

MEMO

TO:

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REF**DATE**

2 October 2024

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CC

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SUBJECT

Explanation of the requested additional information for IQE permit application

To address the requested information, the original noise impact assessment report (NIA) has been updated. This document provides brief explanation and reference to the NIA.

The requested information is presented first, and the replies follow.

1) **Requested information:**

Section 5.1 of the Noise Impact Assessment (document reference: Noise Impact Assessment IQE PERMIT APPLICATION Version 3) states: "The existing noise source from IQE and other nearby industrial sites are considered as residual sound sources and part of the existing sound environment. Therefore, they are not included in the noise modelling".

However, the Noise and vibration management: environmental permits guidance states the following "When you apply for a variation, do not include noise from the existing site (before changes) as part of the background or the residual sound levels. Your noise impact assessment must consider all the noise resulting from the proposed variation – the existing site and the variation together. Show both components clearly and then add them together to give a new total for site noise at the receptors. The impact assessment will be based on this new value, known as the 'specific level' in BS 4142."

You need to redo the modelling and Noise Impact Assessment, including the existing plant and provide us with the updated assessment.

Existing Conditions (Section 5) have been added to provide support for this query. Existing sources have been included in the model as shown in Table 6-1, Table 6-2 and Section 7.1.

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2) Requested information:

We have identified that the background sound levels used had been taken from the existing noise impact assessment used for the nearby data centres. The background for the 2018 survey included noise sources from that include noise sources from IQE including “Plant operating at the adjacent IQE site” as well as the 2019 survey referencing “hum from plant” and “Plant noise”.

As per our guidance, background sound levels must be free from influence from the site: “When considering overall site impact, you must make sure background sound levels at NSRs are not influenced by site noise”.

Except IQE, the site includes other tenants. Based on the calculations of the existing plant from IQE, the highest noise level at the NSRs is 25 dB LAeq,T which is much lower than the measured noise levels at the NSRs and is negligible compare to other sources affecting the NSRs. Therefore it is considered that the measured noise levels are the residual sound levels. Further evidence is shown in Section 5 of the report.

3) Requested information

Following the review of the response to the not duly made letter previous response for how the background at Edmondsbury Road were derived (received 22/07/2024), provide calculation steps for the stated interpolation.

Figure 3-1 in the report shows the locations of the noise sensitive receptors in green. This has been copied below, with labels added to show the measured daytime and night-time LA90 noise levels for Pencarn Avenue and Powis Close. Background noise levels are lower at Powis Close than at Pencarn Avenue principally because Powis Close is further from the main noise sources in the area, the M4 and the A48. Traffic on both of these roads is reasonably constant, and is considered likely to play an important role in determining the background LA90 noise levels.

Daytime noise levels

At Edmondsbury Road background noise levels are considered likely to be lower than the 45dB measured at Pencarn Avenue and higher than the 36dB measured at Powis Close. The halfway point between 45 and 36 is 40.5, and this has been rounded down to 40dB to give more weight to the lower levels measured at Powis Close.

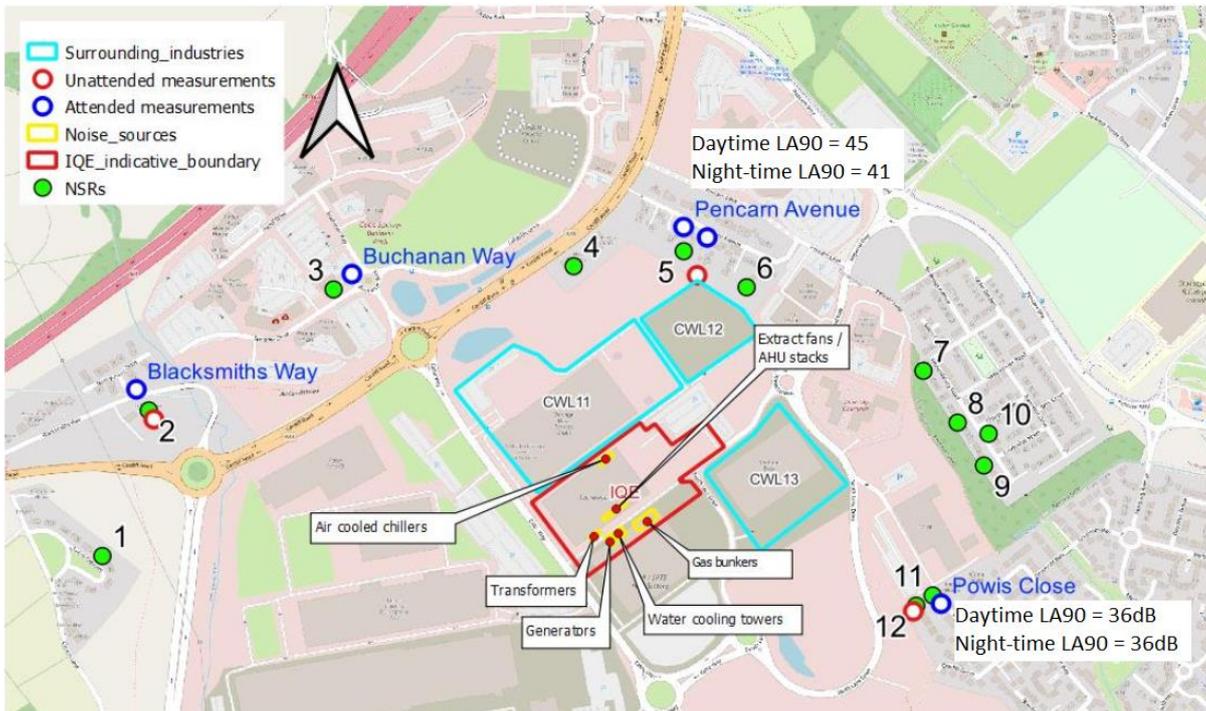
Night-time noise levels

At Edmondsbury Road background noise levels are considered likely to be lower than the 41dB measured at Pencarn Avenue and higher than the 36dB measured at Powis Close. The halfway point between 41 and 36 is 38.5, and this has been rounded down to 38dB to give more weight to the lower levels measured at Powis Close.

Research by NPL in the 1970's¹ showed for road traffic noise, that attenuation due to distance for LA90 values occurred at a smaller rate than for LA10.

¹ Prediction of Road Traffic Noise Levels, M.E, Delany, NPL report AC56, April 1972.

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4) Requested information

Evidence for the assumed source information and modelled sound power level. This should include (but is not limited to) confirmation that if the data is either taken from technical specification or was taken from measurement of the equipment.

The data has been provided by the process engineer taken from the technical specifications. The data spreadsheet has been attached in a separate file "20231024 noise data inputs External Equipment Schedules.xlsx"

5) Requested information

It was assumed that the as water cooler chiller was located indoors the contribution would be negligible due to the sound reduction provided by the building façade. You need to provide evidence this is the case by providing the internal sources in the within the model and the model output.

Water cooled chillers have been included in the model now. The existing building fabrication has been provided by CMB Engineering. The sound insulation of the building fabrication has been estimated and used in the breakout calculation. Details are shown in Section 6.1 and Table 6-2.

6) Requested information

The assessment of the submitted model appears to show that the some of the equipment being included as part of the variation (Air handling units (AHUs) GaN reactors and gas bunker exhaust fan) are not included in the modelled scenario. You need to review your modelling and check these are included in the model scenarios (and provide updated modelling and NIA if they are not).

No noise data are available for these units. Sound power level limits are proposed. These sources have been included in the model now.

7) Requested information

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Should an adverse impact be identified following the above points being addressed you will need to review and update your Noise Management Plan in line with our guidance and submit this to us.

The most affected receptor by the proposed scheme is the residential properties at Powis Close. Based on the calculations, the specific sound level at Powis Close is considerably low (38 dB $L_{Aeq,T}$ normal operation). Based on this context (details have been added to the revised NIA in section 6.3.1), the impact is likely to be below adverse. Therefore, a Noise Management Plan is not considered necessary.