

# **APPENDIX W – Environmental Impact Statement**

## **Electric and magnetic fields assessment**

Prepared for Lake Lyell Project Pty Ltd





# Electric and Magnetic Fields Assessment

Lake Lyell Pump Hydro Energy Storage Project



**Client:** EMM CONSULTING PTY LIMITED  
**Revision:** D  
**Project:** Lake Lyell Pump Hydro Project Energy Storage  
**Doc no:** 25188-E-RPT-0001

**FINAL**



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## Executive summary

Middleton Group Engineering (MGE) has been engaged by EMM Consulting Pty Limited to undertake an Electric and Magnetic Field (EMF) assessment for the Lake Lyell Pumped Hydro Energy Storage (PHES) Project (the project). The project is located approximately 5 kilometres (km) west of Lithgow and 110 km west of the Sydney central business district. This project takes advantage of existing infrastructure (i.e. Lake Lyell) associated with Mt Piper power station which will be decommissioned in the coming decades and allows Lake Lyell to continue to serve a specific purpose in electricity generation (consistent with its existing use).

The project will have the capacity to store up to 3,080 megawatt hours (MWh) of energy and generate at 385 megawatts (MW) for 8 hours or generate up to around 440 MW for a shorter period. It will consist of upper and lower water reservoirs, a pipeline connecting them, and a hydro-electric power station connected to the Grid that is capable of generating or consuming electricity.

From the switchyard, two single circuit transmission lines, approximately 150 metres (m) long with turn in and turn out spans will be constructed to connect with the existing 330 kilovolt (kV) lines that pass through the project area. Due to the relatively short length of the transmission connection, up to six monopole towers are anticipated. Access to the new towers will be via the main entrance road and access to the grid connection tie-in points will be via existing easements.

This study has been undertaken to address the Hazards and Risks element of the NSW Planning Secretary's environmental assessment requirements (SEARs) for the project (SSI-77018220).

EMF limits for this study are taken from the International Commission on Non-Ionising Radiation Protection (ICNIRP). The limit of electric field strength and magnetic field strength to protect human health as determined by the ICNIRP are as follows:

- General public: 5 kilovolts per metre (kV/m) and 2,000 milligauss (mG).
- Occupational Personnel: 10 kV/m and 10,000 mG.

Industry standard EMF modelling software CDEGS was used to predict the electric and magnetic fields associated with the proposed electrical infrastructure required for the project. A summary of the predicted maximum field levels is provided in Table 1 and Table 2 below for magnetic fields and electric fields, respectively.

**Table 1: Magnetic field strength results summary**

Electrical infrastructure	Maximum field strength (mG)	Pass / Fail
<b>2 x Overhead 330 kV single circuit transmission lines (8 m ground clearance)</b>	224	PASS

**Table 2: Electric field strength results summary**

Electrical infrastructure	Maximum field strength (kV/m)	Pass / Fail
<b>2 x Overhead 330 kV single circuit transmission lines (8 m ground clearance)</b>	7.5	PASS*

\*Passes TransGrid's limit but not ICNIRP for public exposure

The results indicate that the predicted field strength levels from the proposed electrical infrastructure are within the allowable limits for occupational exposure. As seen in Table 2, the electric field strength is above the ICNIRP limits for public exposure but passes TransGrid's limits. The proposed transmission lines are contained within the project site, which is inaccessible to the general public, therefore the predicted electric field strength is acceptable.

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# Abbreviations and definitions

Term	Definition
<b>ACSR</b>	Aluminium conductor steel-reinforced
<b>ARPANSA</b>	Australian Radiation Protection and Nuclear Safety Agency
<b>CDEGS</b>	Current Distribution Electromagnetic Fields, Ground and Soil Structure Analysis. Software developed by SES (Safe Engineering Services) & Technologies Ltd.
<b>EMF</b>	Electric and Magnetic Fields
<b>HDPE</b>	High-Density Polyethylene
<b>ICNIRP</b>	International Commission on Non-Ionising Radiation Protection
<b>kV</b>	kilovolt
<b>Long Term Loading</b>	Average load through the circuit under normal operating conditions.
<b>Magnetic Flux Density / Magnetic Field Strength</b>	Terms used interchangeably to describe magnetic field magnitude typically in $\mu T$ or $mG$
<b>Maximum Loading</b>	Peak load through the circuit under normal operating conditions.
<b>MW</b>	megawatt
<b>mG</b>	milligauss ( $1 \mu T = 10 mG$ )
<b>OPGW</b>	Optical Ground Wire
<b>The project</b>	Lake Lyell Pump Hydro Project
<b>XLPE</b>	Cross-Linked Polyethylene

# 1 Introduction

## 1.1 Background

EnergyAustralia Portfolio Holdings Pty Ltd (EnergyAustralia) in partnership with EDF power solutions Australia (EDFA), referred to as Lake Lyell Project Pty Ltd (LLP) as trustee, is developing the Lake Lyell Pumped Hydro Energy Storage (PHES) Project (the project). The project will have the capacity to store up to 3,080 megawatt hours (MWh) of energy and generate at 385 megawatts (MW) for 8 hours or generate up to around 440 MW for a shorter period. At a basic level, it will consist of upper and lower water reservoirs, a pipeline connecting them, and a hydro-electric power station connected to the national energy grid that is capable of generating or consuming electricity.

The project is located approximately 5 kilometres (km) west of Lithgow and 110 km west of the Sydney central business district, shown in Figure 1 and Figure 2. The project takes advantage of existing infrastructure (i.e. Lake Lyell) associated with Mt Piper power station which will be decommissioned in the coming decades and allows Lake Lyell to continue to serve a specific purpose in electricity generation (consistent with its existing use).

In June 2024, the Minister for Planning and Public Spaces declared the project to be Critical State Significant Infrastructure (CSSI). Accordingly, approval for the project is required under Part 5, Division 5.2 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). This requires the preparation of an environmental impact statement (EIS) for the project in accordance with Secretary's environmental assessment requirements (SEARs) and the approval of the Minister. EMM Consulting Pty Limited (EMM) has been engaged by LLP to prepare the EIS.

This Electric and Magnetic Field (EMF) assessment is an appendix to the project's EIS and should be read in conjunction with it. The EMF assessment addresses the SEARs issued for the project.

## 1.2 Assessment guidelines and requirements

This EMF assessment has been prepared by Middleton Group Engineering (MGE) in accordance with the SEARs issued by the Department of Planning, Housing and Infrastructure (DPHI) on 17 November 2025.

The general scope of this study:

- models the proposed overhead transmission lines for the Lake Lyell PHES
- utilises computer models to predict the EMF levels emitted associated with the proposed transmission lines
- compares the predicted levels with the allowable limits
- proposes and assesses mitigation measures to reduce electric and magnetic field levels (if necessary)
- makes recommendations as to the implementation of prudent avoidance practices.

The assessment excludes the underground cable connecting the main transformers and the switchyard.

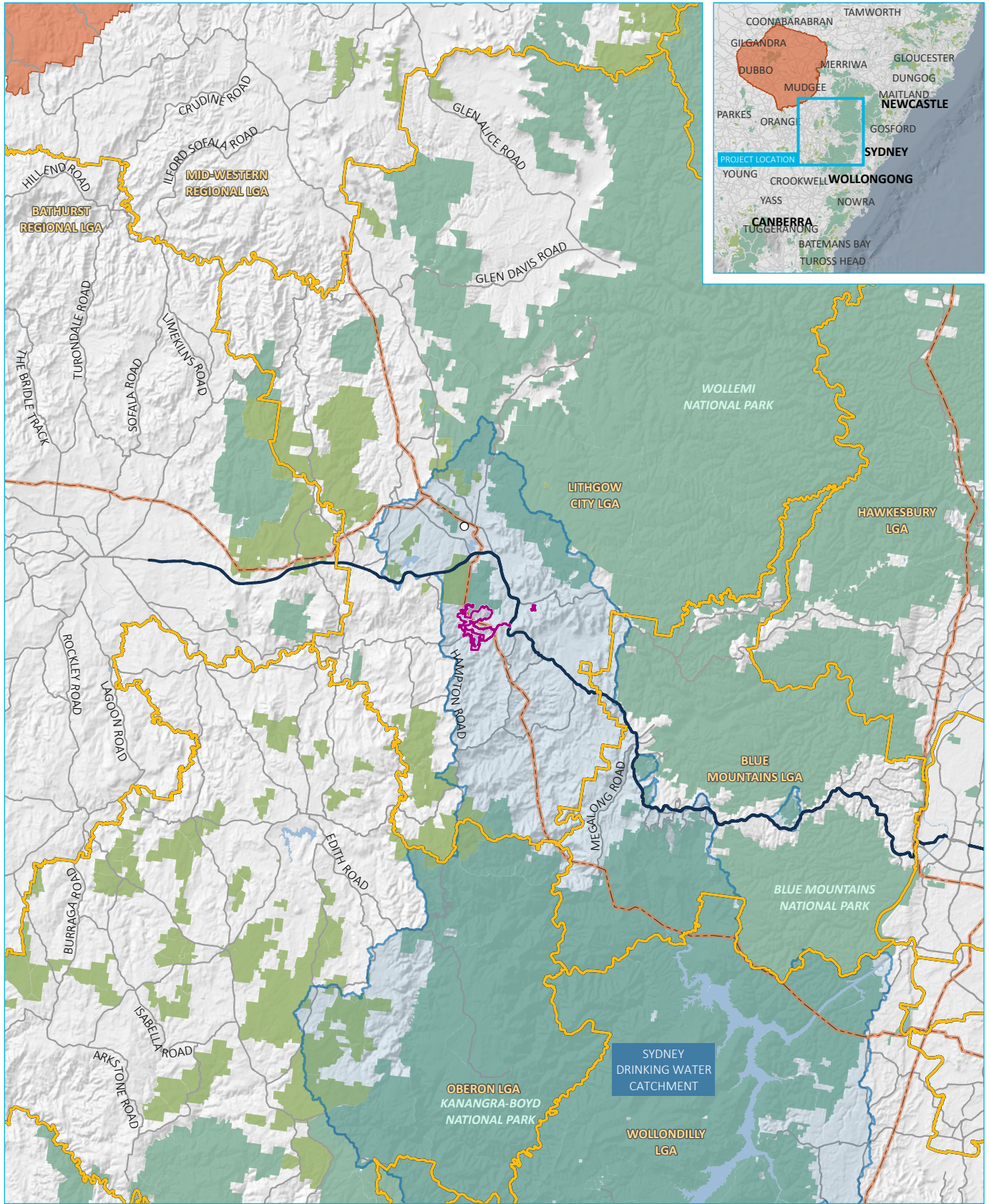
### 1.2.1 SEARs

This EMF assessment has been prepared in accordance with the requirements of the NSW Department of Planning, Housing and Infrastructure (DPHI) and relevant agencies, which are set out in the SEARs for the project, issued on 17 November 2025. The SEARs identify matters which must be addressed in the EIS. Individual requirements relevant to this EMF assessment and where they are addressed in this report are listed in

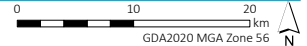
Table 1.

**Table 1: EMF assessment related SEARs**

Requirements	Section addressed
Hazards - including:	
An assessment of: <ul style="list-style-type: none"><li>• <b>an assessment of potential hazards and risks including but not limited to fires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure against the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields</b></li></ul>	Highlighted section



Source: EMM (2025); Lake Lyell Project Pty Ltd (2025); ABS (2021); DCSSS (2024); GA (2009); ESRI (2025)



**KEY**

- ▭ Project area
  - Local government area
  - Sydney Drinking Water Catchment
  - Mt Piper Power Station
  - Central West Orana Renewable Energy Zone
  - Major road
  - 330 kV transmission line
  - Named waterbody
  - NPWS reserve
  - State forest
  - Central West Orana Renewable Energy Zone
- INSET KEY**
- Major road
  - NPWS reserve
  - State forest
  - Central West Orana Renewable Energy Zone

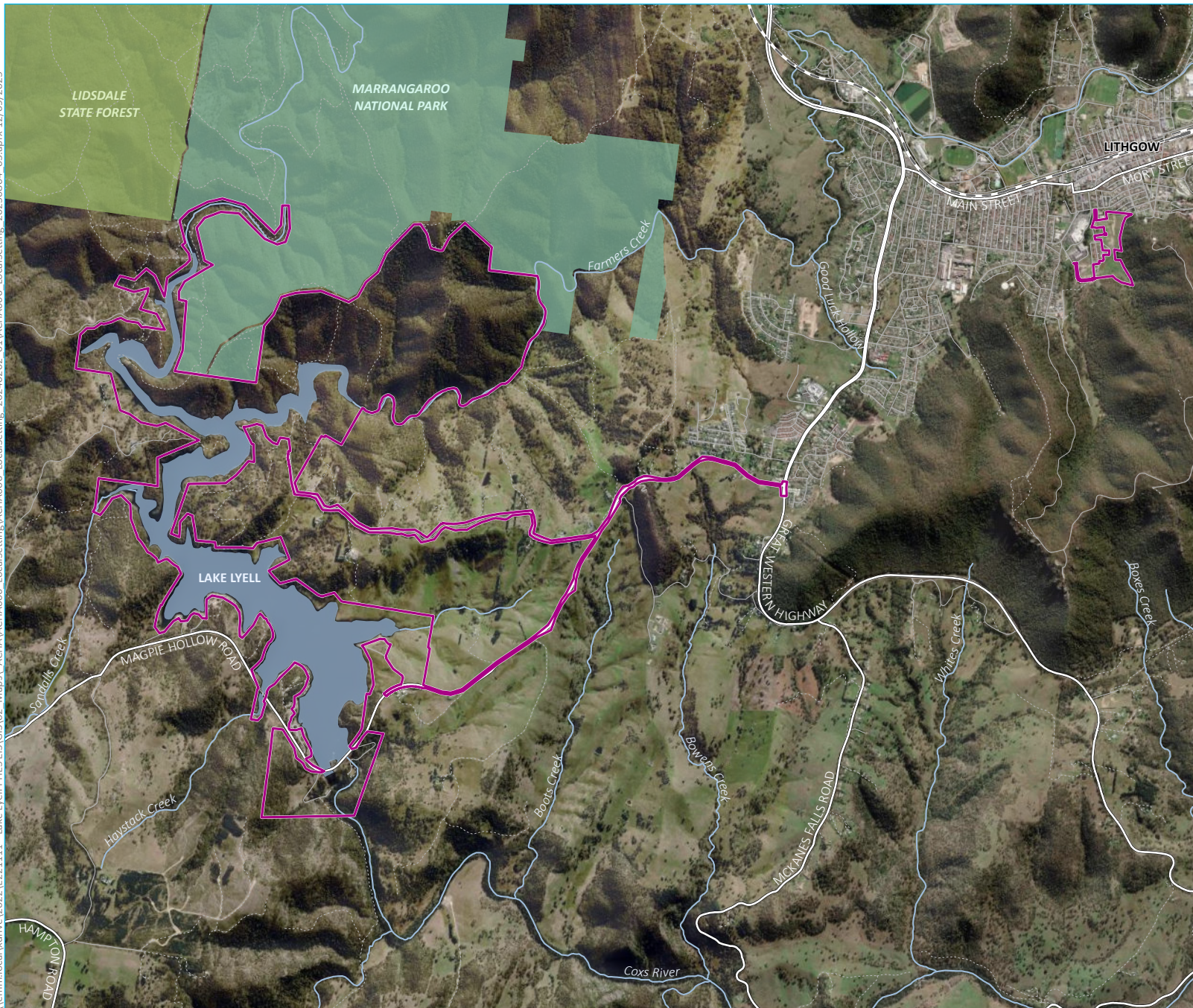
**Regional context**

Lake Lyell PHES  
Electric and Magnetic Fields Assessment  
Figure 1



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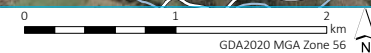
- KEY**
- Project area
  - Existing environment
  - Rail line
  - == Major road
  - Minor road
  - ..... Vehicular track
  - Named watercourse
  - Named waterbody
  - NPWS reserve
  - State forest

Local context

Lake Lyell PHES  
Electric and Magnetic Fields Assessment  
Figure 2



Source: EMM (2025); Lake Lyell Project Pty Ltd (2025); DCSSS (2024); GA (2009); ESRI (2025)



## 2 Description of the project

A detailed description of the project, including an overview of its design, construction and operation is provided in the project's EIS. The EIS (specifically Chapter 3 and Appendix B) should be read in conjunction with this report. A summary of the project's key elements is provided below.

The project design, as shown in Figure 3, can be broadly categorised into:

- pumped hydro generation components – including a 5.3 gigalitres (GL) upper reservoir to be constructed behind the southern ridge of Mount Walker, a 33.5 GL lower reservoir (existing Lake Lyell), inlet/outlet structures, and an underground powerhouse, surge shaft and waterway tunnels
- transmission connection components – including a new high voltage switchyard and connection to the existing 330 kilovolt (kV) transmission line that runs through the site
- site access and ancillary facilities – including upgrade of existing and construction of new access roads and bridges, a diversion and infill of a section of Lake Lyell, administration and utilities
- other construction components or works – including geotechnical investigations, temporary workforce accommodation, site work pads, laydown areas and facilities, and spoil management.

Construction will be completed in stages, including:

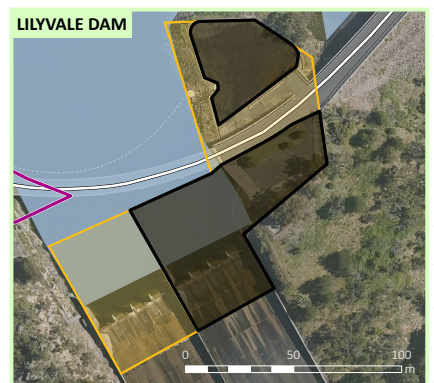
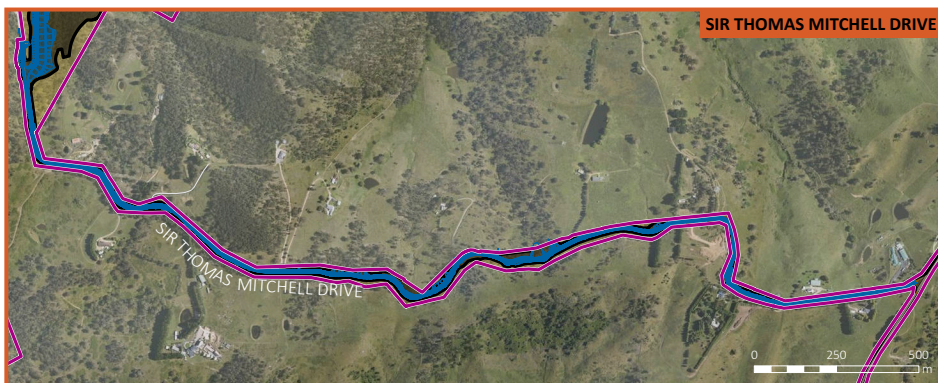
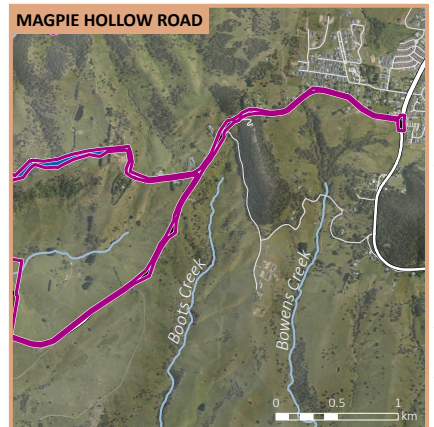
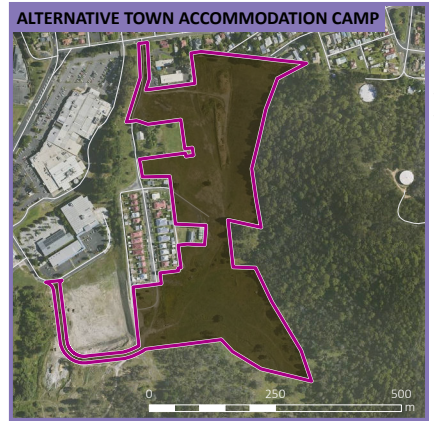
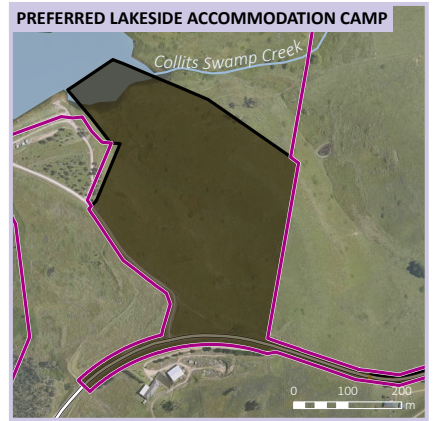
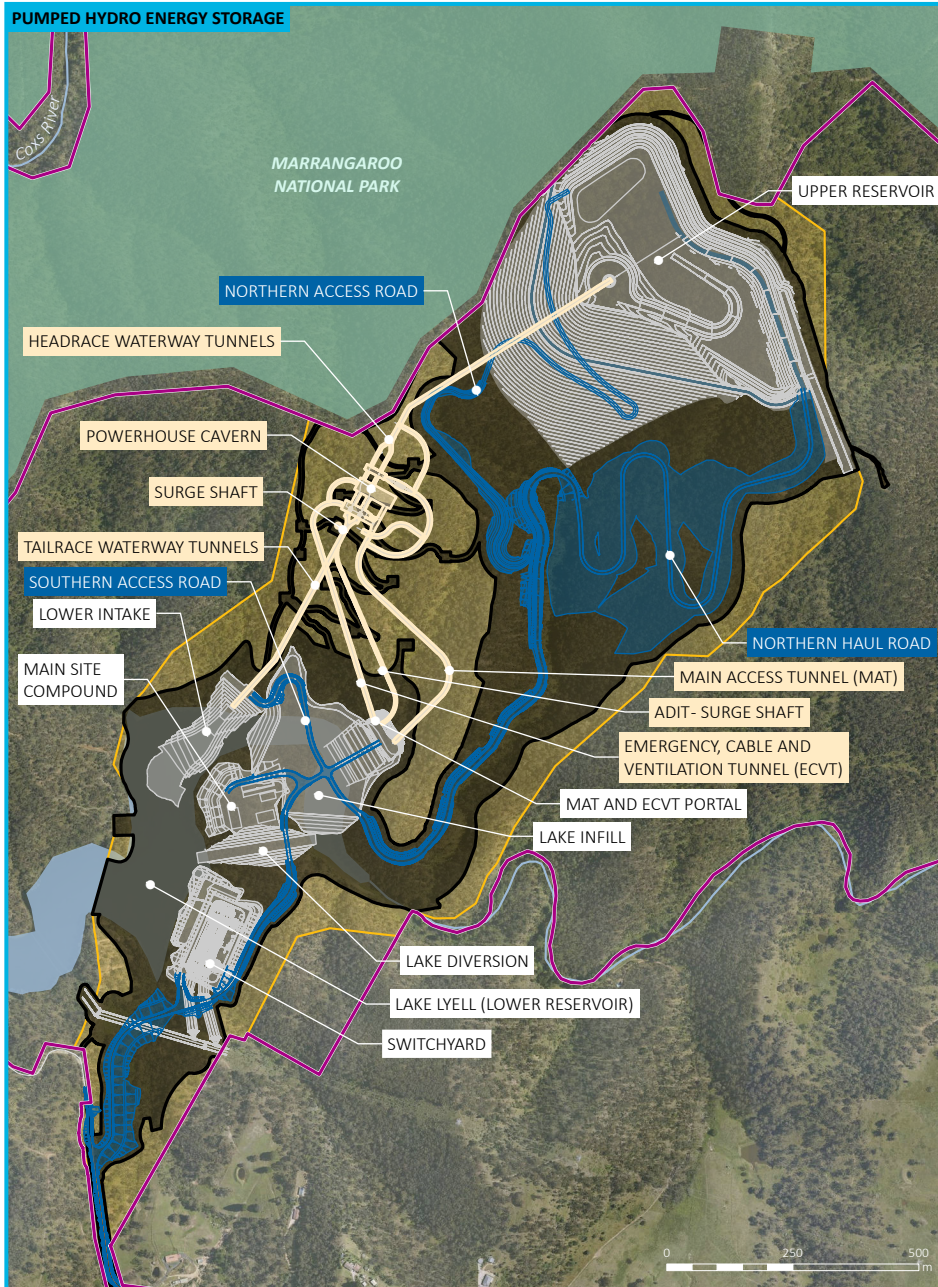
- pre-construction / enabling works – consisting of initial access works (internal and external roads), geotechnical investigations, site establishment and preparation of the worker's accommodation camp
- main works – consisting of all other construction activities needed to enable operation of the project.

During operation, the project will act as an electrical energy storage system through the conversion of electrical to kinetic energy to gravitational energy and back via water as it is transferred from the elevated upper reservoir to a lower reservoir. The project will provide services to the wholesale 'spot' market on the National Electricity Market (NEM), and support ancillary services used to manage the power system reliably.

After the 80 to 100-year design life of the project, the asset may remain viable for a plant refurbishment and extension of life as has been seen for other older assets globally. Following the plants final refurbishment or once it has reached the end of its serviceable life then the site would be returned to a more natural state and encourage community beneficial use.

### 2.1 Electrical equipment

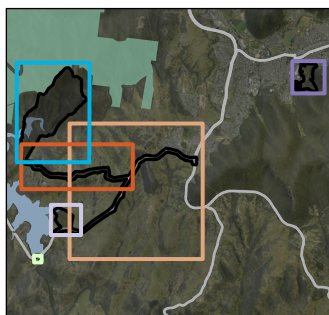
A HV switchyard will contain the electrical equipment required to facilitate the connection between the project and the existing transmission network as shown in Figure 4. From the switchyard, two approximate 150-metre (m) long single circuit transmission lines with turn in and turn out spans will be constructed to connect with the existing 330 kV lines that pass through the project area. Due to the relatively short length of the transmission connection, up to six monopole towers are anticipated. Access to the new towers will be via the main entrance road and access to the grid connection tie-in points will be via existing easements.



Source: EMM (2025); Lake Lyell Project Pty Ltd (2025); DCSSS (2024); GA (2009); MetroMap (2025)

GDA2020 MGA Zone 56

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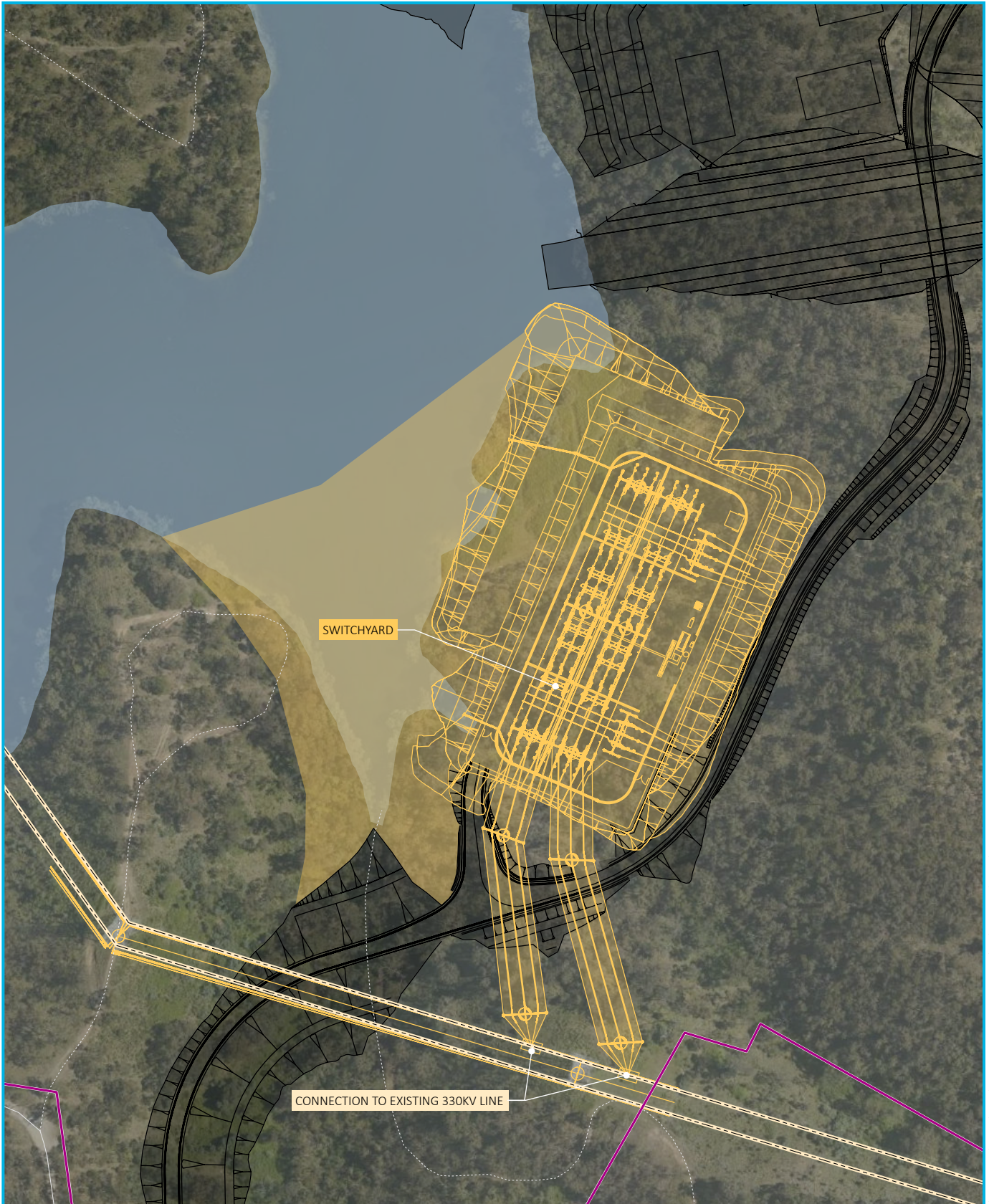


- KEY**
- Project area
  - Permanent road
  - Above ground design
  - Underground design
  - Construction envelope
  - Disturbance footprint
  - Existing environment
  - Major road
  - Minor road
  - Named watercourse
  - Named waterbody
  - NPWS reserve

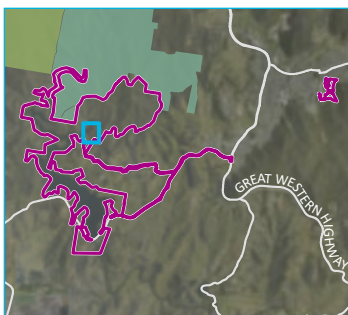
Project overview

Lake Lyell PHES  
Electric and Magnetic Fields Assessment  
Figure 3





Source: EMM (2025); EnergyAustralia (2025); DCSSS (2023); MetroMap (2025); GA (2009)

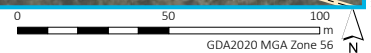


**KEY**

- ▭ Project area
- ▭ Switchyard
- ▭ Project design
- Existing environment
- ▭ 330 kV transmission line
- ▭ Minor road
- ▭ Vehicular track
- ▭ Named waterbody

**INSET KEY**

- ▭ Major road
- ▭ NPWS reserve
- ▭ State forest



**Electrical infrastructure**

Lake Lyell PHES  
Electric and Magnetic Fields Assessment  
Figure 4

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# 3 EMF background and assessment criteria

## 3.1 Introduction to EMF

Electric and magnetic fields are generated when any electrical or electronic equipment is in use and can be present around any device or system that relies on electricity, ranging from household appliances to complex industrial machinery.

Electric fields are regions where electric charge experiences an invisible force. The strength of this force is related to the voltage of the high voltage conductors. Electric fields are strongest close to the high voltage conductors and reduce quickly with distance from the conductors. Many materials, including metal, bricks and concrete will block electric fields, so they are easily shielded. Because they are related to voltage, the electric fields associated with transmission lines remain constant over time for a given operating voltage. In the case of underground cables, the electric fields are confined within the metallic cable screen, and no external field exists.

Magnetic fields are regions where magnetic materials experience a force produced by an electrical current (measured in amps). Since magnetic fields increase as current increases, they fluctuate more than electrical fields. This is because the current in overhead lines and cables typically fluctuates significantly due to changes in generation and loads. Magnetic field strength also decreases with distance from the source of electrical current. Magnetic fields are different to electric fields in that they are not easily blocked by common materials. Consequently, the magnetic fields associated with cables will penetrate outside the cables.

### 3.1.1 Typical magnetic field levels

In the modern world, people are constantly surrounded by and move between different sources of magnetic fields. The Energy Networks Association (ENA) has released a set of standard magnetic field levels for various appliances and powerlines, measured at normal user distances as shown in Table 3 [1].

**Table 3: Typical measured magnetic field levels associated with appliances and powerlines**

Magnetic field source	Typical range of measurement (mG)
Electric Stove	2–30
Refrigerator	2–5
Electric kettle	2–10
Toaster	2–10
Television	0.2–2
Personal computer	2–20
Electric blanket	5–30
Hair Dryer	10–70
Pedestal Fan	0.2–2
Distribution lines at 1 m above ground	2–30

Magnetic field source	Typical range of measurement (mG)
- Directly underneath	0.5–10
- 10 m away	

Transmission lines at 1 m above ground	10–200
- Directly underneath	2–50
- At the edge of easement	

## 3.2 Impact on humans, animals and plants

There has been extensive research into the potential health effects of EMFs, particularly magnetic fields due to their ability to penetrate through most obstructions including the skin (electric fields are easily shielded and do not penetrate the skin). While strong magnetic field levels are known to cause biological effects, these levels are rarely present near overhead lines and underground cables. Several decades of study have failed to find conclusive evidence linking the magnetic field levels typical near electrical infrastructure to adverse health effects. Some studies suggest a statistical association between prolonged exposure to elevated magnetic fields and childhood leukemia, but a causal effect has not been established.

Despite the lack of definitive proof of health impacts from magnetic fields near overhead lines/underground cables, a principle known as prudent avoidance is widely adopted in Australia. This precautionary approach recommends that electrical infrastructure be designed to minimize magnetic field levels in frequently occupied areas, especially where prolonged exposure is possible, provided that this can be achieved at reasonable cost. Strategies to minimize the magnetic fields include increasing ground clearances, reducing phase spacing, and optimizing the symmetry and phase relationship between conductors to improve magnetic field cancellation.

Studies into the effect of electric and magnetic fields on plants and animals have also been undertaken and generally found no significant impacts. The Gibbs Inquiry in 1991 concluded that there was no cause for concern about the impact on electric and magnetic fields on Australian native flora and fauna. This conclusion is supported by other Australian and international reviews.

## 3.3 Assessment criteria

EMF limits for this study are taken from the International Commission on Non-Ionizing Radiation Protection (ICNIRP) guidelines for limiting EMF exposure. These guidelines establish safety thresholds based on levels where direct effects on the central nervous system are observed, incorporating a substantial safety margin.

The advice of the National Health and Medical Research Council (NHMRC) with regards to EMF exposure has been withdrawn. Responsibility for review of the radiation health series publications has been handed to Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) (Australian Radiation Protection and Nuclear Safety Agency, 2023). The EMF exposure guidelines from ARPANSA now explicitly refer to ICNIRP [2].

Furthermore, the Energy Networks Association (ENA) EMF Handbook [1] also refers to ICNIRP for determining the human health limit of electric and magnetic field exposure.

The limit for magnetic and electric field exposure to the general public is specified in the ICNIRP General Public Health Physics publication 99(6):818-836 [3].

The pass/fail criterion for general public and occupational personnel for electric and magnetic field strength limits at 50 hertz (Hz), which will have the peak field strength from the power lines are as per Table 4.

**Table 4: ICNIRP reference levels**

	<b>Electric field strength (kV/m)</b>	<b>Magnetic field strength (mG)</b>
<b>General Public</b>	5	2000
<b>Occupational</b>	10	10000

The ICNIRP reference levels are defined for a height of 1 m above the ground, considering the cumulative impact on the head, body, arms, and legs of a person standing on the ground. These levels are evaluated directly beneath the overhead line.

TransGrid adheres to ICNIRP guidelines and aims to maintain the general public reference level of 5 kilovolts per metre (kV/m) for electric fields where feasible. However, while 220 kV transmission lines typically comply without additional assessment, lines with voltages of 330 kV and above can exceed this limit in certain areas, requiring further evaluation. Consequently, for previous projects, TransGrid has commissioned a dosimetric analysis to evaluate compliance with safety standards for higher voltage overhead lines. This analysis utilized an anatomically accurate human body model positioned beneath the transmission line at midspan, where exposure to electric fields is at its highest. The assessment focused on internal electric fields, particularly within the central nerve stimulation tissue of the head, which has the most restrictive limit of 0.02 volts per metre (V/m). To ensure compliance with ICNIRP basic restrictions, the analysis determined that the external electric field should not exceed 9.1 kV/m at a height of 1 m above ground [4].

Should the magnetic field and electric field strength at 1 m above ground directly around at the electrical infrastructure meet the established criteria, it can be reasonably inferred that the project-related fields at all locations further away from the electrical installation will also meet the criteria. This includes:

- associated houses
- non-associated houses
- all public locations (such as roads, parks, roadside stops).

This conclusion is supported by modelling results in Section 5, which aligns with the fundamental theory of electromagnetism dictating that the magnetic field strength diminishes with distance from the source.

## 4 Input data and assumptions

The data and assumptions that have been used to form the basis of the modelling and calculations are presented in this section.

### 4.1 General

Substations and collector stations, as well as any underground-to-overhead cable transition points, and the overhead or underground electrical connections between the 330 kV switching station and the other project electrical infrastructure have been excluded from the scope of this assessment.

Background EMF strengths on site are considered negligible, given the remote location of the project and absence of nearby electrical equipment. The background magnetic field strength along the majority of the route is expected to be negligible (aside from near the existing 330 kV lines).

Fault conditions (short time transients) are not modelled in this assessment.

Field strengths are calculated at 1 m above ground level in accordance with the relevant standards and presented at various distances with respect to the centreline of the proposed electrical infrastructure.

This study focuses on analysing the electric and magnetic fields generated by transmission lines and cables and excludes the assessment of electromagnetic interference from other sources like power electronics, or electrical equipment.

### 4.2 Computer software

The SES software package CDEGS (Current Distribution, Electromagnetic Fields, Grounding and Soil Structure Analysis) version 19.0.19009.0 was used to model the underground cables and overhead lines. The HIFREQ (High Frequency) module was utilised to capture the magnetic and electric field strengths.

### 4.3 Modelling criteria

The current, voltage, line/cable geometry and phasing are the most significant factors in determining the electric and magnetic field levels. Each of these factors are described in the following subsections.

#### 4.3.1 Electrical loading

The magnetic field levels are directly proportional to the current through the conductors. For this study, the current that has been assumed for each type of infrastructure is based on the maximum loading of that infrastructure. This is a conservative approach since this will give the maximum magnetic fields that can be expected but these levels would only be present for short durations under specific operating conditions. In the context of health impact, it is the long-term loading that is most relevant, and this will be significantly lower than the maximum loading.

**Table 5: Modelled scenarios**

Scenarios	Maximum parallel circuits considered	Apparent power [MVA]	Current in each circuit [A]
330 kV overhead transmission lines	2	440	770

### 4.3.2 Overhead 330 kV transmission line concept design

The 330 kV overhead lines are expected to be two single circuits, each circuit supported by steel towers with a horizontal conductor arrangement comprised of twin Mango ACSR/GZ conductors on suspension insulators with a bundle spacing of 380 millimetres (mm).

The horizontal separation between each phase conductor will be 10.7 m, and the conductors will be strung such that the lowest sag at the midspan on any sections of the line will be at least 8 m as specified in Table 3.5 of AS/NSZ 7000:2016 [5]. Refer to Figure 5 and Figure 6 below for the assumed 330 kV overhead line configuration.

Using the minimum statutory ground clearance is a conservative assumption for the EMF levels because the conductors will typically be higher than the minimum ground clearance.

There will also be an Optical Ground Wire (OPGW), and shield-wire installed but this will have limited impact on the EMF levels at ground level due to the location above the conductors. Consequently, the OPGW/shield-wires are omitted from the calculations.

The minimum separation between the two single circuits is 41 m [6].

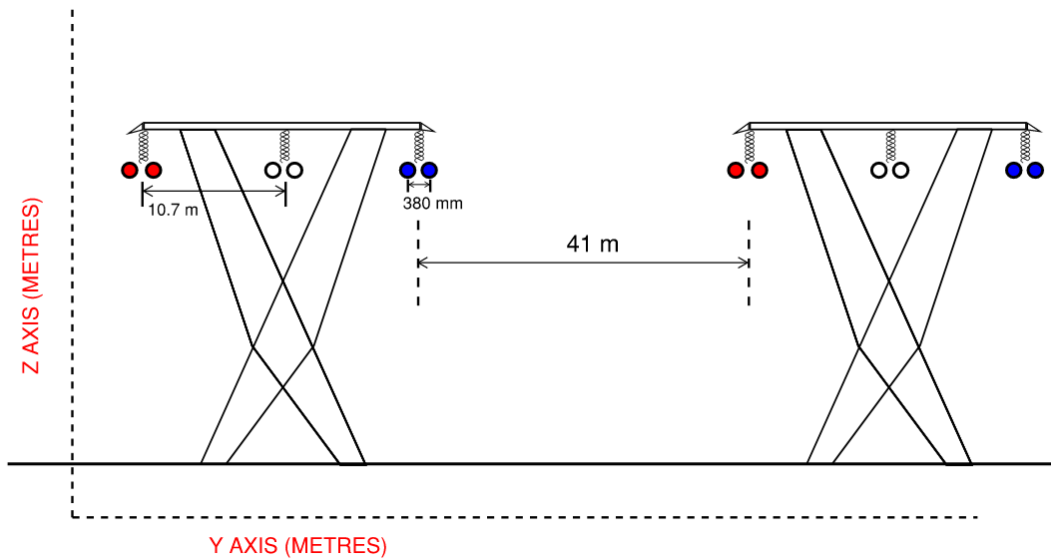


Figure 5: 330 kV steel tower horizontal post insulator configuration

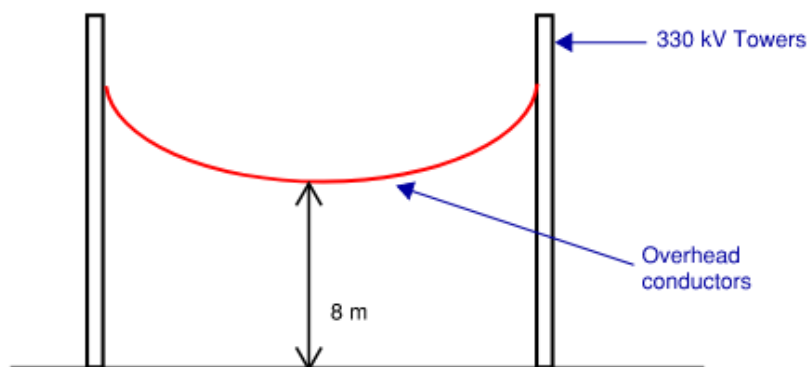


Figure 6: 330 kV minimum ground clearance at midspan

# 5 Results

## 5.1 Magnetic field

### 5.1.1 330 kV overhead transmission lines

The 330 kV overhead transmission line has been modelled as shown in Figure 5 and Figure 6.

Figure 7 shows the CDEGS magnetic field model of the conductors in the Y-Z plane at 1 m above ground. The results show that directly under the line, the magnetic field strength is 224 milligauss (mG), which is within the permissible limits.

At the edge of the easement, the magnetic field strength is 18 mG, which is also within the permissible limits. Hence, the magnetic fields associated with the 330 kV overhead transmission lines are within the safe limits for both public and occupational exposure.

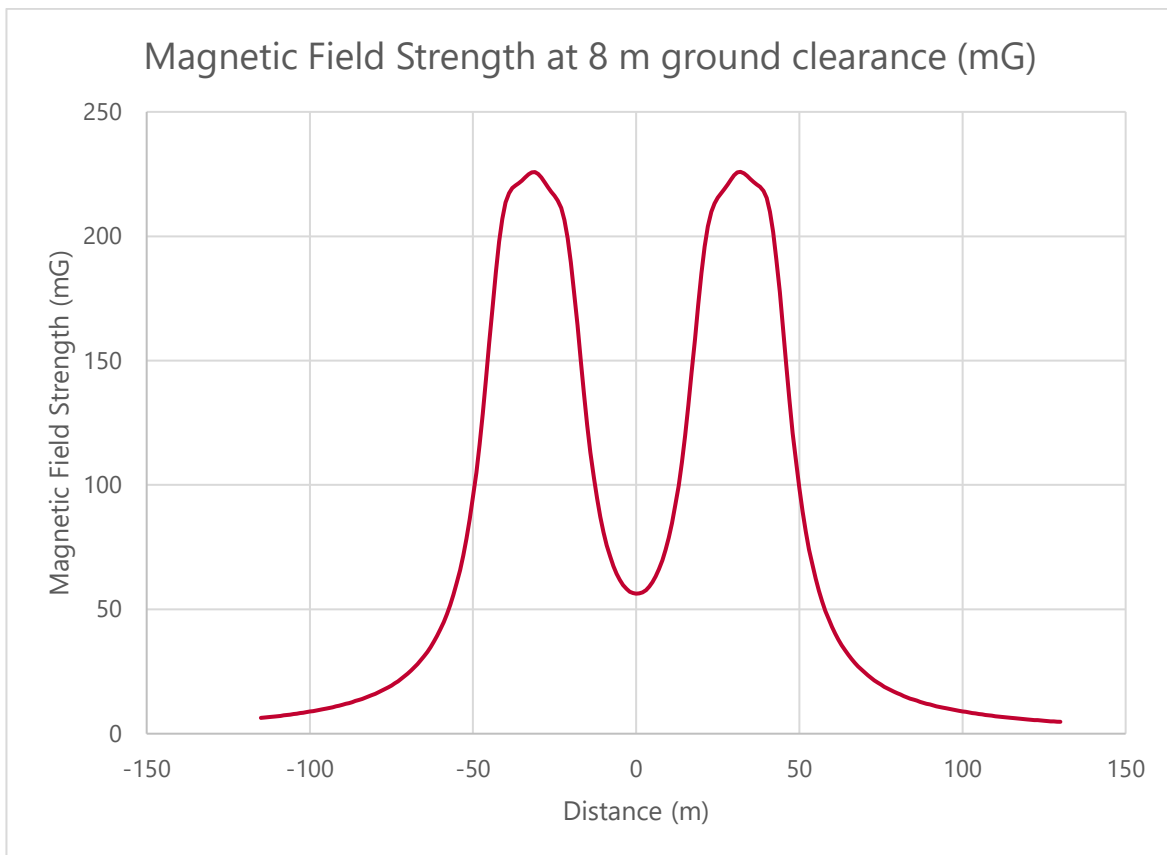


Figure 7: Magnetic field due to 330 kV overhead transmission lines

## 5.2 Electric field

### 5.2.1 330 kV overhead transmission line

Figure 8 shows the CDEGS electric field model of the 330 kV transmission line in the Y-Z plane at 1 m above ground. The results show that directly under the line, the electric field strength is 7.5 kV/m, which is above the ICNIRP permissible limit for the general public, but within TransGrid's permissible limits for general public, and within the ICNIRP permissible limit for occupational exposure. Since the proposed transmission lines will be located within the project site, which is inaccessible to the public, the occupational exposure limits apply.

The electric field strength directly beneath the line and at the edge of the easement remains within the permissible limits for occupational exposure.

At the edge of the easement, the electric field strength is 0.26 kV/m, which is also within the permissible limits.

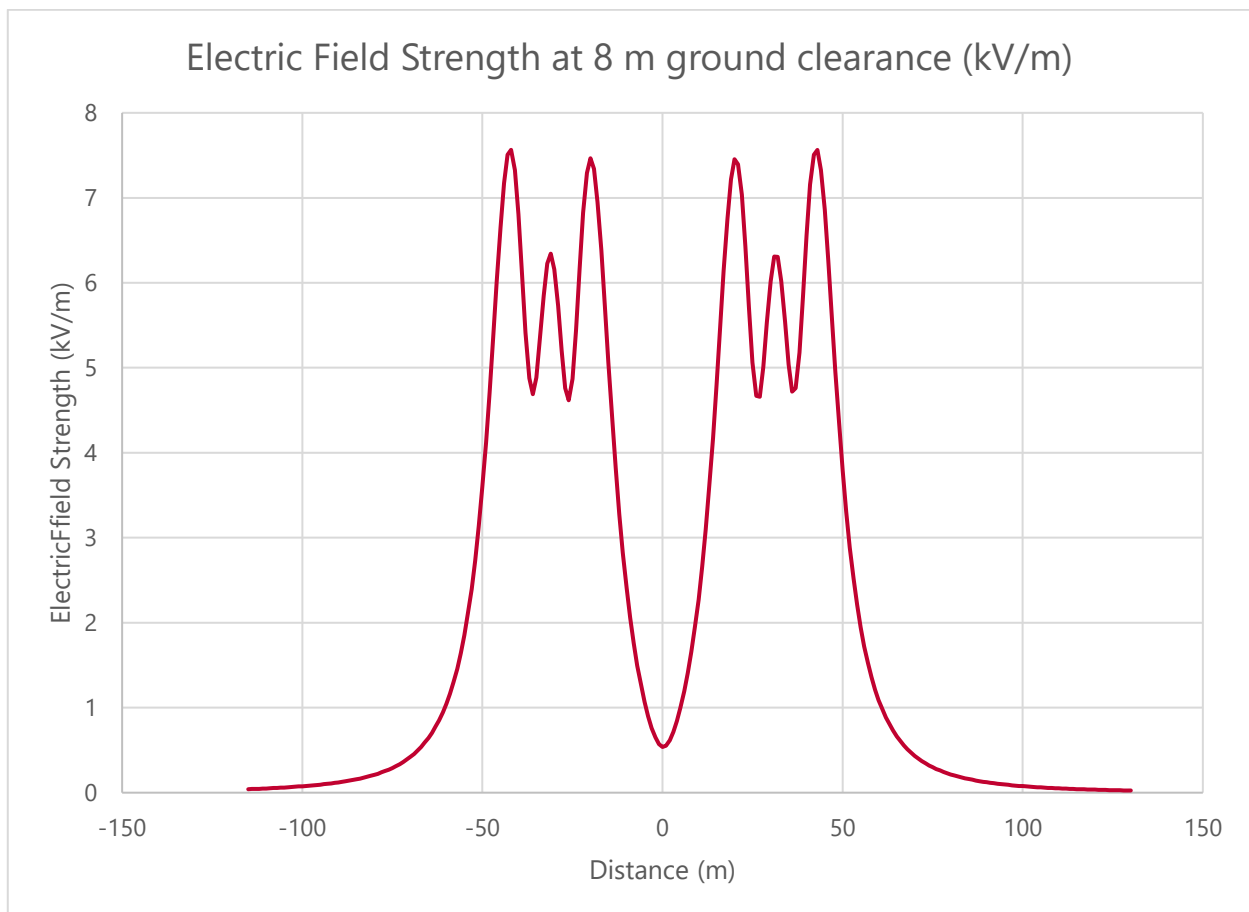


Figure 8: Electric field due to 330 kV overhead transmission lines

## 6 Mitigation measures

The expected EMF levels from the project at the minimum ground clearance comply with the relevant Australian and International standards and guidelines for occupational exposure. The emitted EMF from the proposed transmission lines exceeds the ICNIRP reference limits for general public exposure but complies with the TransGrid standards for public exposure. In any case, the proposed transmission lines are inaccessible to the general public so the occupational exposure limits apply and no mitigation measures are required, pending completion of the detailed design.

# 7 Conclusion

Industry standard EMF modelling software CDEGS was used to predict the electric and magnetic fields associated with the proposed electrical infrastructure required for the project. EMF limits for this study are taken from the ICNIRP.

The limit of electric field strength and magnetic field strength to protect human health as determined by the ICNIRP are as follows:

- General public: 5 kV/m and 2,000 mG, respectively.
- Occupational Personnel: 10 kV/m and 10,000 mG, respectively.

TransGrid has set a limit of 9.1 kV/m for overhead transmission lines of 330 kV and above.

A summary of the predicted maximum field levels is provided in Table 6 and Table 7 below for magnetic fields and electric fields, respectively.

**Table 6: Magnetic field strength results summary**

Electrical infrastructure	Maximum field strength (mG)	Pass / Fail
2 x Overhead 330 kV single circuit transmission lines (8 m ground clearance)	224	PASS

**Table 7: Electric field strength results summary**

Electrical infrastructure	Maximum field strength (kV/m)	Pass / Fail
2 x Overhead 330 kV single circuit transmission lines (8 m ground clearance)	7.5	PASS*

\*Passes TransGrid's limit but not ICNIRP limit for general public exposure.

The results indicate that the predicted field strength levels from the proposed electrical infrastructure are within the allowable limits for occupational personnel. As seen in Table 7, the electric field strength is above the ICNIRP limits for general public exposure but complies with TransGrid's limits. However, since the proposed transmission lines are within the project site, which is inaccessible to the general public, they do not pose any risks.

As the project progresses into detailed design, the conductor arrangements and loads are likely to differ from the modelled scenarios, and it is recommended that further analysis is conducted once these other parameters are refined to ensure compliance with ICNIRP guidelines.

## 8 References

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