

Our ref: EF/GM11372/LET-008

Date: 31 August 2021

Your ref:

Mhairi Douglas
East Ayrshire Council
The Opera House
8 John Finnie Street
Kilmarnock
KA1 1DD

Dear Mhairi,

Killoch Energy Recovery Park – Response to comments received by ACCON UK Limited

Wardell Armstrong LLP (WA) prepared the noise and vibration Chapter submitted as part of the Environmental Impact Assessment Report (EIAR) for the proposed Killoch Energy Recovery Park (ERP) (Planning Ref. 21/0369/PP). The Chapter has been reviewed by ACCON UK Limited (ACCON) on behalf of East Ayrshire Council (EAC) and a formal response submitted by themselves on 3rd August 2021.

Following a review of the comments made by ACCON, this letter addresses the main points of concern raised. All paragraphs coincide with numbering used by ACCON in their response. It should be noted that where ACCON are in general agreement their comment paragraphs have been omitted for brevity.

ACCON 6. Contrary to good practice no detail of the noise monitoring equipment such as model serial numbers has been provided. The description of the weather conditions during the survey period also lacks the detail required by BS 4142.

WA The following noise meters were used in the noise survey:

- 1 x 01dB Fusion – serial number 11619
- 1 x Svantek Svan 971 – serial number 60031

Noise meters were calibrated at the start and on completion of the survey, no significant drift in calibration was noted. Table 1 below details the weather conditions during the survey period.





| Table 1: Weather Conditions Over the Survey Period | | | | |
|--|-------------|------------------|------------------|-------------------------------------|
| Date | Time Period | Temperature (°C) | Wind Speed (m/s) | Rain Fall |
| Monday 1 st March | Daytime | 7 – 11 | 0.9 – 1.8 | No significant rainfall, dry ground |
| | Evening | 3 – 7 | 1.8 – 2.7 | |
| | Night-time | 1 – 5 | 1.8 – 2.7 | |
| Tuesday 2 nd March | Daytime | 5 – 8 | 2.7 – 3.6 | |
| | Evening | 1 – 4 | 1.8 – 2.7 | |
| | Night-time | 0 – 4 | 2.7 – 4 | |
| Wednesday 3 rd March | Daytime | 3 – 4 | 3.6 – 4 | |

As shown in Table 1 and set out in the Noise Chapter the weather conditions during the monitoring periods were within accepted parameters.

ACCON 7. The summary of baseline noise measurements results presented in Table 9.7 presents L_{Aeq} and background L_{A90} levels for each of these periods. It is clear that road traffic on the A70 is the dominant noise source and this was reported as being audible at all monitoring locations. The bullet points in paragraph 9.4.2 indicate that farming activity was audible at Laigh Tarbeg Farm (ML4/ESR4). ACCON note that only at Creoch House (ML2/ESR2) (reported as 615 m to the north of the proposed development), existing industrial noise is noted as a noise source, indicating that the Hargreaves site was audible at this receptor during the daytime. As no attended measurements were carried out for this assessment, no direct observations have been provided on the likely contributors to noise at night. ACCON consider that reference to the attended noise surveys carried out in 2015 for the previous application may have been a useful inclusion in considering the baseline as it included night-time attended measurements. If the applicant considered that the 2015 baseline noise survey was not representative of current night-time conditions, night-time attendance during the new noise survey should have been carried out to provide observations and quantification of noise sources currently operating at night. This is a notable omission considering that the proposed development would operate on a 24/7 basis.

WA In relation to the L_{A90} background noise levels at ML4, although it is accepted there could be short term noise source due to the presence of the farm, from a review of the noise survey data, audio files and from site notes taken during commissioning and decommissioning, the main noise source at ML4 was road traffic throughout the survey, bird song was noted to increase during the early morning period.

The L_{A90} sound levels measured at ML4 are consistent throughout the day and night-time period. The data shows an increase in the L_{A90} levels during periods that we would expect noise levels to increase, such as peak transportation times. The increase in road traffic noise is evident when reviewing the night-time period between 0500 and 0700hours, and the daytime period between 1600 and 1800hours, which are traditionally periods of increased traffic movements due to work and transport patterns. Outside these hours the background



sound levels are reasonably consistent and are dominated by road traffic outside of busy transportation periods.

At all other monitoring locations considered, noise from the A70 was less dominant. This explains the higher L_{A90} background noise levels experienced at ML4.

The attended noise surveys carried out in 2015 for the previous application was beneficial in establishing the noise environment at the time, however the noise survey carried out to accompany the 2021 application is considered to be representative of the current noise environment. As the 2021 survey covered a whole 24 hour period this provided a greater dataset for the assessment. Furthermore, the Hargreaves site is currently being decommissioned and there was very little activity at the site during the daytime period, with activity absent during the night-time. The 2015 survey concluded industrial noise from the Hargreaves site could be heard from the monitoring location. For information, Table 2 details the noise levels measured at Killochside (ESR1) during the 2015 survey and 2021 survey. As shown in Table 2, the ambient noise level measured in 2015, during the 'quiet' night-time period are significantly higher than the 2021 survey. This can be explained by the presence of industrial activity from the Hargreaves site during the night-time period.

| Time Period | 2015 Survey (ML4) Killochside (ESR1) | 2021 Survey (ML1) Killochside (ESR1) |
|--------------------|---|---|
| 0030-0045 | 47.3 | 37.3 |
| 0045-0100 | 31.3 | 32.4 |
| 0100-0115 | 44.4 | 29.6 |
| 0115-0130 | 44.5 | 35.6 |
| 0130-0145 | 44.2 | 36.4 |
| 0145-0200 | 38.3 | 35.5 |
| 0200-0215 | 43.8 | 28.0 |
| 0215-0230 | 44.9 | 34.6 |
| 0230-0245 | 45.2 | 24.3 |
| 0245-0300 | 47.0 | 35.5 |
| 0300-0315 | 41.0 | 34.9 |
| 0315-0330 | 48.3 | 44.5 |
| 0330-0345 | 31.3 | 32.6 |
| 0345-0400 | 40.9 | 34.6 |
| 0400-0415 | 49.9 | 36.3 |
| 0415-0430 | 47.8 | 36.4 |
| Overall | 45.2 | 36.5 |

For these reasons the 2021 data is considered robust and a worst-case when considering the baseline noise levels, due to the presence of night-time operations at the Hargreaves site in 2015.



ACCON 12. Noise predictions have been carried out for the operation of the development taking account of noise break-out from the various component buildings of the ERP and noise from external plant. The sound power level data for the waste reception area and main EfW and external plant and stack are provided in Tables 9.8 to 9.11. ACCON note that these tables appear to include some unclear or contradictory entries. For example, Table 9.10 includes 'Turbine Air Coolers' within the 'Turbine Hall' with a sound power per unit of 90 dB(A) whilst Table 9.11 includes an entry for a plant item 'Turbine Hall' within the 'Turbine Hall' facility, stating 95 dB(A) sound power level per unit. It is not clear that the data is provided in a sufficiently clear manner to enable others to verify the noise predictions, should this be necessary.

WA The turbine hall has been modelled with an internal sound power of 90dB(A) as noted in Table 9.11. However, the Turbine Hall also has eight Turbine Air Coolers externally mounted to the roof of the turbine hall. The Turbine Air Coolers as referenced in Table 9.10 each have a sound power of 95dB(A) and have been modelled as eight external point sources on the roof of the turbine hall.

ACCON 14. It is stated that noise breakout from the roof structures as well as the facades of the proposed facility has been considered in the noise predictions. Kingspan Trapezoidal Roof and Wall Panel KS1000 which has a sound reduction index of 24 dB Rw has been assumed in the model. Sound reduction values assumed for roller doors and are also detailed in the Noise Chapter. However, the sound reduction assumptions for translucent GRP roof panels proposed in the roofs of most parts of the facility have not been detailed. If consideration of these translucent panels has been neglected, the noise emission from the roofs will have been underestimated.

WA When undertaking the noise assessment, the EPC Contractor for the development had not been appointed, therefore the proposed design details were not available. WA assumed that the whole building (including translucent roof panels) would, as a minimum, achieve 24Rw sound reduction. It is understood that the translucent panels which are likely to be used for the development would achieve a significantly higher noise reduction than assumed, as the design is expected to consist of two polycarbonate sheets with an air gap between the sheets.

Notwithstanding, a suitably worded noise Condition could be put in place to ensure that the detailed design stage the Proposed Development archive, as a minimum, the Rating Levels (as defined by BS4142) stated in the noise and vibration chapter.

ACCON 17. The BS 4142 assessments for daytime, evening and night-time periods are presented in Tables 9.15 to 9.17. A separate assessment for the evening period (1800-2300 hours) has been included because HGV deliveries to the ERP would not take place after 1800 hours. The practice required by BS 4142:2014 is to identify the representative or typical background sound level applicable to an assessment period and use this in the comparison of the rating level with the background sound. The approach adopted by Wardell Armstrong was to provide an



assessment against the range defined by the lowest and the highest background sound level measured at each receptor for each of the daytime, evening and night-time periods. Paragraph 9.6.5 quotes BS 4142 where it states ‘there is “no single” background sound level’ as background level is a fluctuating parameter. The most widely adopted current interpretation of BS 4142 is to examine a statistical distribution of background sound levels to identify a representative background sound level for each period in question. The Noise Chapter therefore offers a different approach to that usually utilised. ACCON accepts the assessment against the lowest background level generally provides a useful indication of the worst-case assessment. However, it is unclear whether the presented assessment against the highest background sound level provides a representative assessment of the likely impacts, particularly considering that the variation in background sound levels recorded is up to 11 dB for daytime and 26 dB at night-time.

WA The background sound level selection of the Chapter was undertaken in line with the previous assessment for the site, which also presented the range in background sound levels and thus the range in potential noise impact. As highlighted, BS 4142 states that there is “no single” background sound level’. Therefore, the assessment, by showing the range in background sound levels was seeking to provide some context to the potential noise impact throughout the assessment periods.

However, if a single representative background sound level was determined for each monitoring location it would show a slight betterment to the results presented in the chapter. As the representative background level would likely be somewhere between the lowest and highest measure L_{A90} sound levels. Currently the Chapter considers the quietest periods of the day and night-time.

ACCON 18. Based on ACCON’s consideration that the assessment against the highest background levels is unrepresentative of typical conditions, the statement that ‘where the rating level does not exceed the background sound level this is an indication of the specific sound source having a low impact, depending on the context’ in paragraph 9.6.8 should be given little weight.

WA We do not seek to apply significant weight to the findings where the measured background sound levels are at their highest. The range in background sound levels aims to provide context, demonstrating that the impact would vary throughout the day, evening and night-time periods. We do go on to state in paragraph 9.6.9 the predicted rating level when compared to the lowest background level is ‘an indication of a significant adverse impact, depending on context’, this is clearly the most significant consideration for the assessment.



ACCON 24. *ACCON accept the above arguments and therefore agree with the conclusions in respect of noise during the daytime. However, with regards to the potential noise impacts on noise sensitive receptors during the night-time, we do not consider that the Noise Chapter has adequately demonstrated that significant impacts would not occur even with mitigation in accordance with BAT. ACCON's reasoning is explained in the following paragraphs.*

WA At the time of writing the Chapter the EPC Contractor had not been appointed. It will be the EPC Contractor role to specify, build and operate the ERP. As part of this process, specific noise mitigation and BAT can be explored, as required, to reduce any potential noise impacts. The EPC Contractor will ensure the best equipment will be employed on the site, as it will be their responsibility to ensure the ERP is maintained.

Therefore, a suitably worded noise Condition could be put in place to ensure that at detailed design stage, the Proposed Development will achieve, as a minimum, the Rating Levels (as defined by BS4142) stated in the noise and vibration chapter.

ACCON 25. *The examination of changes in ambient noise levels for night-time is presented in Table 9.20. This relies on the use of ambient noise levels calculated as the $L_{Aeq,8h}$ derived from the measurements for the entire night-time period between 2300 and 0700 hours. Examination of the 15 min L_{Aeq} values for night-time for the receptors clearly shows that the $L_{Aeq,8h}$ values are not representative of the typical values for most of the night-time period. For example, for Creoch Farm (ESR2) the $L_{Aeq,8h}$ value of 41 dB is clearly dominated by the noise levels prevailing during the 0600 to 0700 period. Whereas, after midnight, the ambient noise levels drop from around 31 dB to a typical range of 20 dB to 27 dB for most of the night until 0500 hours. If the L_{Aeq} is determined for the period 0030 to 0430 hours, an ambient noise level of 26 dB is obtained. ACCON consider that if a night-time noise change assessment is to be considered, it should be representative of the night-time period when noise levels have subsided to typical night-time ambient levels. Repeating the assessment presented in Table 9.20 using the night-time period 0030 to 0430 hours results in predicted ambient noise increases of +4 dB, +8 dB and + 2 dB for ESR1, ESR2 and ESR3 respectively. This assessment therefore tends not to support an argument that the potential significant adverse impacts at night-time by BS 4142 are reduced by the context.*

WA We accept the point raised, as the ambient noise levels over the night-time period, at times, drop to levels below the average ambient level used in the assessment. However, it is important to consider all periods of the night, and particularly when receptors may be more sensitive to noise, these include the periods when residents are settling to go to sleep or waking. Consideration should also be given to the historic night-time ambient sound levels, as presented in Table 2 for ESR1. It is for this reason, we do not agree that the early and late night-time periods should be ignored.



As the sound from the development would not contain any distinctive acoustic features, and the specific sound levels are low, it is less likely that during the middle of the night sensitive receptors would be disturbed.

Should a lower ambient level be used, it does, as identified by ACCON, result in an increase in the ambient noise level experienced at existing sensitive receptors (ESR(s)). When using an ambient night-time noise level of 26dB(A), as suggested by ACCON, this would result in an absolute sound level of 39dB(A) at ESR 1 and 34dB(A) at ESR 2 and 3. However, sensitive receptors would be within their properties during the night-time period and would benefit from noise attenuation provided by their building façade. Putting this into context, with windows open, the attenuation provided by the façade would be approximately 13dB(A), therefore, the internal noise level would therefore be approximately 29dB(A) at ESR 1 and 24dB(A) at ESR 2 and 3 (when consider façade reflections). These noise levels are low and accepted as a good standard for internal living conditions when considering steady state noise levels.

Nevertheless, the assessment makes worst case assumption in relation to the development design as at the time of writing the EPC Contractor is yet to be appointed. Therefore, as discussed previously, during the detailed design stage mitigation and BAT can be implemented to control any potential noise impact from the Proposed Development at ESRs and can be subject to a suitably worded Condition.

ACCON 26. A second key point is that the conclusion in the noise assessment relies on noise from the ERP being considered in relation to the character of existing noise sources. However, at night-time, there is no evidence from the baseline noise survey or elsewhere in the Noise Chapter that the receptors ESR1, ESR2 and ESR3 are subject to industrial noise sources at night. Noise levels were elevated at each receptor between 0600 and 0700 hours, which is normally considered as part of night-time for noise assessments. However, such a pattern is typical for road traffic noise and the assessment does not provide any evidence this is due to any local industrial noise sources.

WA We agree that there is currently no evidence of industrial noise during the night-time period and the elevated noise levels between 0600 and 0700 are due to an increase in road traffic noise. However, historically noise of an industrial nature has been present within the local area emanating from the Hargreaves site to the north and Barr site to the east. Although the Barr site was not audible during our observations and review of audio data, the Hargreaves site, currently in the decommissioning phase, was audible at receptors in 2015, including during the night-time periods, as demonstrated in Table 2. It should also be noted that the noise levels from the Hargreaves site contained distinctive acoustic characteristics, associated



with external working at the coal site. Therefore, the ESRs have been exposed to industrial noise historically, and the Proposed Development is in keeping with the use of the area. The predicted specific sound levels from the ERP are significantly lower than the pre-existing sound levels at the ESRs (during Hargreaves operations).

It should also be noted that noise from the Proposed Development is expected to be of a steady state. As discussed previously, during the detailed design stage mitigation and BAT can be implemented to control any potential noise impact from the Proposed Development at ESRs and can be subject to a suitably worded Condition.

ACCON 27. The context assessment that demonstrates that the internal noise levels at night (paragraphs 9.6.29 – 9.6.33) does demonstrate that noise levels will be below the BS 8233 guideline levels which are strictly only applicable to noise sources without a specific character. However, the assessment has not demonstrated that industrial noise from the ERP would not be a new type of noise source, differing in character from the existing sources. Therefore, the increase in noise levels (as assessed by ACCON in paragraph 25 above) combined with a change of noise characteristics has the potential to result in noise disturbance greater than would be predicted by the low internal noise levels considered without these factors.

WA Reference to BS8233 has been made to add additional context to the assessment. Although BS8233 is typically used for transportation sources of a steady state, BS4142 does state that the use of BS8233 may be applicable in some instances, typically when considering context. As the noise from the Proposed Development will be of steady state, it is considered appropriate to reference BS8233 to add context to the assessment findings.

The proposed ERP would differ from existing and historic industrial noise sources in the area. Historically, the sources of noise on the Hargreaves site were external and contained intermittent and impulsive characteristics. The ERP will be a continuous steady state noise source with no tonal, impulsive, or intermittent characteristics. As part of the detailed design of the site, the appointed EPC Contractor will ensure that BAT is employed to keep noise emission to a minimum.

Therefore, the ERP would differ from existing noise sources, as receptors would not be exposed to industrial noise sources of impulsive or intermittent character, as is the case with the Hargreaves site, and instead the ERP would introduce lower noise levels which do not contain any distinctive characteristics and can be seen as an improvement on the historic noise levels, which are demonstrated in Table 2.



ACCON 30. Chapter 16, entitled ‘Summary of Residual and Cumulative Impacts’, identifies that there are ‘no other noise sources in sufficiently close proximity to the ERP for cumulative noise impacts to occur at the existing sensitive receptors’. This statement appears potentially contradictory to the reliance in the noise assessment that the noise from the proposed ERP is similar in character to noise currently affecting the noise sensitive receptors considered in the assessment.

WA Chapter 16 does state there would be no cumulative noise impacts, which we do stand by, as when the ERP is under construction and operation, the Hargreaves site would have been decommissioned. As suggested above, the ERP would in noise assessment terms, be a replacement for the Hargreaves site. Therefore, there is no need to assess the two industrial operations in tandem.

Conclusion

ACCON 32. The initial operational assessments carried out in accordance with BS 4142 indicated adverse impacts to significant adverse noise impacts. Taking account of the context, which is part of the BS 4142 methodology, and mitigation measures, which are not described in any detail, the noise assessment finds that the impacts reduce to ‘negligible’. In relation to potential effects at night-time, these conclusions rely on a presumption that the receptors are affected by existing industrial noise at night and therefore the noise from the ERP would not introduce noise of a different character. This has not been demonstrated by the baseline noise survey or substantiated by other information presented in the Noise Chapter.

WA At the time of writing the EPC Contractor is yet to be appointed. It will be their role to specify, build and operate the ERP. As part of this process, specific noise mitigation and BAT can be explored, as required, to reduce any potential noise impacts.

As stated previously, receptors have historically been exposed to industrial noise during the daytime and night-time period of an impulsive and intermittent character, from the Hargreaves site. When the ERP is under construction and operation, the Hargreaves site will no longer be operational. The noise from the ERP will be a continuous steady state noise with no tonal, impulsive, or intermittent character. Therefore, when assessing the impact at receptors in context, the significance of the impact is reduced during the day and night-time periods.

As previously stated, any planning approval can be subject to a suitably worded Condition to control noise emissions from the Proposed Development.



ACCON 33. The applicant should therefore be requested to provide further justification in this respect, including consideration of how context modifies the BS 4142 assessment for night-time. If it cannot be established that the receptors are currently or normally affected by noise of an industrial character at night, it would be appropriate to consider operational noise mitigation in further detail. Should this second approach be necessary, a suitably worded planning condition to control operational noise could be included within any planning approval. Such a planning condition would require a detailed operational noise assessment to be submitted prior to first full operation of the ERP, providing details of noise mitigation measures and demonstrating compliance with specific noise limits.

WA Further justification for the approach taken in considering context, as part of the BS4142 assessment, has been provided in this letter.

As stated in this letter, historically ESRs have been affected by industrial operations. The proposed ERP would differ from existing and historic industrial noise sources in the area. Previously, the sources of noise on the Hargreaves site were external and contained intermittent and impulsive characteristics. The ERP will be a continuous steady state noise source with no tonal, impulsive, or intermittent characteristics.

We agree that a suitably worded noise Condition could be included within any planning approval for the development.

ACCON 34. Additionally, a scheme of noise monitoring should be submitted. It would be appropriate if this included three months continuous noise monitoring at one location when the ERP became fully operational followed by periodic noise monitoring.

WA We are in agreement a scheme of noise monitoring should be submitted and can be Conditioned within any planning approval for the development. However, as noise from the Proposed Development would be continuous and of a steady state, we suggest one week of compliance monitoring would be suitable as part of a Condition.

For the reasons given in this letter, we consider the submitted noise and vibration Chapter to be robust in determining the potential noise impact from the Proposed Development. We accept that a suitably worded Condition would be beneficial to allow for further detailed assessment to be undertaken to specific noise mitigation and to demonstrate BAT, once the EPC Contractor is appointed. Any such Condition would require a detailed noise assessment to be submitted prior to first full operation of the ERP, and as a minimum, demonstrating compliance with the Rating Levels (as defined by BS4142) stated in the noise and vibration chapter.



A further planning Condition requiring compliance monitoring for one week, and within 6 months of the ERP being fully operational is also considered appropriate.

Yours sincerely
for Wardell Armstrong LLP

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