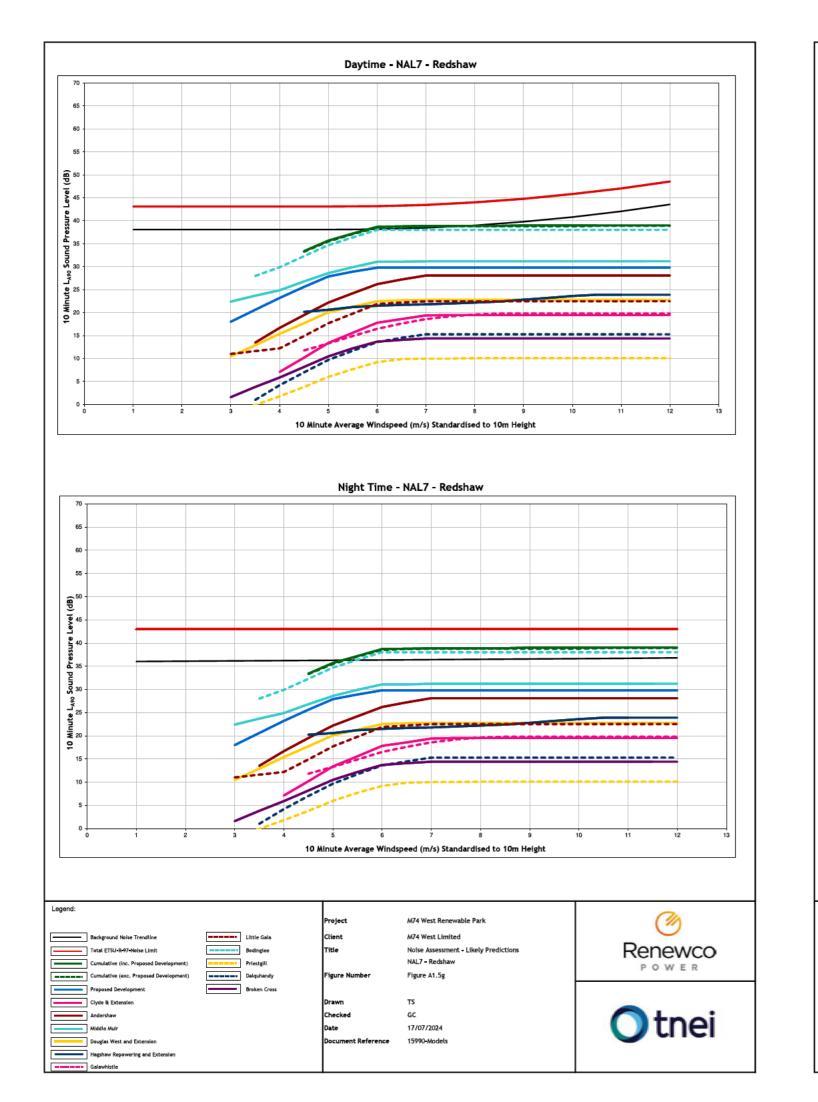
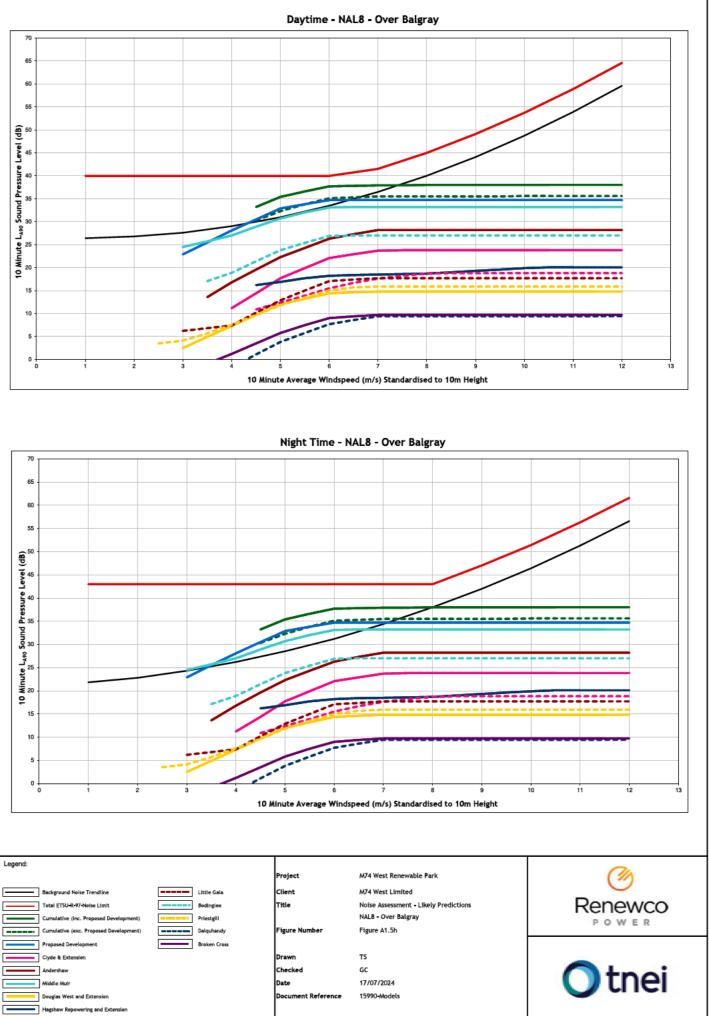


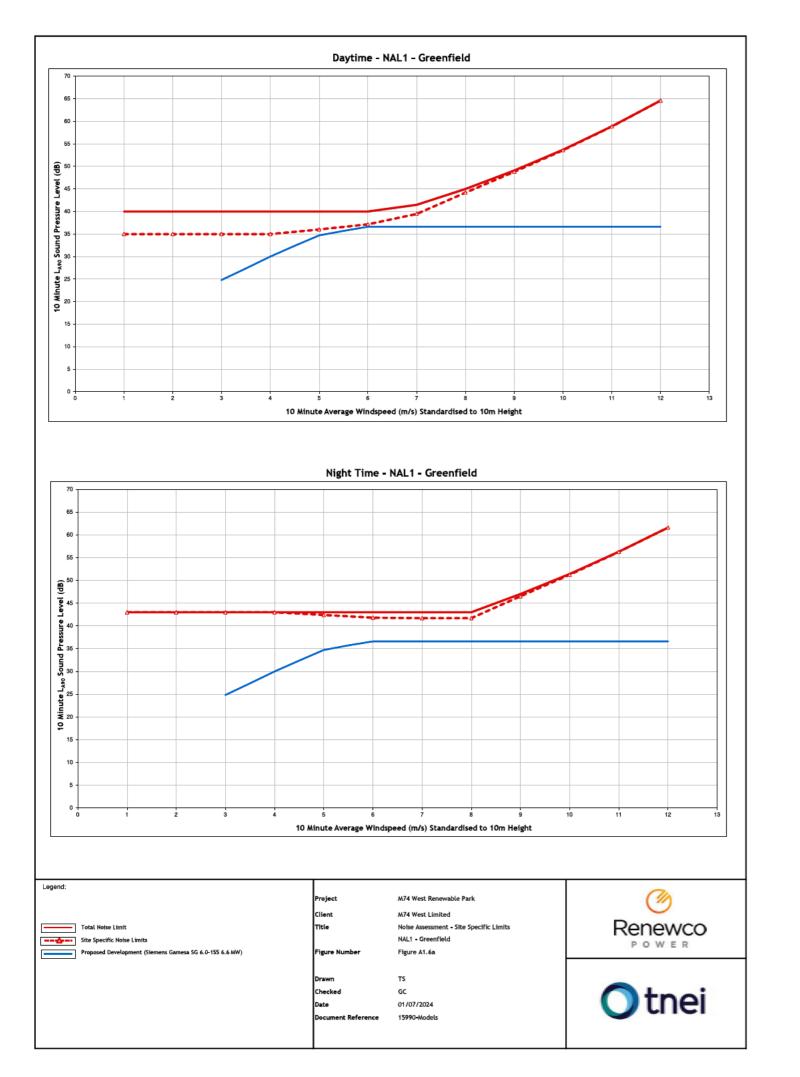
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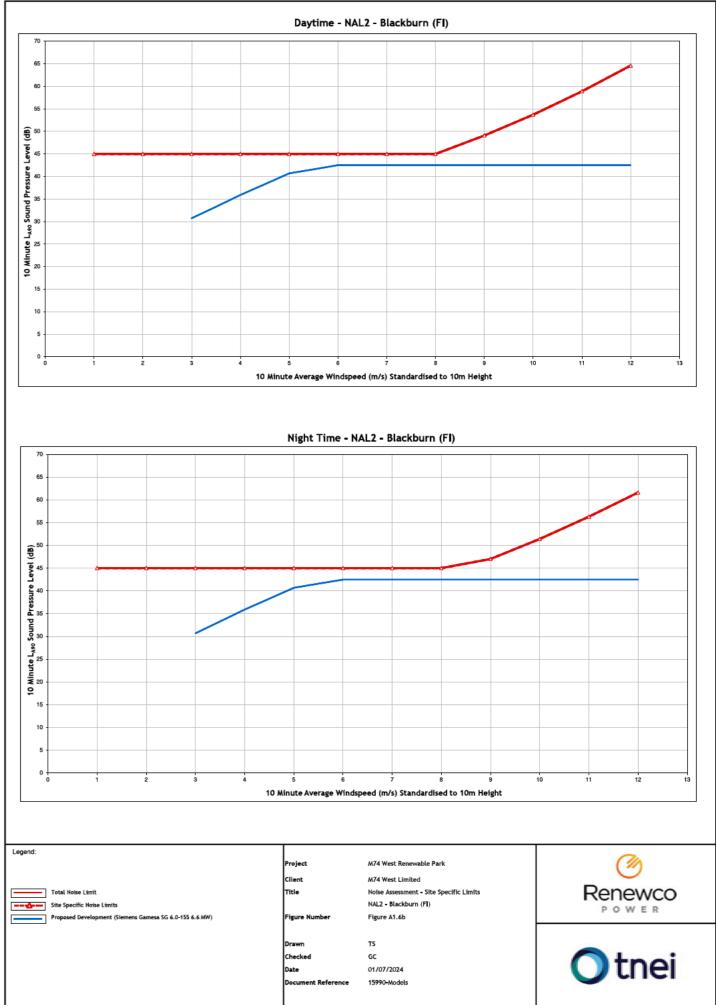
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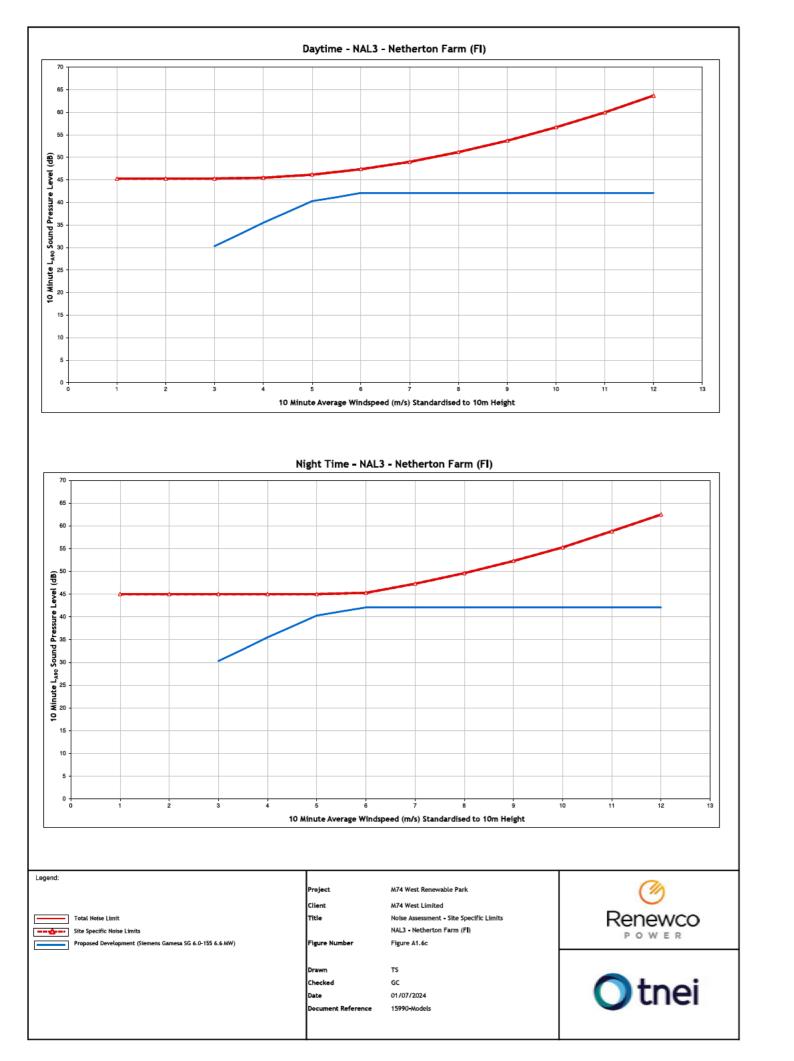


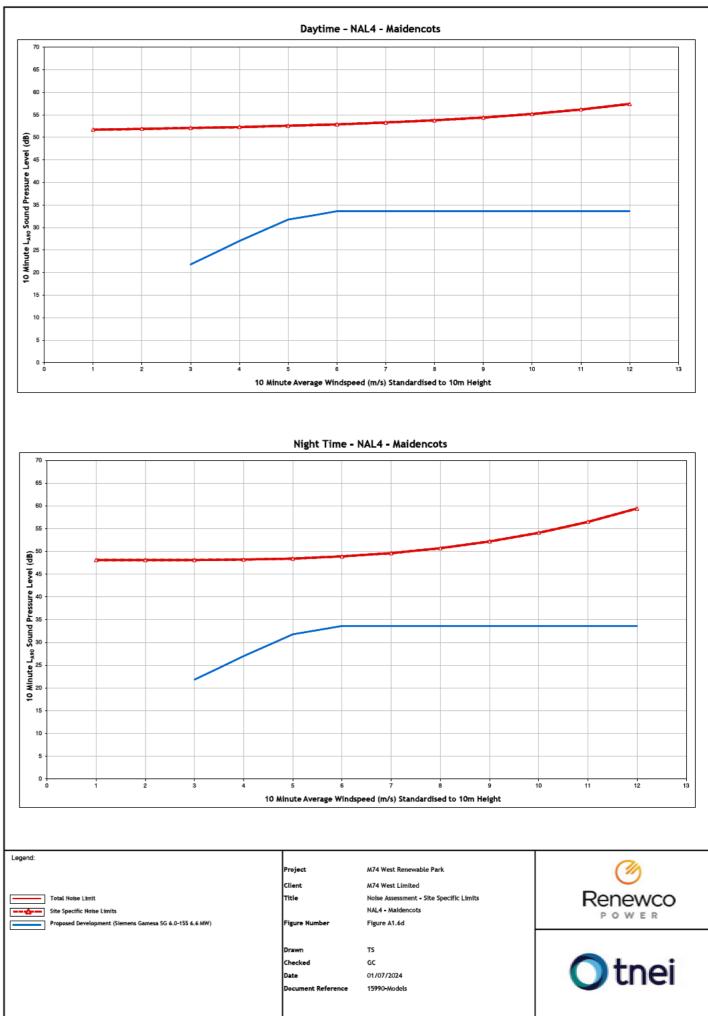


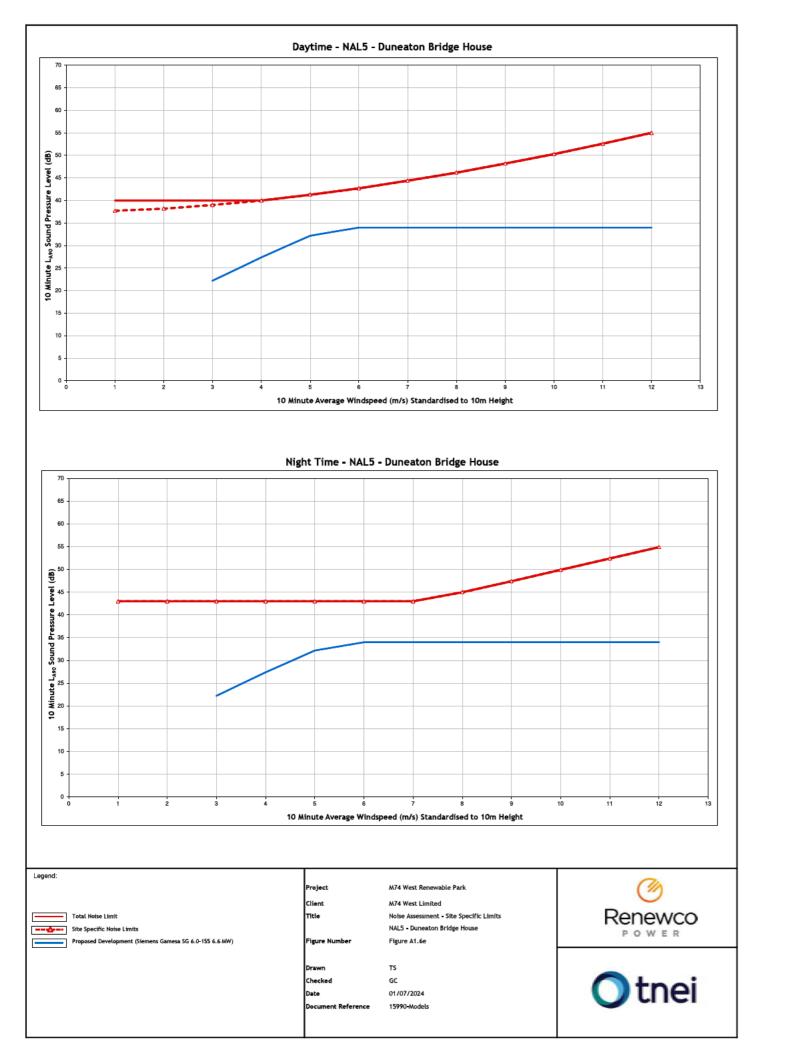
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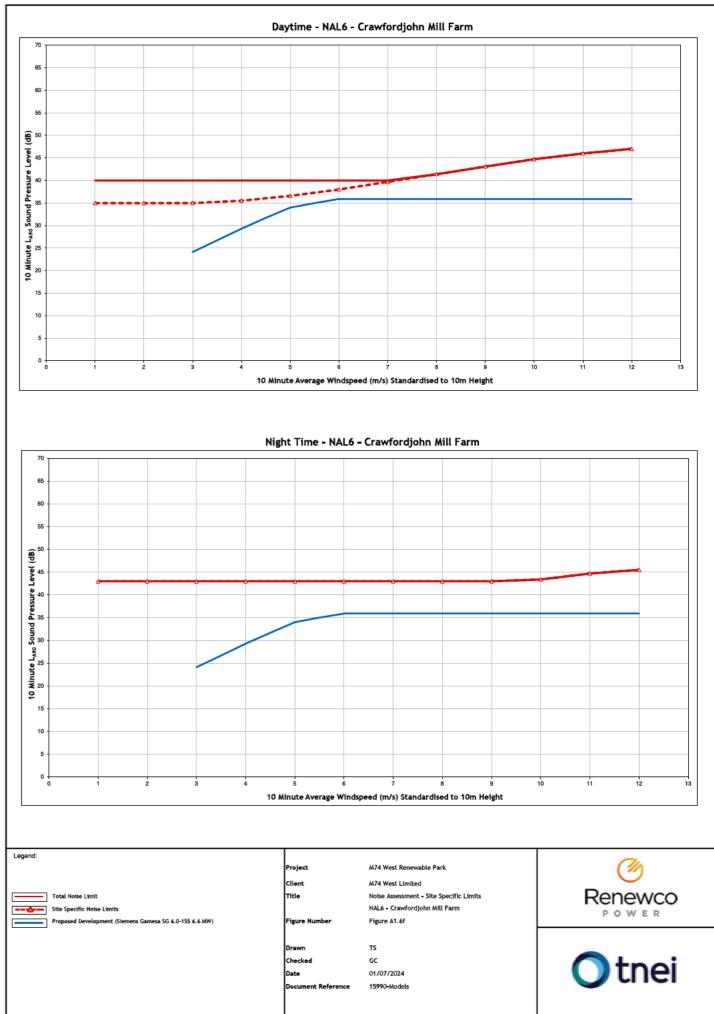


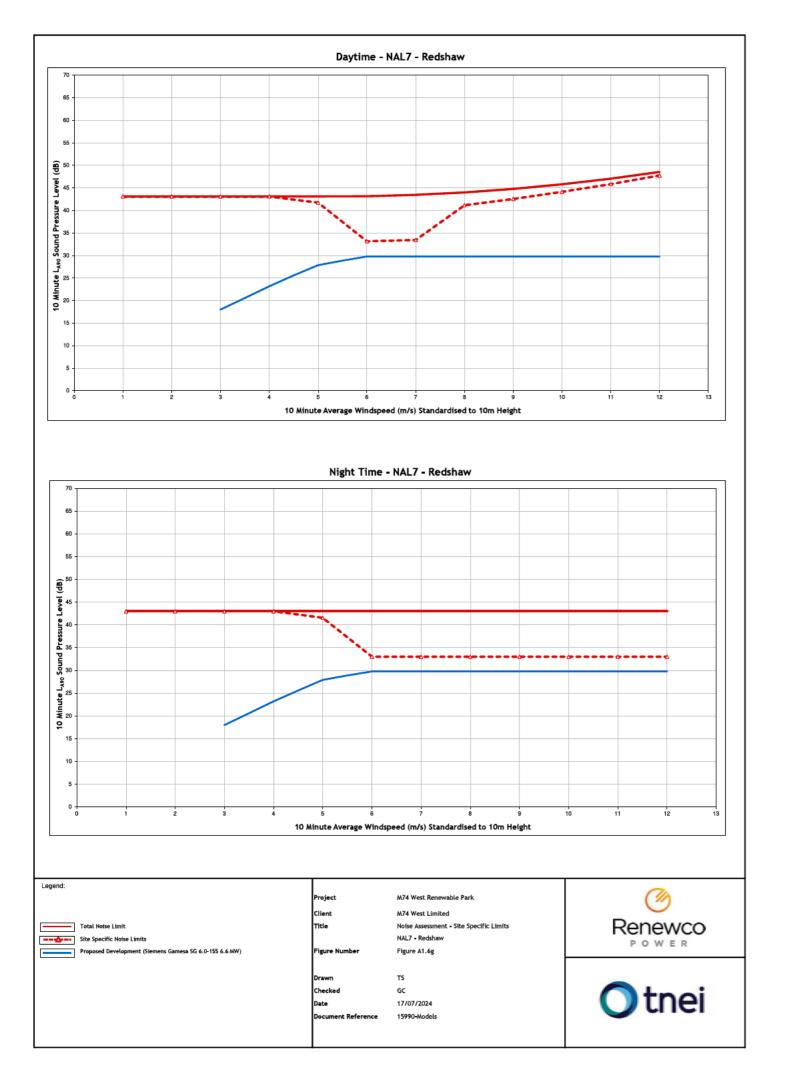


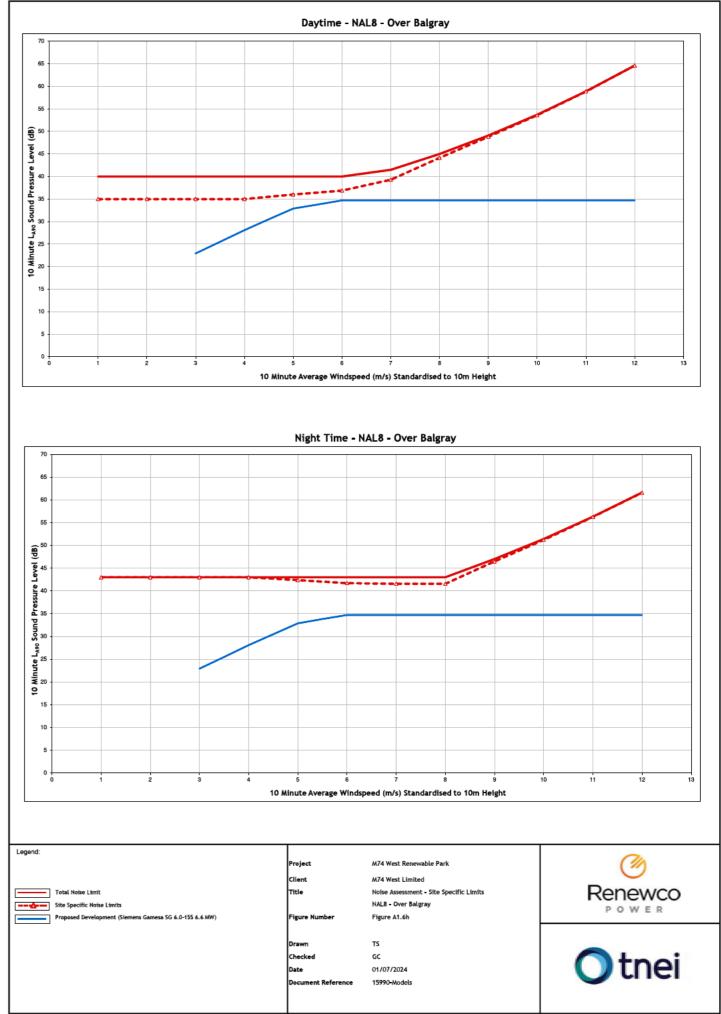












Annex 2 – Correspondence with the Environmental Health Department at the Council

Tom Suddaby

From:	Tom Suddaby		
Sent:	05 January 2024 16:21		
To:	kenny.joyes@southlanarksh		
Cc:	Gemma Clark; Mark Tideswe		
Subject:	15990 - Proposed M74 We		
Attachments:	15990-002 - Proposed M74		

Dear Kenny,

As you may be aware, a scoping request has recently been submitted for the proposed M74 West Wind Farm, located approximately 4km NW of Abingdon in South Lanarkshire. TNEI have been commissioned to undertake the noise assessment for the proposed development on behalf of the developer, Renewco Power.

Attached is a consultation letter detailing our intensions to undertake a background noise survey at properties located closest to the proposed development.

If you have any questions or would like to discuss this further, please don't hesitate to get in touch.

Kind Regards,

Tom Suddaby Graduate Consultant

🔾 tnei

Tel: +44(0)191 211 1402 Email: tom.suddaby@tneigroup.com Address: TNEI, 7th Floor, West One, Forth Banks, Newcastle Upon Tyne, NE1 3PA



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Registered Address: TNEI Services Ltd, Bainbridge House, 86-90 London Road, Manchester M1 2PW

hire.gov.uk vell; Scott Jamieson; Catherine Mackenzie est Wind Farm Noise Consultation 4 Wind Farm - Noise Consultation Letter R0.pdf





5 January, 2024

Ref: 15990-002 R0

Copy: Sent by email only

Mr Kenny Joyes Environmental Health Officer South Lanarkshire Council 154 Montrose Crescent Hamilton ML3 6LB

Dear Mr Joyes,

PROPOSED M74 WEST WIND FARM ON LAND 4 KM TO THE NORTH WEST OF ABINGTON, SOUTH LANARKSHIRE: NOISE ASSESSMENT

Renewco Power Ltd ('the Applicant') is considering developing a wind farm ('the proposed development') on land approximately 4 km north west of Abington. An indicative turbine layout is shown on the enclosed Figure 1. In addition, the proposed development will also accommodate solar power generators, up to approximately 50 MW capacity, and a battery energy storage system (BESS) with 50 MW capacity.

TNEI Services Ltd (TNEI) has been appointed by the Applicant to undertake noise assessment work for the proposed development and prior to commencing the noise assessment we would like to agree with you the noise assessment methodology and proposed background noise monitoring locations.

Construction Noise Assessment

A construction noise assessment will be undertaken to determine the potential for noise impacts during the construction phase of the proposed development. The assessment would be undertaken in accordance with the methodology outlined in British Standard (BS) 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Noise' and ISO 9613-2:1996 'Acoustics - Attenuation of sound during propagation outdoors -Part 2: General method of calculation'. Impacts will be assessed using criteria contained within BS 5228 and, where appropriate, mitigation measures will be proposed.

Activities associated with the decommissioning of the proposed development are assumed to generate similar or lower noise levels to those occurring during construction. As such, an assessment of decommissioning noise will be scoped out. This is on the assumption that if construction noise limits can be met, they should also be met during decommissioning.

Operational Solar and Battery Storage Noise

In respect to operational noise from non-wind developments, such as solar and battery energy storage sites, PAN 1/2011 refers to Assessment of Noise: Technical Advice Note (TAN). The TAN identifies BS 4142:2014+A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound' and BS 8233:2014 'Guidance on sound insulation and noise reduction

for buildings' as appropriate methodologies for the assessment of environmental noise from proposed new developments or activities.

Newcastle 7th Floor, West One Forth Banks Newcastle Upon Tyne NE1 3PA Tel: +44(0)191 211 1400

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Noise from the operation of a solar farm is typically low level in nature and is generated from two primary sources; the inverters and the transformers. The number and size of the inverters varies depending on type of solar farm layout. The noise level output from both the transformers and the inverters can often be controlled through the appropriate positioning of the plant and the use of enclosures as required.

Noise from the operation of a battery storage facility is generated from the use of multiple inverter units, transformers and battery cooling requirements. Noise output from battery storage plant is likely to be higher in level than from solar farm plant, however, careful placement and mitigation measures can minimise noise impacts.

Depending on the final location of the solar PV panels and the battery storage facility, an operational noise assessment may be required. Where necessary, an assessment will be undertaken in line with BS 4142:2014+A1:2019 and BS 8233:2014.

Operational Noise Assessment

An operational noise assessment will be undertaken in accordance with ETSU-R-97 *'The Assessment and Rating of Noise from Wind Farms'* (ETSU-R-97) and the Institute of Acoustics document 'A good practice guide to the application of ETSU-R-97 for the assessment and rating of wind turbine noise' (IOA GPG). In relation to wind turbine noise, PAN 1/2011 *'Planning and Noise'* refers to the Scottish Governments 'Onshore Wind Turbines' web based document, which states that:

"ETSU-R-97 describes a framework for the measurement of wind farm noise, which should be followed by applicants and consultees, and used by planning authorities to assess and rate noise from wind energy developments, until such time as an update is available".

and;

"The Institute of Acoustics (IOA) has since published Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise. The document provides significant support on technical issues to all users of the ETSU-R-97 method for rating and assessing wind turbine noise, and should be used by all IOA members and those undertaking assessments to ETSU-R-97. The Scottish Government accepts that the guide represents current industry good practice."

ETSU-R-97 – Deriving Noise Limits

ETSU-R-97 describes the findings of the Working Group on Noise from Wind Turbines, the aim of which was to provide information and advice to developers and planners on the environmental assessment of operational noise from wind turbines.

ETSU-R-97 recommends noise limits should be set at 5 dB(A) above existing background noise levels, or a fixed minimum limit of 35-40 dB during the daytime and 43 dB during the night-time periods where background noise levels are low, and that these limits should reflect the variation in background noise with wind speed. Different limits apply to those properties that have a financial interest in the wind energy development (45 dB or background plus 5 dB (whichever is the greater) for both daytime and night-time). The financially involved properties for the proposed development are summarised in Table 1 below.

The choice of quiet daytime fixed minimum limits should be considered in light of the guidance contained within ETSU-R-97 and the IOA GPG. Extracts of the guidance contained within ETSU-R-97 and the IOA GPG are included in Annex 1. Noise limits established at properties in accordance with

ETSU-R-97 shall be applicable to all existing / proposed (in planning) wind farms in the area and will henceforth be referred to as the 'Total ETSU-R-97 Noise Limits'.

TNEI propose to set the Total ETSU-R-97 Noise Limits and Site Specific Noise Limits based on the upper daytime fixed minimum noise limit of 40 dB. A justification for the choice of fixed minimum noise limit will be included within the noise assessment. We would be very keen to work with South Lanarkshire Council with a view to agreeing suitable daytime fixed minimum limits at an early stage to ensure the development can be designed accordingly.

The Site Specific Noise Limits would be derived, taking account of the noise limits already allocated to, or the limit that could theoretically be used by, other wind farm developments in the area. The Site Specific Noise Limits will be derived using the principles contained within the IOA GPG (which may include the use of the controlling property principal or determining if there is significant headroom etc). The Site Specific Noise Limits will be the limits that the proposed development would have to operate within, should planning permission be granted.

Paragraph 5.4.11 of the IOA GPG states:

'In cases where there is significant headroom (e.g. 5 to 10 dB) between the predicted noise levels from the existing wind farm and the total ETSU-R-97 limits, where there would be no realistic prospect of the existing wind farm producing noise levels up to the total ETSU-R-97 limits, agreement could be sought with the LPA as to a suitable predicted noise level (including an appropriate margin to cover factors such as potential increases in noise) from the existing wind farm to be used to inform the available headroom for the cumulative assessment without the need for negotiation or cumulative conditioning. This may be the case particularly at low wind speeds.'

Where there is significant headroom we propose to utilise the available headroom to derive the Site Specific Noise Limits for the proposed development and consider a +2 dB addition to predicted cumulative levels (excluding the proposed development) to be "an appropriate margin to cover factors such as potential increases in noise". We would be grateful if the Council would confirm its agreement to this approach.

Background Noise Monitoring

In order to establish the Total ETSU-R-97 Noise Limits it is necessary to determine the relationship between wind speed measured at the proposed development site and background noise levels measured at the closest noise sensitive receptors. This requires the installation of noise monitoring equipment at representative properties surrounding the site as well as the installation of wind monitoring equipment on the site itself.

It is proposed that a SODAR unit will be in place on-site for the duration of the noise survey, which will be used to collect wind speed and direction data at various heights. Data from the SODAR will be used to determine the wind speed at turbine hub height which will then be adjusted to a height of 10 m using a standardised roughness length of 0.05 m to derive 'wind speed as standardised to 10 m height'. Wind speed as standardised to 10 m height will be used in the assessment. This is consistent with method A or B as outlined in the IOA GPG (on page 10 of 40). At least one rain logger will be installed at one of the noise monitoring locations to record any periods of rainfall. A series of simultaneous tenminute measurements will be taken by each piece of equipment over a period of at least two weeks.

Background noise levels will be monitored at a height of between 1.2 m and 1.5 m above the ground, in line with the ETSU-R-97 / IOA GPG guidance. The noise monitoring equipment will be located in a free-field position at least 3.5 m away from hard reflective surfaces where practicable and within the residential amenity area.

The following steps summarise the proposed noise assessment process for the scheme:

- measure the background noise levels at each receptor. This will involve the continuous logging of the L_{A90, 10min} values at each receptor for a minimum period of two weeks;
- obtain simultaneous ten minute average wind speed data from the proposed development site:
- filter baseline noise data to remove any unrepresentative readings (such as periods of rainfall) and split the data into quiet daytime and night-time hours;
- determine the daytime and night-time criterion curves from the measured background noise levels at the nearest neighbours using regression analysis and recommendations within ETSU-R-97 and the IOA GPG;
- ٠
- in the IOA GPG: and
- with the Site Specific Noise Limits.

We have undertaken some initial modelling based on the 21 turbine layout presented in Figure 1. In line with current good practice, noise predictions have been undertaken using the propagation model contained within Part 2 of International Standard ISO 9613:1996, Acoustics – Attenuation of sound during propagation outdoors - Part 2 General method of calculation. The model assumes mixed ground conditions and data for a candidate turbine, the Siemens Gamesa SG155, 6.6 MW with serrated trailing edges, which was chosen to be representative of the turbine that could be installed at the site. Figure 1 shows the neighbouring properties to the proposed development that may fall within the 35 dB(A) L₉₀ contour. It should be noted that the predictions shown on the contour plot do not account for topography, which could decrease the predicted level (if the landform blocks the path from the turbines to receptors) or could increase the level (if any concave ground profiles exist). Topographical corrections will be considered in detail and included in the final noise assessment where required.

Prior to commencing the noise survey we would like to agree suitable locations at which to monitor background noise levels in order to provide a representative dataset for the area. We believe noise monitoring equipment installed at five dwellings would provide a sufficient sample of representative background noise data for the area. The proposed monitoring locations are detailed in Table 1 and shown on Figure 1.

The properties identified for the assessment are deemed representative of the closest receptors to the south, south east and east of the site and have been chosen following consideration of nearby watercourses and the M74 motorway.

specify the type and noise emission characteristics of all existing / proposed wind farms using candidate / installed wind turbine noise data, and undertake predictions and compare the total cumulative predicted noise levels to the Total ETSU-R-97 Noise Limits; derive suitable Site Specific Noise Limits for the proposed development using the guidance

compare the predicted wind farm noise immission levels for the proposed development

Table 1 - Suggested Noise Monitoring Locations (NMLs) for the Proposed Development

Property/Location	Justification	
NML1 – Greenfield (288095, 625000)	Nearest receptor to south west of the proposed development and deemed representative of the dwellings in that area.	
NML2 – Duneaton Bridge (291615, 624582)	Closest non involved receptor to the south east of the site.	
NML3 – Strand (290084, 625408)	Closest receptor to the south east of the site. This property is deemed to be representative of Netherton to the east and Blackburn Farm to the west. TNEI understand that the occupiers of all properties at these locations are financially involved with the proposed development.	
NML4 – Maidencotts Cottage (292684, 626359)	Closest receptor to the east of the site to provide representative data for the dwellings in that area.	
NML5 – Crawfordjohn Mill Farm (289668, 624149)	Closest receptor to the south of the site to provide representative data for the dwellings in that area.	

Please note that monitoring at the locations listed in Table 1 would be subject to consent from the owners/occupiers as well as on-site observations made by TNEI staff to ensure the properties proposed are suitable and representative. If we are unable to gain access to monitor at the proposed properties or find that the noise environment is not appropriate for monitoring, representative alternative locations will be selected and we will inform you of the alternative locations. We would be very happy for you or one of your colleagues to attend the installation of the noise monitoring equipment in order for you to agree the exact siting of the noise monitoring equipment.

We will review the background noise datasets collected to ensure that we can adequately account for the contribution of existing operational wind farms as per the IOA GPG. This will only be possible once we have collected and analysed the data.

Renewco have confirmed that a property (Thirstone Cottage) located next to Thirstone Quarry will be taken out of residential use for the operational lifetime of the proposed development and as such TNEI do not propose to consider the property as a noise sensitive receptor within the noise assessment.

Re-use of previously collected Background Noise Datasets

Background noise monitoring was undertaken in March/ April 2022 at a number of locations to the west/ north west to inform the Bodinglee Wind Farm noise assessment. Where appropriate we may re-use the baseline data collected as part of that assessment rather than undertaking additional monitoring.

Cumulative Noise Assessment

TNEI is aware that there are a number of operational, consented and/or proposed wind farm schemes in the area including Andershaw, West Andershaw, Middle Muir, Priestgill, Broken Cross, Bodinglee, Little Gala, Glentaggart, Dalquhandy, Galawhistle, Hagshaw Hill Repowering and Extension, Douglas West and Extension, Clyde and Clyde extension.

We would be grateful if you could bring to our attention any other wind farm developments that you are aware of in the area that may merit consideration within the cumulative noise assessment.

Summary

To enable us to progress the assessment we would be very grateful if you confirm whether:

- ETSU-R-97, BS4142 and the IOA GPG);
- 2. You agree with the use of the upper daytime fixed minimum noise limit of 40 dB for both the EIAR:
- noise levels:
- You agree with the general monitoring locations proposed (subject to exact siting);
- to the time):
- 6. If the Council is aware of any schemes that should be included in the cumulative noise impacts;
- 7. You agree with the exclusion of Thirstone Cottage from the assessment on the basis that it will be brought out of residential use for the lifetime of the wind farm; and
- 8. You agree with the use of the previously collected background noise datasets as presented in the Bodinglee noise assessment at other locations, if required.

We are planning to install the noise monitoring equipment in the week commencing 15th January, therefore we would appreciate a response to this letter at your earliest convenience. If we don't receive a response by the 15th, we are intending to proceed with the survey on the assumption that the proposed survey methodology set out within this letter is acceptable. If you have any immediate concerns or queries, please do not hesitate to contact me or my colleague Gemma Clark. We look forward to hearing from you soon.



Enc. Figure 1 – Proposed M74 West Wind Farm Annex 1 - Determining the Fixed Part of the Daytime Amenity Noise Limit

1. You are happy with the proposed assessment methods outlined above (BS 5228,

the daytime Total and Site Specific Noise Limits, subject to the relevant justifications within

3. You agree with the proposed approach that, in line with IOA GPG, the cumulative assessment and derivation of Site Specific Noise Limits for the proposed development will utilise available significant headroom with an appropriate margin of +2 dB above predicted

5. You or one of your colleagues would like to attend the noise kit installation (which will take place during the week commencing 15th January, and we will confirm the exact date closer

assessment or any other dwellings that should be considered in the assessment of noise

Annex 1: Determining the Fixed Part of the Daytime Amenity Noise Limit

In relation to determining the fixed part of the Daytime Amenity Noise Limit the ETSU-R-97 notes (on page 65) that:

"The actual value chosen for the daytime lower limit, within the range of 35-40 dB(A), should depend upon a number of factors:

• Number of dwellings in the neighbourhood of the wind farm.

The planning process is trying to balance the benefits arising out of the development of renewable energy sources against the local environmental impact. The more dwellings that are in the vicinity of a wind farm the tighter the limits should be as the total environmental impact will be greater. Conversely if only a few dwellings are affected, then the environmental impact is less and noise limits towards the upper end of the range may be appropriate. Developers still have to consider the interests of individuals as protected under the Environmental Protection Act 1990. It is our belief however, in accordance with the report of the Welsh Affairs Committee [23], that there have been no cases of complaints of noise at levels similar to those caused by wind farms leading to a successful prosecution as a statutory nuisance. It should be noted however that the Welsh Affairs Committee also reports that although the noise may not be a statutory nuisance it can clearly be a cause for distress and disturbance, particularly if residents have been promised inaudibility and the noise has a particular quality leading to complaints.

• The effect of noise limits on the number of kWh generated.

Similar arguments can be made when considering the effect of noise limits on uptake of wind energy generated. A single wind turbine causing noise levels of 40 dB(A) at several nearby residences would have less planning merit (noise considerations only) than 30 wind turbines also causing the same amount of noise at several nearby residences.

• Duration and level of exposure.

The proportion of the time at which background noise levels are low and how low the background noise level gets are both recognised as factors which could affect the setting of an appropriate lower limit. For example, a property which experienced background noise levels below 30 dB(A) for a substantial proportion of the time in which the turbines would be operating could be expected to receive tighter noise limits than a property at which the background noise levels soon increased to levels above 35 dB(A). This approach is difficult to formulate precisely and a degree of judgement should be exercised."

The IOA GPG adds some further guidance:

- "3.2.2 The day amenity noise limits have been set in ETSU-R-97 on the basis of protecting the amenity of residents whilst outside their dwellings in garden areas. The daytime amenity noise limits are formed in two parts: Part 1 is a simple relationship between the prevailing background noise level (with wind speed) with an allowance of +5 dB; Part 2 is a fixed limit during periods of quiet. ETSU-R-97 describes three criteria to consider when determining the fixed part of the limit in the range of 35 dB to 40 dB LA90, all of which should be considered. They are:
 - 1) the number of noise-affected properties;
 - 2) the potential impact on the power output of the wind farm; and

3) the likely duration and level of exposure.

- in this respect should be set out in the assessment. It is beneficial to the decision maker to display both sets of limits to illustrate the range available and/or the noise limit for the development if agreed previously with the LPA.
- 3.2.4 Current practice on the three criteria is as follows:

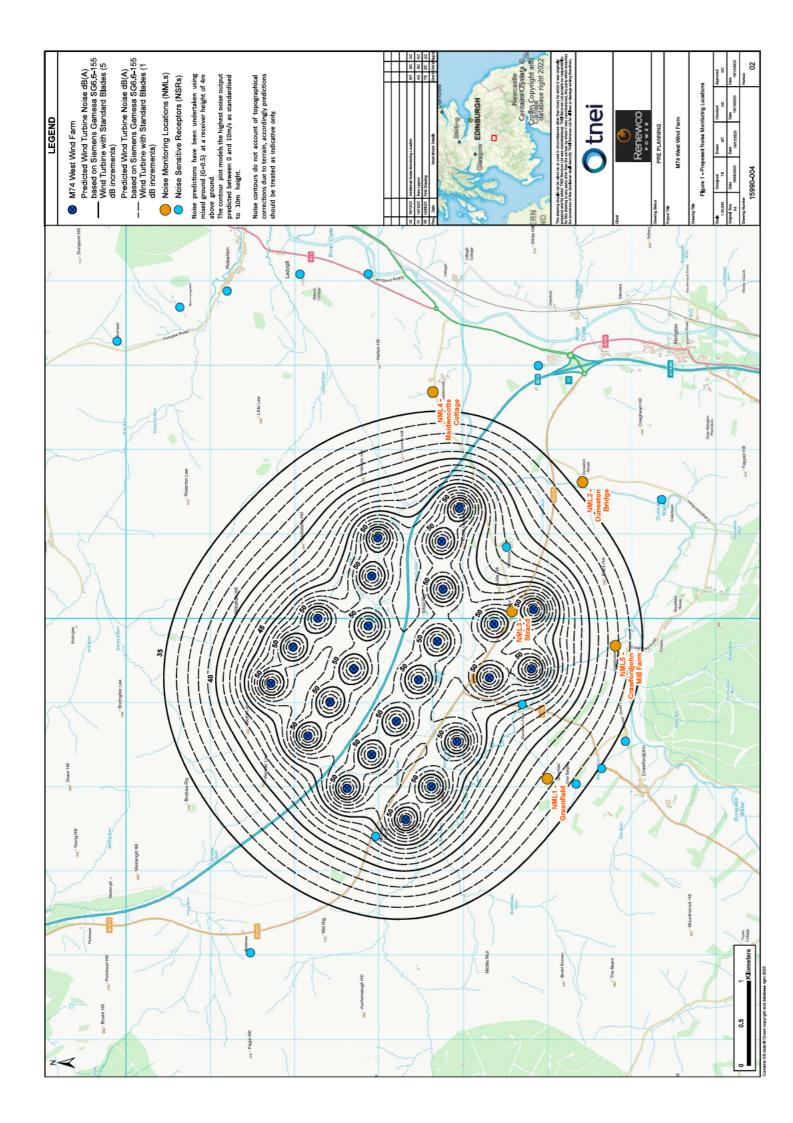
1. The number of neighbouring properties will depend on the nature of the area, (rural, semirural, urban) and is sometimes considered in relation to the size of the scheme and study area. The predicted 35 dB L_{A90} contour (at maximum noise output up to 12 m/s) can provide a guide to the dwellings to be considered in this respect.

2. This is in practice mainly based on the relative generating capacity of the development, as larger schemes have relatively more planning merit (for noise) according to the description in ETSU-R-97. In cases when the amenity fixed limit has little or no impact on the generating capacity (i.e. noise is not a significant design constraint) then a reduced limit may be applied.

3. This last test is more difficult to formulate. But ETSU-R-97 notes that the likely excess of turbine noise relative to background noise levels should be a relevant consideration. In rural areas, this will often be determined by the sheltering of the property relative to the wind farm site. Account can also be taken of the effects of wind directions (including prevailing ones at the site) and likely directional effects. For cumulative developments, in some cases the effective duration of exposure may increase because of cumulative effects.

- 3.2.5 It can be argued that assessing these factors do not represent an acoustic consideration but ultimately a planning consideration, and therefore are difficult for noise consultants to fully determine. However this is described as part of ETSU-R-97 and therefore represents a relevant consideration when determining applicable noise limits. Furthermore, it is necessary, as part of the EIA process to evaluate the noise impacts, which is arguably not fully possible without a complete determination of the ETSU-R-97 limits. Finally, consideration of cumulative noise impacts may require the determination of partial noise limits which may be difficult to obtain unless the amenity noise limit is precisely determined.
- 3.2.6 Other planning considerations, such as the identification in local planning policy of areas of preferred wind farm development, may also influence or determine the choice of the absolute fixed amenity noise limit."

3.2.3 The rationale for a choice of this limit, or factors which would assist the determining authority



Tom Suddaby

From:	Joyes, Kenny <kenny.joyes@< th=""></kenny.joyes@<>		
Sent:	27 February 2024 16:08		
То:	Tom Suddaby		
Cc:	Gemma Clark; Mark Tideswe		
Subject:	RE: M74 West Wind Farm In		

Good afternoon Tom

Apologies for the late response. On the face of it the monitoring points are reasonable.

I would exercise some caution with respect to the following-

NML04



1

If the play equipment is used it may give rise to unusual outliers.

NML05

@southlanarkshire.gov.uk>

ell; Scott Jamieson; Catherine Mackenzie nstallation Report