VNI West

Noise and vibration

The Project area is generally characterised by low background noise levels typical of rural land uses. The Project has the potential to affect amenity during construction and operation, primarily through temporary construction activities, use of plant equipment, and operational electrical and wind-related noise emissions.

All EES documents, chapters, technical appendices, and attachments are available to view and download on the VNI West website at **vniwproject.com.au/EES**

EES Chapter 19 and ***Technical Appendix L*** examine potential noise and vibration impacts from the Project during construction, operation, and decommissioning.

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Chapter 19: Noise and vibration ↗

Technical Appendix L: Noise and vibration ↗

The assessment identified sensitive receptors (e.g. houses) within the noise study area, including houses near the Tragowel Terminal Station, Bulgana Reactor Station, and the nine laydown and/or workforce accommodation areas. Existing noise conditions were measured through attended and unattended monitoring, which found background levels to be typically low and representative of rural environments, dominated by natural and agricultural sources, with localised traffic influence in some locations. This data was used to derive Project-specific noise criteria, with conservative background levels applied, particularly for work outside of normal working hours.

Construction is expected to occur predominantly during normal working hours. Construction noise may temporarily interfere with domestic and recreational activities and, in some locations, with tranquility in nearby outdoor areas. However, predicted noise levels at sensitive receptors are generally expected to be similar to, or lower than, existing ambient levels, and construction noise effects are expected to be temporary and localised. Any works outside normal working hours would be limited to low-noise activities, subject to relevant authority approval and compliance with derived criteria.

Construction would involve noise generating activities over the course of approximately 36 months.

Activities include, but would not be limited to:

- Foundation construction and piling
- Tower construction assembly and erection
- Conductor stringing (by helicopter, drone or via tensioners)
- Civil works – earthworks and pad construction, and equipment installation.

The potential impacts of construction traffic noise on houses located on local roads along the Proposed Easement was also assessed, indicating very few houses on local roads would be subjected to traffic noise above ambient levels and that the noise would be intermittent and of short duration.

Noise and vibration (cont.)

Units of measurement

Ambient noise level (LAeq) is the continuous sound pressure level for all sound occurring during a given measurement period.

Background noise level (LA90) is the average minimum background sound level (in the absence of the source under consideration).

The predicted noise levels at the nearest sensitive receptors range from 44 - 51 LAeq,15min dB for Tragowel Terminal Station and 37 - 42 LAeq,15min dB for Bulgana Reactor Station. In comparison with the Environment Reference Standard (ERS) noise objective of 40 LAeq dB, construction noise may interfere with domestic and recreational activities, as well as normal conversation at noise sensitive receptors in the vicinity of Tragowel Terminal Station. Although the predicted construction noise levels exceed the ERS objectives, the predicted levels are similar to or less than the existing ambient noise levels (on average LAeq,7 am - 6 pm 49 dB) which may indicate a reduced risk of impact to environmental values.

For the transmission line, construction noise may interfere with domestic and recreational activities, as well as normal conversation at noise sensitive receptors in the vicinity of the transmission line. Predicted construction noise levels are of the order of 74 LAeq,15min dB(A) for the majority of tower construction works and up to 84 LAeq,15min dB(A) for those activities that require helicopters, noting there is currently no quantitative noise objective to assess human tranquility and enjoyment outdoors in natural areas.

Operational noise sources would include hum or buzzing from electrical equipment and hissing or crackling associated with aeolian and corona effects under certain conditions. Predicted operational noise emissions are expected to comply with relevant criteria at nearby sensitive receptors and can be managed through appropriate separation distances and, where required, additional controls such as noise barriers and design installation measures to minimise corona and wind-generated noise.

Noise and vibration impacts will be managed through the implementation of the Noise Management Plan prepared in consultation with Environment Protection Authority (EPA) Victoria, supported by monitoring and response procedures as required. Ground vibration from construction has the potential to affect human comfort or structures at very close distances; however, with guideline setback and standard controls, residual vibration impacts are not expected.

With the proposed measures in place, residual impacts on amenity from noise and vibration are expected to be low during construction and low to negligible during operation.

