
UKWIN consultant noise concerns for permit application EPR/QP3724SE/A001

Shlomo Downen <shlomo.downen@gmail.com>
To: PSCpublicresponse@environment-agency.gov.uk

15 July 2025 at 16:15

To Whom It May Concern

UKWIN instructed an acoustics and engineering consultant to investigate the noise assessment and how it was being handled by the EA for the Runcorn Carbon Capture Facility.

This submission sets out below the relevant issues brought to our attention by this consultant, who is a Member of the Institute of Acoustics. We believe that these issues merit further consideration by the EA as part of their determination of the permit.

These issues raise matters about which the EA ought to go back to the applicant for clarification and sets out the need for consideration to be given to the imposition of an additional permit condition relating to maximum noise levels.

Wind Direction

The wind directions during the baseline noise surveys in the Savills Report do not appear to have been reported.

Assessment Method and Criteria

The consultant cannot see how the noise impact descriptors, “negligible, minor, moderate, major” have been defined in the applicant's assessment methodology. They appear to relate to “noise impact”, however it is not clear if these descriptors relate to the ‘magnitude’ of the change in noise, or the ‘significance’ of the noise impact. These are two different concepts.

The night-time ambient noise levels with the EfW facility operating are around 48dBLAeq,T. Savills do not apply any rating correction to noise from the EfW, and this may be a matter of opinion, but the consultant has not been to site to witness the noise so cannot comment further. However, if a nominal +3dB rating correction is applied for the source having a distinct industrial character, then this is approximately +15dB above the background noise level without the EfW facility operating. This would be a significant adverse impact. Savills point to a potential drop in road traffic noise causing much lower background noise levels now, than when the EfW facility was first assessed, but this has not been verified.

Internal ambient night-time noise levels in bedrooms, with a window partially opened, would be 33 to 38dBLAeq,T. This is significantly above BS8233 and WHO guidance and is likely to require residents to close their windows to minimise sleep disturbance. If the CC facility increases noise levels by even +1dBA, then although this may be considered a negligible or minor magnitude increase noise, in the context of the existing situation, any increase could be considered a potentially adverse or significant adverse impact.

This is a similar approach to that taken by National Highways when assessing changes in noise impacting dwellings which are already exposed to high levels of road traffic noise. In these situations, any noise increase of +1dB or more can be considered significant depending on contextual factors. This

is acknowledging the existing situation is not acceptable and should not be allowed to worsen. Fixed limits are used to identify such dwellings.

Noise Levels Predictions

Paragraph 5.35 of the Savills Report states that: *“The coolers have been modelled as 3D structures with two radiating facades, the top/roof and one vertical side, reflecting the air discharge and air intake sections of the coolers, respectively. The top/discharge and the side/intake have been assigned a SWL of 105 and 100 dBA LW respectively. No directivity has been applied.”*

It is not entirely clear how a sound power level (SWL) of 105dBA has been selected when each individual fan appears to have an SWL of 107dBA. Furthermore, on the datasheet in Appendix C, a measured sound pressure level (SPL) of 75dBA is quoted at 15 metres. Based on 18 units operating this would be close to 88dBA at 15 metres. Even allowing for directivity and screening from a parapet, the noise levels on Figure 1 appear low at 15 metres to the south of the coolers.

The consultant has undertaken indicative calculation based on 18 separate point sources to represent the coolers and the noise levels initially appear higher than those indicated on Figure 1. However, the levels on Figure 1 may have been adjusted for <50% duty, which is a -11dB reduction according to Paragraph 5.38 of The Savills Report.

Based on the datasheet provided in Appendix C, the consultant would expect the noise levels in proximity to the coolers to be higher, however it is also not clear how much sound attenuation is being provided by the parapet around the 3 sides of the coolers or precisely where they are to be positioned.

The Environment Agency's Draft Decision Document appears to acknowledge, on Page 36, that they also may expect noise levels from the CC facility to be higher, stating that: “We have carried out an audit of the Applicant's assessment and **although we found higher rating levels than the Applicant**, we agree that when the numerical impacts of the proposed CC plant are considered with the emissions from the incineration plant, excluding operations at 100% duty, the numerical impact of noise emissions from the proposed CC plant does not increase the overall impact of noise emissions above those already emitted from the existing permitted site”.

The consultant does not have access to the full modelling details which include the site topography, building heights, parapet detailing around the coolers, etc. and therefore it is not possible to confirm the accuracy of the predicted noise levels.

It is not clear why noise levels from the proposed CC facility do not increase at Clarks Terrace between Scenario 1 ($\leq 50\%$ duty) and Scenario 2 (50-80% duty). See Tables 5.17 and 5.18 in the Savills Report. However, this may indicate that the cooling tower fan exhaust is the dominant source of noise in these scenarios.

Worst-case Situation

It is stated in Paragraph 6.48 that: “...with the coolers operating at 100% fan speed, which would occur for 0.4% of the year (11 hours) when the WB temp is >19 C, for the daytime period. this only occurs for 0.4% of the year”.

Based on the consultant's calculation 0.4% of the year (based on a 16-hour daytime period (5480 hours)) is 24 hours not 11 hours. This may need further clarification. As pointed out by UKWIN, it is important that future proofing been factored in on this assessment, in terms of the likelihood for higher average temperatures (e.g. due to climate change) and longer operational durations at 100% duty.

General Comments & Recommendations

It is not completely clear what the assessment criteria was, and against which background noise levels the CC facility is primarily being assessed.

There is always uncertainty in these assessments in terms of the baseline noise surveys, supplied data, and the modelling predictions. This is commented on in Chapter 10 of the Savills report. The overall uncertainty is not stated, and it is not common to quantify total uncertainty in such noise assessments. However, if an attempt was made to calculate the total uncertainty, it would be greater than +/-3dB.

There is a potential issue with using this assessment approach as, over time, unless noise reduction measures are taken, noise levels could rise if additional plant is installed - even in circumstances where each new plant item is approximately 10dB below existing levels, as is said to be the case for the proposed CC facility. Typically, from a large facility like this, particularly those permitted by the EA, fixed noise limits would be set at the boundary and/or at the nearest residential properties to give clarity and to ensure noise levels do not creep upwards over time. This is the consultant's experience in relation to power plants, quarries and landfill sites etc. It is not known if such fixed limits are in place at this site.

There does appear to be an unclear approach/method to assessing noise impacts and the consultant would suggest fixed noise limits at the nearest residential properties could be considered, to provide some assurance that noise levels will not increase beyond an agreed limit.

We are grateful to you for your consideration of the matters raised above.

Please do not hesitate to get back to us with any requests for clarification, etc.

Kind regards,
Shlomo Dowen
on behalf of the UK Without Incineration Network (UKWIN)