

HumeLink Environmental Impact Statement

Noise and Vibration Impact Assessment

JUNE 2023

What is an Environmental Impact Statement (EIS)

The HumeLink project has been classified by the NSW Government as Critical State Significant Infrastructure (CSSI). All CSSI development applications must be accompanied by an Environmental Impact Statement (EIS). The purpose of an EIS is to identify and assess the potential environmental, economic and social impacts of the project to help government agencies, relevant authorities, community and stakeholders make an informed decision or provide an informed submission on the merits of the project.

EIS project footprint

The HumeLink project extends from the existing Wagga Wagga 330 kV substation to the existing Bannaby 500 kV substation and the future Maragle 500 kV substation.

The EIS footprint is based on an indicative 200metres corridor and is defined as the area directly affected by the construction and operation of the project. It includes the indicative location of project infrastructure, the area that would be directly disturbed during construction and any easement required during operation.

The final location of all proposed infrastructure will be confirmed during detailed design.

HumeLink planning approvals and EIS

As part of the planning approval process for HumeLink, Transgrid is preparing an EIS in accordance with the [Secretary's Environmental Assessment Requirements \(SEARs\)](#). The SEARs identify matters which must be addressed in the EIS and essentially form its terms of reference. It includes the requirements from both the NSW and Commonwealth Governments.

A series of detailed technical studies and reports are completed as part of the EIS. This includes the noise and vibration topic covered in this fact sheet.

Can I provide feedback?

Once the EIS is finalised, the NSW Department of Planning and Environment (DPE) will place the EIS on exhibition and call for public submissions. You will be able to provide feedback on the EIS directly to the DPE during this public display period. More information on how to make a submission will be provided closer to the EIS exhibition period.

To learn more about the HumeLink EIS please visit the [EIS Frequently Asked Questions](#) on our website.



Noise and
vibration

HumeLink Environmental Impact Statement Specialist Studies



Aboriginal heritage



Electric and magnetic fields



Social



Agricultural land



Greenhouse gas and climate change risk



Soils, geology and contamination



Air quality



Historic heritage



Surface water and groundwater



Aviation safety



Hydrology and flooding



Sustainability



Biodiversity



Landscape character and visual amenity



Traffic and transport



Bushfire risk



Land use and property



Economic



Noise and vibration



Noise and Vibration Impact Assessment

HumeLink’s EIS assesses the possible impacts from noise and vibration during the project’s construction and operation. The assessment includes measuring noise levels in different areas before construction starts to establish background noise level, and analysing activities that are likely to generate noise and vibration during construction and operation. Where the work is expected to be much louder than the background noise the team considers ways to reduce the impact of this noise and vibration.



Pictured: Noise logger used to measure background noise levels in an area.



Sensitive receivers

A number of sections in the EIS refer to sensitive receivers. A sensitive receiver is a location, place or structure that may be sensitive to certain project impacts. Noise and vibration sensitive receivers include residences, medical centres, educational institutes, hospitals, places of worship, recreational areas and commercial/industrial premises. Most sensitive receivers within the study area are residential.

What does this study tell us?

The noise and vibration study area for the assessment includes a two-kilometre buffer around the project footprint. The study area represents the extent of all receivers potentially impacted by noise and vibration from the construction and operation of the project.



Pictured: A drill preparing transmission tower foundations.



Pictured: A crane manoeuvring materials onsite.



Pictured: Corona rings also known as 'grading rings' help reduce noise, providing a smooth surface around sharp edges, such as bolts and connection pins.

Key activities undertaken as part of the assessment included:

- identifying and classifying all potentially affected receivers within the study area
- monitoring of ambient (background) noise at representative locations within the study area
- processing the monitored data to determine project specific noise management levels (NMLs)
- modelling construction and operation of the project infrastructure to predict noise and vibration levels at sensitive receiver locations
- comparing the predicted construction and operation noise levels to the NMLs to determine the likely level of impact
- assessing construction traffic noise in accordance with the relevant guidelines ([Road Noise Policy](#))
- identifying potential vibration impacts anticipated from vibration intensive equipment such as piling rigs or vibration rollers
- identifying mitigation measures to minimise and manage potential noise and vibration impacts such as site layout and equipment selection.

Ambient noise monitoring was carried out at nine locations within the noise and vibration study area. Monitoring locations were selected in areas with potential long-term construction activity, for example, close to potential construction compounds, and in towns.

Construction work is planned to occur during day-time hours between 7am and 6pm Monday to Friday, and 8am to 1pm on Saturday. However, work will also be required outside of these standard construction hours, including at night-time, over the weekend, and on public holidays. Impacted landowners will be notified of any work occurring outside of standard construction hours. This may include delivery of equipment, substation work and transmission line stringing over major road crossings, which are required to be done outside of peak traffic times.

As the project delivery partners develop their detailed construction methodology for the project, more information will become available on the nature and extent of out-of-hours work.

What are NMLs?

Noise Management Levels (NML) define the acceptably level of noise that a project can expose a receiver to.



Potential impacts and proposed management?

Construction noise and vibration

Potential noise and vibration impacts during construction may include:

- noise arising from site establishment work, clearing vegetation and topsoil, establishing construction compounds, utility relocations, constructing and upgrading of access tracks, and constructing temporary worker accommodation
- noise arising from constructing transmission lines, including site establishment, constructing structure footings, steel fabrication works and concrete pours, erecting new transmission lines and stringing conductors
- vibration impact from vibration intense construction equipment such as drilling and compacting foundations at locations closest to sensitive receivers.

Construction noise impacts will be managed through measures such as equipment selection, work hours, noise screens and site set ups. All feasible and reasonable measures will be applied to reduce the potential noise and vibration impacts from the project.

Transgrid's delivery partners will construct HumeLink in accordance with a Construction Environmental Management Plan (CEMP). Our delivery partners will prepare a project-specific Noise and Vibration Management Plan (NVMP), detailing mitigation measures and strategies. This document will include:

- identification of nearby sensitive receivers
- description of work, construction equipment and hours of work
- criteria for the project and relevant licence and approval conditions
- requirements for noise and vibration monitoring
- details of how community consultation in relation to noise and vibration will be undertaken
- procedures for handling complaints
- details on how respite would be applied where ongoing high impacts are expected at certain receivers.

Operational noise

Potential noise and vibration impacts during operation include:

- audible noise from operation of high voltage transmission lines (typically a broadband hum or crackling noise, also called corona noise), which is expected to be more noticeable during light rain or misty weather conditions
- noise created from substation equipment at the Gugaa 500 kV substation such as transformers, auxiliary transformers and shunt reactors. The predicted noise impacts are expected to be minor with suitable mitigation measures in place.

Operational substation noise impacts will be managed by incorporating design measures including positioning transformer barriers, selecting equipment considering sound power levels, and acoustic modelling to comply with the relevant guidelines.

Assessment of audible noise from transmission lines was completed to determine potential impacts on residences.. These impacts will be considered during detailed design as part of the finalisation of the transmission line alignment and confirmed with noise monitoring once the transmission lines are operational. Mitigation for confirmed operational impacts will be identified on a case-by-case basis, in consultation with the affected landowners.

As the project progresses through the development of the EIS and detailed design, more information about the identified noise and vibration impacts, as well as the proposed management measures, will become available.

Connect with us

Transgrid is committed to working with landowners and communities through the development of HumeLink. Please connect with us for more information.



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