

Noise and Vibration Impact statement

Noise

Given the location of the Energy Centre every effort will be made to select low noise plant options. Where required noise attention mitigation measure will be put in place both during the construction and operational phases significantly reducing any potential effects on the surrounding area.

Noise has been considered and is being addressed through the use of sound attenuation and by oversizing the heat rejection radiator.

The CHP unit is to be installed within an acoustic enclosure within the Energy Centre. This enclosure is to be supplied with fresh air via one of the high level louver panels with the other used to expel air from the enclosure. The CHP unit's silencer, acoustic enclosure, the two at high level serving the enclosure and heat rejection radiator will all be rated at 65 dBA at 1metre.

Oversizing the heat rejection radiator has resulted in an increase in the number of fans fitted to the radiator. This results in lower speed fans which lower the noise levels generated by the radiator.

An acoustic consultancy report will be completed to identify current noise levels and confirm the attenuation required to be installed to achieve acceptable future noise levels at sensitive receptors.

Recommendations for attenuation within the commissioned report will be considered in the design of the new plant and equipment. Following the installation of the new equipment, a further noise survey will be completed to confirm the predicted noise reduction levels against existing background levels have been achieved.

Equipment noise levels.

Equipment	Noise rating	Distance (free field conditions)
CHP unit Enclosure	65dBA	At 1m
Enclosure air inlet and outlet	65dBA	At 1m
Exhaust gas silencers	65dBA	At 1m
Heat Rejection radiators	65dBA	At 1m
Energy Centre Structure	65dBA	At 1m

Vibration

The majority of equipment will be relatively small and will be mounted on or in the energy centre, as such they benefit from the mass damping effects of the concrete foundation/floor upon which the Energy Centre is to be constructed. Many items e.g. distribution pumps, will be mounted on frames which will include vibration damping as well as having flexible coupling to prevent vibration being transmitted away from the moving device.

The largest assets which contain moving parts and have the potential to transmit vibrations are the CHP engines. These will mounted on a sub-frame which include vibration damping. This frame will in turn be mounted on the concrete foundation, transmission of vibration will be isolated through the inclusion of flexible couplings.