



Hayes McKenzie — Consultants in Acoustics

Moto-X Experience Centre

Use of site for motocross activities including use of existing scramble track, erection of buildings, highways improvements and infrastructure associated with this use

Use of site for motocross activities including use of existing scramble track, erection of buildings, highways improvements and infrastructure associated with this use

Sound Assessment

Report HM: 3291_R04_EXT1-0

14 February 2022

Moto-X Experience Centre

Use of site for motocross activities including use of existing scramble track, erection of
buildings, highways improvements and infrastructure associated with this use

Sound Assessment

Report HM: 3291_R04_EXT1-0,

14 February 2022

Prepared for: Nightfly Limited
 4 Larkhill Cottages
 Larkhill Lane
 Formby
 L37 1PS

Report prepared by: Malcolm Hayes BSc, MIOA
 Director and Principal Acoustic Consultant

Hayes McKenzie Partnership Ltd (HMPL) has prepared this report for the sole use of the client. The report may not be relied upon by any other party, without prior and express agreement of HMPL. Where findings are based on information provided by third parties, this information has not been independently verified by HMPL, unless otherwise stated.

Lodge Park, Tre'r Ddol, Machynlleth, Powys SY20 8PL, UK
+44 (0)1654 781400, machynlleth@hayesmckenzie.co.uk

Contents

1. INTRODUCTION	5
2. EXECUTIVE SUMMARY	6
3. The Proposal	7
4. Pre-Planning Enquiry 21/0107/PRE	7
5. Existing Site Activities	10
CLEUD PR5473/00 dated 25.03.1999 from Powys CC Shire Planning Officer	10
Permitted Development	12
6. Proposed Site Activities	12
7. Assessment of Electric Bike Experience Days	15
Technical Advice Note 11: Noise.....	15
Guidance Notes on Noise Control at Motor Sport Circuits: 1996	16
Management Plans.....	16
BS 4142:2014 Methods for rating and assessing industrial and commercial Sound	17
WHO Guidelines for Community Noise.....	18
WHO Night Noise Guide Lines for Europe.....	18
WHO Environmental Noise Guidelines for the European Region.....	18
Predicted Experience Day Noise Levels.....	19
Existing Sound Environment at Proposed Site	19
8. COMPARISION OF PROPOSED ACTIVITIES AND EXISTING USE	21
9. change in noise levels associated with proposed controls	23
Source Noise Levels: CLEUD – Practice Days & Permitted Development Days ..	24

	Source Noise Levels: CLUED Events	24
10.	Proposed Assessment Method for Yearly Dose Value	26
11.	Lden Noise Prediction Assumptions	28
	Source Noise Levels: CLEUD – Practice Days & Permitted Development Days.....	29
	Source Noise Levels: Events.....	29
	Source Noise Levels – Electric Bike Experience Days	29
	Source Noise Levels – Electric Bikes – Proposed Race Events	30
	Discussion of Source Noise Levels	30
12.	Predicted Lden Values	31
	Existing Activities	31
	CLEUD – Practice Days (Sunday & Wednesday) & Permitted Days	31
	CLUED Events.....	32
	Existing Activity Total Levels - L _{den}	32
	Change in Sound Environment associated with Proposed Electric Bike Experience Days	34
13.	Proposal controls to CLEUD and permitted Development Activities	35
	CLEUD – Practice Days & Permitted Development Days	36
	Events	36
	Existing Activity Total Levels with Restricted Hours of Operation – L _{den}	37
	Change in Sound Environment associated with Proposed Electric Bike Experience Days with Restricted Hours of Operation	39
14.	Discussion.....	39
15.	Conclusions	40

Glossary

Appendix 1 –

Appendix 2 – ACU Guidelines

Appendix 3 – 3291_R03_EXT1-0_Noise Management Plan (Draft)

Appendix 4 – 3291_R01_EXT1-0

1. INTRODUCTION

- 1.1 This report considers the issue of sound generated by the proposed development and any material change of the sound environment as compared to the current legally permitted activities at the site.
- 1.2 The Report use the definitions within the Glossary attached to the end of this report.
- 1.3 The Report details the predicted sound levels associated with the Electric Bike Experience Days and considers the potential sound impacts associated with this proposed new source of activity on site.
- 1.4 The Report also considers generation of sound associated with the existing lawful use activities under the CLEUD and Permitted Development, and the Historical Use, and considers the potential increase in sound impacts associated with the introduction of the Electric Bike Experience days as well as factoring in the controls being proposed over the Proposed Use.
- 1.5 The Report considers this position by an assessment of the following:
 - Electric Bike Experience Days to the existing sound environment at the site: Tables 7.2 & 7.3;
 - Electric Bike Experience Days in addition to the historical Use of the site: Table 12.8;
 - The reduction in sound levels associated with the proposed controls for CLUED and Permitted Development as compared to the Historical Use : Tables 9.3 & 9.4;
 - The reduction in sound levels associated with the proposed controls for CLUED and Permitted Development as compared to the Historical Use with the additional of Electric Bike Experience Days : Table 13.8;
- 1.6 The Report considers the change in sound impacts associated with the controls to the Proposed Use, and determines the level of sound reduction that may be expected. These controls would form part of the consent.

2. EXECUTIVE SUMMARY

- 2.1 The development proposes a complete plan for Moto-X activity on the site and intends to provide certainty and control for the activities on the site.
- 2.2 The development demonstrates the difference between the lawful use of the track under the CLEUD and Permitted Development and the substantial improvements and controls over that same use of the track under the Proposed Use.
- 2.3 The activities on the site will, under the development, be controlled in a manner that has not been the case in the Historical Use of the site and would not be the case if the site was continued to be operated under its existing lawful use. This is detailed in the report below but by way of example:
- I. The development is offering control of the times the track is used, both for the proposal and the lawful use activity, removing the noise making activities from the key time sensitive hours, i.e. after 17:00 hours.
 - II. There will be up to 5 ½ hours per day less track time for the lawful use activities to those already allowed on the site and how it has been historically operated.
 - III. Race events will move from 3 all petrol events to 1 electric and 2 petrol with a substantial reduction in the noise on the electric event weekend.
 - IV. A noise management plan, which will be agreed with the Local Authority, will be put in place in relation to all activities on the site, both for the proposal and for all existing lawful use activities. The Noise Management Plan will set out such issues as:
 - Hours of Operation;
 - Levels of acceptable source noise (bike noise) in accordance with an agreed test procedure;
 - Complaints Notification and Management Procedure;
 - Review and Community Liaison;
 - Historical Record of activities and vehicle noise levels
 - V. The Applicant is prepared to agree to Planning Conditions limiting and

controlling these matters which is a substantial improvement to the existing lawful use certified within the CLUED which is largely unrestricted in operation. The applicant refers to the “*Comparison Between the CLEUD/Permitted Development, Historical Use and Proposed Use of the Track with Controls*” document which outlines the proposed controls with in Sections 5 & 6, Appendix 1 to this report.

- 2.4 The activities in the development, in comparison to the equivalent activities under the existing lawful use, results in a significant change and material reduction in the yearly noise value for those activities. The addition of the Electric Bike Experience Days has no material effect on the current yearly noise value of the site.
- 2.5 In addition, the development provides significant improvement as it allows for controls over the lawful use of the site and the noise with the conditions highlighted above which are not in place for the existing lawful use.
- 2.6 As is detailed below, the development meets the test for acceptable noise levels and exceeds it with the reduction in noise like for like activities and the controls over the site and noise making activity on the track.

3. THE PROPOSAL

- 3.1 The proposal is for the Erection of a building for use as a Motor-Cross Experience Centre with associated parking area; use of land as overspill car parking area; siting of 7 no. holiday lodges and associated works; installation of 2 no. foul water drainage receptacles and soakaways; alterations to existing roadways and improvements to 2 no. highway entrances and use of existing motor cycle scrambling track.

4. PRE-PLANNING ENQUIRY 21/0107/PRE

- 4.1 The proposal for the use of the site as a Motor-Cross Experience Centre had been subject to a planning application in the recent past (19/0643/FUL). Within the consultation responses from the Environmental Protection (21st October 2019) it is stated:

I have now read the acoustic consultant's report, which was submitted in support of the application. I note that the testing that was undertaken was detailed and covered a number of scenarios. The report does provide maximum noise levels for various

activities onsite and this is useful. I do however note that the site covers quad bike events currently and these have not been considered as a scenario, is the intention to continue to hold quad bike events as well?

It is likely that noise from the site will be audible at some receptors, particularly during the louder mx events. Whilst we would not seek to make noise inaudible it is important to understand for what period of a day that the receptors would be exposed to which noise level. Clearly the loudest event predicted operating 9-5, 7 days a week would not be acceptable.

The noise report concludes that a noise management policy detailing how the site intends to operate and what controls on noise are in place. I believe that a detailed description and/or noise management plan is required for the site to show that it will not have a detrimental impact on the amenity of neighbours.

4.2 It should be noted that the intent of the proposal is for track to be used in accordance with the Proposed Use and that Proposed Use to be governed by controls over the site which includes providing control that would replace and provide significant improvement to how the track has been (and can be) operated under the CLEUD and Permitted Development.

4.3 Within the consultation responses from the Environmental Protection (dated 16th February 2021) it is stated that:

Whilst accepting that the noise assessment shows that the intended increase in use of the site will produce levels of noise much lower than the existing site, there will be some impact at neighbouring properties and the use would certainly not be inaudible.

4.4 The appropriate test for determination of acceptability of the proposal is related to Powys Local Development Plan Development Management Policy DM13 is “... shall not be unacceptably affected by levels of noise...” This does not require inaudibility for determination of acceptability of the proposal.

4.5 The application (19/0643/FUL) was refused permission (16th February 2021) and the first reason for refusal identified within the officers report was as follows:

1. *The proposed development fails to demonstrate that it will not have an unacceptable adverse impact on nearby sensitive receptors contrary to policies DM13, and TD1 of the Powys Local Development Plan, Technical Advice Note 11: Noise, Planning Policy Wales and the Wellbeing of Future Generations Act.*

4.6 Within the reasoning within the Officers Report it is stated that:

In concluding their comments Environmental Health state that the current use of the site has the potential to impact on amenity through high noise levels at least twice a week with the option of impact on another 14 days. If this application was to be granted then those rights would remain and the noise from the proposed use would be added on top. It is my opinion that this would present an unacceptable noise impact on the amenity of nearby residents.

It is also considered that the development fails to embrace wellbeing goals in that it does not reduce average population exposure to noise pollution and would in fact increase the noise pollution in the area.

4.7 The purpose of this report is to address the concerns which have been identified within the Environmental Health Officers response and the Officers report for that application, 19/0643/FUL.

4.8 As part of the Pre-Planning Enquiry for the new application, a view was sought from the Environmental Health Officer (EHO) which was summarised within an email from Catherine James (Powys Planning Officer). This indicated the following:

As previously indicated to the applicant the noise survey which was undertaken was not deemed to deficient and could again be used to support any application submitted, providing that the detail remains relevant to what is being proposed. Our previous objection which the applicant would need to overcome is that extensive use of the site for moto-x activity under pd rights already exists. Intensifying the use of the site with further noise making activity (all be it quieter noise making activity) is unlikely to gain positive comments from this department.

Our advice to the applicant from a noise point of view is to put forward a proposal which includes suitable assessment and controls over noise for the whole of the operation of the site (i.e. Operation under PD rights and the new proposal). A cumulative assessment for all noise from the site is required, as is suitable mitigation to control the impact of that noise on nearby dwellings.

Other key points he made were that the site already has significant rights under the Certificate of Lawfulness and he would be opposed to any increase in those so any future proposal should not include any increase in the days or times available for use. Betterment in respect of noise will be required and clear proposals will be required to demonstrate that. He also stated that a clear statement of how the site will operate and

how the site will be managed will be required

- 4.9 This indicates that the assessment of the existing sound environment undertaken as part of the original application is acceptable on the basis that there is no substantial change in the proposed types of vehicles proposed to use the site. It also indicates that Powys County Council are looking for an improvement of the sound climate at neighbouring properties to the proposal. This is beyond the requirements of Policy DM13 where it should be demonstrated that neighbours to a proposal “*shall not be unacceptably affected by levels of noise*” as a result of the proposed Development being granted consent. This can be achieved by the Development through the offer of controls to the operation of the proposed development but, in addition, through additional controls to the lawful use of the site and its associated activities. This will result in a reduction in the “*average population exposure*” to noise which is generated by the lawful use of the site, as may be seen in paragraph 2.3. above.
- 4.10 The EHO did not object to the prediction methodology which was adopted for the original application. As a consequence, predictions which are undertaken and form part of this report are based upon the source data obtained for the original application (19/0643/FUL: HM Report 3291_R01-Appendix 4) but with updated user numbers and where appropriate, additional controls of use for the Development. We propose to demonstrate that the development provides for no material harm through prediction since this is the reasonable method for assessing the potential changes in sound environment at neighbouring noise sensitive receptors.

5. EXISTING SITE ACTIVITIES

- 5.1 The existing lawful use activities can be summarised as follows:

CLEUD PR5473/00 dated 25.03.1999 from Powys CC Shire Planning Officer

Lawful use of the land is certified as:

‘The use of land at OS field No. 5433 and 7035 at Rhydblwd, Disserth, Builth Wells for motorcycle scrambling practice sessions on Sunday and Wednesday afternoons and the staging of 3 motorcycle scrambling events per annum’

- 5.2 Practice sessions currently occur on CLUED Wednesday Afternoons and CLEUD Sunday. The current operation on site has adopted the setting sun as the definition of

the end of the afternoon¹. Activities on Wednesdays start at 12:00 and would run through until sunset. Sunday activities (when there is no restriction on the timings) would occur from 08:00 until the setting of the sun although it should be noted that there are no limitations as to when the track may be used on a Sunday unlike Wednesday afternoons, i.e. activity may occur on track at any time on a Sunday.

- 5.3 Clearly, since the time for sunset varies throughout the year, it is necessary to take account of the differing day lengths and include these within the predictions of yearly noise dose values for the existing *average population exposure to sound* from lawful use activities.
- 5.4 As indicated in paragraph 2.3 above, it is a substantial benefit to the site that the application proposes controls to times of all activities on the track which can be controlled by planning condition. This means reduction to the current *average population exposure* at neighbouring noise sensitive properties and ensures activities on the track are outside the noise sensitive hours (this is currently wholly unrestricted on the days of operation).
- 5.5 Track density during these practice sessions will be up to 50 riders on the track at any one time. It should be noted that more riders may be on site but not on track, as riders will be in the paddock area undertaking mechanics to the bikes.
- 5.6 The CLEUD Event also allows for 3 events per annum. These Events may take any form, i.e. there is no restriction in the length of such an event (1 day or 7 days, for example) nor is there any restriction in the hours of operation. As part of the application it is proposed that such events will take the form of 3 day events where day 1 is setting up and arrival of competitors at the track and days 2 & 3 are track race days.
- 5.7 Day 1 will normally start to become a source of noise during the afternoon and evenings when competitors have arrived and may be tuning vehicles or undertaking reconnaissance of the track layout in preparation for the next 2 days of competition.
- 5.8 Days 2 & 3 would be expected to start at ~08:00 and run through until the light is failing, i.e. sunset. In general, during events, track density of riders will be around 100 on track at any one time as well as the preparing and tuning of bikes alongside the track ready for the next race.
- 5.9 These activities are currently undertaken using petrol bikes of both 4 and 2 stroke

¹ <https://dictionary.cambridge.org/dictionary/english/afternoon> "the period that starts at about twelve o'clock or after the meal in the middle of the day and ends at about six o'clock or when the sun goes down"
[Afternoon Definition & Meaning -Decib Merriam-Webster](#) "the part of the day between noon and sunset"

variants. Electric bikes have not become adopted in general for these events but it is broadly accepted this will happen as some point in the future (see reference 1).

Permitted Development

5.10 With respect to permitted Development Rights to the site the following has been provided by Powys CC Planning Enforcement:

Letter dated 01.04.2008 from Powys CC Planning Enforcement

'I confirm the use of land up to 14 days per annum for motorcycle events is permitted by virtue of class B2/ part IV of the Town and Country Planning (General Permitted Development) Order 1995. This permitted development right is in addition to any permissions you may have to use this site whether through planning permission or a certificate of lawfulness.'

5.11 In addition to the activities outlined above in 5.2 - 5.9 above, the permitted development rights also allow the operation of the site for 14 days. These are unrestricted in times of use and are generally scrambling events with an expected 50 riders on the track at any one time as well as additional riders in the paddock area preparing and tuning of bikes ready for the next race. These would normally occur on a Saturday or Bank Holiday Monday (or both) and start at ≈08:00 running through to sunset.

5.12 These activities are currently undertaken using petrol bikes of both 4 and 2 stroke variants. Electric bikes have not become adopted in general for these events but it is broadly accepted that there take-up will increase with passing time.

6. PROPOSED SITE ACTIVITIES

6.1 The development is proposing a clear plan for the site that will provide control and certainty to the operation and activities on the site (which are not provided by the current CLEUD and Permitted Development lawful use) to ensure that neighbours "*shall not be unacceptably affected by levels of noise*".

6.2 The proposed use of the site is as follows:

DAY/EVENT	PROPOSED USE
Monday	Electric Bike Experience Day AM session – 10:00 – 12:00 PM session – 14:00 – 16:00
Tuesday	Electric Bike Experience Day AM session – 10:00 – 12:00 PM session – 14:00 – 16:00
Wednesday	AM – Electric Bike Experience Day 10:00 – 12:00 PM – Wednesday Practice Day – 12:00 – 17:00 - Mixed use of petrol and electric
Thursday	Electric Bike Experience Day AM session – 10:00 – 12:00 PM session – 14:00 – 16:00
Friday	Electric Bike Experience Day AM session – 10:00 – 12:00 PM session – 14:00 – 16:00
Saturday	Electric Bike Experience Day AM session – 10:00 – 12:00 PM session – 14:00 – 16:00
Sunday	Sunday Practice Day 09:00 to 17:00 Mixed use of petrol and electric

DAY/EVENT	PROPOSED USE
Proposed Race Events	<p>3 Events per year to be held across a weekend and to replace the Friday, Saturday, and Sunday activities above for that weekend. One event to be electric bike events and two events a petrol bike event.</p> <p>Track to be in use 09:00 to 17:00</p>
Proposed Scrambling Events	<p>14 days to be used throughout the year at the operator's discretion and will replace the respective days activity as above.</p> <p>Track to be in use 09:00 to 17:00</p>

- 6.3 The Electric Bike Experience will occur on Monday, Tuesday, Wednesday Morning, Thursday, Friday and Saturdays when it is proposed to provide tuition to novice riders and family groups for scrambling around the track. It is proposed that no more than 20 riders will be on the track at any one time and that these will be 16 electric bikes and 4 petrol bikes. The petrol bikes will be instructor bikes and not for users of the proposal.
- 6.4 Electric Bike Experience hours of operation are proposed to be from 10:00 – 12:00 in the morning and 14:00 – 16:00 in the afternoon, i.e. a total of 4 hours every day except Wednesdays which would be limited to 2 hours during the morning session. The noise impact of this activity is as set out in Table 9.7 and does not amount to an unacceptable level of noise in accordance with DM13.
- 6.5 The development proposes a different operational regime of the site, as compared to its historical operation in that the CLEUD and Permitted Development Days will have significantly less track occupation time and restricted hours of use (in particular use is taken from outside the key noise sensitive hours which are currently permitted, i.e. late afternoon through to sunset) in association with the gradual adoption of quieter bikes with respect to noise. The noise impact of these activities is set out in Tables 9.3 and 9.4 where the expected change associated with the introduction of these additional control measures to existing activities has been determined. The assessed level of residual

sound does not amount to an unacceptable level of noise in accordance with [DM13] and should be recognised as a reduction in the sound impact when compared to the current operational noise levels associated with the existing lawful use of the site.

6.6 As will be demonstrated in more detail using the predictions set out in this report, the noise impact of the Proposed Activities set out above do not amount to an unacceptable level of noise when considered with respect to historical usage in that:

- The Proposed Activities offer controls (see below) against the equivalent existing use under the CLEUD and Permitted Development Days which results in a significant change and material **reduction** in the yearly noise value for those activities.
- The addition of the Electric Bike Experience Days into the Proposed Activities has **no material effect** on the current yearly noise value of the site.

7. ASSESSMENT OF ELECTRIC BIKE EXPERIENCE DAYS

7.1 The relevant Planning Guidance when assessing the potential effects of noise associated with the proposal is set out within the Report 3291_R1_EXT1-0 Dated 29th July 2019 Appendix 4. The guidance may be summarised as follows:

Technical Advice Note 11: Noise

7.2 Guidance in relation to noise is set out within Technical Advice Note 11: Noise (TAN 11) where guidance is provided when assessing sound associated with new development. When considering the introduction of noise generating development TAN 11 stated the following:

Noise generating development

8. Local planning authorities must ensure that noise generating development does not cause an unacceptable degree of disturbance. They should also bear in mind that if subsequent intensification or change of use results in greater intrusion, consideration should be given to the use of appropriate conditions.

9. Noise characteristics and levels can vary substantially according to their source and the type of activity involved. In the case of industrial development, for example, the character of the noise should be taken into account as well as its level. Sudden impulses, irregular noise or noise which contains a distinguishable continuous tone will require

special consideration. In addition to noise from aircraft landing and taking off, noise from aerodromes is likely to result from engine testing as well as ground movements. The impact of noise from sport, recreation and entertainment will depend to a large extent on frequency of use and the design of facilities. Advice on assessing noise and on factors to consider in relation to the major noise sources including roads, railways, airports, industrial and recreational noise and their measurement is given in Annex B.

7.3 Recreational noise is considered within TAN 11 at paragraph B21 where it is stated:

Noise from recreational and sporting activities

B21. For these activities the local planning authority will have to take account of how frequently the noise will be generated and how disturbing it will be, and balance the enjoyment of the participants against nuisance to other people. Partially open buildings such as stadia may not be in frequent use. Depending on local circumstances and public opinion, local planning authorities may consider it reasonable to permit higher noise emission levels than they would from industrial development, subject to a limit on the hours of use, and the control of noise emissions (including public address systems) during unsocial hours. A number of sports activities are the subject of Codes of Practice. Some noise generating activities enjoy permitted development rights granted by Part 4 of Schedule 2 to the Town and County Planning (General Permitted Development) Order 1995, and so may not require specific planning permission provided that they occur on a temporary basis. However, this permission may be withdrawn by making a direction under Article 4 of the Order.

Guidance Notes on Noise Control at Motor Sport Circuits: 1996

7.4 When considering the issue of Motor Sports noise the most relevant guidance is contained within the Guidance Notes on Noise Control at Motor Sports Circuits. The adoption of electrically power bikes will significantly reduce the relevance of the guidance but it is of benefit to consider the advice that it contains. Of particular note with respect to the proposed development is the advice with respect to Noise Management Plans which states the following:

Management Plans

7.5 The Guidelines suggest that a venue should produce a Policy Statement addressing all aspects of the noise control procedures in use at their site. This Policy Statement should be the basis for the production of a more detailed management plan which describes the actions to be taken by the venue to minimise noise disturbance. It is suggested that

some or all of the following should be included within such a plan:

- Policy Statement regarding noise control
- Management Plan for noise control
- Results of environment noise studies
- Details of improvements to venue to reduce community noise impact
- Noise control manual to be used by venue staff
- Staff training for noise awareness and control
- List of trained personnel or arrangements for their provision
- Details of any sound measurement equipment used at the venue
- Records of the results of vehicle noise measurements
- Records of the results of trackside or environmental measurements
- Records of any noise complaints
- Any other information relevant to the local situation

BS 4142:2014 Methods for rating and assessing industrial and commercial Sound

7.6 BS 4142:2014² provides a means for the assessment of sound from industrial and commercial premises. It should be noted that within the scope of the document that:

The standard is not intended to be applied to the rating and assessment of sound from:

a) recreational activities, including all forms of motorsport;

7.7 Therefore, the use of this standard for the assessment of motor sport noise is considered outside the intent of the standard. However, the standard does provide guidance as to the means by which the existing noise environment may be assessed and provides an indication for the potential audibility of a sound within such an environment.

² BS 4142: 2014: Methods for rating and assessing industrial and commercial Sound

WHO Guidelines for Community Noise

7.8 The World Health Organisation document Guidelines for Community Noise³ provide an indication of levels of sound which may give rise to moderate annoyance. It is stated that moderate annoyance may occur during daytime and evening periods when $L_{Aeq, 16 \text{ Hour}}$ levels exceed 50 dB. For the protection of persons asleep within a building with window open it is advised that external noise levels should not exceed an $L_{Aeq, 8 \text{ hour}}$ of 45 dB or an L_{Amax} noise level of 60 dB.

WHO Night Noise Guide Lines for Europe

7.9 The WHO Night Noise Guidelines for Europe⁴ set out what are considered noise limits for the protection of sleep of neighbours to sources of noise. In general this refers to traffic, aircraft, train and industrial noise. The suggested policy aim of the document is that to minimise the risk of any negative effects associated with noise to the health of a sleeping person that external noise levels should not exceed 40 dB $L_{night, outside}$. This is a limit based upon the yearly average night time noise levels measured over an 8 hour period. The levels which are indicated relate specifically to night time sleep protection but it may be assumed that noise levels of this level during the day will have no adverse health impacts to persons subjected to such levels nor, as a consequence, are unlikely to significantly result in adverse comment especially if the pre-existing ambient (L_{Aeq}) sound level at a receptor is of a similar level.

WHO Environmental Noise Guidelines for the European Region

7.10 WHO Environmental Noise Guidelines for the European Region⁵ provide the most recent research into the potential effects of sound upon human health and proposes a number of limits for the protection of health. The sources considered do not include sound from sports events but do provide an indication of the general levels which may be considered safe from any source.

7.11 Sound associated with traffic is considered to have no adverse effects upon health of levels are controlled below 53 dB L_{den} ⁶. This is equivalent to around a fixed level of

³ WHO Guidelines for Community Noise 1999: <https://apps.who.int/iris/handle/10665/66217>

⁴ WHO Night Noise Guidelines for Europe: 2009:
http://www.euro.who.int/_data/assets/pdf_file/0017/43316/E92845.pdf

⁵ WHO Environmental Noise Guidelines for the European Region : 2018:
<http://www.euro.who.int/en/health-topics/environment-and-health/noise/publications/2018/environmental-noise-guidelines-for-the-european-region-2018>

⁶ L_{den} = Day – evening-night level which biases the level of noise for evening and night-time periods by 5 and 10 dB respectively to take account of the greater sensitivity of receptors during these periods of relaxation. The L_{den} is a yearly average level.

approximately 46 dB L_{Aeq} .

Predicted Experience Day Noise Levels

7.12 As indicated within the response from Environmental Protection with respect to the Application 19/0643/FUL, the original noise survey was considered appropriate on the basis that “*was not deemed to deficient and could again be used to support any application submitted, providing that the detail remains relevant to what is being proposed.*” The proposed Electric Bike Experience Days predictions undertaken within the Noise Assessment which accompanied the 19/0643/FUL Application assumed 15 riders on track. This proposal assumes 16 guest riders on track (electric bikes) and a maximum of 4 instructor bikes (petrol). Therefore, there is a need to update the predicted noise levels determined at neighbouring noise sensitive receptors to take account of the change in usage.

7.13 On the basis of change in bike movements around the track, the calculated change in levels would be an increase of 0.3 dB for the calculated electric bike noise levels. For the Instructor bikes this has been calculated from the difference between 15 separate bikes using the track whereas this would now be 4 petrol bikes, a reduction in level of 5.7 dB for this source.

7.14 Table 7.1 below details the predicted $L_{Aeq, 1 \text{ hour}}$ assuming 16 electric bikes and 4 petrol instructor bikes are on track at the same time.

	Cefnawr	Maeswynne	Maeswynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke Enduro	45.7	44.9	38.0	45.7	44.6	41.9	44.4	42.1	38.1
2-Stroke Motor-X	39.2	38.0	31.5	38.7	37.9	34.8	37.6	35.5	31.4
2-Stroke Trials	33.5	33.4	25.0	34.3	33.0	29.7	32.4	30.5	26.3

Existing Sound Environment at Proposed Site

7.15 The measured ambient and background noise levels at site indicate levels of $L_{A90} = 32$ dB and $L_{Aeq} = 38$ dB. (See Appendix 4: Figure 1)

7.16 Table 7.2 details the assessed levels with respect to the existing background and ambient sound levels at the site. This indicates that the activities on the site would be audible at neighbouring receptors to the development.

	Predicted $L_{Aeq,r}$	Derived Background L_{A90}	$\Delta Lp=L_{Aeq,r}-L_{A90}$	Derived Ambient L_{Aeq}	$\Delta Lp=L_{Aeq,r}-L_{Aeq}$ Ambient
Cefnmawr	45.7	32.0	13.7	38.0	7.7
Maesgwynne	44.9	32.0	12.9	38.0	6.9
Maesgwynne Farm	38.0	32.0	6.0	38.0	0.0
Trecoed Farm	45.7	32.0	13.7	38.0	7.7
Rhyd-Blawd	44.6	32.0	12.6	38.0	6.6
Cwmamliw	41.9	32.0	9.9	38.0	3.9
Cefn-bach	44.4	32.0	12.4	38.0	6.4
Pentre	42.1	32.0	10.1	38.0	4.1
Brynhydd	38.1	32.0	6.1	38.0	0.1

7.17 Analysis of the sounds associated with only the electric bikes indicates that electric bike activity will result in incident sound levels at neighbouring properties which are generally at between +2.4 and -7.2 above and below the existing background sound levels. Electric bike sound is predicted to be below the ambient sound levels at all times. This is detailed in Table 7.3 below where the predicted levels for just electric bike sourced noise is presented.

7.18 This analysis indicates that the most audible sound from the site during periods of Electric Bike Experience Days is the sound of the petrol driven instructor bikes, of which there will be a maximum of 4 on site at any one time. Such a sound would be expected in a rural sheep farming environment, in the form of quad bikes or 4x4 vehicles, for access around a farm, i.e. this would not be an exceptional sound for the environment within which it occurred. The assumptions for this petrol bike activity is that all 4 bikes will be ridden at speed around the existing scramble track. This would seem to be a very conservative assumption given that the intent of the instructors is to ensure the safety and training of guests rather than using the track for additional practice. The more likely scenario is that instructor petrol bikes will circuit the track at reduced speeds and stop at specific points to allow coaching to passing guests. In these circumstances, we would expect that the actual operational noise levels associated with instructor bikes will be lower than presented within these tables.

Table 7.3: Assessment of Effects: Electric Bike Experience Day ONLY Electric Bikes					
	Predicted $L_{Aeq,r}$	Derived Background L_{A90}	$\Delta Lp=L_{Aeq,r}-L_{A90}$	Derived Ambient L_{Aeq}	$\Delta Lp=L_{Aeq,r}-L_{Aeq}$ Ambient
Cefnmawr	33.6	32.0	1.6	38.0	-4.4
Maesgwynne	33.7	32.0	1.7	38.0	-4.3
Maesgwynne Farm	24.8	32.0	-7.2	38.0	-13.2
Trecoed Farm	34.4	32.0	2.4	38.0	-3.6
Rhyd-Blawd	32.8	32.0	0.8	38.0	-5.2
Cwmamliw	29.9	32.0	-2.1	38.0	-8.1
Cefn-bach	32.6	32.0	0.6	38.0	-5.4
Pentre	30.2	32.0	-1.8	38.0	-7.8
Brynrydd	25.5	32.0	-6.5	38.0	-12.5

7.19 When considering the potential for annoyance, as set out in the WHO Guidelines for Community Noise, the threshold level for moderate annoyance would be $L_{Aeq, 16 \text{ hour}} = 50$ dB. The predictions for the Electric Bike Experience days range between $L_{Aeq, 16 \text{ Hour}} = 32.0 - 39.7$ dB for the proposal, well below the threshold for moderate annoyance.

7.20 On this basis, it is considered that the proposed Electric Bike Experience Days would meet the requirements of the Powys Local Development Plan Development Management Policy DM13 in that the new proposed development, in isolation, would not result in neighbouring properties being “... *unacceptably affected by levels of noise*...”.

7.21 However, as indicated within the Pre-enquiry response from Environmental Protection, it is the addition of this sound to existing activities which has given rise to the original refusal of consent for the 19/0643/FUL Application. Therefore, it is necessary to consider the potential proposed changes to the existing lawful use of the site in addition to the Electric Bike Experience Days that have been considered above.

8. COMPARISON OF PROPOSED ACTIVITIES AND EXISTING USE

8.1 Within the “*Comparison Between the CLEUD/Permitted Development, Historical Use and the Proposed Use of the Track with Suggested Controls*” document at Appendix 1 there are 4 tables that provide a comparison of the Proposed Use against the permitted use under the CLEUD/Permitted Development and Historical Use of the site (for the days/activities in which a comparison can be made).

8.2 The tables demonstrate the controls and restrictions that are being proposed for the site, as compared with how the site has historically operated and how the site may be operated in the event that no permission is granted for the proposed Development and

the CLEUD and Permitted Development Days remain.

8.3 As can be seen from those tables, the development offers the following additional restrictions/controls on the site which have not been in place historically and which would not be in place in the event that permission were refused for the proposed Development:

- CLUED Sunday: Practice days on a Sunday and then race/scrambling events have historically, and will be operated (without planning permission), from 08:00 (though may start earlier particularly in the longer summer daylight periods) until sunset which, during the summer months, is on average around 22:30 – the track is used during the key time sensitive hours of the day. The development proposes restrictions on the times of use so the track will only be occupied from 09:00 until 17:00. This takes the proposed use outside the key time sensitive hours of the day (early morning and early evenings up and until sunset) and results, in the summer months, in an average of 6 ½ hours per day **less time** in which the track can be used as compared to how it has been and may be used.
- CLUED Wednesday: The practice day on a Wednesday afternoon will start at noon and finish at 17:00 rather than around 22:30 in the summer months. The proposed use is now outside the key time sensitive hours and results, in the summer months, in an average of 5 ½ hours per Wednesday afternoon **less track time** being used as a practice day.
- All practice days are intended to be a mixed use of petrol and electric bikes whereas historically there has been no electric bike use and only petrol.
- CLUED Events: Race events have historically, and will be operated (without planning permission), as weekends of full petrol bike racing on track (as well as preparation and tuning on the sides getting the bikes ready). The development proposes that one of the race events will now be electric and only two petrol. This is a significant noise reduction as the electric event is 9 – 17 dB quieter as compared to the petrol events for 2 and 4-stroke respectively.

8.4 In addition to the above, the site for the days/events referred to in this section as well as the use outlined in Section 5 will be subject to the following:

-
- The site will be operated in accordance with ACU Guidelines⁷ at all times. A copy of the guidelines are provided within Appendix 2. The site has historically not been operated in accordance with these (or any other) guidelines.
 - The site will be subject to a Noise Management Plan (NMP). A draft NMP is provided within Appendix 3 and is subject to discussion and agreement with the Planning Authority. The site has historically not been operated in accordance with any such plan. Without planning permission there will be no requirement for such a plan to be in place. The NMP would include such items as:
 - i. Hours of Operation;
 - ii. Levels of acceptable source noise (bike noise) in accordance with an agreed test procedure;
 - iii. Complaints Notification and Management Procedure;
 - iv. Review and Community Liaison;
 - v. Historical Record of activities and vehicle noise levels.

9. CHANGE IN NOISE LEVELS ASSOCIATED WITH PROPOSED CONTROLS

9.1 The control of operating hours for the site will result in a reduction in the $L_{Aeq, 16 \text{ hour}}$ which is experienced by neighbouring properties. To determine the potential change in sound levels requires an assessment of the historical/existing lawful use sound levels as compared with the proposed sound levels associated with the outlined controls above.

9.2 The historical lawful use of the site is greater, in terms of rider numbers, than originally assumed in Report 3291_R01_EXT1-0 dated 28th July 2019. Therefore, for this to be determined requires that the predicted sound levels for lawful use activities at neighbouring noise sensitive properties are recalculated.

9.3 Predictions of 2 & 4-Stroke Petrol engine bikes assumed rider track densities of 15 riders

⁷ <https://www.acu.org.uk/Uploaded/1/Documents/2021-Minimum-Standards.pdf>

at any one time. However, actual historical rider track densities were around 50 riders on track during CLEUD Practice Days and Permitted Development Scrambling days with around 100 on track during CLEUD Event Days. Therefore, the increased rider track densities need to be reflected in the predicted sound levels at neighbouring properties.

9.4 Tables 9.1 – 9.2 below detailed the revised $L_{Aeq, 1 \text{ Hour}}$ levels determined for each of these activities.

Source Noise Levels: CLEUD – Practice Days & Permitted Development Days

Table 9.1 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated CLEUD – Practice Days & Permitted Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynrydd
4-Stroke – Petrol	55.2	54.3	47.5	55.1	54.0	51.4	53.8	51.6	47.6
2-Stroke – Petrol	47.5	45.8	40.2	46.4	46.1	42.8	45.7	43.7	39.8

Source Noise Levels: CLUED Events

Table 9.2 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated with Events at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynrydd
4-Stroke – Petrol	58.2	57.3	50.5	58.1	57.0	54.4	56.8	54.6	50.6
2-Stroke – Petrol	50.5	48.8	43.2	49.4	49.1	45.8	48.7	46.7	42.8

9.5 These levels set out in the tables represent the baseline sound levels associated with the lawful use of the site in the absence of any controls and assuming all riders are on either 4 stroke or 2-stroke petrol engines. Predicted levels are above background and ambient sound levels measured at the site and therefore would be audible at the properties listed within the tables.

9.6 The $L_{Aeq, 16 \text{ hour}}$ for each of these activities would be dependent upon the time of year that a neighbour might be exposed to the lawful use sound levels, i.e. summer periods would result in a higher level of $L_{Aeq, 16 \text{ hour}}$ than winter due to the cessation of activities at sunset.

9.7 The two extremes would be at winter and summer solstice, i.e. the shortest and the longest days of the year. For winter, this would imply a lawful use activities occurring for 07:44:25 hours and for summer 13:37:36 hours (assuming a 08:00 start for summer. Winter solstice sunrise is after 08:00 hours and therefore the site start time is taken as sunrise.

9.8 $L_{Aeq, 16 \text{ hour}}$ noise levels for winter and summer solstice are as set out in Table 9.3 and 9.4 below for CLEUD – Practice Days & Permitted Development Days and CLEUD Events respectively.

Table 9.3 detailing Predicted $L_{Aeq, 16 \text{ Hour}}$ Sound Levels associated CLEUD – Practice Days & Permitted Development Days at neighbouring noise sensitive receptors: dB									
	Cefnawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
Winter-4 stroke	52.0	51.1	44.3	51.9	50.8	48.2	50.6	48.4	44.4
Winter- 2 Stroke	44.3	42.6	37.0	43.2	42.9	39.6	42.5	40.5	36.6
Summer 4-Stroke	54.5	53.6	46.8	54.4	53.3	50.7	53.1	50.9	46.9
Summer 2-Stroke	46.8	45.1	39.5	45.7	45.4	42.1	45.0	43.0	39.1
WITH CONTROLS									
Summer 4-Stroke	52.7	51.8	45.0	52.6	51.5	48.9	51.3	49.1	45.1
Summer 2-Stroke	45.0	43.3	37.7	43.9	43.6	40.3	43.2	41.2	37.3
Reduction									
Summer 4-Stroke	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Summer 2-Stroke	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8

9.9 Table 9.3 details the assessed reduction associated with the application of controls as set out above for CLEUD – Practice Days & Permitted Development Days. During the winter months, when sunrise is later than 08:00 hours and sunset is before 17:00 hours, the site will not experience a change in levels associated with the proposed controls. However, once sunset is after 17:00 hours then there will be a change in the $L_{Aeq, 16 \text{ hour}}$ for neighbouring receptors. This will be a maximum of 1.8 dB reduction through simple control of the operating hours.

9.10 For CLUED Events, a similar picture emerges with respect to a reduction in the $L_{Aeq, 16 \text{ hour}}$

hour sound level which is associated with the restriction of operational hours.

Table 9.4 detailing Predicted $L_{Aeq, 16 \text{ Hour}}$ Sound Levels associated with CLEUD Events at neighbouring noise sensitive receptors: dB									
	Cefnawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentire	Brynhydd
Summer 4-Stroke	57.5	56.6	49.8	57.4	56.3	53.7	56.1	53.9	49.9
Summer 2-Stroke	49.8	48.1	42.5	48.7	48.4	45.1	48.0	46.0	42.1
WITH CONTROLS									
Summer 4-Stroke	55.7	54.8	48.0	55.6	54.5	51.9	54.3	52.1	48.1
Summer 2-Stroke	48.0	46.3	40.7	46.9	46.6	43.3	46.2	44.2	40.3
Reduction									
Summer 4-Stroke	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8
Summer 2-Stroke	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8	-1.8

9.11 With reference to the WHO Guidelines for Community Noise, the predicted $L_{Aeq, 16 \text{ hour}}$ values sit around the moderate annoyance range for 4-Stroke bike activities and below the moderate annoyance range for 2 stroke activities.

9.12 It should also be noted that when comparing the $L_{Aeq, 16 \text{ hour}}$ noise levels associated with lawful use of the site, the proposed Electric Bike Experience Days are between 15 – 20 dB below. This is a clear indication that the addition of the proposed Electric Bike Experience Days will have little impact to neighbours with respect to noise and should not be considered a reason for refusal to the proposal.

10. PROPOSED ASSESSMENT METHOD FOR YEARLY DOSE VALUE

10.1 The response from the Environmental Protection and comments within the Planning Officers report stated the following:

It is also considered that the development fails to embrace wellbeing goals in that it does not reduce average population exposure to noise pollution and would in fact increase the noise pollution in the area.

10.2 To demonstrate the average population exposure to noise pollution requires an approach of considering the yearly dose values of sound associated with the current lawful use of the site with the proposed use with the proposed controls implemented. To

provide such an assessment of average population exposure requires the use of the L_{den} noise index as set out below.

10.3 When assessing the potential effects of average population noise exposure, the European Union has adopted the indicator L_{den} ⁸ as set out within the European Noise Directive (END). The L_{den} is a yearly dose value for noise which, for the purpose of END is a calculated value since measurement is extremely difficult. The L_{den} is used within the END to provide advice to decision makers as to the benefits of schemes to reduce noise impacts to the general population.

10.4 The L_{den} is the yearly average levels with weightings (or penalties) applied for noise generated in the evening and night-time periods. END define the evening as between 19:00 – 23:00, Night-time as between 23:00 – 07:00 and daytime between 07:00 – 19:00.

10.5 For sound generated in the evenings, then a 5 dB correction is added to the calculated sound level from the source under investigation. For night-time periods, this correction is 10 dB to be added to the source under investigation. These corrections are to account for the potential increased sensitivity of receptors during these periods of rest and recuperation.

10.6 The adoption of this metric for assessing a material change in the sound environment at neighbouring noise sensitive receptors is because this provides a means by which to assess the overall long term effects of activities on the site. The need to determine whether any material change will occur as a consequence of the proposal requires that the proposed new usage is seen in context with the existing lawful use for the site. Simply considering L_{AMax} levels (for example) does not provide an indication as to the increase in noise burden of a neighbouring noise sensitive receptor and would not provide an indication of any material change associated with the introduction of the new activities associated with the proposal. Therefore, we have adopted the L_{den} as the index which will provide an indication of the potential change in sound environment associated with the operation of the proposal since this indicates the yearly dose and provides appropriate weighting for sounds generated during periods when a neighbouring receptor would be more sensitive to sounds being generated from the site, i.e. during the evenings and night.

⁸ Day-evening-night-weighted sound pressure level as defined in section 3.6.4 of ISO 1996-1:2016 (ISO, 2016).

11. LDEN NOISE PREDICTION ASSUMPTIONS

11.1 The prediction of sound levels associated with the lawful activities of the existing site have been determined in the following manner:

- I. Predicted noise levels for 2 and 4 stroke petrol engines presented in Table 4.2 of Report HM 3291_R01_INT1-3 have been adopted as source noise levels at neighbouring receptors.
- II. A correction to the predicted noise levels for existing use activity levels has been applied.
- III. Historical Race Events, Historical Scrambling Events and Historical Sunday Practice Days started on occasion at 08:00 (can start earlier under the CLEUD/PERMITTED DEVELOPMENT) and Historical Wednesday Practice Days start at 12:00 and all continue to sunset for each specific day of calculation.
- IV. That Historical Race Events are held during the summer months over a 3 x 3 day periods (no restriction on duration under the CLEUD) and start on occasion at 08:00 (can start earlier under the CLEUD) and run until sunset. The Proposed Race Events are to run from 09:00 (Proposed Use) until: 17:00, taking the use of the track outside the key noise sensitive hours.
- V. No breaks for lunch and/or between races have been assumed, i.e. activities are continuous throughout the defined activity period.
- VI. Electric Bike activities are as set out in the Report HM 3291_R01_INT1-3 with the exception that rider numbers have been increased for Electric Bike Experience Days and inclusion of instructor petrol bikes for the Electric Experience Day predictions.
- VII. That the sound mitigation proposed and set out in “*Comparison between the CLEUD/Permitted Development, Historical Use and the Proposed Use of the Track with Suggested Controls*” (Appendix 1) have been applied when determining the operational noise levels for the application site.

Source Noise Levels: CLEUD – Practice Days & Permitted Development Days

11.2 The predicted sound levels associated with this activity have been provided in Table 9.1 and is presented again below.

Table 9.1 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated CLEUD – Practice Days & Permitted Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	55.2	54.3	47.5	55.1	54.0	51.4	53.8	51.6	47.6
2-Stroke – Petrol	47.5	45.8	40.2	46.4	46.1	42.8	45.7	43.7	39.8

Source Noise Levels: Events

11.3 The predicted sound levels associated with this activity have been provided in Table 9.2 and is presented again below;

Table 9.2 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated with Events at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	58.2	57.3	50.5	58.1	57.0	54.4	56.8	54.6	50.6
2-Stroke – Petrol	50.5	48.8	43.2	49.4	49.1	45.8	48.7	46.7	42.8

Source Noise Levels – Electric Bike Experience Days

11.4 The proposed Electric Bike Experience Day activity will be a maximum of 16 electric bikes in association with a maximum of 4 4-stroke petrol bikes (instructors) for periods when experience activities will occur.

11.5 The assessment presented within Report HM 3291_R01_INT1-3 assumed 15 electric bike riders but did not include the instructor machines. Therefore, for the purpose of prediction for the proposed Electric Bike Experience Days we have assumed the following values based upon the predictions provided within Report HM 3291_R01_INT1-3, as set out in Table 11.1 below.

Table 11.1 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated with Electric Bike Activities – Experience at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
Electric Bike Experience	33.6	33.7	24.8	34.4	32.8	29.9	32.6	30.2	25.5
4-Stroke – Petrol - Instructor	45.6	44.7	37.9	45.5	44.4	41.8	44.2	42.0	38.0

Source Noise Levels – Electric Bikes – Proposed Race Events

11.6 The development proposes that 1 of the Proposed Race Event days will be an electric bike only event. In these circumstances, it is assumed from past event activity that up to 100 riders of electric bikes will be on the track at any one time.

11.7 The assessment presented within Report HM 3291_R01_INT1-3 assumed 15 electric bike riders. Therefore, the purpose of prediction for the proposed Electric Bike Experience Days we have assumed the following values based upon the predictions provided within Report HM 3291_R01_INT1-3, as set out in Table 11.2 below.

Table 11.2 detailing Predicted $L_{Aeq, 1 \text{ Hour}}$ Sound Levels associated with Electric Bike Activities – Experience at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
Electric Bike Experience	41.5	41.6	32.7	42.3	40.7	37.8	40.5	38.1	33.4

Discussion of Source Noise Levels

11.8 The existing activities on site are not specifically “only 4-stroke Petrol” or “Only 2-Stroke Petrol” in that there will normally be a mix of 2 and 4 stroke engine bikes on the track. Therefore, the predictions which have been undertaken provide an estimated range of noise levels associated with lawful use activities these being CLEUD, Permitted Development Days and CLEUD Events. Therefore, it should be expected that the actual levels of incident noise at neighbouring noise sensitive receptors would lie between the two predicted levels set out within Tables 9.1 & 9.2. Therefore, we have provided an assessment below for the potential change in L_{den} values on the basis of just 2-Stroke or

just 4-stroke engines but the actual L_{den} values may lie between those that have been predicted.

12. PREDICTED L_{DEN} VALUES

Existing Activities

12.1 To determine the contribution of individual activities to the overall sound levels experienced at neighbouring noise sensitive receptors, predictions have been undertaken to determine the L_{den} values for each of these activities.

12.2 To determine the total level of sound experienced with a combination of these activities, it is necessary to logarithmically add the values to determine the yearly dose value.

12.3 Predicted L_{den} values for each activity are set out in the Tables below.

CLEUD – Practice Days (Sunday & Wednesday) & Permitted Days

12.4 Table 12.1 sets out the CLEUD Practice day sound levels for Wednesday afternoon and Sunday activities.

	Cefnawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynrydd
4-Stroke – Petrol	46.4	45.5	38.7	46.3	45.2	42.6	45.0	42.8	38.8
2-Stroke – Petrol	38.7	37.0	31.4	37.6	37.3	34.0	36.9	34.9	31.0

12.5 Table 12.2 sets out the Permitted Development 14 Day Activities sound levels.

Table 12.2 detailing Predicted L_{den} Sound Levels associated with CLEUD – Permitted Days at neighbouring noise sensitive receptors: dB

	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	39.8	38.9	32.1	39.7	38.6	36.0	38.4	36.2	32.2
2-Stroke – Petrol	32.1	30.4	24.8	31.0	30.7	27.4	30.3	28.3	24.4

CLEUD Events

12.6 Table 12.3 sets out the CLEUD Events Operational sound levels.

Table 12.3 detailing Predicted L_{den} Sound Levels associated with CLEUD – 3 x 3 day Events at neighbouring noise sensitive receptors: dB

	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	39.0	38.1	31.3	38.9	37.8	35.2	37.6	35.4	31.4
2-Stroke – Petrol	31.3	29.6	24.0	30.2	29.9	26.6	29.5	27.5	23.6

12.7 Table 12.4 details the predicted sound levels associated with the Proposed Development of Electric Bike Activities.

Table 12.4 detailing Predicted L_{den} Sound Levels associated with Electric Bike Activities – Experience Activities at neighbouring noise sensitive receptors: dB

	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
Electric Bike Experience	24.9	25.0	16.1	25.7	24.1	21.2	23.9	21.5	16.8
4-Stroke – Petrol - Instructor	36.9	36.0	29.2	36.8	35.7	33.1	35.5	33.3	29.3

Existing Activity Total Levels - L_{den}

12.8 The total predicted L_{den} levels associated with CLEUD and Permitted Development Activities may be determined through logarithmic addition of the values determined in Tables 12.1, 12.2 & 12.3. This then provides the existing sound environment associated with the operation of the site with existing Lawful Use. Table 12.5 below details the total

L_{den} values for both 2 & 4-Stroke Bike Activities on the site.

Table 12.5 detailing Predicted L_{den} Sound Levels associated with Existing Site Usage as determined from Tables 12.1, 12.2 & 12.3 at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamliw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	47.9	47.0	40.2	47.8	46.7	44.1	46.5	44.3	40.3
2-Stroke – Petrol	40.2	38.5	32.9	39.1	38.8	35.5	38.4	36.4	32.5

12.9 Table 12.5 sets the baseline against which the proposed development may be compared with respect to changes in sound levels associated with consent of the proposed development.

12.10 Predicted Sound levels for the proposed Electric Bike Experience Days are provided within Table 12.4, Table 12.6 provides the total level associated with this activity and Table 12.7 provides the total sound level with existing activities on the site with the proposed Electric Bike Experience Days.

Table 12.6 detailing Predicted Total L_{den} Sound Levels associated with Electric Bike Experience Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamliw	Property	Pentre	Brynhydd
Electric Bike with Instructor Bikes	37.2	36.3	29.4	37.1	36.0	33.4	35.8	33.6	29.5

Table 12.7 detailing Predicted L_{den} Sound Levels associated with Existing Site Usage with Electric Bike Experience Days as determined from Tables 12.1, 12.2, 12.3 & 12.6 at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamliw	Property	Pentre	Brynhydd
4-Stroke – Petrol – Total Sound Level	48.2	47.3	40.5	48.1	47.0	44.4	46.8	44.6	40.6
2-Stroke – Petrol – Total Sound Level	41.9	40.5	34.5	41.2	40.6	37.6	40.3	38.2	34.3

Change in Sound Environment associated with Proposed Electric Bike Experience Days

12.11 To determine the potential change associated with the Electric Bike Experience Days it is necessary to subtract the predicted levels set out in Table 12.5 from Table 12.7 to determine the potential change in sound environment associated with the proposed development. This is provided in Table 12.8.

	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol + Electric – Total Sound Level	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
2-Stroke – Petrol + Electric – Total Sound Level	1.8	2.1	1.6	2.1	1.8	2.1	1.9	1.8	1.8

12.12 The predictions indicate that if all existing bike activities were only 4-Stroke Petrol Engines, then the expected change in sound environment through the addition of the proposal would be negligible.

12.13 If all existing bike activities were only 2-Stroke Petrol Engines then the expected change in sound environment through the addition of the proposal would be minor.

12.14 As indicated above, the assumption that all motorbikes on site are all 2 stroke or 4 stroke is clearly unlikely to occur. The likely change in levels will tend towards the 4-Stroke analysis since 4-Stroke petrol engines result in noise levels that are 7 – 8 dB higher than 2-Stroke noise levels. In these circumstances, for a change of more than 1 dB to occur would require a 60/40 split in engine types, 2-Stroke to 4-Stroke respectively.

12.15 As a consequence of this analysis, it is considered that the Proposed Use, will have **no material effect** upon the sound levels experienced at neighbouring noise sensitive properties and they will not be unacceptably affected by the change in levels of noise associated with the introduction of the Electric Bike Experience Days.

12.16 It should be noted that this does not mean that activities are inaudible but that they are at a level which will have **no material change** to the sound environment which is currently experienced and that the noise is not an unacceptable level.

13. PROPOSAL CONTROLS TO CLEUD AND PERMITTED DEVELOPMENT ACTIVITIES

13.1 Irrespective of the assessment that the addition of the Electric Bike Experience Days will result in a negligible or minor change to the sound environment at the nearest noise sensitive receptors, the operator of the site has proposed additional controls to mitigate any remaining concerns in relation to the proposal and sound. These are set out in more detail above at Section 6 and the tables within the “*Comparison between the CLEUD/Permitted Development, Historical Use and the Proposed Use of the Track with Suggested Controls*” document, Appendix 1.

13.2 The Developer has proposed that through Planning Conditions (subject to agreement) associated with the proposal, hours of operation would be offered for mitigation of the sound levels experienced by neighbouring noise sensitive receptors in association with a noise management plan.

13.3 Such controls would take the form of:

- Control of Hours of Operation: Activities would not start before 09:00 and would cease on site at 17:00 as compared to the timings currently allowed under the CLEUD and Permitted Development Days as set out in the “*Comparison Between the CLEUD/Permitted Development, Historical Use and the Proposed Use of the Track with Suggested Controls*” document.
- CLEUD Events: 1 race events would be exclusive to Electric Bikes
- A Noise Management Plan would be agreed with the Local Authority which would include noise testing of all petrol bikes for events and Permitted Development Activities.
 - i. Hours of Operation;
 - ii. Levels of acceptable source noise (bike noise) in accordance with an agreed test procedure;
 - iii. Complaints Notification and Management Procedure;
 - iv. Review and Community Liaison;

v. Historical Record of activities and vehicle noise levels

13.4 Limitation of the hours of operation will result in a reduction in the sound levels associated with the current sound environment experienced by neighbours to the development. It will ensure that during late summer afternoons would no longer be at risk of noise being generated by the site through exercising the existing rights associated with the CLEUD and Permitted Development.

CLEUD – Practice Days & Permitted Development Days

13.5 Table 13.1 sets out the CLEUD Practice day sound levels for Wednesday afternoon and Sunday activities with restricted hours of operation.

Table 13.1 detailing Predicted L_{den} Sound Levels associated with CLEUD – Practice Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamliw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	44.1	43.2	36.4	44.0	42.9	40.3	42.7	40.5	36.5
2-Stroke – Petrol	36.4	34.7	29.1	35.3	35.0	31.7	34.6	32.6	28.7

13.6 Table 13.2 sets out the Permitted Development 14 Day Activities sound levels with restricted hours of operation.

Table 13.2 detailing Predicted L_{den} Sound Levels associated with CLEUD – Permitted Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamliw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol	36.3	35.4	28.6	36.2	35.1	32.5	34.9	32.7	28.7
2-Stroke – Petrol	28.6	26.9	21.3	27.5	27.2	23.9	26.8	24.8	20.9

Events

13.7 Table 13.3 sets out the CLEUD Events Operational sound levels with restricted hours of operation and with one Event specifically for Electric Bikes.

Table 13.3 detailing Predicted L_{den} Sound Levels associated with CLEUD – 3 x 3 day Events at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
2 X 4-S + 1 Electric Bike	33.9	33.0	26.2	33.8	32.7	30.1	32.5	30.3	26.3
2 X 2-S + 1 Electric Bike	26.6	25.1	19.1	25.7	25.2	22.0	24.9	22.8	18.8

13.8 Table 13.4 details the predicted sound levels associated with the Proposed Development of Electric Bike Activities in addition to the lawful use mitigated sound levels. Since the Hours of Operation are already controlled there is no change in the predicted levels for the Electric Bike Experience Days.

Table 13.4 detailing Predicted L_{den} Sound Levels associated with Electric Bike Activities – Experience Activities at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
Electric Bike Experience	24.9	25.0	16.1	25.7	24.1	21.2	23.9	21.5	16.8
4-Stroke – Petrol – Instructor	36.9	36.0	29.2	36.8	35.7	33.1	35.5	33.3	29.3

Existing Activity Total Levels with Restricted Hours of Operation – L_{den}

13.9 The total predicted L_{den} levels associated with CLEUD and Permitted Development Activities may be determined through logarithmic addition of the values determined in Tables 13.1, 13.2 & 13.3. This then provides the predicted sound environment associated with the operation of the site with existing Lawful Use but with restricted hours of operation and proposed 1 Event with only Electric Bikes.

13.10 Table 13.5 below details the total L_{den} values for both 2 & 4-Stroke Bike Activities on the site inclusive on the single electric bike event.

Table 13.5 detailing Predicted L _{den} Sound Levels associated with Existing Site Usage with restricted hours of operation as determined from Tables 13.1, 13.2 & 13.3 at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecord Farm	Rhyd-Blawd	Cwmamlw	Property	Pentre	Brynhydd
4-Stroke – Petrol	45.1	44.2	37.4	45.0	43.9	41.3	43.7	41.5	37.5
2-Stroke – Petrol	37.4	35.8	30.1	36.4	36.1	32.8	35.7	33.7	29.7

13.11 Predicted Sound levels for the proposed Electric Bike Experience are provided within Table 13. Table 13.6 provides the total level associated with this activity and Table 13.7 provides the total sound level with existing activities on the site with the proposed Electric Bike Experience days but with restricted hours of operation for the CLEUD and Permitted Development activities.

Table 13.6 detailing Predicted Total L _{den} Sound Levels associated with Electric Bike Experience Days at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecord Farm	Rhyd-Blawd	Cwmamlw	Property	Pentre	Brynhydd
Electric Bike with Instructor Bikes	37.2	36.3	29.4	37.1	36.0	33.4	35.8	33.6	29.5

Table 13.7 detailing Predicted L _{den} Sound Levels associated with Existing Site Usage with Electric Bike Experience Days as determined from Tables 13.1, 13.2, 13.3 & 13.6 at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecord Farm	Rhyd-Blawd	Cwmamlw	Property	Pentre	Brynhydd
4-Stroke – Petrol – Total Sound Level	45.8	44.9	38.1	45.7	44.6	42.0	44.4	42.2	38.2
2-Stroke – Petrol – Total Sound Level	40.3	39.1	32.8	39.8	39.0	36.1	38.7	36.6	32.7

Change in Sound Environment associated with Proposed Electric Bike Experience Days with Restricted Hours of Operation

13.12 To allow comparison with the proposed mitigation of bike noise with the existing lawful use of the site and the proposed use of the site with agreed controls through hours of operation in association with the Electric Bike Experience Days, it is necessary to subtract the predicted levels set out in Table 13.5 from Table 13.7 to determine the potential change in sound environment associated with the proposed development. This is provided in Table 13.8.

13.13 Table 13.8 details the expected reduction in yearly dose level associated with the proposed controls to be agreed. An assumption of all petrol bikes being 4-stroke in operation indicates a reduction of 2.4 dB and for 2-Stroke petrol engines, this reduction would be between 1.4 – 1.7 dB depending upon the location of the receptor. These are reductions in level which would be apparent to any neighbour to the development in terms of noise associated with the existing lawful use of the site.

Table 13.8 detailing Predicted L _{den} Sound Levels associated with Existing Site Usage with Electric Bike Experience Days as determined from Tables 13.1, 13.2, 13.3 & 13.6 at neighbouring noise sensitive receptors: dB									
	Cefnmawr	Maesgwynne	Maesgwynne Farm	Trecoed Farm	Rhyd-Blawd	Cwmamlw	Cefn-bach	Pentre	Brynhydd
4-Stroke – Petrol + Electric – Total Sound Level	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4	-2.4
2-Stroke – Petrol + Electric – Total Sound Level	-1.6	-1.5	-1.7	-1.4	-1.6	-1.5	-1.5	-1.6	-1.6

14. DISCUSSION

14.1 The predictions undertaken for determination of the L_{den} levels at neighbouring noise sensitive receptors indicates that the addition of the Electric Bike Experience Days will result in no material effect upon the yearly sound levels from lawful use CLEUD and Permitted Development activities on the site. This is due to the fact that the electric bikes are significantly quieter than the petrol engine vehicles which currently use the site. Electric bikes are also restricted to specific hours of the day and therefore their contribution to the yearly noise dose is not material.

14.2 This Report addresses the concerns expressed within the consultation responses to the application and demonstrates that no unacceptable adverse impact to neighbouring

properties is predicted to occur since there is no material additional impact associated with the Proposed Electric Bike Experience Days as set out in Section 5 and the current existing lawful use of the site.

14.3 The revised application, which is considered here, proposes controls in the operations of the lawful use CLUED practice days and event days. When compared with how the practice days and event days are operated (and would continue to be operated without consent of the Development) under the CLEUD and Permitted Development Days, the operational controls proposed will result in a **material reduction in the yearly dose value** to neighbouring noise sensitive receptors. The reductions, between **1.4 – 2.4 dB L_{den}**, are a **significant change** in the sound environment which would result in a clearly audible change in the sound environment in the vicinity of the proposal. Again, a significant majority of the sound predicted at neighbouring properties is associated with existing CLEUD and Permitted Development activities which will now be controlled by this planning application. This is demonstrated through the addition of the Experience Day Electric Bike activities again showing little change to the yearly dose values for noise sensitive receptors.

15. CONCLUSIONS

15.1 The Report has detailed the predicted sound levels associated with the Electric Bike Experience Days and considered the potential sound impacts associated with this proposed new source of activity on site.

15.2 The Report considered the generation of sound associated by use under the CLEUD/Permitted Development (based on the Historical Use of the track) any potential increase in sound impacts associated with the introduction of the Electric Bike Experience days as part of the Proposed Use and factoring in the improvements and controls being offered by the applicant. The Report finds no significant change.

15.3 The analysis undertaken within this report has considered the sound levels associated with the CLEUD and Permitted Development Days which are currently permitted and the Proposed Activities as set out in Section 5.

15.4 The analysis indicates that the Proposed Use with the addition of the Electric Bike Experience Days to the lawful use CLEUD and Permitted Development Days has no material effect upon the yearly dose values (L_{den}) at any of the neighbouring noise sensitive receptors. The reasons for refusal for application 19/0643/FUL have been overcome and a strategy of considerable community gain is proposed commensurate with core objectives set down within the Wellbeing of Future Generations (Wales) Act

2015.

- 15.5 The current proposal has outlined proposed controls to the activities that currently contain limited restrictions (see the tables within the “*Comparison Between the CLEUD/Permitted Development, Historical Use and the Proposed Use of the Track with Suggested Controls*” document) under the lawful use of CLEUD and Permitted Development Days which, in themselves, will reduce the yearly dose values at neighbouring noise sensitive receptors by 1.4 – 2.4 dB L_{den} for these activities. A reduction of this level will result in an audible reduction of sound from the existing operations at the site and is a **planning gain to neighbouring receptors**.
- 15.6 The inclusion of Electric Bike Experience Days within the Propose Use will have no material effect upon these yearly dose values and thereby would not result in an unacceptable adverse impact whilst maintaining the **planning gain to neighbouring receptors** in relation to the activities currently permitted.
- 15.7 Through application of controls to CLEUD and Permitted Development activities, existing sound levels would be reduced but Electric Bike Experience Days as part of the Propose Use would have no material effect upon the resultant yearly dose values. The proposal is compliant with LDP Policy DM13 and TD1 of the Powys LDP, TAN11 and the Wellbeing of Future Generations (Wales) Act 2015.

GLOSSARY FOR Noise

A-weighting

A filter that down-weights low frequency and high frequency sound to better represent the frequency response of the human ear used in environmental sound measurements. The A-weighting is based upon the equal loudness curve for a level of <55 dB.

Air-borne noise

This refers to sound or noise which is fundamentally transmitted by way of the air. Such noise may be attenuated by the use of barriers and walls placed physically between the noise and receiver.

Ambient noise

All-encompassing noise associated with a given environment, usually a composite of sounds from many sources both far and near, often with no particular sound being dominant. Is referenced in terms of $L_{Aeq,T}$

Background Noise

The ambient (existing) noise level present within an environment in the absence of noise from a specific source, in this case wind turbine/wind farm operation. In the UK it is usually measured using the L_{A90} or L_{A95} measurement index.

Barrier

Solid walls or partitions, solid fences, earth mounds, buildings, etc that when obstructing the line sight from the source to the receiver may attenuate the sound level at the receiver.

CLUED

Reference PR5473/00 dated 25.03.199:

The use of land at OS field No. 5433 and 7035 at Rhydblwd, Disserth, Builth Wells for motorcycle scrambling practise sessions on Sunday and Wednesday afternoons and the staging of 3 motorcycle scrambling events per annum

“CLEUD Event “

Three motorcycle scrambling events per annum

“CLEUD Sunday”

Motocross scrambling track for practising on Sunday

“CLEUD Wednesday”

a motocross scrambling track for practising on Wednesday afternoons

Decibels (dB)

The unit used to describe sound intensity (or amplitude). It is an expression between two quantities and needs to be accompanied by a descriptor such as L_{Aeq} or L_{A90} (explained below), unless it describes a level difference. 0 dB L_{Aeq} is equivalent to the hearing threshold of a person with typical hearing.

Frequency (of Sound)

Similar to the musical pitch of a sound.

Hertz (Hz)

The unit of frequency representing cycles per second.

Historical Use

“Historical Wednesday Practice Days”

Practice sessions on the track from 12:00 to sunset (i.e., 22:30 in June)

“Historical Sunday Practice Days”

Practice sessions on the track from 08:00 to sunset (i.e., 22:30 in June)

“Historical Race Events”

3 race events per annum on 3 consecutive days with racing on the track from 08:00 to sunset (i.e., 22:30 in June)

“Historical Scrambling Events”

14 days per annum with the track in use from 08:00 to sunset (i.e., 22:30 in June)

L_{A10} (18-hour)

The arithmetic average of the values of $L_{10 \text{ hourly}}$ dB(A) for each of the eighteen one-hour periods between 06:00 – 24:00. This is the parameter used to assess the potential noise impact from road traffic noise.

$L_{Aeq,T}$ - Equivalent Continuous A-weighted Sound Pressure Level

The equivalent continuous A-weighted sound pressure level. This is the A-weighted sound pressure level in decibels of continuous steady sound that within a specified time interval, T (in this case 10 minutes), has the same energy as a sound that varies with time. It is used to identify the average sound pressure level over the specified given time.

$L_{nn,T}$ - Percentile Exceeded Sound Level Over Time Interval, T

The level of noise, in dB, exceeded for nn-percent of the specified time interval, T. For example, $L_{A90,10min}$, used to define the background level here, is the A-weighted sound pressure level exceeded for 90% of the 10 minute measurement period.

L_{WA} - Sound Power Level

The fundamental measure of sound power. Sound power is the total sound energy radiated by a source per unit time. The subscript 'A' refers to an A-weighted sound power level.

Loudness

The subjective level of noise or sound. A change in level of 10 dB is indicate of a sound becoming twice or half as loud.

Low Frequency Sound/Noise

Sound/noise with concentrated energy in frequency region between 20 and 200 Hz.

Noise Emission

The noise radiated by a source of sound.

Mitigation

In terms of noise, measures to reduce the sound pressure level at a given receptor.

Octave band

A range of frequency where the highest frequency of the band is double the lowest frequency of the band.
The band is usually specified by the centre frequency f_c .

Percentile

This is the value below which a certain percentage of the population fall, i.e. when deriving a 10th percentile value, this is the value at which 10% of the observed levels are below.

Permitted Development:

Confirmation dated 01.04.2008 from the Local Planning Authority:

The use of the land up to 14 days per annum for motorcycle events is permitted by virtue of class B2 / part IV of the Town and Country Planning (General Permitted Development) Order 1995. This permitted development right is in addition to any permissions you may have to use this site whether through planning permission or a certificate of lawfulness.

Proposed Use

“Proposed Practice Days”

Proposed use of the track for motocross practice sessions on Wednesday 12:00 – 17:00 and Sunday 09:00 - 17:00.

“Proposed Race Events”

Proposed use of the track for 3 motocross events per year (1 electric bike event and 2 petrol bike events), across 3 days each with on the track limited to 09:00 – 17:00 each day.

“Proposed Scrambling Events”

Proposed use of the track for motocross activity on 14 days to be used throughout the year with time on the track limited to 09:00 – 17:00 each day.

“Electric Bike Experience Days”

Electric bike experience days with no use of the track (other than as provided for elsewhere in the application) outside the hours of:

Monday: 10:00 – 12:00 and 14:00 – 16:00

Tuesday: 10:00 – 12:00 and 14:00 – 16:00

Wednesday: 10:00 – 12:00

Thursday: 10:00 – 12:00 and 14:00 – 16:00

Friday: 10:00 – 12:00 and 14:00 – 16:00

Saturday: 10:00 – 12:00 and 14:00 – 16:00

Only the following bikes will be on the track at any one time during Experience Days:

16 Electric Bikes

4 Petrol Bikes

Receiver/Receptor

A person or property that will experience an effect from the sound source under consideration.

Sound

Energy that is transmitted by pressure waves in air. Commonly called noise if it is 'unwanted'.

Sound Level Meter

An electronic instrument for measuring, and sometimes recording, sound pressure level or audio signals.

Sound Pressure

A dynamic variation in atmospheric pressure caused by a sound wave.

Sound Pressure Level (SPL)

The fundamental measure of sound pressure, measured in dB. The sound pressure level is a logarithmic measure of the RMS average sound pressure of a sound relative to the reference acoustic pressure of (2×10^{-5} Pa) for measurements in air.

Spectrum

A description of sound as a function of frequency.

Wind Shield

A cover put on the sound level meter microphone to minimise direct effects of the wind on the microphone diaphragm.

APPENDIX 1 - COMPARISON BETWEEN THE
CLEUD/PERMITTED DEVELOPMENT, HISTORICAL USE
AND THE PROPOSED USE OF THE TRACK WITH
SUGGESTED CONTROLS

COMPARISON BETWEEN THE EXISTING USE AND THE PROPOSED USE OF THE TRACK WITH SUGGESTED CONTROLS

1. The purpose of this document is to show a comparison between what is currently permitted on the site, how the site has been used and how it is intended that those same activities will be undertaken in accordance with this application and the controls being proposed over the site.
2. The current permitted existing use of the site is as follows:
 - 2.1. "CLEUD" - a motocross scrambling tack for practising on Sunday and Wednesday afternoons and for three motorcycle scrambling events per annum.
 - 2.2. "Permitted Development" – 14 days per annum for motorcycle events.
3. The current permitted existing use of the track is unrestricted in terms of the times of operation, types of bikes being used, length of events and controls on the activities whilst on site such as there is no requirement for any noise management plan.
4. The proposed development offers a clear plan for the site that will provide control and certainty to the operation and activities on the site including restrictions on the time of day the track can be used, the types of bikes, the length of events and a noise management plan.
5. The development intends that the site be used as set out in the application and the table at paragraph 6.2 of the Noise Assessment Report. The proposed use is summarised below:
 - 5.1. "Practice Days" – Wednesday 12:00 – 17:00 and Sunday 09:00 – 17:00.
 - 5.2. "Race Events" – 3 events per year (1 electric bike event and 2 petrol bike events), across 3 days each with time on the track limited to 09:00 – 17:00 each day.
 - 5.3. "Scrambling Events" – 14 days to be used throughout the year with time on the track limited to 09:00 – 17:00 each day.
 - 5.4. "Experience Days" – Electric bike experience days on Monday, Tuesday, Thursday, Friday and Saturday with time on the track between 10:00 – 12:00 and 14:00 – 16:00 and Wednesday morning between 10:00 – 12:00.
6. The below tables provide a comparison between how the activities on the site have been undertaken and how those same activities (listed at 4.1 – 4.3) would be undertaken under the development with the controls being proposed.
7. The controls being proposed apply to all the uses on the site as set out at 4.1 – 4.4 including the times of the day the track can be used, the types of bike in use and a noise management plan.
8. The noise management is at **Appendix 3** Hayes McKenzie Report 3291_R04_EXT1-0_MDH and provides for the following:
 - Hours of Operation,
 - Noise Limits for Petrol Power Bikes and a Proposed Test Method,
 - Complaints Management and
 - Community Liaison.

9. The applicant is happy and open to discuss the proposed controls with the LPA or answer any questions the LPA may have.

Table 1.
Comparison of existing use on Wednesday afternoons under the CLEUD and proposed Wednesday afternoon Practice Days

	CLEUD	HISTORICAL & PROPOSED USE WITHOUT PERMISSION	USE WITH PERMISSION & CONTROLS PROPOSED
TIME	Wednesday afternoons	12:00- sunset¹ (i.e. 22:30 in June)	No use of the track outside the hours of 12:00 to 17:00
CONTROLS ON SITE	Wholly unrestricted	Unrestricted	Noise Management Plan

Table 2.
Comparison of existing use on Sunday under the CLEUD and proposed Sunday Practice Days

	CLEUD	HISTORICAL & PROPOSED USE WITHOUT PERMISSION	USE WITH PERMISSION & CONTROLS PROPOSED
TIME	Wholly unrestricted	08:00² sunset (i.e. 22:30 in June)	No use of the track outside the hours of 12:00 to 17:00
CONTROLS ON SITE	Wholly unrestricted	Unrestricted	Noise Management Plan

¹ Dictionary definition of afternoon is as follows – this applies to each table below.

Cambridge *‘the period that starts at about twelve o'clock or after the meal in the middle of the day and ends at about six o'clock or when the sun goes down’.*

Merriam Webster *‘the part of the day between noon and sunset’*

With this in mind we have used sunset as the baseline of rider activity on the track as this is how the site has historically been used.

² Historically practice sessions would on occasion start on the track at 08:00 or 09:00 – there is no restriction however on when the practice sessions could start on the track.

Table 3.

Comparison of existing use for 14 days per annum for motorcycle events under the Permitted Development and proposed Scrambling Events

	CLEUD	HISTORICAL PROPOSED & USE WITHOUT PERMISSION	CONTROLS PROPOSED
TIME	Wholly unrestricted	08:00 ³ - sunset (i.e. 22:30 in June)	No use of the track outside the hours of 09:00 to 17:00
DURATION	Wholly unrestricted	3 consecutive days ⁴	3 consecutive days
TYPE OF BIKES	Wholly unrestricted	3 petrol events	1 electric event and 2 petrol events
CONTROLS ON SITE	Wholly unrestricted	Unrestricted	Noise Management Plan

Table 4.

Comparison of existing use for three motorcycle scrambling events per annum under the Permitted Development and proposed Race Events

	PERMITTED DEVELOPMENT	HISTORICAL PROPOSED & USE WITHOUT PERMISSION	CONTROLS PROPOSED
TIME	Wholly unrestricted	08:00 ⁵ - sunset (i.e. 22:30 in June)	No use of the track outside the hours of 09:00 to 17:00
CONTROLS ON SITE	Wholly unrestricted	Unrestricted	Noise Management Plan

³ Historically these events would on occasion start on the track at 08:00 or 09:00 – there is no restriction however on when the events could start on the track.

⁴ Historically events would last for 3 consecutive days but there is no restriction on the duration of events and they could be longer – it is unrestricted,

⁵ Historically the scrambling events would on occasion start on the track at 08:00 or 09:00 – there is no restriction however on when the events could start on the track.

Table 5.
Controls proposed over Experience Days

	USE WITH PERMISSION & CONTROLS PROPOSED
TIME	<p>No use of the track outside the hours of:</p> <p>Monday: 10:00 – 12:00 and 14:00 – 16:00</p> <p>Tuesday: 10:00 – 12:00 and 14:00 – 16:00</p> <p>Wednesday: 10:00 – 12:00</p> <p>Thursday: 10:00 – 12:00 and 14:00 – 16:00</p> <p>Friday: 10:00 – 12:00 and 14:00 – 16:00</p> <p>Saturday: 10:00 – 12:00 and 14:00 – 16:00</p>
TYPE OF BIKES	<p>Only the following bikes will be on the track at any one time during Experience Days:</p> <p>16 Electric Bikes</p> <p>4 Petrol Bikes⁶</p>
CONTROLS ON SITE	Noise Management Plan

⁶ The petrol bikes will typically be used by instructors.

APPENDIX 2 – ACU GUIDELINES

APPENDIX 3 – NOISE MANAGEMENT PLAN – DRAFT

APPENDIX 4 – REPORT 3291_R01_EXT1-0