

1. A character correction has not been applied in the submitted noise impact assessment. The report states 'A correction has not been applied in this assessment because it is most likely that the need for a correction can be avoided during detailed design and commissioning phases of Project development.' BS 4142 section 9.2 states 'Where the specific sound features characteristics that are neither tonal or impulsive, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3dB can be applied. Please provide evidence for not including a 3dB character correction to the +7dB predicted at 1 Pleasant View.'

When considering whether noise from the Project features '*characteristics that may be readily distinctive against the residual acoustic environment*', it is necessary to consider the character of the residual (i.e. baseline) acoustic environment in Rhoscrowther, and how this compares to the proposed new source of noise.

Were Rhoscrowther not situated next to an oil refinery, but instead located in remote countryside or even on the edge of a town, close to a park, a road or a railway, then an industrial plant such as that proposed might introduce different acoustic characteristics, potentially making it distinctive.

The baseline acoustic environment within Rhoscrowther is, however, dominated by noise from the Valero refinery and is therefore industrial in character. The fact of this is readily evident from field observations and demonstrated by the lower measured background noise level at more remote but otherwise similar settings such as Eastington Farm and Angle.

Significant sources of noise within the refinery, which are expected to be important specific influences on the noise environment in Rhoscrowther, include the steam plant where there are 9 steam raising boilers and several compressors. Within 200m of the project's proposed location, there are 21 compressors, 4 fired heaters and approximately 130 pumps all contributing to the background of industrial noise.

The expected character of the noise from the project is industrial, originating from an item of heavily insulated rotating equipment, fans, other ancillary equipment and the HRSG which is another steam raising boiler.

The residual acoustic environment in Rhoscrowther therefore has a dominant industrial character similar to that expected from the proposed development. Consequently, it is considered unlikely that noise from the project will be 'readily distinctive' against the existing background.

It is therefore considered there is no reasonable basis under BS 4142 for applying a penalty on the grounds that the project noise is expected to be readily distinctive against the residual acoustic environment.

By way of context, ERM has experience of applications for similar developments to the Cogen project in a variety of different settings including rural and urban, and in none of these applications either developer or regulator found cause to apply any penalty for the presence of 'Other sound characteristics' (as described in BS 4142). ERM has also discussed this with another experienced, specialist noise consultant and they too are not aware of a scheme of this type where such a penalty has been thought appropriate.

2. The simultaneous baseline study undertaken in April showed a 4dB difference between LA90 values at the Village Hall and 4 Pleasant View. During this simultaneous monitoring study, at the Village Hall the majority of LA90 values were above 45dB. During the original February/March monitoring study there were extended periods where the LA90 values were around 40dB at the Village Hall. Please provide justification that the 4dB difference between the Village Hall and 4 Pleasant View is expected to occur during periods of low LA90 values, as measured in the original February/March study.

Variability in the difference in  $L_{A90}$  measurements during the simultaneous noise study carried out at the two locations in April 2017 was small. A variety of noise levels were encountered during this 3 day survey.

The main source of noise at both the Village Hall and 4 Pleasant View is the Valero refinery. This is confirmed by the field observations of an ERM acoustic surveyor on site. Surveys conducted in February/March at more remote locations from the refinery demonstrate background noise levels, of 34 dB(A) at Eastington Farm and 29 dB(A) at Angle. By comparison in the same period, the background at Rhoscrowther was around 40 dB(A). This demonstrates that at Rhoscrowther the refinery dominates the background noise level, even when that background is relatively low.

The steam plant is the nearest large plant at the refinery and is likely to be an important specific influence on the noise experienced at these properties. The observed differences in background noise at the Village Hall and 4 Pleasant View are likely to be explained by differences in the details in the geographic setting of the properties and their distances from refinery noise sources.

As noise levels at the Village Hall are dominated by noise from the refinery, differences in  $L_{A90}$  noise levels between the Village Hall and 4 Pleasant View are expected to have a similar level of consistency to the differences in noise levels measured during the April simultaneous noise study. We therefore expect that the 4dB(A) difference between the Village Hall and 4 Pleasant View will be maintained during periods of low  $L_{A90}$  values, such as were measured in the original February/March study.