

Technical Note

Title	Cruach Clenamacrie Wind Farm – NIA addendum following updated guidance		
Client	Voltalia UK Ltd	Internal Reference	C7536-1551
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1. Introduction

A noise impact assessment (NIA) was submitted in support of the Cruach Clenamacrie Wind Farm application in November 2024 to the Energy Consents Unit (ECU00004841). Following a review by Mott MacDonald, on behalf of Argyll and Bute, a cumulative noise assessment was submitted as part of an FEI in September 2025.

The NIA, and subsequent additional information, was carried out in line with the Institute of Acoustics (IoA) Good Practice Guide¹ and ETSU-R-97², as required by planning guidance at the time of assessment. Since the submission of the NIA, updated noise guidance has been published on 19th June 2026:

- Department for Energy Security and Net Zero (2026), ‘Assessment and Rating of Wind Turbine Noise’.³ (referred to as ARWTN)

This document provides updated technical guidance for assessing and controlling operational noise from wind turbines and replaces the previous ETSU-R-97 document. For technical areas not covered in detail, best practice guidance should still be followed, as provided within the IoA Good Practice Guide.

This technical note follows a review of the NIA to determine whether the assessment outcomes remain valid once the changes to guidance have been considered.

For the avoidance of doubt, the definitions used within the NIA and the subsequent FEI shall apply equally to this Addendum to the NIA.

2. ARWTN Methodology

While the new guidance supersedes ETSU-R-97, the fundamental framework of the assessment remains unchanged. ARWTN helps to clarify terminology and the setting of noise limits in both the cumulative and site specific contexts.

ARWTN does not replace current guidance for calculating noise immissions, conducting background measurements, and analysis of the collected data; though some clarifications are given.

The guidelines now recommend that total noise assessment criteria (TNAC) are derived for each relevant receptor within the study area. The TNAC are based on a combination of a Lower Limiting Value (LLV) or 5dB above background, whichever the greater. The TNAC would then apply to cumulative operational noise levels for all

¹ The Institute of Acoustics. (2013). A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise. Available at: <https://www.ioa.org.uk/sites/default/files/IOA%20Good%20Practice%20Guide%20on%20Wind%20Turbine%20Noise%20-%20May%202013.pdf>.

² The Department of Trade and Industry. (1996). ETSU-R-97: The Assessment and Rating of Noise from Wind Farms.

³ UK Government (2026): Assessment and rating of noise from wind turbines: guidance. Available at: <https://www.gov.uk/government/publications/assessment-and-rating-of-noise-from-wind-turbines-guidance>

acoustically relevant wind turbines at each representative receptor. Once TNAC have been derived and agreed, site specific noise limits (SSNL) should be calculated for the control of noise solely from the Proposed Development.

A comparison between ETSU-R-97 and ARWTN for areas that relate to the Proposed Development is provided below in **Table 1**.

Table 1: Comparison of ETSU-R-97 and ARWTN

Area	ETSU-R-97	ARWTN	Comment
Measurement Index	$L_{A90, 10 \text{ min}}$ correlated with wind speed	$L_{A90, 10 \text{ min}}$ correlated with wind speed	Measurement index for assessment remains the same.
Prediction Methodology	Following publication of the IoA Good Practice Guide in 2013, this formed the best practice prediction methodology.	ARWTN does not provide detailed guidance and defers to the IoA Good Practice Guide for specific technical areas.	The IoA Good Practice Guide remains as guidance for prediction, measurement equipment and data analysis and filtering.
Basis for noise limits	The greater of background levels +5dB or the lower fixed limit.	TNAC is set with reference to the greater of background levels +5dB or the LLV.	Where previously derived limits were not assigned explicitly to total or individual noise, the TNAC will now apply to cumulative noise within the study area.
Day Lower Limit	35–40 dB $L_{A90,10\text{min}}$	35–40 dB $L_{A90,10\text{min}}$	Day lower limit range remains the same.
Night Lower Limit	43 dB $L_{A90,10\text{min}}$	43 dB $L_{A90,10\text{min}}$	Night lower limit remains the same.
Financially involved receptors	Increase in lower limit to 45dB $L_{A90,10\text{min}}$	Increase in lower limit to 45dB $L_{A90,10\text{min}}$	FI lower limit remains the same.
Simplified Criteria	Where no receptors fall within 35dB(A) of the development, a simplified limit of 35dB(A) up to 10m/s can be applied for all periods.	Where no receptors fall within 35dB(A) of the development, a simplified limit of 35dB(A) up to 10m/s can be applied for all periods.	Where large separation distances occur, the simplified single fixed limit is still applicable.
Wind Speed Range	Limits based on background noise should be calculated up to 12m/s. The simplified limit is up to 10m/s.	Derived day and night limits are applicable up to 10m/s.	The new guidance acknowledges that modern turbines generally reach maximum sound power output before 10m/s. Provided this is the case, limits should only be applied up to 10m/s in both the simplified and background based approach.
Site specific noise limits (SSNL)	No formal guidance on how limits should be interpreted and applied to multiple developments	Once TNAC have been calculated, the SSNL should be defined. This should normally be less than the TNAC and only	ARWTN is clear that all cumulative predictions should be assessed against the TNAC. Following this, SSNLs should be

Area	ETSU-R-97	ARWTN	Comment
		equal the TNAC where necessary and justified.	derived to condition individual project noise levels.
Cumulative Assessment	The IoA stated that where a project was within 10dB of the proposed development, a cumulative assessment should be conducted.	ARWTN states that where an individual project is within 10dB of the TNAC, it should be included within a cumulative assessment.	The method for determining inclusion within the cumulative assessment remains broadly the same, with a 10dB check to be carried out against the TNAC.

3. NIA Review

The NIA included six noise sensitive receptors within the assessment, all of which were predicted to receive immission levels below 35dB(A) (**Section 8.7.2, Table 8.10** of the NIA). Of these locations, the subsequent FEI identified two locations (NAL4 and NAL5) as having the potential to exceed 35dB(A) when considered alongside cumulative developments. The identification of sensitive receptors remains consistent with ARWTN.

A cumulative assessment was initially scoped out; however, the Corr Chnoc Wind Farm application was submitted to planning shortly after the Proposed Development. At the request of Mott MacDonald, a cumulative assessment was submitted as part of the 2025 FEI. The Beinn Ghlas Repowering was also considered for inclusion, however, as predictions from the site were greater than 10dB below the total noise limits, this development was scoped out of the assessment. Under ARWTN, the included third-party sites would remain the same for the cumulative assessment.

To determine the total noise limits for the area, the background survey conducted in support of Corr Chnoc was referenced. This survey was conducted in line with the IoA Good Practice Guidance and included two locations representative of the identified NALs. Limits were then derived based on the greater of background levels +5dB or a lower limit of 35dB(A) and 43dB(A) for day and night, respectively. This approach remains consistent with ARWTN and adopts the lower end of the recommended LLVs for daytime.

In reviewing the submitted documentation, it was found that the reported noise limits contained a copy and paste error. This table has now been updated and provided below and is consistent with those used in the Corr Chnoc Wind Farm application (ECU00006023). These limits should now be considered as the Total Noise Assessment Criteria (TNAC).

Table 2: Total Noise Assessment Criteria

		Standardised v_{10} wind speed								
Location	Name	2	3	4	5	6	7	8	9	10
Day										
NAL3	Clachadubh	35.0	35.9	37.0	38.2	39.5	41.0	42.6	44.4	46.4
NAL4	Dorran Cottage	36.5	37.1	37.8	38.4	39.1	40.0	40.9	42.1	43.4
NAL5	Glenamachrie	36.5	37.1	37.8	38.4	39.1	40.0	40.9	42.1	43.4
Night										
NAL3	Clachadubh	43.0	43.0	43.0	43.0	43.0	43.0	43.0	44.2	46.6
NAL4	Dorran Cottage	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.8

		Standardised v ₁₀ wind speed								
Location	Name	2	3	4	5	6	7	8	9	10
NAL5	Glenamachrie	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.0	43.8

The NIA then compared predicted cumulative levels with the TNAC, demonstrating all locations would comply with the noise criteria.

The assessment concluded that predicted cumulative operational noise would not exceed the day or night TNAC and would be not significant in EIA terms. This outcome would remain the same under ARWTN.

4. Noise Criteria

Mott MacDonald provided a template planning condition and recommended that apportioned limits should be derived to ensure both developments operating together would not exceed the total noise limits. In Argyll and Bute's response, dated January 2026, the following is stated:

Argyll and Bute do not object on noise impact grounds, subject to the inclusion of an Operational Noise Planning Condition, as recommended by the Council's Noise Consultant, Mott MacDonald, specified in their Review of Evidence – Noise, dated March 2025.

As no apportioned limit has been agreed, it is now proposed that they are derived following the guidance within ARWTN. ARWTN advises that where there are two proposed developments, apportioned limits can be derived by determining the minimum margin (x) between the TNAC and the predicted cumulative levels. The TNAC is then reduced until the same minimum margin (x) is shown between the SSNL and the individual site predicted levels.

This approach has been used for locations where it was shown cumulative impacts could occur. For all other locations, it is proposed that the SSNL reference the simplified limit of 35dB(A).

The proposed SSNL for day and night are provided below in **Table 3** and **Table 4**, respectively. In line with ARWTN, these are now given for windspeeds up to 10m/s.

Table 3: Day SSNL

		Standardised v ₁₀ wind speed								
Location	Name	2	3	4	5	6	7	8	9	10
NAL1	Sealladh Mhor	35	35	35	35	35	35	35	35	35
NAL2	Duntanachan	35	35	35	35	35	35	35	35	35
NAL3	Clachadubh	29.7	30.6	31.7	32.9	34.2	35.7	37.3	39.1	41.1
NAL4	Dorran Cottage	33.2	33.8	34.5	35.1	35.8	36.7	37.6	38.8	40.1
NAL5	Glenamachrie	33.2	33.8	34.5	35.1	35.8	36.7	37.6	38.8	40.1
NAL6	Kilvaree	35	35	35	35	35	35	35	35	35

Table 4: Night SSNL

		Standardised v ₁₀ wind speed								
Location	Name	2	3	4	5	6	7	8	9	10
NAL1	Sealladh Mhor	35	35	35	35	35	35	35	35	35

		Standardised v_{10} wind speed								
Location	Name	2	3	4	5	6	7	8	9	10
NAL2	Duntanachan	35	35	35	35	35	35	35	35	35
NAL3	Clachadubh	38.2	38.2	38.2	38.2	38.2	38.2	38.2	39.4	41.8
NAL4	Dorran Cottage	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	41.2
NAL5	Glenamachrie	40.4	40.4	40.4	40.4	40.4	40.4	40.4	40.4	41.2
NAL6	Kilvaree	35	35	35	35	35	35	35	35	35

For locations with an apportioned limit, the derivation of the SSNL has also been presented graphically to demonstrate each site's predicted level, the cumulative prediction, and respective SSNLs in relation to the TNAC.

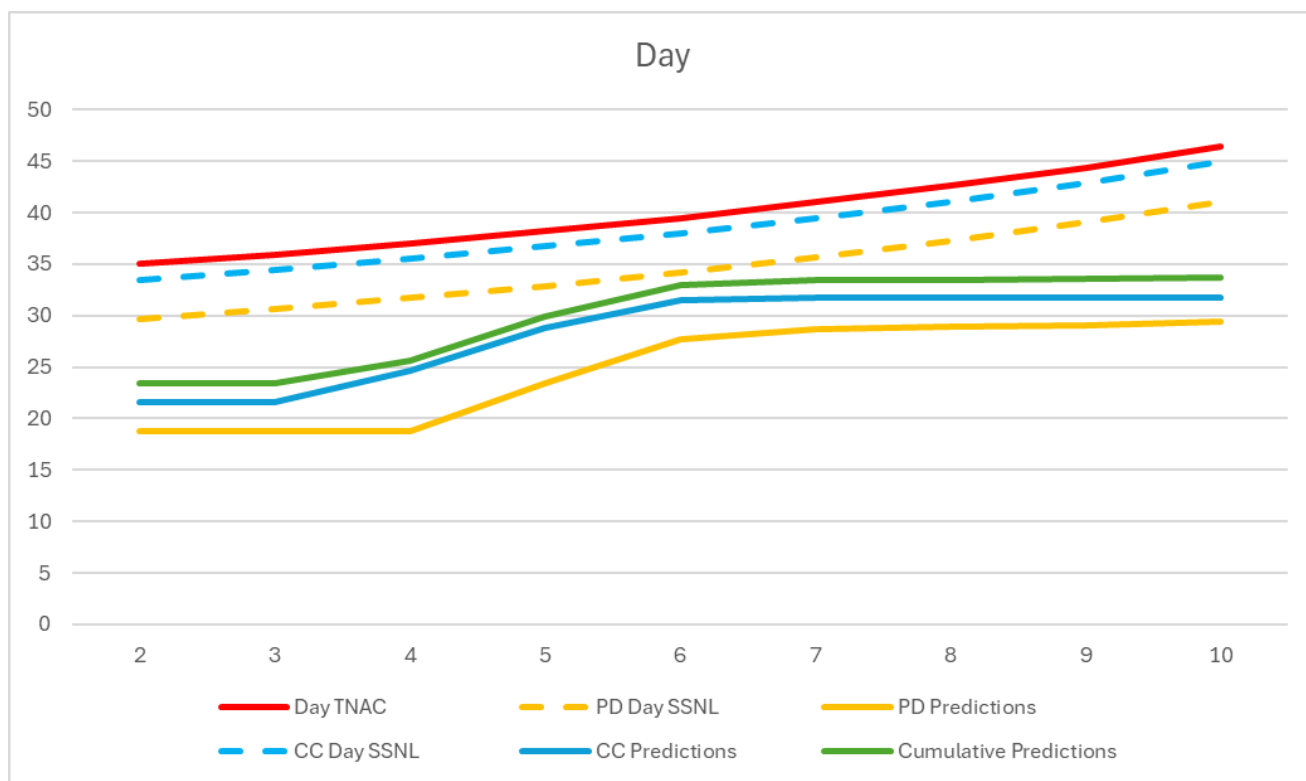


Figure 1: Day – Clachadubh (NAL3) ⁴

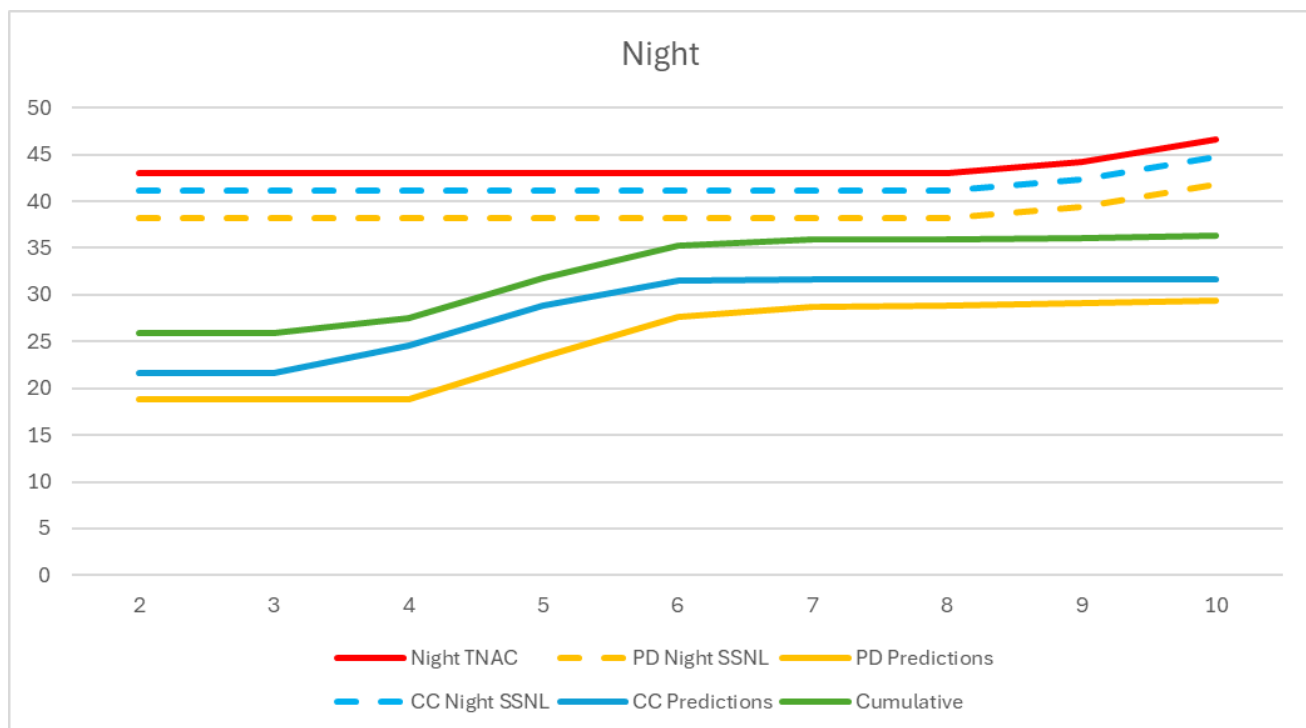


Figure 2: Night – Clachadubh (NAL3)

⁴ PD = Proposed Development, CC= Corr Chnoc

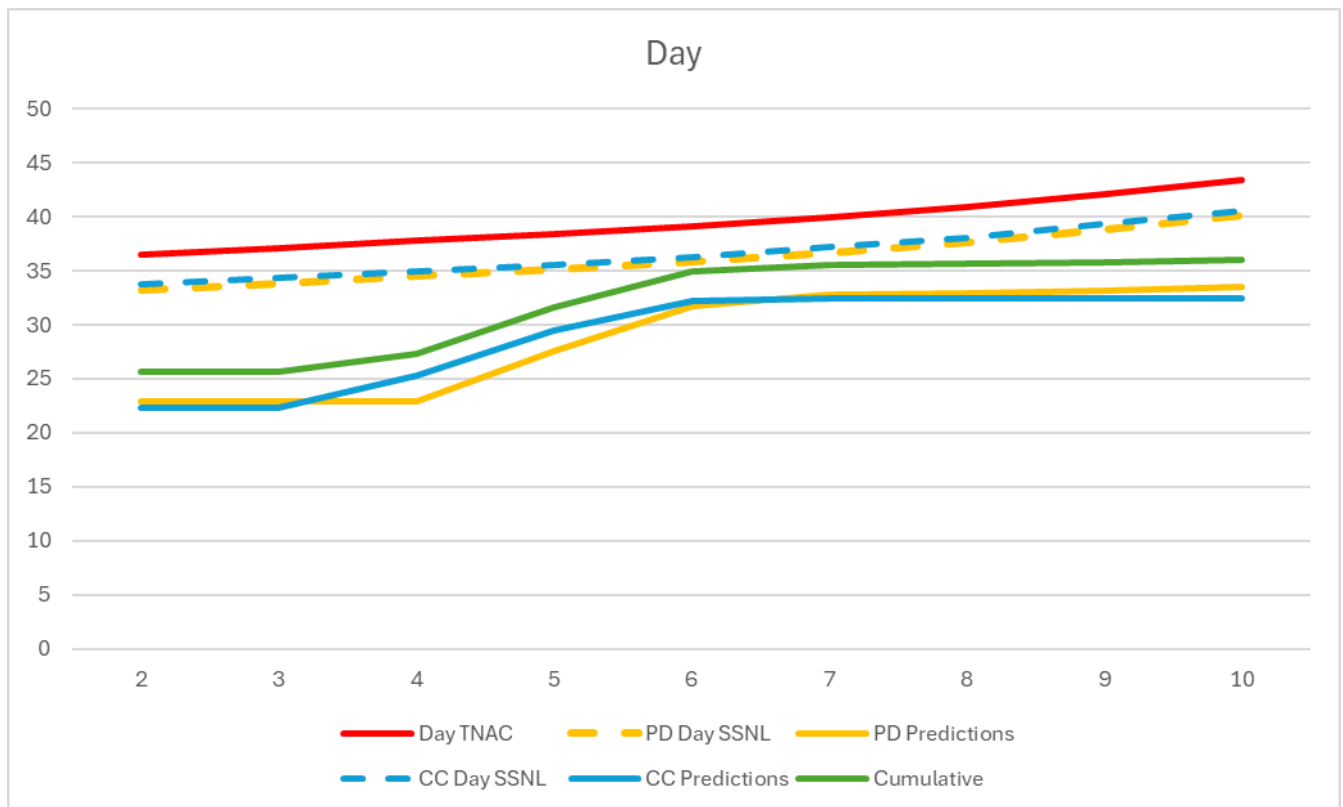


Figure 3: Day - Dorran Cottage/Glenamacrie (NAL4/5)

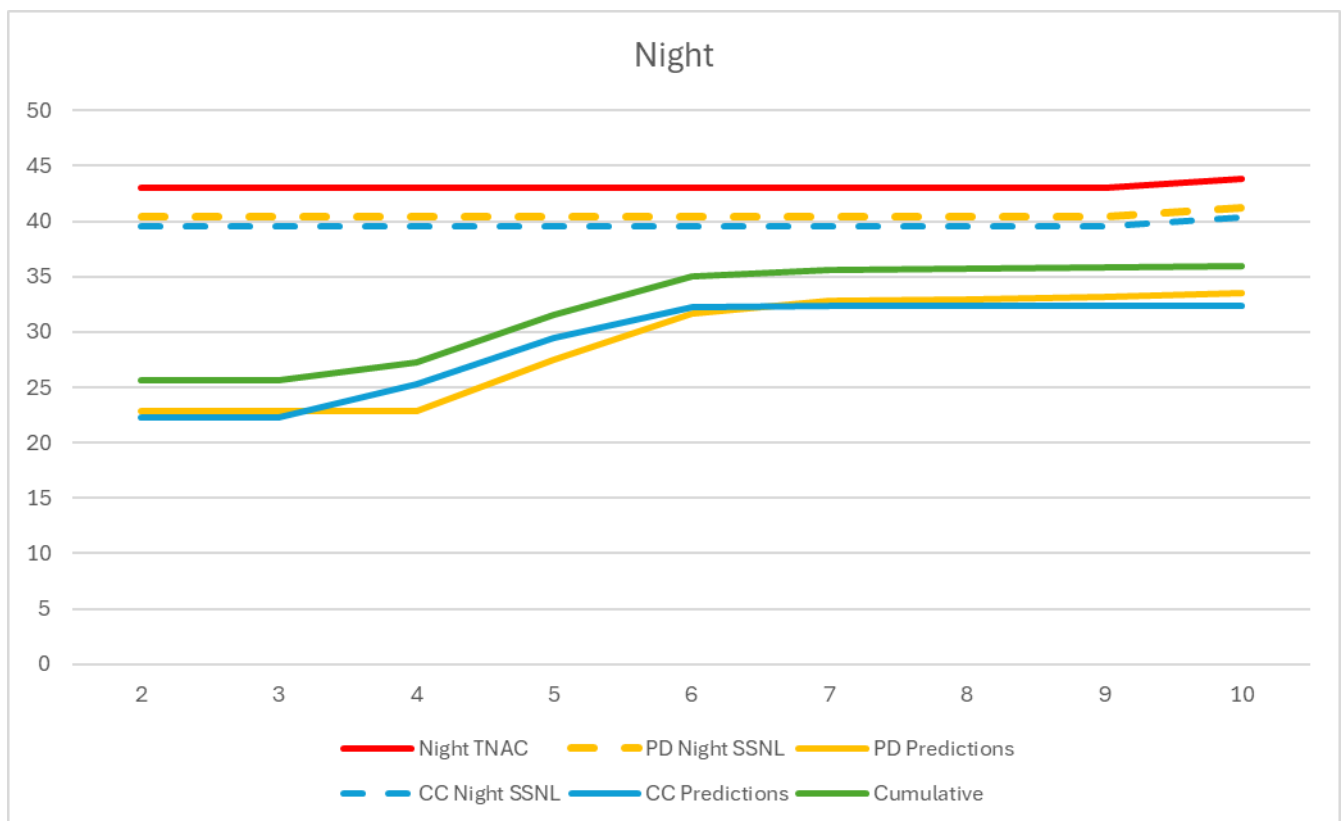


Figure 4: Night - Dorran Cottage/Glenamacrie (NAL4/5)

5. Conclusion

Following the publication of new noise guidance, the submitted NIA for Cruach Clenamacrie Wind Farm was reviewed in the context of ARWTN. As the assessment process and noise limit structure remain largely unchanged, the assessment outcomes presented in the NIA remain valid under ARWTN and therefore a new or an updated NIA is not considered to be necessary.

The proposed noise criteria have been reviewed in the context of the updated guidance and updated apportioned limits have been provided, calculated in line with ARWTN. The new guidance provides clarity in terminology, and this should be reflected within the wording of conditions whereby any noise criteria are labelled as the Site Specific Noise Limits and reference the values provided in **Table 3** and **Table 4**.

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