-	-	-24.2	-22.6	-18.6	-14.9	-18.6	-18.6	-18.6	-21	-25.5	-30.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H332	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	15.8	17.4	21.4	25.1	26.4	26.4	26.4	26.4	26.4	26.4
	Exceedance Level	-	-	-24.2	-22.6	-18.6	-14.9	-18.6	-18.6	-18.6	-21	-25.5	-30.4
H333	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	15.6	17.2	21.3	25	26.3	26.3	26.3	26.3	26.3	26.3
	Exceedance Level	-	-	-24.4	-22.8	-18.7	-15	-18.7	-18.7	-18.7	-21.1	-25.6	-30.5
H334	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	15.4	17	21	24.7	26	26	26	26	26	26
	Exceedance Level	-	-	-24.6	-23	-19	-15.3	-19	-19	-19	-21.4	-25.9	-30.8
H335	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	15.2	16.8	20.9	24.6	25.9	25.9	25.9	25.9	25.9	25.9
	Exceedance Level	-	-	-24.8	-23.2	-19.1	-15.4	-19.1	-19.1	-19.1	-21.5	-26	-30.9
H336	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.9	16.5	20.6	24.3	25.6	25.6	25.6	25.6	25.6	25.6
	Exceedance Level	-	-	-25.1	-23.5	-19.4	-15.7	-19.4	-19.4	-19.4	-21.8	-26.3	-31.2
H337	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.8	16.4	20.4	24.1	25.4	25.4	25.4	25.4	25.4	25.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-19.6	-19.6	-19.6	-22	-26.5	-31.4
H338	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.6	16.2	20.2	23.9	25.2	25.2	25.2	25.2	25.2	25.2
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16.1	-19.8	-19.8	-19.8	-22.2	-26.7	-31.6
H339	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.5	16.1	20.1	23.8	25.1	25.1	25.1	25.1	25.1	25.1
	Exceedance Level	-	-	-25.5	-23.9	-19.9	-16.2	-19.9	-19.9	-19.9	-22.3	-26.8	-31.7
H340	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.3	15.9	19.9	23.6	24.9	24.9	24.9	24.9	24.9	24.9
	Exceedance Level	-	-	-25.7	-24.1	-20.1	-16.4	-20.1	-20.1	-20.1	-22.5	-27	-31.9

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H341	WEDG Noise Limit L_{A90}	40	40	40	40	40	40	45	45	45	47.4	51.9	56.8
	Predicted Wind Turbine Noise L_{A90}	-	-	14.3	15.9	19.9	23.6	24.9	24.9	24.9	24.9	24.9	24.9
	Exceedance Level	-	-	-25.7	-24.1	-20.1	-16.4	-20.1	-20.1	-20.1	-22.5	-27	-31.9

Table A5.3 WEDG Noise Limits Compliance Table – Night time

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H1	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H2	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	27.7	29.3	33.4	37.1	38.4	38.4	38.4	38.4	38.4	38.4
	Exceedance Level	-	-	-15.3	-13.7	-9.6	-5.9	-4.6	-4.6	-6.4	-11.4	-16.1	-20.1
H9	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.6	36.4	37.7	37.7	37.7	37.7	37.7	37.7
	Exceedance Level	-	-	-16	-14.4	-10.4	-6.6	-5.3	-5.3	-7.1	-12.1	-16.8	-20.8
H11	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.6	36.3	37.6	37.6	37.6	37.6	37.6	37.6
	Exceedance Level	-	-	-16	-14.4	-10.4	-6.7	-5.4	-5.4	-5.4	-6.5	-11.3	-16.3
H12	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	26.9	28.5	32.5	36.3	37.6	37.6	37.6	37.6	37.6	37.6
	Exceedance Level	-	-	-16.1	-14.5	-10.5	-6.7	-5.4	-5.4	-7.2	-12.2	-16.9	-20.9
H15	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	28.1	29.6	33.7	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-14.9	-13.4	-9.3	-5.6	-4.3	-4.3	-4.3	-7.7	-12.7	-17.7
H16	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	28	29.6	33.7	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-15	-13.4	-9.3	-5.6	-4.3	-4.3	-4.3	-7.7	-12.7	-17.7
H17	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	28	29.6	33.6	37.4	38.7	38.7	38.7	38.7	38.7	38.7
	Exceedance Level	-	-	-15	-13.4	-9.4	-5.6	-4.3	-4.3	-4.3	-7.7	-12.7	-17.7
H18	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.2	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-16.4	-14.8	-10.8	-7	-5.7	-5.7	-5.7	-9	-13.6	-17.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H20	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.2	28.8	32.9	36.6	37.9	37.9	37.9	37.9	37.9	37.9
	Exceedance Level	-	-	-15.8	-14.2	-10.1	-6.4	-5.1	-5.1	-5.1	-8.5	-13.5	-18.5
H21	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	28.6	30.2	34.2	37.9	39.2	39.2	39.2	39.2	39.2	39.2
	Exceedance Level	-	-	-14.4	-12.8	-8.8	-5.1	-3.8	-3.8	-3.8	-4.9	-9.7	-14.7
H22	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.8	29.4	33.4	37.1	38.4	38.4	38.4	38.4	38.4	38.4
	Exceedance Level	-	-	-15.2	-13.6	-9.6	-5.9	-4.6	-4.6	-4.6	-8	-13	-18
H23	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	26.5	28.1	32.1	35.9	37.2	37.2	37.2	37.2	37.2	37.2
	Exceedance Level	-	-	-16.5	-14.9	-10.9	-7.1	-5.8	-5.8	-5.8	-9.4	-13.9	-17.9
H24	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.2	35.9	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-16.4	-14.8	-10.8	-7.1	-5.7	-5.7	-5.7	-9	-13.6	-17.7
H26	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.2	34.9	36.2	36.2	36.2	36.2	36.2	36.2
	Exceedance Level	-	-	-17.5	-15.9	-11.8	-8.1	-6.8	-6.8	-8.6	-13.6	-18.3	-22.3
H27	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.1	27.6	31.7	35.4	36.7	36.7	36.7	36.7	36.7	36.7
	Exceedance Level	-	-	-16.9	-15.4	-11.3	-7.6	-6.3	-6.3	-6.3	-9.6	-14.2	-18.3
H29	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	27.1	28.7	32.7	36.5	37.8	37.8	37.8	37.8	37.8	37.8
	Exceedance Level	-	-	-15.9	-14.3	-10.3	-6.5	-5.2	-5.2	-5.2	-8.9	-13.8	-18.5
H30	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-17	-15.4	-11.4	-7.7	-6.4	-6.4	-6.4	-10	-14.5	-18.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H31	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	28.8	30.4	34.4	38.1	39.4	39.4	39.4	39.4	39.4	39.4
	Exceedance Level	-	-	-14.2	-12.6	-8.6	-4.9	-3.6	-3.6	-3.6	-6.9	-11.5	-15.6
H32	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-17	-15.4	-11.4	-7.7	-6.4	-6.4	-6.4	-10	-14.5	-18.5
H33	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29	33.1	36.8	38.1	38.1	38.1	38.1	38.1	38.1
	Exceedance Level	-	-	-15.6	-14	-9.9	-6.2	-4.9	-4.9	-4.9	-8.3	-13.3	-18.3
H34	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-17.2	-15.6	-11.6	-7.9	-6.6	-6.6	-6.6	-10.2	-14.7	-18.7
H36	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-17.2	-15.6	-11.6	-7.9	-6.6	-6.6	-6.6	-10.2	-14.7	-18.7
H37	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.6	27.2	31.3	35	36.3	36.3	36.3	36.3	36.3	36.3
	Exceedance Level	-	-	-17.4	-15.8	-11.7	-8	-6.7	-6.7	-6.7	-10.3	-14.8	-18.8
H38	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.2	27.7	31.8	35.5	36.8	36.8	36.8	36.8	36.8	36.8
	Exceedance Level	-	-	-16.8	-15.3	-11.2	-7.5	-6.2	-6.2	-6.2	-9.5	-14.1	-18.2
H39	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.4	36.7	36.7	36.7	36.7	36.7	36.7
	Exceedance Level	-	-	-17	-15.4	-11.4	-7.6	-6.3	-6.3	-6.3	-9.6	-14.2	-18.3
H40	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.7	27.3	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-17.3	-15.7	-11.6	-7.9	-6.6	-6.6	-6.6	-10.2	-14.7	-18.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H41	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.3	28.9	33	36.7	38	38	38	38	38	38
	Exceedance Level	-	-	-15.7	-14.1	-10	-6.3	-5	-5	-5	-8.4	-13.4	-18.4
H42	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25	26.6	30.7	34.4	35.7	35.7	35.7	35.7	35.7	35.7
	Exceedance Level	-	-	-18	-16.4	-12.3	-8.6	-7.3	-7.3	-7.3	-11	-15.9	-20.6
H43	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	24.6	26.2	30.3	34	35.3	35.3	35.3	35.3	35.3	35.3
	Exceedance Level	-	-	-18.4	-16.8	-12.7	-9	-7.7	-7.7	-9.5	-14.5	-19.2	-23.2
H44	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	26.2	27.8	31.8	35.5	36.8	36.8	36.8	36.8	36.8	36.8
	Exceedance Level	-	-	-16.8	-15.2	-11.2	-7.5	-6.2	-6.2	-6.2	-9.9	-14.8	-19.5
H45	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	24.8	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-18.2	-16.7	-12.6	-8.9	-7.6	-7.6	-9.4	-14.4	-19.1	-23.1
H46	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-16.7	-15.1	-11.1	-7.4	-6.1	-6.1	-6.1	-9.8	-14.7	-19.4
H47	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	27.3	28.9	32.9	36.6	37.9	37.9	37.9	37.9	37.9	37.9
	Exceedance Level	-	-	-15.7	-14.1	-10.1	-6.4	-5.1	-5.1	-5.1	-8.5	-13.5	-18.5
H48	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25.8	27.4	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-17.2	-15.6	-11.6	-7.9	-6.6	-6.6	-6.6	-10.3	-15.2	-19.9
H49	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.3	26.9	31	34.7	36	36	36	36	36	36
	Exceedance Level	-	-	-17.7	-16.1	-12	-8.3	-7	-7	-7	-10.6	-15.1	-19.1

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H50	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.6	28.2	32.3	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-16.4	-14.8	-10.7	-7	-5.7	-5.7	-5.7	-9	-13.6	-17.7
H51	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26.7	28.3	32.3	36	37.3	37.3	37.3	37.3	37.3	37.3
	Exceedance Level	-	-	-16.3	-14.7	-10.7	-7	-5.7	-5.7	-5.7	-9.1	-14.1	-19.1
H52	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.2	26.8	30.9	34.6	35.9	35.9	35.9	35.9	35.9	35.9
	Exceedance Level	-	-	-17.8	-16.2	-12.1	-8.4	-7.1	-7.1	-7.1	-10.7	-15.2	-19.2
H53	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	25.3	26.9	31	34.7	36	36	36	36	36	36
	Exceedance Level	-	-	-17.7	-16.1	-12	-8.3	-7	-7	-7	-10.6	-15.1	-19.1
H54	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	24.3	25.9	29.9	33.7	35	35	35	35	35	35
	Exceedance Level	-	-	-18.7	-17.1	-13.1	-9.3	-8	-8	-9.8	-14.8	-19.5	-23.5
H55	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	27	28.6	32.7	36.4	37.7	37.7	37.7	37.7	37.7	37.7
	Exceedance Level	-	-	-16	-14.4	-10.3	-6.6	-5.3	-5.3	-5.3	-6.4	-11.2	-16.2
H56	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	27.4	29	33	36.7	38	38	38	38	38	38
	Exceedance Level	-	-	-15.6	-14	-10	-6.3	-5	-5	-5	-8.3	-12.9	-17
H57	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	24.8	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-18.2	-16.7	-12.6	-8.9	-7.6	-7.6	-7.6	-11.2	-15.7	-19.7
H58	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-16.7	-15.1	-11.1	-7.4	-6.1	-6.1	-6.1	-9.5	-14.5	-19.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H59	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-17.5	-15.9	-11.9	-8.2	-6.9	-6.9	-6.9	-10.6	-15.5	-20.2
H60	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	24.6	26.2	30.3	34	35.3	35.3	35.3	35.3	35.3	35.3
	Exceedance Level	-	-	-18.4	-16.8	-12.7	-9	-7.7	-7.7	-7.7	-11.4	-16.3	-21
H61	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	26.3	27.9	31.9	35.6	36.9	36.9	36.9	36.9	36.9	36.9
	Exceedance Level	-	-	-16.7	-15.1	-11.1	-7.4	-6.1	-6.1	-6.1	-9.4	-14	-18.1
H62	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.2	29.3	33	34.3	34.3	34.3	34.3	34.3	34.3
	Exceedance Level	-	-	-19.3	-17.8	-13.7	-10	-8.7	-8.7	-10.5	-15.5	-20.2	-24.2
H63	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-19.3	-17.7	-13.7	-9.9	-8.6	-8.6	-10.4	-15.4	-20.1	-24.1
H64	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	25.5	27.1	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-17.5	-15.9	-11.9	-8.2	-6.9	-6.9	-6.9	-10.6	-15.5	-20.2
H65	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.8	33.5	34.8	34.8	34.8	34.8	34.8	34.8
	Exceedance Level	-	-	-18.8	-17.2	-13.2	-9.5	-8.2	-8.2	-8.2	-11.5	-16.1	-20.2
H66	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.6	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-19	-17.4	-13.4	-9.6	-8.3	-8.3	-8.3	-12	-16.9	-21.6
H68	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	26	27.6	31.6	35.3	36.6	36.6	36.6	36.6	36.6	36.6
	Exceedance Level	-	-	-17	-15.4	-11.4	-7.7	-6.4	-6.4	-6.4	-9.8	-14.8	-19.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H69	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.7	27.3	31.4	35.1	36.4	36.4	36.4	36.4	36.4	36.4
	Exceedance Level	-	-	-17.3	-15.7	-11.6	-7.9	-6.6	-6.6	-6.6	-10	-15	-20
H70	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	25.4	27	31.1	34.8	36.1	36.1	36.1	36.1	36.1	36.1
	Exceedance Level	-	-	-17.6	-16	-11.9	-8.2	-6.9	-6.9	-6.9	-10.3	-15.3	-20.3
H71	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	23.8	25.4	29.4	33.2	34.5	34.5	34.5	34.5	34.5	34.5
	Exceedance Level	-	-	-19.2	-17.6	-13.6	-9.8	-8.5	-8.5	-8.5	-11.8	-16.4	-20.5
H72	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33	34.3	34.3	34.3	34.3	34.3	34.3
	Exceedance Level	-	-	-19.3	-17.7	-13.7	-10	-8.7	-8.7	-8.7	-12	-16.6	-20.7
H73	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	23.9	25.5	29.5	33.2	34.5	34.5	34.5	34.5	34.5	34.5
	Exceedance Level	-	-	-19.1	-17.5	-13.5	-9.8	-8.5	-8.5	-8.5	-12.2	-17.1	-21.8
H74	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	24.4	26	30	33.7	35	35	35	35	35	35
	Exceedance Level	-	-	-18.6	-17	-13	-9.3	-8	-8	-8	-9.1	-13.9	-18.9
H75	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	25.6	27.2	31.3	35	36.3	36.3	36.3	36.3	36.3	36.3
	Exceedance Level	-	-	-17.4	-15.8	-11.7	-8	-6.7	-6.7	-6.7	-10	-14.6	-18.7
H76	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.6	33.3	34.6	34.6	34.6	34.6	34.6	34.6
	Exceedance Level	-	-	-19	-17.4	-13.4	-9.7	-8.4	-8.4	-8.4	-12	-16.5	-20.5
H77	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H78	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.1	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-20.5	-18.9	-14.9	-11.2	-9.9	-9.9	-11.7	-16.7	-21.4	-25.4
H79	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	23.8	25.4	29.4	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-19.2	-17.6	-13.6	-9.9	-8.6	-8.6	-8.6	-12.2	-16.7	-20.7
H80	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	23.4	25	29.1	32.8	34.1	34.1	34.1	34.1	34.1	34.1
	Exceedance Level	-	-	-19.6	-18	-13.9	-10.2	-8.9	-8.9	-8.9	-12.6	-17.5	-22.2
H81	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	24.7	26.3	30.4	34.1	35.4	35.4	35.4	35.4	35.4	35.4
	Exceedance Level	-	-	-18.3	-16.7	-12.6	-8.9	-7.6	-7.6	-7.6	-10.9	-15.5	-19.6
H82	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	25.2	26.8	30.9	34.6	35.9	35.9	35.9	35.9	35.9	35.9
	Exceedance Level	-	-	-17.8	-16.2	-12.1	-8.4	-7.1	-7.1	-7.1	-10.4	-15	-19.1
H83	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	23.7	25.3	29.3	33.1	34.4	34.4	34.4	34.4	34.4	34.4
	Exceedance Level	-	-	-19.3	-17.7	-13.7	-9.9	-8.6	-8.6	-8.6	-12.2	-16.7	-20.7
H84	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-20.8	-19.2	-15.2	-11.5	-10.2	-10.2	-12	-17	-21.7	-25.7
H85	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	22.8	24.4	28.4	32.1	33.4	33.4	33.4	33.4	33.4	33.4
	Exceedance Level	-	-	-20.2	-18.6	-14.6	-10.9	-9.6	-9.6	-9.6	-12.9	-17.5	-21.6
H87	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.9	24.5	28.5	32.3	33.6	33.6	33.6	33.6	33.6	33.6
	Exceedance Level	-	-	-20.1	-18.5	-14.5	-10.7	-9.4	-9.4	-9.4	-10.5	-15.3	-20.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H88	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	22.4	24	28	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-20.6	-19	-15	-11.2	-9.9	-9.9	-9.9	-13.6	-18.5	-23.2
H89	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.7	24.3	28.3	32	33.4	33.4	33.4	33.4	33.4	33.4
	Exceedance Level	-	-	-20.3	-18.7	-14.7	-11	-9.6	-9.6	-9.6	-10.7	-15.5	-20.5
H90	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	23.2	24.8	28.8	32.5	33.8	33.8	33.8	33.8	33.8	33.8
	Exceedance Level	-	-	-19.8	-18.2	-14.2	-10.5	-9.2	-9.2	-9.2	-12.8	-17.3	-21.3
H91	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.7	24.3	28.3	32	33.3	33.3	33.3	33.3	33.3	33.3
	Exceedance Level	-	-	-20.3	-18.7	-14.7	-11	-9.7	-9.7	-9.7	-10.8	-15.6	-20.6
H92	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.1	31.8	33.1	33.1	33.1	33.1	33.1	33.1
	Exceedance Level	-	-	-20.5	-18.9	-14.9	-11.2	-9.9	-9.9	-9.9	-11	-15.8	-20.8
H93	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.4	51.4	56.4
	Predicted Wind Turbine Noise L_{A90}	-	-	24.3	25.9	29.9	33.6	34.9	34.9	34.9	34.9	34.9	34.9
	Exceedance Level	-	-	-18.7	-17.1	-13.1	-9.4	-8.1	-8.1	-8.1	-11.5	-16.5	-21.5
H94	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	24.1	25.7	29.7	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-18.9	-17.3	-13.3	-9.6	-8.3	-8.3	-8.3	-11.6	-16.2	-20.3
H95	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	22	23.6	27.6	31.4	32.7	32.7	32.7	32.7	32.7	32.7
	Exceedance Level	-	-	-21	-19.4	-15.4	-11.6	-10.3	-10.3	-10.3	-14	-18.9	-23.6
H96	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	22.1	23.7	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-20.9	-19.3	-15.2	-11.5	-10.2	-10.2	-10.2	-13.9	-18.8	-23.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H98	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.6	24.2	28.3	32	33.3	33.3	33.3	33.3	33.3	33.3
	Exceedance Level	-	-	-20.4	-18.8	-14.7	-11	-9.7	-9.7	-9.7	-10.8	-15.6	-20.6
H99	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-20.5	-18.9	-14.8	-11.1	-9.8	-9.8	-9.8	-10.9	-15.7	-20.7
H100	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22.6	24.2	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-20.4	-18.8	-14.8	-11.1	-9.8	-9.8	-9.8	-13.4	-17.9	-21.9
H101	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-21.3	-19.7	-15.6	-11.9	-10.6	-10.6	-10.6	-14.3	-19.2	-23.9
H102	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22.5	24.1	28.2	31.9	33.2	33.2	33.2	33.2	33.2	33.2
	Exceedance Level	-	-	-20.5	-18.9	-14.8	-11.1	-9.8	-9.8	-9.8	-13.4	-17.9	-21.9
H103	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-12.7	-11.4	-11.4	-13.2	-18.2	-22.9	-26.9
H104	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.4	30.1	31.4	31.4	31.4	31.4	31.4	31.4
	Exceedance Level	-	-	-22.3	-20.7	-16.6	-12.9	-11.6	-11.6	-13.4	-18.4	-23.1	-27.1
H105	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.8	23.4	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-21.2	-19.6	-15.6	-11.9	-10.6	-10.6	-10.6	-14.2	-18.7	-22.7
H106	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22.3	23.9	27.9	31.6	32.9	32.9	32.9	32.9	32.9	32.9
	Exceedance Level	-	-	-20.7	-19.1	-15.1	-11.4	-10.1	-10.1	-10.1	-13.7	-18.2	-22.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H107	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20.6	22.2	26.2	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-22.4	-20.8	-16.8	-13.1	-11.8	-11.8	-13.6	-18.6	-23.3	-27.3
H108	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	23.5	25.1	29.1	32.9	34.2	34.2	34.2	34.2	34.2	34.2
	Exceedance Level	-	-	-19.5	-17.9	-13.9	-10.1	-8.8	-8.8	-8.8	-12.1	-16.7	-20.8
H109	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.4	31.1	32.4	32.4	32.4	32.4	32.4	32.4
	Exceedance Level	-	-	-21.3	-19.7	-15.6	-11.9	-10.6	-10.6	-10.6	-14.3	-19.2	-23.9
H110	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.2	27.2	30.9	32.2	32.2	32.2	32.2	32.2	32.2
	Exceedance Level	-	-	-21.4	-19.8	-15.8	-12.1	-10.8	-10.8	-10.8	-11.9	-16.7	-21.7
H111	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-22.6	-21	-16.9	-13.2	-11.9	-11.9	-13.7	-18.7	-23.4	-27.4
H112	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	21.2	22.8	26.8	30.5	31.8	31.8	31.8	31.8	31.8	31.8
	Exceedance Level	-	-	-21.8	-20.2	-16.2	-12.5	-11.2	-11.2	-11.2	-14.9	-19.8	-24.5
H113	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	22	23.6	27.7	31.4	32.7	32.7	32.7	32.7	32.7	32.7
	Exceedance Level	-	-	-21	-19.4	-15.3	-11.6	-10.3	-10.3	-10.3	-13.9	-18.4	-22.4
H114	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.5	32.8	32.8	32.8	32.8	32.8	32.8
	Exceedance Level	-	-	-20.8	-19.2	-15.2	-11.5	-10.2	-10.2	-10.2	-11.3	-16.1	-21.1
H115	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20.2	21.8	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-22.8	-21.2	-17.2	-13.5	-12.2	-12.2	-14	-19	-23.7	-27.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H116	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H117	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.8	23.4	27.4	31.2	32.5	32.5	32.5	32.5	32.5	32.5
	Exceedance Level	-	-	-21.2	-19.6	-15.6	-11.8	-10.5	-10.5	-10.5	-14.1	-18.6	-22.6
H118	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-22.9	-21.3	-17.3	-13.6	-12.3	-12.3	-14.1	-19.1	-23.8	-27.8
H119	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-12.7	-11.4	-11.4	-11.4	-15.1	-20	-24.7
H120	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	24.2	25.8	29.9	33.6	34.9	34.9	34.9	34.9	34.9	34.9
	Exceedance Level	-	-	-18.8	-17.2	-13.1	-9.4	-8.1	-8.1	-8.1	-11.4	-16	-20.1
H121	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-23	-21.4	-17.4	-13.6	-12.3	-12.3	-14.1	-19.1	-23.8	-27.8
H122	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	24	25.6	29.7	33.4	34.7	34.7	34.7	34.7	34.7	34.7
	Exceedance Level	-	-	-19	-17.4	-13.3	-9.6	-8.3	-8.3	-8.3	-11.6	-16.2	-20.3
H123	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-11.3	-11.3	-11.3	-12.4	-17.2	-22.2
H124	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.7	23.3	27.3	31	32.3	32.3	32.3	32.3	32.3	32.3
	Exceedance Level	-	-	-21.3	-19.7	-15.7	-12	-10.7	-10.7	-10.7	-14.3	-18.8	-22.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H125	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	19.8	21.4	25.5	29.2	30.5	30.5	30.5	30.5	30.5	30.5
	Exceedance Level	-	-	-23.2	-21.6	-17.5	-13.8	-12.5	-12.5	-14.3	-19.3	-24	-28
H126	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	21	22.6	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-22	-20.4	-16.4	-12.7	-11.4	-11.4	-11.4	-12.5	-17.3	-22.3
H127	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-23.3	-21.7	-17.6	-13.9	-12.6	-12.6	-14.4	-19.4	-24.1	-28.1
H128	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.5	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-23	-21.5	-17.4	-13.7	-12.4	-12.4	-14.2	-19.2	-23.9	-27.9
H129	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-22.5	-20.9	-16.9	-13.1	-11.8	-11.8	-11.8	-15.5	-20.4	-25.1
H130	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.8	22.4	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-22.2	-20.6	-16.5	-12.8	-11.5	-11.5	-11.5	-12.6	-17.4	-22.4
H131	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H132	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.8	22.4	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-22.2	-20.6	-16.5	-12.8	-11.5	-11.5	-11.5	-12.6	-17.4	-22.4
H133	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21.1	25.1	28.9	30.2	30.2	30.2	30.2	30.2	30.2
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.1	-12.8	-12.8	-14.6	-19.6	-24.3	-28.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H134	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-22.5	-20.9	-16.9	-13.2	-11.9	-11.9	-11.9	-15.6	-20.5	-25.2
H135	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-22.6	-21	-17	-13.3	-12	-12	-12	-15.6	-20.1	-24.1
H136	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.3	22.9	26.9	30.7	32	32	32	32	32	32
	Exceedance Level	-	-	-21.7	-20.1	-16.1	-12.3	-11	-11	-11	-14.6	-19.1	-23.1
H137	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-23	-21.4	-17.4	-13.6	-12.3	-12.3	-12.3	-16	-20.9	-25.6
H138	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	22.4	24	28	31.7	33	33	33	33	33	33
	Exceedance Level	-	-	-20.6	-19	-15	-11.3	-10	-10	-10	-13.3	-17.9	-22
H139	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	22	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-22.6	-21	-17	-13.3	-12	-12	-12	-13.1	-17.9	-22.9
H140	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	22.2	23.8	27.8	31.6	32.9	32.9	32.9	32.9	32.9	32.9
	Exceedance Level	-	-	-20.8	-19.2	-15.2	-11.4	-10.1	-10.1	-10.1	-13.4	-18	-22.1
H141	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-11.3	-11.3	-11.3	-14.9	-19.4	-23.4
H142	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.5	22.1	26.1	29.8	31.1	31.1	31.1	31.1	31.1	31.1
	Exceedance Level	-	-	-22.5	-20.9	-16.9	-13.2	-11.9	-11.9	-11.9	-13	-17.8	-22.8

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H143	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-11.3	-11.3	-11.3	-12.4	-17.2	-22.2
H144	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.1	27.2	30.9	32.2	32.2	32.2	32.2	32.2	32.2
	Exceedance Level	-	-	-21.4	-19.9	-15.8	-12.1	-10.8	-10.8	-10.8	-14.1	-18.7	-22.8
H145	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.1	-22.5	-18.5	-14.8	-13.5	-13.5	-15.3	-20.3	-25	-29
H146	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.3	30	31.3	31.3	31.3	31.3	31.3	31.3
	Exceedance Level	-	-	-22.3	-20.7	-16.7	-13	-11.7	-11.7	-11.7	-15.3	-19.8	-23.8
H147	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.6	22.1	26.2	29.9	31.2	31.2	31.2	31.2	31.2	31.2
	Exceedance Level	-	-	-22.4	-20.9	-16.8	-13.1	-11.8	-11.8	-11.8	-15.4	-19.9	-23.9
H148	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-23.9	-22.3	-18.3	-14.6	-13.3	-13.3	-15.1	-20.1	-24.8	-28.8
H149	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.2	21.8	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-22.8	-21.2	-17.2	-13.5	-12.2	-12.2	-12.2	-13.3	-18.1	-23.1
H150	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	21.9	23.5	27.5	31.3	32.6	32.6	32.6	32.6	32.6	32.6
	Exceedance Level	-	-	-21.1	-19.5	-15.5	-11.7	-10.4	-10.4	-10.4	-13.7	-18.3	-22.4
H151	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-12.8	-11.5	-11.5	-11.5	-12.6	-17.4	-22.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H152	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-11.3	-11.3	-11.3	-14.6	-19.2	-23.3
H153	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.9	21.5	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-23.1	-21.5	-17.4	-13.7	-12.4	-12.4	-12.4	-13.5	-18.3	-23.3
H154	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.3	21.9	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-22.7	-21.1	-17	-13.3	-12	-12	-12	-15.6	-20.1	-24.1
H155	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.6	29.3	30.6	30.6	30.6	30.6	30.6	30.6
	Exceedance Level	-	-	-23	-21.4	-17.4	-13.7	-12.4	-12.4	-12.4	-13.5	-18.3	-23.3
H156	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.5	30.2	31.5	31.5	31.5	31.5	31.5	31.5
	Exceedance Level	-	-	-22.1	-20.5	-16.5	-12.8	-11.5	-11.5	-11.5	-12.6	-17.4	-22.4
H157	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	19.6	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-23.4	-21.8	-17.7	-14	-12.7	-12.7	-12.7	-16	-20.6	-24.7
H158	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.9	22.5	26.6	30.3	31.6	31.6	31.6	31.6	31.6	31.6
	Exceedance Level	-	-	-22.1	-20.5	-16.4	-12.7	-11.4	-11.4	-11.4	-12.5	-17.3	-22.3
H159	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-23.8	-22.2	-18.1	-14.4	-13.1	-13.1	-13.1	-16.8	-21.7	-26.4
H160	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-23.3	-21.7	-17.6	-13.9	-12.6	-12.6	-12.6	-13.7	-18.5	-23.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H161	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-22.9	-21.3	-17.3	-13.6	-12.3	-12.3	-12.3	-15.9	-20.4	-24.4
H162	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.7	22.3	26.4	30.1	31.4	31.4	31.4	31.4	31.4	31.4
	Exceedance Level	-	-	-22.3	-20.7	-16.6	-12.9	-11.6	-11.6	-11.6	-12.7	-17.5	-22.5
H163	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	20.9	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-23.6	-22.1	-18	-14.3	-13	-13	-13	-16.6	-21.1	-25.1
H164	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-23.6	-22	-17.9	-14.2	-12.9	-12.9	-12.9	-16.5	-21	-25
H165	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-23.3	-21.8	-17.7	-14	-12.7	-12.7	-12.7	-13.8	-18.6	-23.6
H166	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-23.6	-22	-18	-14.3	-13	-13	-13	-16.6	-21.1	-25.1
H167	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.1	-19.1	-15.4	-14.1	-14.1	-15.9	-20.9	-25.6	-29.6
H168	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	21.6	23.2	27.3	31	32.3	32.3	32.3	32.3	32.3	32.3
	Exceedance Level	-	-	-21.4	-19.8	-15.7	-12	-10.7	-10.7	-10.7	-14	-18.6	-22.7
H169	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-24.5	-22.9	-18.9	-15.2	-13.9	-13.9	-15.7	-20.7	-25.4	-29.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H170	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.9	21.5	25.5	29.2	30.5	30.5	30.5	30.5	30.5	30.5
	Exceedance Level	-	-	-23.1	-21.5	-17.5	-13.8	-12.5	-12.5	-12.5	-16.1	-20.6	-24.6
H171	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21.1	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-23.5	-21.9	-17.9	-14.2	-12.9	-12.9	-12.9	-14	-18.8	-23.8
H172	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-23.8	-22.2	-18.1	-14.4	-13.1	-13.1	-13.1	-16.4	-21	-25.1
H173	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-23.6	-22	-17.9	-14.2	-12.9	-12.9	-12.9	-14	-18.8	-23.8
H174	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.4	21	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-23.6	-22	-18	-14.3	-13	-13	-13	-14.1	-18.9	-23.9
H175	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-24.6	-23	-19	-15.2	-13.9	-13.9	-15.7	-20.7	-25.4	-29.4
H176	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.4	29.1	30.4	30.4	30.4	30.4	30.4	30.4
	Exceedance Level	-	-	-23.3	-21.7	-17.6	-13.9	-12.6	-12.6	-12.6	-16.2	-20.7	-24.7
H177	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H178	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24	-22.4	-18.4	-14.7	-13.4	-13.4	-13.4	-17	-21.5	-25.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H179	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.4	21.9	26	29.7	31	31	31	31	31	31
	Exceedance Level	-	-	-22.6	-21.1	-17	-13.3	-12	-12	-12	-13.1	-17.9	-22.9
H180	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	21.1	22.7	26.7	30.4	31.7	31.7	31.7	31.7	31.7	31.7
	Exceedance Level	-	-	-21.9	-20.3	-16.3	-12.6	-11.3	-11.3	-11.3	-14.6	-19.2	-23.3
H181	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.8	28.5	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-23.9	-22.3	-18.2	-14.5	-13.2	-13.2	-13.2	-16.8	-21.3	-25.3
H182	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-23.9	-22.3	-18.3	-14.6	-13.3	-13.3	-13.3	-16.9	-21.4	-25.4
H183	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-23.3	-21.8	-17.7	-14	-12.7	-12.7	-12.7	-13.8	-18.6	-23.6
H184	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-23.7	-22.1	-18.1	-14.3	-13	-13	-13	-16.6	-21.1	-25.1
H185	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20.1	21.7	25.8	29.5	30.8	30.8	30.8	30.8	30.8	30.8
	Exceedance Level	-	-	-22.9	-21.3	-17.2	-13.5	-12.2	-12.2	-12.2	-13.3	-18.1	-23.1
H186	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-24.5	-22.9	-18.8	-15.1	-13.8	-13.8	-13.8	-17.5	-22.4	-27.1
H187	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.1	29.4	29.4	29.4	29.4	29.4	29.4
	Exceedance Level	-	-	-24.2	-22.6	-18.6	-14.9	-13.6	-13.6	-13.6	-17.2	-21.7	-25.7

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H188	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	25	28.7	30	30	30	30	30	30
	Exceedance Level	-	-	-23.7	-22.1	-18	-14.3	-13	-13	-13	-16.6	-21.1	-25.1
H189	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-24.9	-23.3	-19.3	-15.6	-14.3	-14.3	-16.1	-21.1	-25.8	-29.8
H190	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-24	-22.4	-18.3	-14.6	-13.3	-13.3	-13.3	-14.4	-19.2	-24.2
H191	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	20	21.6	25.7	29.4	30.7	30.7	30.7	30.7	30.7	30.7
	Exceedance Level	-	-	-23	-21.4	-17.3	-13.6	-12.3	-12.3	-12.3	-13.4	-18.2	-23.2
H192	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.1	29.4	29.4	29.4	29.4	29.4	29.4
	Exceedance Level	-	-	-24.2	-22.6	-18.6	-14.9	-13.6	-13.6	-13.6	-17.2	-21.7	-25.7
H193	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-24	-22.4	-18.3	-14.6	-13.3	-13.3	-13.3	-14.4	-19.2	-24.2
H194	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.7	21.3	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-23.3	-21.7	-17.7	-14	-12.7	-12.7	-12.7	-13.8	-18.6	-23.6
H195	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-23.7	-22.1	-18.1	-14.4	-13.1	-13.1	-13.1	-14.2	-19	-24
H196	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.2	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-24.4	-22.8	-18.8	-15	-13.7	-13.7	-13.7	-14.8	-19.6	-24.6

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H197	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.4	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.2	-22.6	-18.6	-14.8	-13.5	-13.5	-13.5	-17.1	-21.6	-25.6
H198	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.1	-22.5	-18.5	-14.8	-13.5	-13.5	-13.5	-17.1	-21.6	-25.6
H199	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.2	-22.6	-18.5	-14.8	-13.5	-13.5	-13.5	-14.6	-19.4	-24.4
H200	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.1	-22.5	-18.5	-14.8	-13.5	-13.5	-13.5	-14.6	-19.4	-24.4
H201	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.2	-22.6	-18.5	-14.8	-13.5	-13.5	-13.5	-14.6	-19.4	-24.4
H202	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-25.5	-24	-19.9	-16.2	-14.9	-14.9	-16.7	-21.7	-26.4	-30.4
H203	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.8	-23.2	-19.2	-15.4	-14.1	-14.1	-14.1	-17.8	-22.7	-27.4
H204	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	19.6	21.2	25.3	29	30.3	30.3	30.3	30.3	30.3	30.3
	Exceedance Level	-	-	-23.4	-21.8	-17.7	-14	-12.7	-12.7	-12.7	-16	-20.6	-24.7
H205	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-24	-22.4	-18.3	-14.6	-13.3	-13.3	-13.3	-14.4	-19.2	-24.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H206	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.7	28.4	29.7	29.7	29.7	29.7	29.7	29.7
	Exceedance Level	-	-	-24	-22.4	-18.3	-14.6	-13.3	-13.3	-13.3	-14.4	-19.2	-24.2
H207	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.3	-23.7	-19.6	-15.9	-14.6	-14.6	-16.4	-21.4	-26.1	-30.1
H208	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.3	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-24.4	-22.8	-18.7	-15	-13.7	-13.7	-13.7	-14.8	-19.6	-24.6
H209	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-24.5	-22.9	-18.8	-15.1	-13.8	-13.8	-13.8	-17.1	-21.7	-25.8
H210	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16	-14.7	-14.7	-16.5	-21.5	-26.2	-30.2
H211	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-24.5	-22.9	-18.9	-15.1	-13.8	-13.8	-13.8	-17.4	-21.9	-25.9
H212	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.7	29	29	29	29	29	29
	Exceedance Level	-	-	-24.6	-23	-19	-15.3	-14	-14	-14	-17.3	-21.9	-26
H213	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.8	20.4	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.2	-22.6	-18.5	-14.8	-13.5	-13.5	-13.5	-14.6	-19.4	-24.4
H214	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24.1	-22.5	-18.5	-14.7	-13.4	-13.4	-13.4	-14.5	-19.3	-24.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H215	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19.1	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-25.5	-23.9	-19.9	-16.2	-14.9	-14.9	-16.7	-21.7	-26.4	-30.4
H216	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.5	21	25.1	28.8	30.1	30.1	30.1	30.1	30.1	30.1
	Exceedance Level	-	-	-23.5	-22	-17.9	-14.2	-12.9	-12.9	-12.9	-14	-18.8	-23.8
H217	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-25.7	-24.1	-20.1	-16.4	-15.1	-15.1	-16.9	-21.9	-26.6	-30.6
H218	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24.1	-22.5	-18.4	-14.7	-13.4	-13.4	-13.4	-14.5	-19.3	-24.3
H219	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-18.2	-23.1	-27.8
H220	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.3	20.9	24.9	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-23.7	-22.1	-18.1	-14.4	-13.1	-13.1	-13.1	-14.2	-19	-24
H221	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20	24.1	27.8	29.1	29.1	29.1	29.1	29.1	29.1
	Exceedance Level	-	-	-24.5	-23	-18.9	-15.2	-13.9	-13.9	-13.9	-15	-19.8	-24.8
H222	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.4	20	24	27.7	29	29	29	29	29	29
	Exceedance Level	-	-	-24.6	-23	-19	-15.3	-14	-14	-14	-17.3	-21.9	-26
H223	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	19.1	20.7	24.7	28.4	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-23.9	-22.3	-18.3	-14.6	-13.2	-13.2	-13.2	-16.5	-21.1	-25.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H224	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H225	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.1	-19.1	-15.4	-14.1	-14.1	-14.1	-17.4	-22	-26.1
H226	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.8	28.6	29.9	29.9	29.9	29.9	29.9	29.9
	Exceedance Level	-	-	-23.8	-22.2	-18.2	-14.4	-13.1	-13.1	-13.1	-14.2	-19	-24
H227	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.8	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.2	-19.1	-15.4	-14.1	-14.1	-14.1	-17.4	-22	-26.1
H228	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H229	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.2	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-24.5	-22.9	-18.8	-15.1	-13.8	-13.8	-13.8	-14.9	-19.7	-24.7
H230	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-18.3	-23.2	-27.9
H231	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.1	-19.1	-15.4	-14.1	-14.1	-14.1	-17.4	-22	-26.1
H232	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.8	22.8	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-25.8	-24.2	-20.2	-16.4	-15.1	-15.1	-16.9	-21.9	-26.6	-30.6

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H233	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-24.8	-23.2	-19.2	-15.5	-14.2	-14.2	-14.2	-17.8	-22.3	-26.3
H234	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24.1	-22.5	-18.4	-14.7	-13.4	-13.4	-13.4	-14.5	-19.3	-24.3
H235	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25	-23.4	-19.4	-15.7	-14.4	-14.4	-14.4	-18	-22.5	-26.5
H236	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.7	22.8	26.5	27.8	27.8	27.8	27.8	27.8	27.8
	Exceedance Level	-	-	-25.8	-24.3	-20.2	-16.5	-15.2	-15.2	-17	-22	-26.7	-30.7
H237	WEDG Noise Limit L_{A90}	Derelict											
	Predicted Wind Turbine Noise L_{A90}												
	Exceedance Level												
H238	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-24.9	-23.3	-19.3	-15.6	-14.3	-14.3	-14.3	-17.6	-22.2	-26.3
H239	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-18.4	-23.3	-28
H240	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-26.2	-24.6	-20.5	-16.8	-15.5	-15.5	-17.3	-22.3	-27	-31
H241	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-24.8	-23.2	-19.2	-15.5	-14.2	-14.2	-14.2	-17.5	-22.1	-26.2

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H242	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-26.2	-24.6	-20.6	-16.9	-15.6	-15.6	-17.4	-22.4	-27.1	-31.1
H243	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19.2	20.8	24.8	28.5	29.8	29.8	29.8	29.8	29.8	29.8
	Exceedance Level	-	-	-23.8	-22.2	-18.2	-14.5	-13.2	-13.2	-13.2	-14.3	-19.1	-24.1
H244	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16.1	-14.8	-14.8	-14.8	-18.5	-23.4	-28.1
H245	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25	-23.4	-19.4	-15.7	-14.4	-14.4	-14.4	-17.7	-22.3	-26.4
H246	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.7	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-26	-24.4	-20.3	-16.6	-15.3	-15.3	-17.1	-22.1	-26.8	-30.8
H247	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-24.9	-23.3	-19.3	-15.6	-14.3	-14.3	-14.3	-15.4	-20.2	-25.2
H248	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.2	19.8	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-24.8	-23.2	-19.2	-15.5	-14.2	-14.2	-14.2	-15.3	-20.1	-25.1
H249	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24	-22.4	-18.4	-14.7	-13.4	-13.4	-13.4	-14.5	-19.3	-24.3
H250	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-15.8	-20.6	-25.6

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H251	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-26	-24.4	-20.4	-16.7	-15.4	-15.4	-17.2	-22.2	-26.9	-30.9
H252	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-26.1	-24.5	-20.4	-16.7	-15.4	-15.4	-17.2	-22.2	-26.9	-30.9
H253	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	19	20.6	24.6	28.3	29.6	29.6	29.6	29.6	29.6	29.6
	Exceedance Level	-	-	-24	-22.4	-18.4	-14.7	-13.4	-13.4	-13.4	-14.5	-19.3	-24.3
H254	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-18	-22.6	-26.7
H255	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.9	20.5	24.5	28.2	29.5	29.5	29.5	29.5	29.5	29.5
	Exceedance Level	-	-	-24.1	-22.5	-18.5	-14.8	-13.5	-13.5	-13.5	-14.6	-19.4	-24.4
H256	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H257	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-18	-22.6	-26.7
H258	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.8	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.2	-19.1	-15.4	-14.1	-14.1	-14.1	-17.4	-22	-26.1
H259	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.7	27.4	28.7	28.7	28.7	28.7	28.7	28.7
	Exceedance Level	-	-	-25	-23.4	-19.3	-15.6	-14.3	-14.3	-14.3	-17.6	-22.2	-26.3

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H260	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-26.4	-24.8	-20.8	-17.1	-15.8	-15.8	-17.6	-22.6	-27.3	-31.3
H261	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18.1	19.7	23.8	27.5	28.8	28.8	28.8	28.8	28.8	28.8
	Exceedance Level	-	-	-24.9	-23.3	-19.2	-15.5	-14.2	-14.2	-14.2	-17.5	-22.1	-26.2
H262	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.4	19	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-25.6	-24	-19.9	-16.2	-14.9	-14.9	-14.9	-18.2	-22.8	-26.9
H263	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.2	-23.6	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H264	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.7	18.3	22.3	26	27.3	27.3	27.3	27.3	27.3	27.3
	Exceedance Level	-	-	-26.3	-24.7	-20.7	-17	-15.7	-15.7	-17.5	-22.5	-27.2	-31.2
H265	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.8	-14.5	-14.5	-14.5	-18.1	-22.6	-26.6
H266	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.5	19.1	23.1	26.8	28.1	28.1	28.1	28.1	28.1	28.1
	Exceedance Level	-	-	-25.5	-23.9	-19.9	-16.2	-14.9	-14.9	-14.9	-18.5	-23	-27
H267	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17.2	18.8	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-25.8	-24.2	-20.1	-16.4	-15.1	-15.1	-15.1	-18.8	-23.7	-28.4
H268	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.7	-14.4	-14.4	-14.4	-17.7	-22.3	-26.4

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H269	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H270	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25	-23.4	-19.4	-15.7	-14.4	-14.4	-14.4	-17.7	-22.3	-26.4
H271	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H272	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25	-23.4	-19.4	-15.7	-14.4	-14.4	-14.4	-17.7	-22.3	-26.4
H273	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-15.6	-20.4	-25.4
H274	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H275	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.7	-14.4	-14.4	-14.4	-17.7	-22.3	-26.4
H276	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H277	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H278	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-26.4	-24.8	-20.8	-17.1	-15.8	-15.8	-17.6	-22.6	-27.3	-31.3
H279	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-26.1	-24.5	-20.5	-16.7	-15.4	-15.4	-15.4	-16.5	-21.3	-26.3
H280	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-18	-22.6	-26.7
H281	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.2	-23.6	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H282	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H283	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-15.7	-20.5	-25.5
H284	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16	-14.7	-14.7	-14.7	-18.3	-22.8	-26.8
H285	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.5	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.5	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H286	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.7	28	28	28	28	28	28
	Exceedance Level	-	-	-25.7	-24.1	-20.1	-16.3	-15	-15	-15	-18.6	-23.1	-27.1

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H287	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H288	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.2	-23.6	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5
H289	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H290	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H291	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.8	19.4	23.4	27.1	28.4	28.4	28.4	28.4	28.4	28.4
	Exceedance Level	-	-	-25.2	-23.6	-19.6	-15.9	-14.6	-14.6	-14.6	-17.9	-22.5	-26.6
H292	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.8	21.9	25.6	26.9	26.9	26.9	26.9	26.9	26.9
	Exceedance Level	-	-	-26.7	-25.2	-21.1	-17.4	-16.1	-16.1	-17.9	-22.9	-27.6	-31.6
H293	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.6	20.2	24.3	28	29.3	29.3	29.3	29.3	29.3	29.3
	Exceedance Level	-	-	-24.4	-22.8	-18.7	-15	-13.7	-13.7	-13.7	-14.8	-19.6	-24.6
H294	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.7	51.6	56.3
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-26	-24.4	-20.4	-16.6	-15.3	-15.3	-15.3	-19	-23.9	-28.6
H295	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.9	19.4	23.5	27.2	28.5	28.5	28.5	28.5	28.5	28.5
	Exceedance Level	-	-	-25.1	-23.6	-19.5	-15.8	-14.5	-14.5	-14.5	-17.8	-22.4	-26.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H296	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-17.7	-22.7	-27.4	-31.4
H297	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.7	19.3	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.3	-23.7	-19.7	-16	-14.7	-14.7	-14.7	-18	-22.6	-26.7
H298	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.3	27	28.3	28.3	28.3	28.3	28.3	28.3
	Exceedance Level	-	-	-25.4	-23.8	-19.7	-16	-14.7	-14.7	-14.7	-18	-22.6	-26.7
H299	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.5	20.1	24.1	27.9	29.2	29.2	29.2	29.2	29.2	29.2
	Exceedance Level	-	-	-24.5	-22.9	-18.9	-15.1	-13.8	-13.8	-13.8	-14.9	-19.7	-24.7
H300	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16.1	-14.8	-14.8	-14.8	-18.1	-22.7	-26.8
H301	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.3	26	27.3	27.3	27.3	27.3	27.3	27.3
	Exceedance Level	-	-	-26.4	-24.8	-20.7	-17	-15.7	-15.7	-15.7	-16.8	-21.6	-26.6
H302	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	17.6	19.2	23.2	26.9	28.2	28.2	28.2	28.2	28.2	28.2
	Exceedance Level	-	-	-25.4	-23.8	-19.8	-16.1	-14.8	-14.8	-14.8	-18.1	-22.7	-26.8
H303	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	44.8	49.8	54.5	58.5
	Predicted Wind Turbine Noise L_{A90}	-	-	16.1	17.7	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-26.9	-25.3	-21.3	-17.6	-16.3	-16.3	-18.1	-23.1	-27.8	-31.8
H304	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.6	51.1	55.1
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-26.1	-24.5	-20.5	-16.8	-15.5	-15.5	-15.5	-19.1	-23.6	-27.6

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H305	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	46.3	50.9	55
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-26.1	-24.5	-20.5	-16.8	-15.5	-15.5	-15.5	-18.8	-23.4	-27.5
H306	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.4	19	23	26.7	28	28	28	28	28	28
	Exceedance Level	-	-	-25.6	-24	-20	-16.3	-15	-15	-15	-16.1	-20.9	-25.9
H307	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18.3	19.9	23.9	27.6	28.9	28.9	28.9	28.9	28.9	28.9
	Exceedance Level	-	-	-24.7	-23.1	-19.1	-15.4	-14.1	-14.1	-14.1	-15.2	-20	-25
H308	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.1	18.7	22.7	26.4	27.7	27.7	27.7	27.7	27.7	27.7
	Exceedance Level	-	-	-25.9	-24.3	-20.3	-16.6	-15.3	-15.3	-15.3	-16.4	-21.2	-26.2
H309	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	18	19.6	23.6	27.3	28.6	28.6	28.6	28.6	28.6	28.6
	Exceedance Level	-	-	-25	-23.4	-19.4	-15.7	-14.4	-14.4	-14.4	-15.5	-20.3	-25.3
H310	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-26.2	-24.6	-20.6	-16.9	-15.6	-15.6	-15.6	-16.7	-21.5	-26.5
H311	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.9	18.5	22.5	26.2	27.5	27.5	27.5	27.5	27.5	27.5
	Exceedance Level	-	-	-26.1	-24.5	-20.5	-16.8	-15.5	-15.5	-15.5	-16.6	-21.4	-26.4
H312	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.8	18.4	22.4	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-26.2	-24.6	-20.6	-16.9	-15.6	-15.6	-15.6	-16.7	-21.5	-26.5
H313	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17.3	18.9	22.9	26.6	27.9	27.9	27.9	27.9	27.9	27.9
	Exceedance Level	-	-	-25.7	-24.1	-20.1	-16.4	-15.1	-15.1	-15.1	-16.2	-21	-26

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H314	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H315	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H316	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.4	18	22	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.6	-25	-21	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H317	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	17	18.6	22.6	26.3	27.6	27.6	27.6	27.6	27.6	27.6
	Exceedance Level	-	-	-26	-24.4	-20.4	-16.7	-15.4	-15.4	-15.4	-16.5	-21.3	-26.3
H318	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.9	22	25.7	27	27	27	27	27	27
	Exceedance Level	-	-	-26.7	-25.1	-21	-17.3	-16	-16	-16	-17.1	-21.9	-26.9
H319	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.3	17.9	21.9	25.6	26.9	26.9	26.9	26.9	26.9	26.9
	Exceedance Level	-	-	-26.7	-25.1	-21.1	-17.4	-16.1	-16.1	-16.1	-17.2	-22	-27
H320	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H321	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H322	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.7	18.3	22.3	26.1	27.4	27.4	27.4	27.4	27.4	27.4
	Exceedance Level	-	-	-26.3	-24.7	-20.7	-16.9	-15.6	-15.6	-15.6	-16.7	-21.5	-26.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H323	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-27	-25.4	-21.3	-17.6	-16.3	-16.3	-16.3	-17.4	-22.2	-27.2
H324	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.6	18.2	22.2	25.9	27.2	27.2	27.2	27.2	27.2	27.2
	Exceedance Level	-	-	-26.4	-24.8	-20.8	-17.1	-15.8	-15.8	-15.8	-16.9	-21.7	-26.7
H325	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.4	18	22	25.7	27	27	27	27	27	27
	Exceedance Level	-	-	-26.6	-25	-21	-17.3	-16	-16	-16	-17.1	-21.9	-26.9
H326	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.2	17.8	21.8	25.5	26.8	26.8	26.8	26.8	26.8	26.8
	Exceedance Level	-	-	-26.8	-25.2	-21.2	-17.5	-16.2	-16.2	-16.2	-17.3	-22.1	-27.1
H327	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.1	17.7	21.7	25.4	26.7	26.7	26.7	26.7	26.7	26.7
	Exceedance Level	-	-	-26.9	-25.3	-21.3	-17.6	-16.3	-16.3	-16.3	-17.4	-22.2	-27.2
H328	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16.5	18.1	22.1	25.8	27.1	27.1	27.1	27.1	27.1	27.1
	Exceedance Level	-	-	-26.5	-24.9	-20.9	-17.2	-15.9	-15.9	-15.9	-17	-21.8	-26.8
H329	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.6	25.3	26.6	26.6	26.6	26.6	26.6	26.6
	Exceedance Level	-	-	-27	-25.4	-21.4	-17.7	-16.4	-16.4	-16.4	-17.5	-22.3	-27.3
H330	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	16	17.6	21.6	25.3	26.6	26.6	26.6	26.6	26.6	26.6
	Exceedance Level	-	-	-27	-25.4	-21.4	-17.7	-16.4	-16.4	-16.4	-17.5	-22.3	-27.3
H331	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	15.8	17.4	21.4	25.1	26.4	26.4	26.4	26.4	26.4	26.4
	Exceedance Level	-	-	-27.2	-25.6	-21.6	-17.9	-16.6	-16.6	-16.6	-17.7	-22.5	-27.5

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H332	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	15.8	17.4	21.4	25.1	26.4	26.4	26.4	26.4	26.4	26.4
	Exceedance Level	-	-	-27.2	-25.6	-21.6	-17.9	-16.6	-16.6	-16.6	-17.7	-22.5	-27.5
H333	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	15.6	17.2	21.3	25	26.3	26.3	26.3	26.3	26.3	26.3
	Exceedance Level	-	-	-27.4	-25.8	-21.7	-18	-16.7	-16.7	-16.7	-17.8	-22.6	-27.6
H334	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	15.4	17	21	24.7	26	26	26	26	26	26
	Exceedance Level	-	-	-27.6	-26	-22	-18.3	-17	-17	-17	-18.1	-22.9	-27.9
H335	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	15.2	16.8	20.9	24.6	25.9	25.9	25.9	25.9	25.9	25.9
	Exceedance Level	-	-	-27.8	-26.2	-22.1	-18.4	-17.1	-17.1	-17.1	-18.2	-23	-28
H336	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.9	16.5	20.6	24.3	25.6	25.6	25.6	25.6	25.6	25.6
	Exceedance Level	-	-	-28.1	-26.5	-22.4	-18.7	-17.4	-17.4	-17.4	-18.5	-23.3	-28.3
H337	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.8	16.4	20.4	24.1	25.4	25.4	25.4	25.4	25.4	25.4
	Exceedance Level	-	-	-28.2	-26.6	-22.6	-18.9	-17.6	-17.6	-17.6	-18.7	-23.5	-28.5
H338	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.6	16.2	20.2	23.9	25.2	25.2	25.2	25.2	25.2	25.2
	Exceedance Level	-	-	-28.4	-26.8	-22.8	-19.1	-17.8	-17.8	-17.8	-18.9	-23.7	-28.7
H339	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.5	16.1	20.1	23.8	25.1	25.1	25.1	25.1	25.1	25.1
	Exceedance Level	-	-	-28.5	-26.9	-22.9	-19.2	-17.9	-17.9	-17.9	-19	-23.8	-28.8
H340	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.3	15.9	19.9	23.6	24.9	24.9	24.9	24.9	24.9	24.9
	Exceedance Level	-	-	-28.7	-27.1	-23.1	-19.4	-18.1	-18.1	-18.1	-19.2	-24	-29

Location		Wind Speed (ms^{-1}) as standardised to 10 m height											
		1	2	3	4	5	6	7	8	9	10	11	12
H341	WEDG Noise Limit L_{A90}	43	43	43	43	43	43	43	43	43	44.1	48.9	53.9
	Predicted Wind Turbine Noise L_{A90}	-	-	14.3	15.9	19.9	23.6	24.9	24.9	24.9	24.9	24.9	24.9
	Exceedance Level	-	-	-28.7	-27.1	-23.1	-19.4	-18.1	-18.1	-18.1	-19.2	-24	-29

Annex 6 – Topographical Corrections/ Turbine Coordinates

Table 1: Topographical (concave ground/ barrier) Noise Prediction Adjustment Table

Notes/Comments

Requirement to include a concave ground profile correction of +3dB has been calculated in accordance with section 4.3.9 of the IOA GPG (July 2011)

A barrier correction of -2dB is included where the landform completely obscures a turbine at the noise assessment location

Where analysis indicates that both are required the barrier correction take precedence and a correction of -2dB is applied

			Noise Assessment Locations																
Wind Farm	Hub	T ID	NAL1 (H3)	NAL2 (H4)	NAL3 (H5)	NAL4 (H6)	NAL5 (H7)	NAL6 (H8)	NAL7 (H10)	NAL8 (H13)	NAL9 (H14)	NAL10 (H19)	NAL11 (H25)	NAL12 (H28)	NAL13 (H35)	NAL14 (H67)	NAL15 (H86)	NAL16 (H97)	H1	H2
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H9	H11	H12	H15	H16	H17	H18	H20	H21	H22	H23	H24	H26	H27	H29	H30	H31	H32
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H33	H34	H36	H37	H38	H39	H40	H41	H42	H43	H44	H45	H46	H47	H48	H49	H50	H51
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H52	H53	H54	H55	H56	H57	H58	H59	H60	H61	H62	H63	H64	H65	H66	H68	H69	H70
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H71	H72	H73	H74	H75	H76	H77	H78	H79	H80	H81	H82	H83	H84	H85	H87	H88	H89
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H90	H91	H92	H93	H94	H95	H96	H98	H99	H100	H101	H102	H103	H104	H105	H106	H107	H108
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H109	H110	H111	H112	H113	H114	H115	H116	H117	H118	H119	H120	H121	H122	H123	H124	H125	H126
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H127	H128	H129	H130	H131	H132	H133	H134	H135	H136	H137	H138	H139	H140	H141	H142	H143	H144
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H145	H146	H147	H148	H149	H150	H151	H152	H153	H154	H155	H156	H157	H158	H159	H160	H161	H162
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H163	H164	H165	H166	H167	H168	H169	H170	H171	H172	H173	H174	H175	H176	H177	H178	H179	H180
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H181	H182	H183	H184	H185	H186	H187	H188	H189	H190	H191	H192	H193	H194	H195	H196	H197	H198
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H199	H200	H201	H202	H203	H204	H205	H206	H207	H208	H209	H210	H211	H212	H213	H214	H215	H216
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H217	H218	H219	H220	H221	H222	H223	H224	H225	H226	H227	H228	H229	H230	H231	H232	H233	H234
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H235	H236	H237	H238	H239	H240	H241	H242	H243	H244	H245	H246	H247	H248	H249	H250	H251	H252
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H253	H254	H255	H256	H257	H258	H259	H260	H261	H262	H263	H264	H265	H266	H267	H268	H269	H270
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H271	H272	H273	H274	H275	H276	H277	H278	H279	H280	H281	H282	H283	H284	H285	H286	H287	H288
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H289	H290	H291	H292	H293	H294	H295	H296	H297	H298	H299	H300	H301	H302	H303	H304	H305	H306
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H307	H308	H309	H310	H311	H312	H313	H314	H315	H316	H317	H318	H319	H320	H321	H322	H323	H324
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Wind Farm	Hub	T ID	H325	H326	H327	H328	H329	H330	H331	H332	H333	H334	H335	H336	H337	H338	H339	H340	H341
1 - Umma More	104	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 - Umma More	104	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 - Umma More	104	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 - Umma More	104	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 - Umma More	104	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 - Umma More	104	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 - Umma More	104	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 - Umma More	104	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 - Umma More	104	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2: Wind Turbine Coordinates

Wind Farm	Easting	Northing	Height
Umma More 1	619119	747703	60
Umma More 2	619001	747158	60
Umma More 3	618946	746605	60
Umma More 4	618737	746080	60
Umma More 5	619623	745904	60
Umma More 6	620224	745898	60
Umma More 7	620874	745730	60
Umma More 8	620067	745325	70
Umma More 9	620500	745103	70

Annex 7 – Summary of Wind Turbine Noise Source Data

Table A7.1: Sound Power Level Data

Wind Farm	Turbine	Hub height	Uncertainty Included	Reference Wind Speed (ms^{-1}) Standardised to 10m Height									
				3	4	5	6	7	8	9	10	11	12
Umma More	162 m rotor candidate with serrated blades*	104	2	96.17	97.76	101.8	105.5	106.8	106.8	106.8	106.8	106.8	106.8

Table A7.2: Octave Band Data

Scheme	Turbine Modelled	Octave Band (Hz)									
		31.5	63	125	250	500	1000	2000	4000	8000	Overall
Umma More	162 m rotor candidate with serrated blades*	77.7	88.1	95.6	100.2	101.9	100.8	96.7	89.8	80.0	106.8

* data supplied by Enerco