

Planning and Development (Environmental Impact Statement Assessment Report – Jerrabomberra 132kV Transmission Line) Notice 2022*

Notifiable instrument NI2022–590

made under the

Planning and Development Act 2007, s 225A (EIS assessment report)

1 Name of instrument

This instrument is the *Planning and Development (Environmental Impact Statement Assessment Report – Jerrabomberra 132kV Transmission Line) Notice 2022*.

2 Commencement

This instrument commences on the day after its notification day.

3 Environmental Impact Statement assessment report

The planning and land authority has prepared the Environmental Impact Statement (EIS) assessment report for the Jerrabomberra 132kV Transmission Line as set out in the schedule.

Note 1: A copy of the assessment report can be obtained from the planning and land authority website at: <http://www.planning.act.gov.au>

Note 2: Under section 225A(5) of the *Planning and Development Act 2007*, the EIS assessment report expires 18 months after its notification day.

George Cilliers
Delegate of the planning and land authority
22 November 2022

*Name amended under Legislation Act, s 60



Environmental Impact Statement Assessment Report

132kV Jerrabomberra Transmission Line
October 2022

Pursuant to Section 222 of the *Planning and Development Act 2007* (**PD Act**), this report evaluates the revised environmental impact statement for the following application:

Ref no: 201900038

Project: 132kV Jerrabomberra Transmission Line

Date scoping document issued: 25 September 2019

Date draft EIS lodged: 23 November 2020

Date revised EIS lodged: 6 October 2021

Date s224 response lodged: 13 September 2022

Proponent: Evoenergy

Applicant: GHD Pty Ltd

Location: The new 132 kV transmission line is approximately 3.6km long and will be located across numerous blocks in Symonston and Jerrabomberra. The line will extend from the existing East Lake-Gilmore 132 kV transmission line on the Monaro Highway, along the Hindmarsh Drive and Canberra Avenue road reserves to HMAS Harman.

As required by section 225A of PD Act, the planning and land authority (**the Authority**) has prepared this EIS Assessment Report (**the report**) for the Minister for Planning and Land Management. This report confirms that the Authority is satisfied that sufficient information has been provided on each matter raised in the scoping document for this proposal.

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Glossary and definitions

Term	Definition
ACT	Australian Capital Territory
The Authority	The planning and land authority
CEMP	construction environmental management plan
DA	development application
EIS	Environmental impact statement: a document prepared to detail the expected environmental, social and economic effects of a development, and state commitments to avoid, mitigate or satisfactorily control and manage any potential adverse impacts of the development on the environment. In the ACT, an EIS is required for proposals in the impact track as per Section 127 of the Planning and Development Act 2007.
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EPSDD	Environment, Planning and Sustainable Development Directorate
ESA	Emergency Services Agency
kV	Kilovolt
NCA	National Capital Authority
PD Act	Planning and Development Act 2007 (ACT)
PD Regulation	Planning and Development Regulation 2008 (ACT)
TCCS	Transport Canberra and City Services
The Project	132kV Jerrabomberra Transmission Line

1. Introduction

This report is to the ACT Minister for Planning and Land Management on the assessment of the Environmental Impact Statement (EIS) in relation to the construction of a new 132 kilovolt (kV) transmission line in the district of Jerrabomberra (the Project).

The Project is a development of a type that meets section 123 of the *Planning and Development Act 2007* as it involves an activity mentioned in Schedule 4 of the PD Act, and therefore requires an impact track development application (DA). An impact track DA is required to include a completed EIS under the PD Act.

1.1. Project description

GHD Pty Ltd is acting as the applicant for this Project on behalf of Evoenergy, the proponent for this Project.

The Project would extend approximately 3.6 km from the existing East Lake-Gilmore distribution line at the Monaro Highway and would head northeast along Hindmarsh Drive and Canberra Avenue within the southern road reserve to HMAS Harman (Harman).

The Project includes 28 pole sites with span lengths of between 120m and 210m and pole heights varying between 21m and 32m. This comprises:

- Twenty-four new 132 kV transmission pole sites from the Monaro Highway to Harman.
- Four existing transmission pole sites part of the existing East Lake-Gilmore transmission line.
- Transmission cabling (double circuit) along the length of the alignment.

In response to environment and heritage considerations, pole types have been selected to have the lowest possible footprint for the transmission line type, and siting of poles has been undertaken in consideration of known environmental values within the technical limitations of the infrastructure.

Construction of the Project would involve work at discrete locations, which are between 120m and 210m apart.

Key steps in construction include:

- Site establishment – survey and layout, establishment of signage and environmental controls.
- Construction of foundations – excavation of footings approximately 1 m wide by 3-4 m deep using a heavy borer-lifter machine, steel and concrete foundation installation, installation of connections, and backfilling.
- Installation of poles – delivery and erection of pole sections, which would be in approximate 12 m segments,
- installed by the borer-lifter and by crane.
- Pole fit out – installation of hardware and stringing of conductors using brake and winch equipment.
- Site clean-up and rehabilitation – including weed management, and removal of construction materials.

Maintenance would involve annual inspections and, if required, rectification works as identified.

A detailed breakdown of the number of pole sites, pole arrangement details and their siting are included at Table 2.3 and Appendix C of the EIS. Indicative imaging of the pole arrangements are also included at Figures 2.4, 2.5 and 2.6 of the EIS.

1.2. Project purpose

The Department of Defence (Defence) has requested that Evoenergy, the ACT electricity distribution network provider, increase the supply capacity to Harman to meet the forecast load demand.

1.3. Project location

The Project would extend from the East Lake-Gilmore transmission line at the Monaro Highway to Harman via the southern road reserves of Hindmarsh Drive and Canberra Avenue.

Whilst surrounding blocks are proposed to be used for temporary access to construct and maintain the Project, permanent structures are mostly located within the road reserves of Canberra Avenue, Hindmarsh Drive and the Monaro Highway. Blocks identified in the EIS as being directly affected by the proposal include:

- Block 10, Section 107, Symonston – location of pole 1 and construction access;
- Block 12, Section 4, Symonston – construction access;
- Block 2233, Jerrabomberra – intersected by cable; and
- Block 2249, Jerrabomberra – location of poles 27, 28 and 29, site compound and construction access.

Land relevant to the Project is predominantly zoned 'TSZ1: Transport' or Designated Area (National land). However, the proposal also requires temporary and permanent use of land in the NUZ1 Broadacre zone.

The Project location is shown in Figure 1 below.

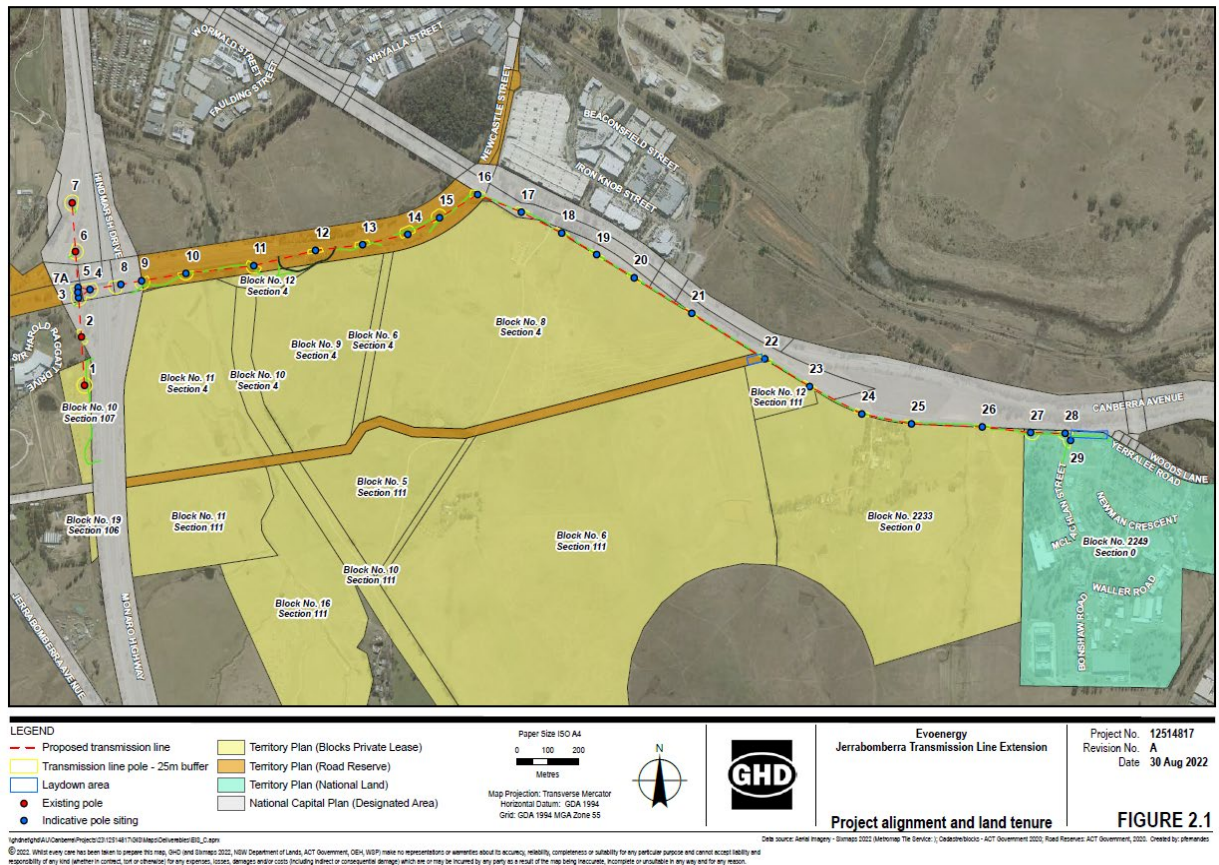


Figure 1 - Map of the 132kV Transmission Line location [source: Revised EIS, GHD Pty Ltd]

1.3.1. Legal land description and tenancy

The Project will directly and indirectly affect 13 blocks.

shows the legal land description for each block affected by the proposal and the details of tenancy type and tenant.

Block	Section	District/Division	Tenancy	Tenant
Directly affected lands				
10	107	Symonston	Unleased Territory Land	TCCS – City Presentation
12	4	Symonston	Unleased Territory Land	EPSDD – Parks and Conservation
2233	0	Jerrabomberra	Leased Territory Land	Private Lessee
2249	0	Jerrabomberra	National Land	HMAS Harman
Adjacent lands				
6	4	Symonston	Unleased Territory Land	EPSDD – Parks and Conservation
8	4	Symonston	Leased Territory Land	Private Lessee
9	4	Symonston	Leased Territory Land	Private Lessee
10	4	Symonston	Unleased Territory Land	EPSDD – Parks and Conservation
11	4	Symonston	Leased Territory Land	Private Lessee
13	4	Symonston	Unleased Territory Land	TCCS – City Presentation
14	4	Symonston	Unleased Territory Land	TCCS – City Presentation
6	111	Symonston	Leased Territory Land	Private Lessee
12	111	Symonston	Leased Territory Land	Private Lessee

Table 1 - Legal land description and tenancy

1.4. Alternatives to the Project

Six options were considered in the EIS as possible alternatives to the Project. Evoenergy conducted an options assessment which evaluated potential constraints associated with each option against the following criteria to provide an overall constraint rating:

- Ecology/Biodiversity
- Cultural Heritage
- Landscape and Visual Amenity
- Soil/Contamination
- Hydrology and Flooding
- Social Factors including:
 - social disturbance,
 - economic factors,
 - electromagnetic fields,
 - noise and vibration,
 - traffic, transport and access
- Technical Feasibility
- High Level Cost

The following options were considered by the proponent:

- **Option 1** – connect to the East Lake-Gilmore 132 kV line adjacent to the Narrabundah Lane Road corridor, head east via the corridor to Canberra Avenue just before Bonshaw, then follow the southern road reserve of Canberra Avenue to Harman (approximate length 3.4 km).
- **Option 2** – connect to the East Lake-Gilmore 132 kV transmission line at the intersection of the Monaro highway and Hindmarsh Drive, head east to Canberra Avenue via the southern road reserve of Hindmarsh Drive before continuing south east along the southern road reserve of Canberra Avenue (approximate length 3.6 km).
- **Option 3a** – connect to the East Lake-Gilmore 132 kV transmission line at the intersection of the Monaro highway and Hindmarsh Drive, head east to Canberra Avenue via the northern road reserve of Hindmarsh Drive before continuing south east along the southern road reserve of Canberra Avenue (approximate length 3.6 km).
- **Option 3b** – connect to the East Lake-Gilmore 132 kV transmission line at the intersection of the Monaro highway and Hindmarsh Drive, head east to Canberra Avenue via the northern road reserve of Hindmarsh Drive before continuing south east along the northern road reserve of Canberra Avenue (approximate length 3.7 km).
- **Option 4** – connect to the East Lake-Gilmore 132 kV transmission line at the intersection of the Monaro highway and Canberra Avenue, head south east along the southern road reserve of Canberra Avenue from the Monaro Highway to Harman (approximate length 3.8 km).
- **Option 5** – connect to the Gilmore Zone Substation, head east from the substation to the Sydney – Bombala railway line before continuing north-east to Harman via the Sydney – Bombala railway line and Woods Lane (approximate length 10.3 km).

The proponent considered the above options and determined that Option 2, the proposal as described in the EIS, was the preferred option - primarily in reducing impacts relating to biodiversity and heritage. Option 2 is expected to impact on less vegetation and minimise impacts on surrounding land, compared to the other options.

A copy of Evoenergy's Options Assessment is included at Appendix D of the EIS.

2. The environmental impact assessment process

Environmental impact assessment processes are used to identify, predict, plan for and manage the impacts of development proposals before a decision is made about the project going ahead. An environmental impact assessment process is required to be undertaken for projects in the impact track. Two options are available for environmental impact assessment, Environmental Impact Statement (EIS) or EIS exemption and Environmental Significance Opinions (ESO), with the suitability of each option dependent on whether previous studies were undertaken for the development.

An environmental impact assessment process is not an approval process. It ensures potential impacts and possible mitigation measures have been fully investigated and documented in accordance with the requirements of a scoping document.

The EIS is used as a key assessment tool for any development application lodged for the proposal. The EIS also recommends conditions to be imposed on a development application (if approved) for the proposal. Figure 2 outlines the EIS process.

Under section 127 of the PD Act, a development application for a development proposal in the impact track must include a completed EIS in relation to the proposal (unless the application is exempted under section 211 of the Act). Section 123 of the PD Act states that the impact track applies to a development if:

- the relevant development table states that the impact track applies;
- the proposal is of a kind mentioned in Schedule 4 of the PD Act;
- the Minister makes a declaration under section 124;
- section 125 or section 132 applies to the proposal; or
- the Commonwealth Minister responsible for the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) advises the Minister in writing that the development is a controlled action under the EPBC Act, section 76.

2.1. Impact track triggers

The proposal to construct a new 132 kV transmission line from the Monaro Highway to Harman is in the impact track as it is a development of a kind mentioned in Schedule 4 of the PD Act. This proposal triggers the Schedule 4 items listed in Table 2.

Table 2 Impact track triggers per Schedule 4 of the PD Act

Item Number	Description	Project Component
Part 4.2, item 2	<i>Proposal that involves - (a) electricity transmission line construction, including additions or realignment works, outside an existing easement or exceeding 500m in length, that are intended to carry underground or above-ground transmission lines with a voltage of 132kV or more.</i>	The Project is for construction of an electricity transmission line greater than 500 metres in length with a voltage of 132 kV or higher

2.2. EIS process

The flowchart below outlines the EIS application process.

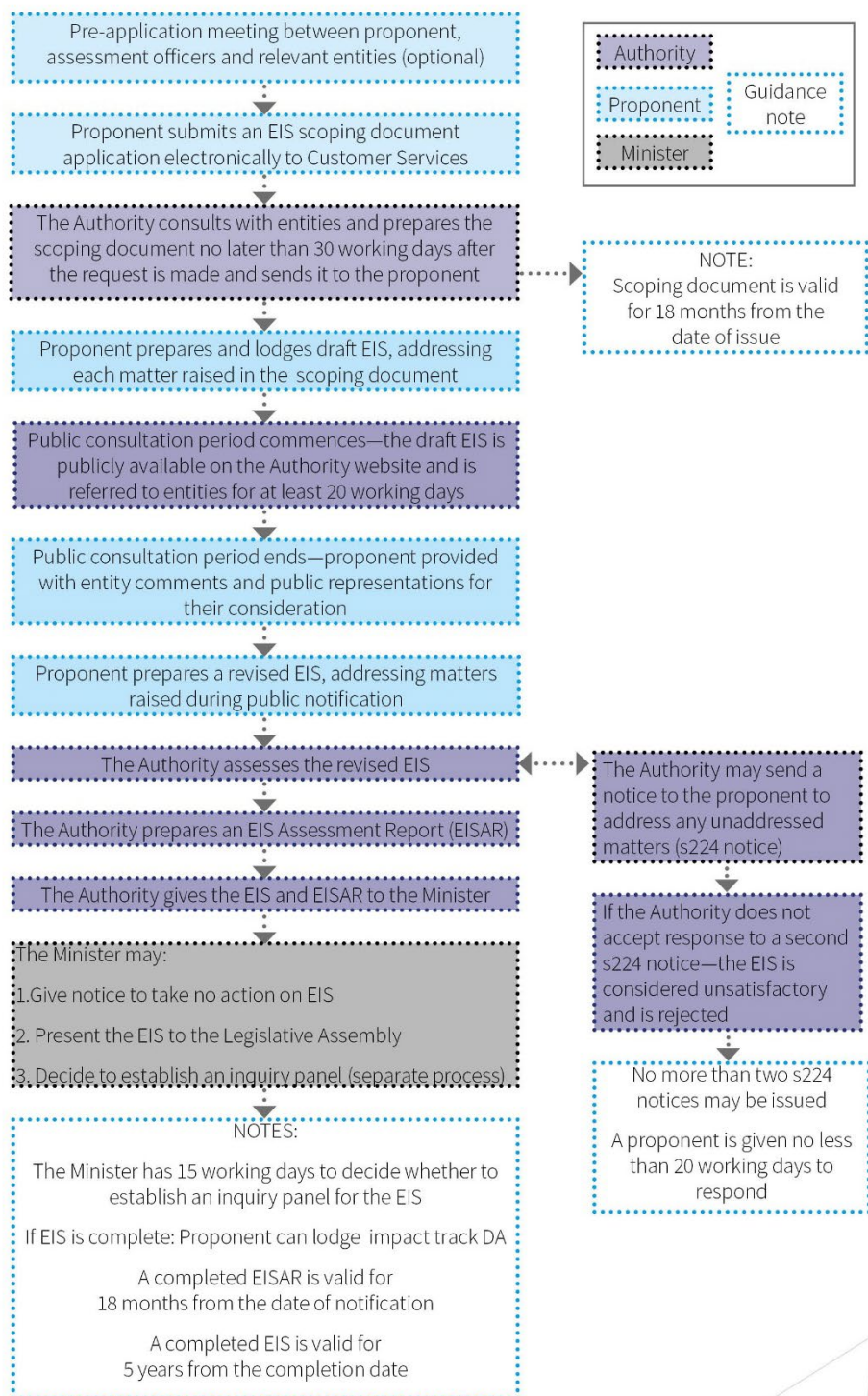


Figure 2 - The EIS process

2.3. Scoping Document

A scoping document is prepared to outline the contents of an EIS and areas of investigations and research required for the proposal. The planning and land authority (the Authority) within EPSDD prepares a scoping document in response to an application made for the proposal. In considering the contents of the scoping document, the Authority must consult with entities prescribed in section 51 of the Planning and Development Regulation 2008 (**PD Regulation**).

On 14 August 2019 WSP Pty Ltd, on behalf of Evoenergy, lodged a request for a scoping document for an EIS pursuant to section 212(1) of the PD Act. The Authority referred the scoping document application to the entities inviting written comments. The entities were given 15 working days to provide comment. The consulted entities and date of their response are shown in Table 3.

Table 3 Entity comments on scoping document application

Entity consulted	Entity response
Evoenergy	No comment
Icon Water	No comment
Jemena	No comment
Conservator of Flora and Fauna	5 September 2019
Emergency Services Agency	5 September 2019
Environment Protection Authority	26 August 2019
ACT Heritage Council	9 September 2019
ACT Health	11 September 2019
TCCS	25 September 2019
National Capital Authority	10 September 2019
Utilities Technical Regulator	22 August 2019
Canberra Airport	23 September 2019
EPD – Strategic Planning Division	12 September 2019

In developing the scoping document, a risk-based approach was used so that the EIS could focus on those matters that potentially result in a significant environmental impact. Matters raised by entities were considered by the Authority and were incorporated into the preparation of the Scoping Document

On 25 September 2019, the scoping document was issued by the Authority to the proponent pursuant to section 212(2) of the PD Act (**Appendix 1**). The scoping document sets out the matters to be addressed in the EIS and contained, at a minimum, the requirements required under section 50 of the PD Act and section 54 of the PD Regulation.

The scoping document was notified on the ACT Legislation Register on 26 September 2019.

Pursuant to section 214 of the PD Act, the scoping document was issued within 30 working days after the application was made.

Under section 213 of the PD Act, the proponent was required to submit a draft EIS within 18 months from the day after the date on the scoping document. The draft EIS was to address each matter raised in the final scoping document and provide the draft EIS to the Authority for public notification.

A cross-reference document was included at Appendix B in the EIS to cross reference the contents of the EIS to the contents required by the scoping document (**Appendix 2**).

2.4. Draft EIS

The purpose of the draft EIS is to identify and describe the potential environmental, social and economic impacts of the proposal, including cumulative, regional, temporal and spatial considerations. The draft EIS is required to fulfil the requirements of the scoping document.

On 13 November 2020, GHD Pty Ltd gave the Authority a draft EIS, under section 216(2) of the PD Act.

2.4.1. Public notification of draft EIS

Pursuant to section 217 of the PD Act, the Authority publicly notified the draft EIS from 27 November 2020 to 22 January 2021 being 25 working days.

The notification period for this EIS takes into account the definition of ‘working day’ under s 28(2) of the *Planning and Development Regulation 2008*, which specifies that the days beginning on 20 December and ending 10 January the following year do not constitute as a ‘working day’.

During the public consultation period, a copy of the draft EIS available on the Authority’s website and at the Access Canberra shopfront in Dickson. This public consultation process provided interested stakeholders and the community with the opportunity to make representations on the proposal or in respect to specific environmental issues of concern.

No public representations were received during the consultation period and the EIS has stated this.

2.4.2. Entity referral of EIS

On 27 November 2020, the draft EIS was referred to each of the entities who provided comments on the scoping document. The referral took place at the draft EIS stage so that the proponent could address entity comments in revising their EIS. On 7 October 2021, additional comments were sought on the revised EIS where the entity had requested further information from the proponent. Final comments on the EIS are summarised in Table 4.

Table 4 - Summary of entity comments on the EIS

Referred entity	Entity response	Entity response date
ACT Health	<p>Contamination risks must be managed by an Unexpected Finds Protocol during the installation of the transmission lines.</p> <p>During the development, all reasonable and practicable measures are taken to suppress dust.</p> <p>The HPS notes that the impacts of electromagnetic fields (EMFs) from the development has been assessed in the GHD Harman EIS – 132kV Transmission Line EMF Impact Assessment (November 2020).</p> <p>The HPS requests that any future developments near the transmission lines must have appropriate set back distances in accordance with International</p>	22 January 2021

	<p>Commission on Non-Ionizing Radiation Protection (ICNIRP) and Australian Radiation Protection Nuclear Safety Agency (ARPANSA) exposure standards.</p> <p>The design and construction of any sedimentation ponds must minimise the potential for them to cause an insanitary condition (local mosquito nuisance) under the <i>Public Health Act 1997</i>.</p>	
Icon Water	<p>Any work(s) that is likely to impact on the Icon Water infrastructure must have Icon Water acceptance prior to any work being undertaken.</p> <p>Any interaction with Icon Water infrastructure with the potential presence of asbestos will need to be noted and managed accordingly.</p>	27 October 2021
Jemena	<p>The following requirements are to be observed by the proponent to ensure safety to the proponent's contractors and the community is maintained, along with the integrity of the existing steel gas main (Canberra high pressure gas pipeline) distribution network:</p> <ul style="list-style-type: none"> • The proponent is required to prepare an Electrical Hazard Study (EHS) consistent with the standards found within AS4853 to assess the interface between proposed overhead electrical infrastructure with buried steel pipeline infrastructure. For example: as provided in Figure 2.2, the proposed transmission line poles marked 1 to 8 will be within close proximity of the Canberra Primary Main (CPM) (refer to the attached maps) and will impact the CP system of the pipeline. • Based on the EHS outcomes, a Safety Management Study workshop (SMS) may be required to assess the threats and identify the required controls to minimize the impact of HV transmission line on CPM. • To provide a construction methodology which outlines construction phase activities and show the location/distance of the new proposed transmission line in respect to CPM, i.e. distance from the pole foundations to the CPM. 	18 December 2020
Conservator of Flora and Fauna	<p>Timing of works is planned for cooler months (April to October) to avoid impacts to Grassland Earless Dragon (GED) and Striped Legless Lizard (SLL). This is strongly supported; however the CEMP/BMP should refine this to late April to early October as GED are still active in April, and both species commence activity in late September.</p>	5 October 2022

Ideally, once cleaned, plant and equipment should remain on site. If taken off site, plant and equipment should be cleaned prior to returning to site (P 144, Table 5.44).

P145, Table 5.44 – The ACT Parks and Conservation Service (PCS) should be notified (i.e., Ranger in Charge, Offsets South) if threatened lizard/fauna are found on site as they have trained staff who can catch and relocate animals.

P147, Table 5.45 & Appendix C. Indicative construction work areas -The indicative construction area of several poles overlaps the boundary fence. Assurances have previously been made that work areas (and particularly impact areas) would remain on the Canberra Avenue side of the construction. In particular, the indicative construction work areas at Pole 19 (P553/1529) and Pole 20 (P554/1529) move beyond the boundary fence and overlap with GED core habitat. The indicative construction area at Pole 21 abuts Natural Temperate Grassland (NTG) (and moves across the boundary fence). By restricting work areas to the Canberra Ave side of the boundary fence, direct impacts on GED habitat/NTG will be averted.

If indicative work areas (i.e., where vehicles move around construction sites) edge into core GED habitat and abut NTG, then the EPBC assessment of “no significant impact” in Appendix E will be in conflict– no significant impact can only be possible on the proviso that all construction activities are constrained to the road reserve on Canberra Ave and, under no circumstance, should vehicles/plant/machinery/ground vegetation clearance take place beyond the boundary fence (into Cookanalla/Wendover).

Given the height of the electricity poles (particularly at 19-21), consideration should be given to documentation of bird activity during and immediately after erection of poles (i.e. for 2-3 weeks) being incorporated into regular checks undertaken during site auditing.

Emergency Services Commissioner	<p>This development is located inside the area declared by the ESA to be subject to the threat of bushfire. The application of appropriate bushfire protection measures is advised, and an assessment of the proposal by an accredited Bushfire Consultant is required as part of any development application. Bushfire Assessment report: ACTF&R has reviewed bushfire assessment report – prepared by GHD Pty Ltd and concur with its findings</p>	20 January 2021
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and recommendations found in section 4 – Bushfire protection Measures.

ACTF&R Access Requirements:

Access is to be maintained, during construction, to any and all ACTF&R Emergency Vehicles, to identified fire trails, tracks, and property gates.

All emergency access gates are to be fitted with standard Fire Brigade locks.

Bushfire Protection Measures – During Construction:

Where works prevent travel along existing fire trails or access way, alternate access, constructed to Rigid Float standard in accordance with the ACT Bushfire Management Standards (2014) must be provided to ensure access for firefighting operations is maintained.

Standard industry procedures are to be adhered to for hot works during constructions and operation at the facility and a permit will be required for any high-risk activities such as hot works on total fire ban days. To obtain a permit to burn you should contact ACTF&R by email actf&risk&planning@act.gov.au

Hazardous Materials:

Demolition and asbestos management must be undertaken in accordance with the *Building Act 2004*, *Dangerous Substances Act 2004*, *Work Health and Safety Act 2011* and *Work Health and Safety (How to Safely remove asbestos Code of Practice) approval 2014*.

ACTF&R request notification on commencement and completion of all significant asbestos removal. Notification can be made to the ACTF&R Communication centre on 62004111.

Environment Protection Authority	The draft document adequately addresses Environment Protection Authority (EPA) concerns within the proposed works area. Further advice will be provided in relation to the proposed Project following a review of the Development Application.	9 December 2020
ACT Heritage Council	The revised EIS adequately identifies the heritage values of the study area and provides an assessment of the likely heritage impacts; and therefore meets the requirements of the EIS Scoping Document for the Project. The Council advises that further heritage controls and considerations will be required for the Project's Construction Environment Management Plan	28 September 2022

(CEMP) which must be provided to the Council for endorsement prior to works commencing.

The following is required:

- protective fencing of Hindmarsh 1 prior to works commencing to ensure that no inadvertent impacts occur to this Aboriginal place. Fencing locations are to be demarcated by a qualified archaeologist and RAOs; and protective fencing must be adequate to physically protect heritage places, such as star pickets spaced no more than 4m apart and with high visibility barrier mesh; and once installed, the location and adequacy of protective fencing is to be visually confirmed by a qualified archaeologist and RAOs; and notification on protective fencing is to be submitted to the Council;
- the adherence to an appropriate Unexpected Discovery Protocol such as set out within the NOHC (2022) report, with amendments to note at all Aboriginal objects and places are protected regardless assessed significance and require Heritage Act 2004 approvals; and
- a site induction for heritage matters relating to the Project that includes cultural awareness training as per the recommendations of NOHC (2022) and including RAO representative/s.

Should it become necessary to use the part of access track on which Hindmarsh 1 is located on, then an approval would be necessary under Section 61H of the *Heritage Act 2004*. The ACT Heritage Council (the Council) advises that if this occurs, the following is required prior to Development Application submission:

- a Statement of Heritage Effect (SHE), approved by the Council under Section 61H of the *Heritage Act 2004*, would be required to move the artefacts associated with Hindmarsh 1. The SHE application must meet the statutory criteria outlined in Section 61G of the *Heritage Act 2004* including that the proposed activity is justifiable; and there are no reasonably practicable alternative ways to carry out the proposed activity; and that reasonable steps

have been identified to reduce the risk of diminishing the heritage significance of or damage to the place;

- additional consultation with the RAOs regarding the recommendation to move Hindmarsh 1, as limited timeframes for were originally provided. Any SHE application must include reasonable opportunity to provide comment on the report;
- a Return to Country (RTC) protocol developed in consultation with RAOs, noting consultation requirements above. Additionally, written evidence of lessee and/or land manager support of the RTC location would be required. This should be accompanied by a statement that no future works are proposed to occur in the area that the artefacts would be moved to; and
- any SHE application must be accompanied by the required application form as per Section 119 of the *Heritage Act 2004*, and submitted directly to the Council via heritage@act.gov.au.

**Transport
Canberra and
City Services**

TCCS supports the proposed works with a condition of a Landscape Management and Protection Plan (LMPP) being provided for further assessment. The LMPP must detail, and number, which trees are proposed for removal and demonstrate how the adjacent trees will be protected for the duration of works. The LMPP is required to be endorsed by TCCS prior to the commencement of any works on the site.

If any trees proposed for removal are within unleased land, with the exception of the pest plants, Evoenergy will need to contact TCCS via TCCS.UrbanTreesDDCoord@act.gov.au at least three weeks before the trees are scheduled for removal, so that arrangements can be made to provide them with the appropriate signage. The signs will need to be posted on the trees for a minimum of 14 days prior to them being removed, in line with Transport Canberra and City Services public notification process.

Weeds and grasses within the worksite must be controlled by the proponent during the construction period.

NCA	The information and analysis provided is acceptable in response to the NCA's comments to the EIS scoping document. An additional photo perspective of the transmission line facing north (such as visual point 1) will greatly assist the NCA's assessment when a Works Approval is lodged at a later date.	22 December 2020
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The entity comments are included in this report where they relate to each potential impact. Any matters to be considered or conditions that have been recommended by a referral entity will be included in Table 26 of this report.

2.4.3. Request for revision of draft EIS

The Authority provided their preliminary review of the draft EIS and entity comments to the proponent. The proponent was required to revise the draft EIS, to take into consideration all matters raised by entities, comments from EPSDD, and to demonstrate how the matters have been considered in the revised EIS.

2.5. Revised EIS

On 22 July 2021 GHD Pty Ltd submitted a revised EIS to the Authority pursuant to section 221 of the PD Act. An adequacy review was undertaken to confirm that all appropriate sections and appendices had been included. The revised application was then circulated to selected entities to confirm their matters raised in earlier referrals had been addressed. Following this, the Authority commenced assessment of the EIS in accordance with section 222 of the Act. The Authority reviewed the revised EIS for:

- adherence to the final scoping document and legislative requirements; and
- consideration and incorporation of the Authority's and entity comments provided on the draft EIS.

Matters to be considered during the assessment include possible conditions of approval for any subsequent DAs for this proposal, as identified in Table 26 of this report.

After assessing the revised EIS and discussions with referral entities, the Authority determined that there were a number of items that were deemed 'unaddressed matters'. Therefore a notice under section 224 of the PD Act was issued to GHD Pty Ltd.

The Authority notes that no public submissions were received during the consultation period on the draft EIS, and the revised application has stated this.

2.5.1. Section 224 notice – request for further information

On 19 November 2021 a notice pursuant to section 224 of the PD Act was issued by the Authority to the GHD Pty Ltd (**Appendix 3**).

On 13 September 2022 the proponent provided a revised EIS to the Authority and the Authority deemed the resubmission to address the unaddressed matters of the notice.

2.6. Additional public consultation

The proponent conducted community and stakeholder consultation in line with the requirements of the scoping document by consulting with prescribed stakeholders, providing consultation method, considering community feedback and inclusion of previous

correspondence with relevant entities in relation to the requirements or support of the proposal.

In addition to the statutory notification undertaken by the Authority at the draft EIS stage, the following consultation activities were undertaken by Evoenergy as described in the EIS. In Part 6 and at Appendix Q of the EIS, the proponent gives a description of how each issue raised by the community was considered in the EIS.

Stakeholders outlined in the EIS included land custodians, utility owners, ACT and NSW Government, Federal Government, residents and homeowners, community council and special interest groups, local community centres, services, and local businesses. A complete list of stakeholders is provided at Table 6.1 of the EIS.

The proponent organised the following public consultation activities:

Project website – information about the proposal and its purpose, as well as preparation of the EIS was made available online at <https://www.evoenergy.com.au/about-us/mediacentre/2020-05-21-new-electricity-transmission-line-to-support-jerrabomberra>

Community information session – Due to the COVID-19 pandemic, online community webinars were held with landowners, businesses, and community interest groups in May 2020, giving them the opportunity to provide feedback and ask any questions about the proposal.

Stakeholder consultation – Stakeholders identified as part of the stakeholder analysis were targeted via email communication and follow up phone calls in May 2020.

Stakeholder and Community Webinar - An online community webinar was held on Wednesday 3 June 2020 from 1pm to 2pm via the digital platform Microsoft Teams. A presentation was given to provide background information including location, timeline, details regarding the EIS and an opportunity for questions. The presentation also included a digital fly-through of the proposal providing a visual representation of the transmission line.

Twenty email invitations for the community webinar were sent to relevant stakeholders and businesses. However, only two stakeholders were in attendance representing Icon Water and Queanbeyan-Palerang Regional Council.

2.7. Giving the EIS to the Minister for Planning and Land Management

Following the proponent's response to the section 224 notice, the Authority has accepted the revised EIS under section 222 of the PD Act. The findings and outcomes of the review of the EIS are included in this report, which is provided to the Minister for Planning and Land Management with the EIS, in accordance with section 225 of the PD Act.

Once the Minister has received the EIS, the Minister may:

- under section 226 – choose to take no action on the EIS; or
- under section 227 – present the EIS to the Legislative Assembly; or
- under section 228 – establish an inquiry panel to inquire about the EIS. The Minister must make this decision within 15 working days of receiving the EIS from the Authority. The requirements for establishing an inquiry panel are detailed under Part 8.3 of the PD Act.

Under section 209 of the PD Act, an EIS is completed if the Minister:

- a. gives the Authority a notice of no action under section 226;
- b. has not decided to establish an inquiry panel to inquire about the EIS;

- c. has established an inquiry panel for the EIS and:
 - i) the Panel has reported the results of the inquiry; or
 - ii) the time for reporting under section 230 has ended.

The Authority's recommendation to the Minister can be found in Section 7 of this report.

2.8. Lodging a development application

Once the EIS has been completed the proponent can lodge a development application in the impact track. Any subsequent development application related to the EIS must include the completed EIS. The EIS expires five years after the day it is completed.

2.9. Documentation referenced in this report

The documentation referenced in the Authority's assessment report is summarised as follows:

- Revised EIS and supporting documentation;
- Entity comments on draft EIS; and
- Correspondence or additional information received from proponent.

3. Assessment of impacts

This section summarises issues identified in the scoping document that had to be assessed in the EIS. For each set of identified issues, the results of the proponent's assessment are summarised under the following headings:

- Impacts;
- Key findings;
- Mitigation; and
- Scoping document requirements.

3.1. Planning and land status

The Project proposes to extend high voltage powerlines 3.6km from the existing East Lake-Gilmore 132 kV line on the Monaro Highway, head east to Canberra Avenue via the southern road reserve of Hindmarsh Drive before continuing south-east along the southern road reserve of Canberra Avenue to a new substation at Harman.

Whilst surrounding blocks would be used for temporary access to construct and maintain the proposal, permanent structures are located within and/or are adjacent to the road corridors of Hindmarsh Drive, Canberra Avenue, and the Monaro Highway.

Land that is relevant to the proposal is zoned TZ1 Transport, NUZ1 Broadacre and Designated Area. However, surrounding land use zonings north of the Project also include IZ2 Industrial Mixed Use.

Canberra Avenue and the Monaro Highway are Designated Areas under the National Capital Plan (NCP) and therefore fall under the administration of the NCA. These roads are subject to multiple land use categories under the NCP, including 'national and arterial roads' and 'inter-town public transport system.'

In addition, both of these roads are considered by the NCA as Approach Routes and are subject to the NCA 'main avenue and approach routes' (MAAR) design policies. The Project will be subject to separate approval from the NCA.

Harman is not Designated Area, but is National Land managed by Defence on behalf of the Commonwealth. Development on Harman is subject to special requirements and planning approval administered by the NCA.

3.1.1. Impacts

The EIS identified the following impacts associated with planning and land status at construction and operation stages.

Construction:

- Temporary visual impacts to nearby sensitive receivers were identified, including drivers using the road network being impacted by the erection of fencing, barricades, lighting, site compounds, vehicle movements and other construction activities.

This could affect:

- drivers using the road network; and
- clients and workers in the commercial spaces at retail or commercial properties located northeast of the Newcastle Street and Canberra Avenue intersection.
- Limited pedestrian traffic.

Operation:

- On-going visual impacts to sensitive receivers were identified, including:
 - drivers using the road network;
 - clients and workers in the commercial spaces at retail or commercial properties located northeast of the Newcastle Street and Canberra Avenue intersection; and
 - limited pedestrian traffic.

The EIS notes that visual impacts, including potential impacts on property values, have been investigated in relation to visual and landscape amenity at Section 5.7, and Appendix J of the EIS.

Other amenity impacts include noise and air quality, which have been addressed at sections 5.13 and 5.14 of the EIS respectively, and construction traffic impacts which is addressed at section 5.3 of the EIS.

3.1.2. Key findings

The Project is primarily located within highly modified road reserves which have been disturbed by other utilities and the general operation of the road network. The zones that are relevant to the proposal include the TSZ1 Transport Zone, NUZ1 Broadacre Zone and Designated Area. The existing uses of the land identified to which the Project relates are:

- road reserve which include cleared and maintained road shoulder and adjacent areas, with some areas comprised of native and non-native trees and shrubs; and
- pasture with access tracks which are used for grazing of stock

Under the Territory Plan, a *‘major utility installation – major service conduit’* is an assessable development in the TSZ1 Transport and NUZ1 Broadacre Zones. As previously stated, works within Designated Area will be subject to separate approval from the NCA.

In their advice dated 22 December 2022, the NCA confirmed that the information and analysis provided in the EIS is acceptable in response to the relevant parts of the EIS scoping document and the proposal will be subject to further assessment when a Works Approval is lodged at a later date.

The EIS states that GHD Pty Ltd undertook a desktop review of existing and future land uses to identify the potential land use impacts associated with the construction and operation of the proposal. The desktop investigations involved:

- an assessment and review of the surrounding land uses via ACTmapi and Google Earth Pro;
- a site visit to ‘ground-truth’ the proposal study area; and
- a review of broad strategic planning documents including the Eastern Broadacre Strategy.

The desktop review found that there are a mix of existing development and land uses surrounding the proposal alignment. Directly adjacent properties are primarily used for agricultural grazing in open farmland as well as government installations and other utilities. Jerrabomberra Creek also crosses the proposal alignment on Hindmarsh Drive, and there is an additional watercourse and depression crossing the alignment on Canberra Avenue, which drains north to Molonglo River.

The Canberra Avenue section of the Project footprint currently includes an existing operational 11kV distribution line which will be replaced as part of the proposal. Within both the Canberra Avenue and Hindmarsh Drive Road easements there is existing supporting road infrastructure such as fixed lighting and way finding signage. The EIS notes that because these are major roads they are unlikely to be subject to changes in land zoning.

The desktop review found that none of the surrounding lands are listed as ‘Future Urban Area’ under the Territory Plan. However, the Project is located within the area subject to the Eastern Broadacre Strategic Assessment (EBSA). The EBSA is currently underway and has not yet been endorsed by the Commonwealth.

The EIS states that the Project will deliver an increased electricity supply to Harman which is not included in the EBSA area. As electricity supply will only service Harman, the Project will not have any bearing on future developments in the area, including those considered in the EBSA.

To reduce identified impacts of the Project on planning and land use the pole type selected for the Project has the lowest construction footprint possible for the required supply (i.e. does not comprise towers that require larger footings and clearances, and may have greater visual impact). Such structures will minimise the overall visual impact compared to other options available, such as lattice towers.

3.1.3. Mitigation and avoidance

Table 5 details the avoidance measures associated with planning and land status as proposed in the EIS.

Table 5 Avoidance and mitigation measures (planning and land status)

Proposed mitigation measures	Stage of implementation
Concrete and steel structures have been selected for the transmission line poles to minimise the overall visual impact.	Construction.

3.1.4. Scoping document requirements

The table below details the risks associated with planning and land status as defined in the EIS.

Table 6 Scoping document requirements: residual planning and land status risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impact of powerlines upon adjacent land uses identified as “approach routes” within NCA Designates areas.	Low	Possible	Minor	Low
Potential impact to property values.	Low	Possible	Minor	Low

3.2. Traffic and Transport

The Project is primarily located within the road reserves of the Monaro Highway, Hindmarsh Drive and Canberra Avenue. Where necessary, existing access tracks will also be used to access transmission line easements.

A Traffic and Parking Impact Assessment (TPIA) was prepared by GHD in July 2021 (Appendix G of the EIS) and forms the basis of the assessment of traffic and transport impacts at construction and operational stages of the Project.

The TPIA included a desktop assessment of the existing road network and traffic conditions, traffic volumes, crash data, public and active transport, construction activities and traffic implications during construction and operation of the Project.

3.2.1. Impacts

Potential impacts identified in the EIS in relation to traffic and transport during construction and operation are summarised below.

Construction:

- additional access points to each of the transmission line pole structures for maintenance purposes;
- partial Lane closures during conductor stringing across Monaro Highway;
- partial lane closure of Canberra Avenue and Hindmarsh Drive during delivery of poles and other heavy equipment;

- increased traffic generation from equipment deliveries, earthworks, concrete deliveries, construction worker vehicles;
- bus service disruptions to Canberra Avenue; and
- disruptions to on-road cycle routes at Canberra Avenue and Hindmarsh Drive.

Operation:

- traffic generated by the proposal for maintenance purposes - limited to Evoenergy staff and associated contractors.

3.2.2. Findings

The EIS highlights that most traffic and transport impacts will be temporary in nature, occurring during the construction phase. The operation of the transmission line is not expected to result in ongoing or permanent traffic and transport impacts.

The impacts identified in the TPIA were assessed in relation to:

- traffic generation;
- traffic impacts;
- car Parking;
- public Transport: and
- pedestrian and bicycle riders.

These impacts are addressed as follows in accordance with the two main phases of the Project:

Construction:

The EIS investigated the impacts of traffic and transport impacts during the construction phase of the Project. A specialist assessment was conducted to ascertain the extent of the potential impacts and has proposed mitigation measures to either remove, mitigate, or reduce impacts. Mitigation measures, such as temporary traffic management plans (TTMP), have been committed to in the EIS and will be implemented as part of a Construction Environmental Management Plan (CEMP).

Operation:

The majority of likely traffic and transport impacts are limited to the construction stage and will be staggered as the proposal progresses. The TPIA concluded that there will be minimal traffic and transport impacts during operation. During inspections and associated maintenance works, mitigation measures such as temporary traffic management measures have been committed to and are to be undertaken in accordance with a TTMP that has been approved by the relevant road authority.

3.2.3. Mitigation and avoidance

Table 7 details the avoidance measures associated with traffic and transport as proposed in the EIS. A complete table of mitigation measures is available at section 7 of the EIS.

Table 7: Avoidance and mitigation measures (traffic and transport)

Proposed mitigation measures	Stage of implementation
<p>A Traffic Management and Control Plan (TMCP) (incorporating a Temporary Traffic Management plan (TTM)) is to be prepared prior to the commencement of works with site induction for construction personnel being undertaken to outline the requirements of the TMCP/TTM.</p> <p>Access to the surrounding public road network will be maintained throughout the construction period. Vehicles will be permitted to travel past the worksite with traffic signage in accordance with the TMCP/TTM incorporating Traffic Control Plan (TCP) to be developed in accordance with <i>AS1742.3 – Traffic Control for Works on Roads and the relevant authority guidelines by accredited personnel</i>.</p> <p>The aim of the TMCP/TTM is to maintain the safety of all workers and road users within the vicinity site and the following are the primary objectives:</p> <ul style="list-style-type: none"> • To minimise the impact of the construction vehicle traffic on the overall operation of the road network. • To provide continuous, safe and efficient movement of traffic for both the general public and construction workers. • Installation of appropriate advance warning signs to inform users of the changed traffic condition. • To provide a description of the construction vehicles and the volume of these construction vehicles accessing the construction site. • To provide information regarding the changed access arrangement and also a description of the proposed external routes for vehicles, including the construction vehicles accessing the site. • Establishment of a safe pedestrian environment in the vicinity of the site. 	<p>Pre-construction and Construction</p>
<p>The construction contractor intending to use any part of a road or road related area such as a footpath will need to apply to TCCS for the authorisation of a TTM plan with construction to be coordinated with TCCS in compliance with the plan.</p> <p>The TTM plan is to document the authorisation to install, display or interfere with, change or remove traffic control devices (TCDs), temporary TCDs and other features. The</p>	<p>Pre-construction and Construction</p>

<p>TTM plan must be prepared by a qualified person and must include details on:</p> <ul style="list-style-type: none"> • The start date and end date of works. • The extent of the proposed work area. • TCDs, including temporary devices, that are to be installed, removed or altered. • The licence number of the person who prepared the plan. 	
<p>In addition to a TTM plan, the construction contractor will need to apply for:</p> <ul style="list-style-type: none"> • Work approval – for any occasion when work will occur on public unleased land including the implementation of measures included within the TTM plan. • Approval to temporarily close a public road or use a closed public road. 	Pre-construction and Construction
<p>The TMCP/TTM is to include management measures for:</p> <ul style="list-style-type: none"> • wet weather • pedestrians and bicycle riders • general traffic • bus transport 	Pre-construction and Construction
<p>Key site access would be identified with “Truck turning” signs to advise motorists of changes on the road network or vehicle movements to/from the site. Additionally “Road workers” symbolic and associated signage would be provided to inform motorists of the impending works within and adjacent to the roads and associated workers.</p>	Pre-construction and Construction
<p>Site access is to be restricted to authorised personnel only and existing employees on site. Pedestrian access to and around the site is to be maintained at all times.</p> <p>Within the site pedestrian travel paths are to be maintained to key areas such as construction entrances and be free from trip hazards.</p> <p>The TMCP, to be developed by the contractor, is to include measures to manage risks to cyclists along the adjoining road network to the Project area.</p>	Pre-construction and Construction
<p>Lane closures should be undertaken outside the road network peak periods with the appropriate signage and traffic control.</p>	Pre-construction and Construction
<p>Consideration would be given to the proximity of workers to the through traffic movement, with roadwork speed reduction in place if workers are proximate to high-speed areas.</p>	Pre-construction and Construction

<p>Vehicles would access the site via the construction traffic routes identified in Section 5.6.4.</p> <p>Peak heavy vehicle traffic movements would be minimised, where possible, during the AM and PM peak hour and during the middle of the day on the weekend, when higher traffic volumes occur within the road network.</p>	Pre-construction and Construction
<p>Encouraging carpooling between workers will decrease traffic activity and parking demand.</p> <p>Parking for construction workers is provided within the site. Parking on the public road network is not to occur, with the exception of off-road parking when working in road reserve areas.</p>	Pre-construction and Construction
<p>During inspections and associated maintenance, appropriate temporary traffic management is to be applied with application and approval of the TTM to the road authority. The TTM is to consider the safety to workers and public, accessibility for all road users around the works site and the associated amenity to minimise delays to traffic (including pedestrians and cyclists).</p>	Operation

3.2.4. Scoping document requirements

The table below details the risks associated with traffic and transport as defined in the EIS.

Table 8 Scoping document requirements: residual traffic and transport risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Increased traffic congestion and reduced road safety during construction	Medium	Possible	Moderate	Medium
Changes to existing access	Very low	Unlikely	Minor	Very low

3.3. Utilities

The Project will extend 3.6km of high voltage powerlines from the existing East Lake-Gilmore 132 kV line on the Monaro Highway to a new substation at Harman.

The transmission line will replace an existing 11kV distribution line that runs along Canberra Avenue as part of the broader ACT network. The EIS states that the 11kV line will be relocated as part of a separate project.

The new electricity zone substation to be constructed at Harman will also require separate assessment and approval from the NCA.

3.3.1. Impacts

Potential impacts identified in the EIS in relation to utilities are summarised below:

- potential damage to existing infrastructure during construction (and associated safety risks); and
- disruption to services and utilities.

3.3.2. Findings

A Dial-Before-You-Dig (DBYD) request was undertaken as part of the geotechnical investigations conducted to inform the concept design for the proposal (Appendix H of the EIS). The EIS documentation states that the DBYD found a range of existing utilities located within the study area. These services include electrical (both network and street light cables), water supply mains, sewer, high pressure gas mains (the Canberra Primary Main), stormwater, and telecommunications.

The DBYD results, including the results for the Canberra Primary Main (CPM), are provided in Appendix H of the EIS. The EIS notes that Evoenergy has a standing agreement and guideline with Jemena, the ACT gas network provider, to be implemented during construction in relation to the CPM. A number of recommended conditions were also provided by Jemena following referral of the Draft EIS. Jemena's conditions are included in Part 6 of this Report.

The geotechnical investigations also included bore hole drilling at each proposed pole location. No other utilities were encountered during the investigations and the EIS states that it is not anticipated that any existing utilities will require relocation. Mitigation measures proposed in the EIS include a repeat DBYD, which will be conducted prior to construction commencing.

The EIS notes that an Electrical Hazard Interference assessment was also conducted by GHD in July 2021 to ensure that induced and transferred voltages to existing assets are within the allowable limits as stipulated in the relevant Australian Standards.

3.3.3. Mitigation and avoidance

Table 9 details the avoidance measures associated with utilities as proposed in the EIS.

Table 9 Avoidance and mitigation measures (utilities)

Proposed mitigation measures	Stage of implementation
The location of existing utility services is to be confirmed by the construction contractor during the detailed design of the Project and in consultation with the relevant utility provider.	Detailed design and Pre-construction
Prior to commencing detailed design, the DBYD will be conducted again to verify the locations of the utilities and services. During the detailed design process necessary clearance distances as per Australian and Evoenergy standards shall be determined and provided to utility and service providers as necessary.	Pre-construction and Construction

Site supervision by the utility and service providers would be included as required during construction.	
The proponent must consult with Canberra Airport for approval of any crane/s to operate on the site.	Construction
Repeat the DBYD prior to construction commencing which may result in specific operating procedures around particular utilities such as: <ul style="list-style-type: none"> For all works in the vicinity of High-Pressure Gas Mains arrange for a Jemena Representative to attend and supervise all excavations. All construction works in vicinity to the Canberra Primary Main, High Pressure Gas Main and fibre optic services (where applicable) will be in consultation with the relevant stakeholders. Adherence to minimum clearances for assets dictated by relevant utility providers Guideline to designing, constructing and operating around existing AS2885 Natural Gas Pipelines. On site attendance by owners of certain assets to identify locations. 	Pre-construction
Utilise the 'Work Near Underground Assets Guideline'.	Pre-construction and Construction

3.3.4. Scoping document requirements

The table below details the risks associated with utilities as defined in the EIS.

Table 10 Scoping document requirements: residual utilities risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impacts to existing infrastructure during construction.	Low	Unlikely	Minor	Very low
Impact to existing bores and water infrastructure within the Project footprint.	Low	Unlikely	Minor	Very low

3.4. Materials and waste

Construction, maintenance activities and resource use associated with the Project are anticipated to generate several different waste streams throughout the construction and operational phases, including:

- material packaging and off-cuts;
- excavated spoil;
- vegetation;

- concrete;
- conduits and cables from protection of utilities;
- oily rags and waste oil;
- general office waste;
- sewage from construction site;
- paper, cardboard, plastics, glass and other recyclable materials; and
- redundant sediments and erosion control materials.

3.4.1. Impacts

The EIS describes the following key material and waste impacts associated with the Project.

Construction:

- excess spoil;
- green waste from vegetation clearing (where green waste cannot be mulched and used on site for the landscaping works);
- packaging materials associated with items delivered to the site, such as pallets, crates, cartons, plastics, and other packaging materials;
- wastes produced from the maintenance of construction plant and equipment, including liquid wastes from cleaning, repairing and maintenance;
- wastes from installation of the insulators, hardware, earth wire support, conductors, climbing safety rail, stringing rollers, and scrap rope;
- conduits and cables from protection and/or relocation of utilities (if required);
- waste material resulting from any on-site spillage and subsequent clean-up of fuels/oils;
- sewage wastes generated through the use of worker's facilities at the construction compound;
- redundant erosion and sediment controls would also become waste during construction and site reinstatement; and
- general wastes, such as paper, cardboard, beverage containers and food wastes, generated by workers at construction facilities.

Operation:

- clearing of existing or new vegetation if it encroaches on clearances that are required to be maintained around the new conductors; and
- replacement/repair of aging or damaged components (typically insulators, broken conductor, or other broken hardware).

3.4.2. Findings

The EIS states that construction is expected to generate minimal quantities of waste. The anticipated waste will be removed from construction areas at the end of each day or temporarily stockpiled at the construction compound sites. All waste will be disposed of at an appropriately licensed waste facility. Any excess materials following construction would be removed from site for either re-use, recycling, or disposal at an approved disposal site.

The EIS anticipates that the main activity associated with operation of the Project includes visual inspections and maintenance activities. Therefore, it is considered that there will be limited volumes of waste generated and minimal resources used during operation. The primary source of waste would include vegetation from tree trimming, damaged components that cannot be repaired and packaging associated with replacement components.

Mitigation measures, such as a Waste Management Plan have been committed to in the EIS and will be implemented as part of a Construction Environmental Management Plan (CEMP).

3.4.3. Mitigation and avoidance

Table 11 details the avoidance measures associated with materials and waste as proposed in the EIS.

Table 11 Avoidance and mitigation measures (materials and waste)

Proposed mitigation measures	Stage of implementation
<p>A Waste Management Plan (WMP) is to be prepared and implemented as part of the CEMP.</p> <p>The WMP should provide specific guidance on measures and controls to be implemented to support minimising the amount of waste produced and appropriately handle and dispose of unavoidable waste. It would also address the importation of waste to the site for use in undertaking the Project.</p> <p>The WMP would include, but not necessarily be limited to:</p> <ul style="list-style-type: none"> • measures to avoid and minimise waste associated with the Project; • classification of wastes generated by the Project and management options (re-use, recycle, stockpile, disposal); • classification of wastes received from off-site for use in the Project and management options; • procedures for storage, transport, and disposal; and • monitoring, record keeping and reporting, including any documentation management obligations arising from resource recovery exemptions. 	Pre-construction and Construction
Additional clean fill material are to be sourced if required from appropriate local sources.	Pre-construction and Construction
Cleared weed-free vegetation is to be chipped/cut up and reused on site.	Pre-construction and Construction
Weed management measures will be implemented to control spread, including immediate removal (without stockpiling) and disposal at appropriate weed disposal facilities.	Pre-construction and Construction
Waste material will be removed from the site regularly, before receptacles are full, and prior to and on completion of works.	Pre-construction and Construction

Working areas are to be maintained, kept free of rubbish, and cleaned up at the end of each working day.	Pre-construction and Construction
Garbage receptacles are to be provided at the site compound and recycling of materials encouraged. There will be no disposal or re-use of construction waste on to other land.	Pre-construction and Construction
Waste must not be burnt on-site.	Pre-construction and Construction
Materials and products with a recycled content will be used where that material or product is cost and performance effective.	Pre-construction and Construction
Portable toilets will be provided for construction workers and will be managed by the service provider to ensure the appropriate disposal of sewage.	Pre-construction and Construction
<p>All soils requiring off-site disposal will be assessed in accordance with EPA Information Sheet 4: Requirements for reuse and disposal of contaminated soil in the ACT.</p> <p>Soils should be classified (where possible) <i>in-situ</i> prior to excavation or when stockpiled during excavation, depending on available time and room for stockpile areas. Any unexpected contamination finds would follow the same classification procedures. Material that is classified as Virgin Excavated Natural Material (VENM) may be used in accordance with EPA's Environment Protection Contaminated Sites Information Sheet 10.</p>	Pre-construction and Construction
<p>Potential hazards associated with construction workers or general persons in areas used for stockpiling materials will be managed by the contractor.</p> <p>This includes, but is not limited to:</p> <ul style="list-style-type: none"> • Stockpile signage including warning signs • Fencing and bunting • Regular communication during toolbox talks • Prevention of access for non-authorised persons 	Pre-construction and Construction
Any excess contaminated excavated material that is not able to be reused on site is to be transported to a site legally able to accept that material, following appropriate classification and approvals in accordance with EPA requirements, including EPA Information Sheet 4: Requirements for reuse and disposal of contaminated soil in the ACT.	Construction
Where possible excavated spoil will be reused on site as backfill.	Construction

3.4.4. Scoping document requirements

The table below details the risks associated with planning and land status as defined in the EIS.

Table 12 Scoping document requirements: residual materials and waste risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Increase waste to landfill during construction and demolition.	Low	Possible	Minor	Low
Hazards created by stockpiling of materials within the construction site.	Low	Unlikely	Minor	Very low

3.5. Soils and geology

The Project has the potential to impact on adjoining land as a result of sediment and erosion. During construction, there is potential for sediment and nutrient laden runoff from areas disturbed by construction to impact water quality in downstream waterways.

The EIS identifies the following activities associated with the Project as having the highest risk of sediment and erosion impacts:

- works near creeks and stormwater drainage lines;
- vegetation removal;
- general earthworks, including stripping of topsoil, excavation of material or filling of material;
- stockpiling of topsoil and vegetation;
- transportation of materials;
- movement of heavy vehicles across exposed earth; and
- mobilisation of unconsolidated materials if disturbed surfaces are not stabilised or successfully revegetated following construction.

3.5.1. Impacts

The EIS describes the following unmitigated soil and geology risks associated with the Project.

Construction:

- Excavated spoil determined not to be appropriate for reuse on site may require additional spoil imported to the site to make up any identified deficit.
- Improper management and handling of stockpiled materials may lead to the need to dispose of materials rather than being able to reuse the materials during construction.
- Sediment and nutrient laden runoff from areas disturbed by construction may impact on water quality in downstream waterways.
- Increased waste amounts may occur from improper practices such as poor fill management.
- Contaminated or hazardous waste may not being correctly disposed of.

- There may be a release of contaminants from construction plant and equipment into underlying soils and groundwater.
- Contaminated sediments from chemical spills may run into waterways.

Operation:

- The potential for the access tracks to be impacted by wind and water erosion during operation.
- Accidental spillage of hazardous materials may occur during the operational stage, mainly associated with maintenance activities.

3.5.2. Findings

The EIS includes a geotechnical investigation prepared by Coffey Services Australia Pty Ltd in May 2020 (Appendix I of the EIS). A Contaminated Land Preliminary Site Investigation (PSI) was also conducted as part of the preliminary environmental assessment for the Scoping Document application submitted by WSP in July 2019.

Information from the geotechnical investigation report and the PSI were used to inform the soils and geology assessment in the EIS.

The geotechnical investigations included a desktop assessment and site investigations. The site investigations included a site walkover and intrusive investigation fieldwork, between 19 February and 01 April 2020. 32 cored boreholes were excavated at the proposed pole locations to conduct the following assessment of the ground conditions:

- soil conditions, including soil types, strength, and consistency;
- assess rock conditions, including strength, weathering, and significant defects;
- groundwater levels, if encountered; and
- comment on excavability for piling excavation methods.

Groundwater inflow was not encountered during drilling of any of the boreholes to the depths investigated; and, based on the ground conditions encountered, the investigations also confirmed that excavation of soil strength materials can likely be achieved by standard earth moving equipment such as a piling rig with auger attachment.

The PSI identified the following areas of environmental concern in the study area:

- potentially uncontrolled fill used along road verges;
- waste metal/oils in the road verge off Hindmarsh Drive; and
- residual building materials following building demolition in the Harman substation site/other Defence activities close to the Harman substation site.

The ground disturbance intended for the actual construction of the transmission lines will be minimal and spread across various locations. Therefore, during the construction process, the EIS considers that the nature of the works can be easily managed as separate components to ensure effective management of identified areas of environmental concern.

The EIS states that the following plans will be included in the CEMP to appropriately manage impacts that have been identified as being associated with soils and geology:

- Sediment and Erosion Control Plan
- Unexpected Finds Protocol
- Spoil and Waste Management Plan

Operational impacts such as maintenance of access tracks are also described in the EIS as being mitigated by ensuring works are undertaken in accordance with the *Best Practice Guidelines for Fire Trail Construction and Maintenance* (Bushfire Coordinating Committee 2007); and the potential for accidental spillage of hazardous materials, mainly associated with maintenance activities, will be managed through Evoenergy standard operating procedures.

3.5.3. Mitigation and avoidance

Table 13 details the avoidance measures associated with soils and geology as proposed in the EIS.

Table 13 Avoidance and mitigation measures (soils and geology)

Proposed mitigation measures	Stage of implementation
<p>A Sediment and Erosion Control Plan would be prepared as part of the CEMP.</p> <p>All erosion and sediment control measures are to be designed, implemented, and maintained in accordance with the “<i>Environment Protection Guidelines for Construction and Land Development in the ACT</i>” (ACT Environment Protection Authority, 2015).</p> <p>Erosion and sediment mitigation measures would be installed and maintained for the duration of the construction period.</p>	Pre-construction and Construction
<p>An Unexpected Finds Protocol (UFP) would be prepared as part of the CEMP that includes:</p> <ul style="list-style-type: none"> procedures for the identification, assessment, management, validation, and disposal of potential contamination; and contractor induction procedure. 	Pre-construction and Construction
<p>Storage of construction materials and stockpiles, fuels and chemicals is to be located away from drainage lines and include controls such as bunding to prevent leakage.</p>	Pre-construction and Construction
<p>Vehicles and machinery must be properly maintained to minimise the risk of fuel/oil leaks.</p> <p>Routine inspections of all construction vehicles and equipment are to be undertaken for evidence of fuel/oil leaks.</p> <p>All fuels, chemicals and hazardous liquids must be stored within an impervious bunded area in accordance with Australian standards and EPA guidelines.</p> <p>Any on-site refuelling must occur in a designated area within the construction compound with impervious surfaces.</p>	Pre-construction and Construction

Disposal and management of potentially occurring contaminated waste will be managed as per the Unexpected Finds Protocol, and EPA advice. No soil is to be disposed from the site without EPA approval.	Construction
Any dewatering activities are to be undertaken in a manner that prevents pollution of waters.	Construction
Access tracks are to be constructed and maintained in accordance with the <i>Best Practice Guidelines for Fire Trail Construction and Maintenance (Bushfire Coordinating Committee, 2007)</i> .	Construction and Operation

3.5.4. Scoping document requirements

The table below details the risks associated with soils and geology as defined in the EIS.

Table 14 Scoping document requirements: residual soils and geology risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impact on adjoining land as a result of sediment and erosion	Low	Unlikely	Minor	Very low
Site contamination, such as liquid contaminant spills from construction machinery	Low	Unlikely	Minor	Very low
Encountering contaminated land	Low	Possible	Minor	Low

3.6. Landscape and visual impact

The transmission line alignment is proposed to follow the road reserves of Hindmarsh Drive, Monaro Highway and Canberra Avenue, all of which are arterial roads where similar infrastructure already exists. The adjacent land use for the most part consists of broadacre properties used for agricultural grazing. Other land uses include industrial areas on the northern side of Canberra Avenue and parks and recreation on the northern side of Hindmarsh Drive.

Canberra Avenue and the Monaro Highway are Designated Areas under the National Capital Plan (NCP) and therefore fall under the administration of the NCA. These roads are subject to multiple land use categories under the NCP, including 'national and arterial roads' and 'inter-town public transport system.'

In addition, both of these roads are considered by the NCA as Approach Routes and are subject to the NCA 'main avenue and approach routes' (MAAR) design policies. The Project will be subject to separate approval from the NCA for land identified as Designated Area.

The terrain surrounding the Project area is described in the EIS as gently undulating with steeper slopes near the intersection of Hindmarsh Drive and Canberra Avenue. The highest elevation is 612 m AHD near the intersection of Hindmarsh Drive and Canberra Avenue. The lowest point within the study area is 562 m AHD at the junction between Jerrabomberra Creek and Hindmarsh Drive.

The main watercourse within the study area is Jerrabomberra Creek with its associated floodplain, which crosses the Project alignment on Hindmarsh Drive. There is an additional watercourse and depression crossing the alignment on Canberra Avenue which drains north to Molonglo River.

The prominent existing landscape and visual features within and adjacent to the Project area are the vegetated hills and mountain ranges to the south, south-west and south-east. The EIS identifies that from Hindmarsh Drive views of Black Mountain, Isaacs Ridge, Wanniasa Hill and Red Hill can be obtained; and from Monaro Highway, Mount Ainslie, Mount Pleasant and Mount Majura can be seen to the north.

The EIS notes that the layout and design of Canberra has utilised the natural topography, incorporating the hills surrounding the city as a scenic backdrop. These have been incorporated into the design as much as the lake, foreshore, buildings and roads. For this reason, the planning and management of the inner hills as open space areas are central to maintaining and enhancing the character of Canberra.

3.6.1. Impacts

Visual and landscape impacts were considered in the EIS in relation to land use, built form, landform, topography, hydrology, vegetation, and historical features.

The following landscape and visual impacts were identified in the EIS:

Construction:

- the presence of fencing, barricades and lighting at construction zones, site compounds and administration buildings;
- the temporary presence of work crew, vehicles and machinery at designated laydown areas and materials storage at designated stockpile areas;
- visual amenity would be temporarily interrupted by installation equipment or vehicles;
- stockpiling of materials - this will be limited due to the progression of construction along the alignment;
- the stockpiling of spoil excavated from the pole holes – this will be minor and temporary, to be reused as backfill following the standing of poles;
- construction vehicles moving along existing roads enroute to the construction site;
- dust generated as a result of construction works which may have a visual impact;
- lighting impacts from construction activities - not likely to occur as construction would typically be undertaken during the hours of 7:00 am to 6:00 pm. Work would only be undertaken outside of these hours for emergencies; and
- vegetation clearing along the Project alignment to facilitate construction and ensure adequate clearances are enabled for the transmission line works.

Operation:

- vegetation clearing if it encroaches on clearances of the new transmission line.

- Ongoing visual impacts to the existing landscape and rural broadacre areas including 7 key viewpoints that were identified in the EIS.

3.6.2. Findings

Impacts on the landscape character and visual viewpoints were a matter considered during the EIS process. The EIS includes a Landscape and Visual Impact Assessment (LVIA – Appendix J of the EIS) that considered the visual impact during construction and the impacts of the permanent infrastructure in the landscape.

The LVIA found that the Project site is located along road reserves surrounded mostly by a highly modified landscape of undulating farmland. Within the broader region of Canberra, there are prominent geographical features and natural ridgelines which make a significant contribution to the landscape character of Canberra. Such features include Isaacs Ridge, Mount Mugga, Mount Jerrabomberra, Cuumbeun, Mount Ainslie, Mount Majura and Mount Pleasant. The LVIA notes that these landmarks are considered to be important geographic features that should be carefully managed to preserve their visual integrity. Consideration of visual impact upon the main approach routes into Canberra, such as Monaro Highway and Canberra Avenue were also identified as important geographic features in the LVIA.

The LVIA found that the landscape impact of the Project would be low to negligible for the landscape character zones that were assessed. The Project alignment would, for the most part, be located within road reserves with minimal modifications to the existing landscape.

The LVIA also considers that there will be minimal visual impacts of the Project on road users using approach routes, given the presence of roadside infrastructure such as light poles, signage and the existing 11kV transmission line. The highest visual impacts within the study area were assessed as being located along the Monaro Highway when travelling south towards Tuggeranong.

Mitigation measures proposed in the EIS include the maintenance of vegetation buffers between site compounds and public roads and the reestablishment of vegetation, where possible. These mitigation measures would be particularly relevant during the construction phase of the Project. Concrete and steel transmission line poles have also been selected to minimise the overall visual impact compared to other options available, such as lattice towers.

A Landscape Management and Protection Plan (LMPP) has also been committed to in the EIS and will be implemented as part of a Construction Environmental Management Plan (CEMP).

The following figures provide a visual representation of what the transmission lines will look like from key visual points identified in the LVIA.



Figure 3: Artists impression of 132kV Transmission Line visual from Visual Point 1 - southbound entry ramp from Hindmarsh Drive onto Monaro Highway



Figure 4: Artists impression of 132kV Transmission Line visual from Visual Point 2 - southbound exit ramp from Monaro Highway onto Hindmarsh Drive



Figure 5: Artists impression of 132kV Transmission Line visual from Visual Point 3 - eastbound carriageway of Hindmarsh Drive



Figure 6: Artists impression of 132kV Transmission Line visual from Visual Point 4 - westbound carriageway of Hindmarsh Drive



Figure 7: Artists impression of 132kV Transmission Line visual from Visual Point 5 - northern side of the intersection of Hindmarsh Drive and Canberra Avenue

3.6.3. Mitigation and avoidance

Table 15 details the avoidance measures associated with landscape and visual as proposed in the EIS.

Table 15 Avoidance and mitigation measures (landscape and visual)

Proposed mitigation measures	Stage of implementation
<p>A Landscape Management and Protection Plan (LMPP) would be developed as part of the CEMP. The LMPP must detail, and number which trees are proposed for removal and demonstrate how the adjacent trees will be protected for the duration of works. The LMPP is required to be endorsed by TCCS prior to the commencement of any works on the site.</p> <p>If any trees proposed for removal are within unleased land, with the exception of the pest plants listed in Table 5.42, Evoenergy will need to contact TCCS via TCCS.UrbanTreesDDCoord@act.gov.au at least three weeks before the trees are scheduled for removal, so that arrangements can be made to provide them with the appropriate signage. The signs will need to be posted on the trees for a minimum of 14 days prior to them being removed, in line with Transport Canberra and City Services public notification process.</p>	Pre-construction
Reinstatement of access roads and construction site compounds will commence progressively post construction and will be undertaken as soon as practicable.	Pre-construction and Construction
Storage of construction materials will be minimised as far as practical.	Pre-construction and Construction
All temporary above ground infrastructure is to be removed at the completion of construction.	Pre-construction and Construction
<p>If any lighting is required, it would be managed in accordance with the requirements in <i>Australian Standard AS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting</i>.</p> <p>Generally lighting would be designed to minimise offset light spill.</p>	Pre-construction and Construction
Vegetation buffers will be maintained between site compounds and public roads wherever practicable.	Pre-construction and Construction
Where vegetation is cleared to make way for the construction work area, it is to be replaced with a similar species to the extent practical. This should be undertaken whilst maintaining the necessary safety clearances from the transmission poles.	Operation

3.6.4. Scoping document requirements

The table below details the risks associated with landscape and visual as defined in the EIS.

Table 16 Scoping document requirements: residual landscape and visual risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Visual impacts on approach routes and iconic visual features in the ACT	Medium	Likely	Minor	Medium
Visual disturbance caused by the temporary storage of machinery and materials along approach routes.	Low	Likely	Minimal	Low

3.7. Water quality and hydrology

The Project area is located in the Molonglo catchment, which extends from the Murrumbidgee River, just downstream of Uriarra Crossing, to the headwaters of Molonglo and Queanbeyan Rivers and Jerrabomberra Creek.

Jerrabomberra Creek runs in a north-south direction, intersecting the western portion of the proposed alignment, and flowing into the Molonglo River. The Molonglo River is located to the northeast and outside of the study area, running from the south-east to the north-west.

An unnamed watercourse and depression runs along the western boundary of Harman, crossing the proposed alignment at Canberra Avenue and flowing north to the Molonglo River. A series of drainage lines and ponds are also located within the study area, flowing into either Jerrabomberra Creek or the Molonglo River.

An image that clearly shows the site hydrology is provided at Figure 5.30 of the EIS.

3.7.1. Impacts

A summary of the water quality and hydrology impacts from investigations and modelling presented in the EIS are provided below.

The EIS identified the following activities associated with the Project as potential sources of water quality impacts on surrounding watercourses:

- increased sediment loads due to exposed soil transported to downstream watercourses during rain events;
- increased sediment loads due to discharge of sediment laden water from dewatering of excavations;
- increased concentrations of nutrients, metals, and other pollutants, transported via sediments to downstream watercourses or via discharge of water to watercourses;
- chemicals, oils, grease, and petroleum hydrocarbon spills from construction machinery directly polluting downstream watercourses; and
- gross pollutants (e.g. litter) from construction activities polluting downstream watercourses.

Impacts to water quality that may result from these activities include:

Construction:

- smothering of aquatic life and/or inhibiting critical processes (e.g. photosynthesis) of aquatic and riparian flora;
- impacts to breeding and spawning conditions of aquatic fauna;
- changes to water temperature due to reduced light penetration, or from discharge of water that is not at ambient temperature;
- impacts to downstream ecosystems such as wetlands, and Lake Burley Griffin; and
- increased turbidity and nutrient concentrations leading to a proliferation of nuisance aquatic flora.

Operation:

- changes in surface water flows could result in increased erosion and sedimentation impacts and could occur in areas that were not previously subject to such flows; and
- the addition of impervious surfaces may result in increased flow volumes and velocities, which also have the potential to increase erosion and sedimentation at discharge locations.

3.7.2. Findings

The EIS includes an assessment of water quality and hydrology impacts carried out by reviewing publicly available sources, including:

- ACTmapi data;
- Upper Murrumbidgee Catchment Health Indicator Program (Upper Murrumbidgee Waterwatch, 2019);
- aerial photographs, Geotechnical Investigation Report (Coffey, 2020);
- Flora and Fauna Assessment (Appendix D of the EIS); and
- the Scoping Document Application Report (WSP, 2019).

The assessment has also considered the 'ACT Water Strategy 2014–44: Striking the Balance'.

The EIS identifies potential negative impacts to downstream surface water and groundwater during construction and offers a range of mitigation measures to minimise this risk, including the preparation of an Erosion and Sediment Control Plan (ESCP) to be implemented as part of the CEMP.

The assessment of water quality and hydrology impacts included in the EIS found that impacts on hydrology are anticipated to be negligible, as the change in impervious areas during construction is considered to be minor within the context of the catchment. The assessment also anticipates that there will be negligible impacts on groundwater during construction and that any potential impacts would be mitigated through the safeguards and managements measures that have been proposed.

Given the change in impervious areas resulting from the proposal will be minor in nature, the EIS anticipates that operational impacts associated with water quality and hydrology will also be negligible.

3.7.3. Mitigation and avoidance

Table 17 details the avoidance measures associated with water quality and hydrology as proposed in the EIS. A complete table of mitigation measures is available at section 7 of the EIS.

Table 17 Avoidance and mitigation measures (water quality and hydrology)

Proposed mitigation measures	Stage of implementation
An Erosion and Sediment Control Plan would be prepared as part of the CEMP.	Pre-construction and Construction
Construction planning is to consider flood risk and locations of watercourses for all compounds and work sites.	Pre-construction and Construction
The site layout and staging of construction activities will avoid or minimise obstruction of overland flow paths and limit the extent of flow diversion required.	Pre-construction and Construction
Flood risk to be considered during construction. Monitoring of extreme rainfall or weather events should be undertaken as necessary, and construction works planned accordingly. No construction should be conducted in times of high-rainfall and flood risk to minimise the impacts of flooding on construction work and health.	Pre-construction and Construction
Maintain access to existing licensed bores and other water infrastructure (such as existing water filling standpipes), to be identified and avoided where possible as part of ongoing design refinement.	Detailed design and construction
There would be no refuelling of vehicles, plant and machinery within 40 m of a watercourse.	Construction

3.7.4. Scoping document requirements

The table below details the risks associated with water quality and hydrology as defined in the EIS.

Table 18 Scoping document requirements: residual water quality and hydrology risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impact on water quality due to potential erosion and sedimentation during and post-construction	Low	Unlikely	Minor	Very Low

3.8. Socio-economic and health

The EIS includes an assessment of socio-economic and health impacts. The assessment was carried out by reviewing publicly available sources, the Scoping Document Application Report prepared by WSP, and an EMF Impact Assessment prepared by GHD (Appendix K of the EIS).

The assessment considered the impact of temporary electrical outages upon critical services in proximity to the installation site, including:

- Medical services;
- Emergency services;
- Security services; and
- Critical care services, including services for vulnerable people.

The assessment also considered any impact (either perceived or actual) upon human health and safety as a result of exposure to electro-magnetic fields (EMF) and frequencies associated with high-voltage power lines.

3.8.1. Impacts

Services:

The EIS states that the proposal is not expected to adversely impact the power supply to any key critical services.

EMF:

The EIS notes that there are some industrial, commercial and rural residential areas within the wider vicinity of the study area, but considers it unlikely that there will be any significant socio-economic and health impacts as a result of the Project.

Whilst there will be short term impacts associated with the construction and long-term impacts associated with visual amenity, the EIS states that no temporary electrical outages are proposed during construction of the Project. Construction works would not be exposed to EMF from the Project because the line would not be energised during construction.

The EIS anticipates positive economic impacts as a result of the Project, including employment during construction as well as increasing network capacity to stimulate further economic growth. Therefore, social and economic impacts were not considered a key issue for this Project

3.8.2. Findings

Services:

The EIS states that the existing 11kV power line, which services the area, will operate throughout construction to maintain electricity supply to customers. This power line will be decommissioned following successful completion and commissioning of the proposal.

The EIS also notes that the end point for the 132kV power line is the 'end of the line' with respect to power needs in the area, reducing the risk of the proposal impacting on critical services. Therefore, the proponent's assessment found that the proposal is not expected to adversely impact the power supply to any key critical services.

EMF:

The EIS notes the presence of general public in the alignment for the proposal is very low. Therefore, the EMF exposure is anticipated to be negligible. The proponent's assessment found the maximum simulated value inside and outside the easement is less than the International Commission on Non-Ionizing Radiation Protection (ICNIRP) exposure limits for the occupational exposure and members of the public.

3.8.3. Mitigation and avoidance

Services:

As the Project is not expected to adversely impact the power supply to any key critical services, the EIS does not propose any specific mitigation measures.

EMF

The EIS notes that all simulated magnetic field and electric field values are less than the exposure limits recommended to workers and the public, as provided in ICNIRP (2010) guidelines. Because the proposed 132 kV line is compliant with the relevant standards, no mitigation measures are proposed to address EMF impacts.

Advice received from the ACT Health Protection Service states that any future developments near the transmission lines will be required to have appropriate set back distances in accordance with International Commission on Non-Ionizing Radiation Protection (ICNIRP) and Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) exposure standards.

3.8.4. Scoping document requirements

The table below details the risks associated with planning and land status as defined in the EIS.

Table 19 Scoping document requirements: residual socio-economic and health risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impacts upon critical service and electricity-dependent entities as a result of temporary losses in electricity supply.	Medium	Unlikely	Major	Medium
Impacts upon human health and safety as a result of electro-magnetic fields (EMF) and frequencies associated with high-voltage power lines.	Medium	Remote	Major	Low

3.9. Hazard and risk

Hazards and risks relate to both construction and operation phases of Project.

3.9.1. Impacts

The potential hazard and risk impacts identified in the EIS were:

Working near high voltage power lines

- Safety risks are increased when working near the existing Monaro Highway 132 kV transmission line due to the potential for electricity flashing over a gap which means a worker or piece of machinery can be some distance away and still be at risk.
- Aerial transmission lines swing in wind and sag due to heat. This movement must be allowed for in any clearance distance between the conductors and nearby infrastructure.
- Safety risks will also be increased during commissioning of the transmission line extension.

Electro-magnetic induction hazards

- Due to the significant electromagnetic fields present around energised high voltage transmission lines, voltages may be induced onto adjacent de-energised or non-commissioned electric lines. These voltages may be large enough to deliver potentially lethal electric shocks.

Earth potential rise

- Equipment that may be subjected to EPR must be insulated, isolated, bonded, or other approved measures taken to reduce the risk to a satisfactory level.

Bushfire

Construction:

- On-site Hot works (if any), such as metal grinding, cutting, and welding, at the Project site.
- Catalytic converter-fitted vehicle exhaust system contact with tall flammable grass.
- Sparks from metal on metal or rock friction during ground engaging machinery operation (earthworks works/hole boring works).
- Discarded cigarette butts from smokers.

Operation:

- Grass fire ignition caused by asset failure/electrical fault on the transmission network.
- Grass fire ignition caused by conductor clashing on the transmission network.
- Grass fire ignition caused by vegetation contact with the transmission network.
- Grass fire ignition and spread caused by lightning strike.
- Grass fire ignition and uncontrolled spread caused by electrocuted/ignited fauna.

3.9.2. Findings

The EIS states that the proponent's assessment of hazard risk was informed by Evoenergy procedures relating to safety risks, electromagnetic induction, EPR and Bushfires. The following assessments were also undertaken by GHD Pty Ltd:

- Bushfire Assessment Report (Appendix L of the EIS)
- EMF Impact Assessment (Appendix M of the EIS)

The EIS states that Evoenergy has in place Electrical Safety Rules that specify the safe working requirements and minimum standards for workers working on, near or in the vicinity of Evoenergy’s electrical apparatus within the ACT and the surrounding region.

Evoenergy’s compliance with these Electrical Safety Rules assists in meeting obligations imposed by the *Work Health and Safety Act 2011*, the *Utilities (Technical Regulation) Act 2014* and the electricity distribution licence issued to Evoenergy by the Independent Competition and Regulatory Commission.

In accordance with the above requirements, the proposed transmission line will:

- be designed in accordance with AS 7000:2016 *Overhead line design* noting that public safety is a key objective in overhead line design;
- form part of Evoenergy’s electricity supply network and will be subject to the safety regulation requirements of the Utilities Act 2000, and the Utilities (Technical Regulation) Act 2014; and
- be subject to the same safety management, network operation and maintenance system that other 132kV transmission lines in Evoenergy’s network are subject to.

ACTMAPi confirms that the proposal is located within a bushfire prone area. The EIS found that the road reserve containing the proposed transmission line route, and the adjacent lands are mapped as bushfire prone on account of the grassland vegetation cover.

The EIS has assessed the risk of grass fire ignition and uncontrolled spread for both construction and operation phases of the development. The risk for both phases was assessed as low.

A number of bushfire prevention and protection measures have been proposed for the Project. The EIS considers that Implementation of these mitigation measures enables the low risk level to be maintained throughout the construction and operation of the proposal.

3.9.3. Mitigation and avoidance

Table 20 details the avoidance measures associated with hazard and risk as proposed in the EIS. A complete table of mitigation measures is available at section 7 of the EIS.

Table 20 Avoidance and mitigation measures (Hazard and Risk)

Proposed mitigation measures	Stage of implementation
<p>A Safety Management Plan will be prepared prior to construction commencing that includes a safety risk assessment and recommended mitigation measures.</p> <p>The Safety Management Plan is to include Safe Work Method Statements (SWMS) to be prepared prior to construction to minimise and manage hazards associated with construction.</p>	Preconstruction and Construction
<p>Safety and environmental risk assessments, SWMS and procedures to be regularly reviewed and updated throughout construction to identify, report and respond to any new hazards/risks for activities, such as:</p> <ul style="list-style-type: none"> • working near utilities 	Preconstruction and Construction

<ul style="list-style-type: none"> • working with electrical infrastructure (prevention of electrocution); and • management of holes and trenches on site. 	
<p>The safe approach distances in the Electrical Safety Rules are based on an 'exclusion zone' principle. This defines an area around the electrical apparatus into which no part of the worker, mobile plant or object (other than approved insulated or covered objects) may encroach unless in accordance with Sections 8 and 9 of the Electrical Safety Rules.</p> <p>When working at these distances, work practices must be established to ensure workers, mobile plant and unapproved objects do not encroach on the safe approach distances as follows:</p> <ul style="list-style-type: none"> • Table 2.1 of the Electrical Safety Rules provides Safe Approach Distance (mm) to Overhead Energised Conductors for Ordinary, Instructed and Authorised Workers • Table 2.2 of the Electrical Safety Rules provides Safe Approach Distance (mm) to Energised Conductors for CAVC Workers • Table 2.3 of the Electrical Safety Rules provides Safe Approach Distance (mm) to Underground Cables for Ordinary, Instructed and Authorised Workers • Table 2.4 of the Electrical Safety Rules provides Safe Approach Distance (mm) to Overhead Energised Conductors for Vehicles and Mobile Plant. 	Preconstruction and Construction
<p>Unnecessary approaches to electrical apparatus must be avoided and if it is necessary to approach electrical apparatus this must be kept to a minimum and must be restricted to the period required to perform the work.</p>	Preconstruction and Construction
<p>Suitable precautions must be taken by persons to avoid the dangers of induction when carrying out work on isolated electrical apparatus that is located near energised conductors. Additional working earths, short circuits and bonds must be applied where necessary to ensure equipotential conditions are maintained under all conditions.</p>	Preconstruction and Construction
<p>Equipment that may be subjected to earth potential rise must be insulated, isolated, bonded, or other approved measures taken to reduce the risk to a satisfactory level.</p> <p>Further assessment and mitigation will be undertaken to reduce EPR risks at poles 1, 2, 3, 4 13, and 14 as indicted in the EPR assessment (July 2021) at Appendix M of the EIS.</p>	Preconstruction and Construction

A Bushfire Prevention and Response Plan must be prepared as part of the CEMP, providing relevant information for fire and emergency service responders and Project personnel.	Preconstruction and Construction
Development and implementation of a 'Hot Works' permit system which prohibits all hot works on days of Severe, Extreme or Catastrophic Fire Danger Rating, and provides prudent hot work risk control at lower levels of Fire Danger.	Preconstruction and Construction
For all work involving Hot Works, mandate requirements for Job Safety Analysis to incorporate Hot Works risk assessment and controls.	Preconstruction and Construction
For all work, mandate requirements for Job Safety Analysis to incorporate fire ignition risk assessment and controls for prevention of fire ignition in grass by vehicle exhaust systems.	Preconstruction and Construction
For all work involving earthmoving machinery or hole boring operations, mandate requirements for Job Safety Analysis to incorporate fire ignition risk assessment and controls for prevention of grass fire ignition.	Preconstruction and Construction
Construction to conform with AS7000:2016 compliant transmission line design.	Preconstruction and Construction
<p>Access to identified fire trails, tracks and property access gates would be maintained for any and all ACT Fire and Rescue Emergency vehicles at all times during the construction phase.</p> <p>Where works prevent travel along existing fire trails or access ways, alternate access, constructed to Rigid Float standard in accordance with the ACT Bushfire Management Standards (ESA 2014) must be provided to ensure access for firefighting operations is maintained.</p> <p>ACT Fire and Rescue Access requirements:</p> <ul style="list-style-type: none"> – ACTF&R Pumper dimensions: <ul style="list-style-type: none"> • Length: 8.1m • Width: 2.5m • Height: 3.2m • Weight: 14 tonnes • Turning Circle: 18m – Compressed Air Foam System Appliance: <ul style="list-style-type: none"> – Length: 10.5m – Width: 3.2m (with mirrors) – Height: 3.7m 	Preconstruction and Construction

<ul style="list-style-type: none"> – Weight: 23 tonnes – Turning circle: 21.2m <p>All emergency access gates are to be fitted with standard Fire Brigade locks.</p>	
<p>Demolition and asbestos management must be undertaken in accordance with the <i>Building Act 2004</i>, <i>Dangerous Substances Act 2004</i>, <i>Work Health and Safety Act 2011</i> and Work Health and Safety (How to Safely remove asbestos) Code of Practice 2015 (ACT Government 2016).</p> <p>ACT Fire and Rescue request notification on commencement and completion of all significant asbestos removal. Notification can be made to the ACTF&R Communication centre on 62004111.</p>	Construction
<p>The proposal is to be incorporated into an Evoenergy Asset Management Plan applying to 132kV transmission lines, and Vegetation Management (Bushfire and Environmental) Works Plan.</p>	Operation

3.9.4. Scoping document requirements

The table below details the risks associated with hazard and risk as defined in the EIS.

Table 21 Scoping document requirements: residual hazard and risk risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impacts upon construction workers and service personnel as a result of exposure to high-voltage power lines	Medium	Remote	Catastrophic	Medium
Risks associated with electromagnetic induction upon human health and safety	Medium	Remote	Moderate	Very low
Risks associated with Earth potential rise (EPR) upon human health and safety	Very high	Unlikely	Catastrophic	High
Potential risk of bushfire during construction.	Very low	Unlikely	Minor	Very low
Potential for transmission lines to cause bushfires.	Very low	Unlikely	Minor	Very low

3.10. Ecology and the Natural Environment

The EIS includes an Ecological Assessment prepared by GHD (Appendix E and Appendix N of the EIS) which investigated flora and fauna located within and adjacent to the Project area in relation to matters protected under the *Nature Conservation Act 2014* (NC Act) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The assessment identifies potential direct and indirect impacts associated with ecology and natural environment during construction and operation phases of the Project and proposes a number of mitigation measures to be implemented to manage the impacts.

The following list summarises the threatened species and ecological communities that have been identified in the EIS as potentially present, or likely to occur, within the transmission line alignment and surrounding area. The EIS notes that of the species and communities listed, only Striped Legless Lizard (SLL) has been recorded within the Project area.

- The critically endangered ecological community Natural Temperate Grassland (NTG) occurs in five patches to the south of Canberra Avenue, with a frontage of approximately 360 m along the Project area. It does not occur within the Project area itself, which is cleared and regularly maintained for the purposes of a road reserve.
- The NC Act and EPBC Act vulnerable species, SLL, was recorded within the Project area during targeted surveys.
- An isolated population of the NC Act and EPBC Act endangered species, Grassland Earless Dragon (GED), is known to occur within the NTG south of Canberra Avenue. Its habitat, consistent with NTG, does not extend into the Project area. Therefore, the species would not be expected to occur in the Project area.
- The NC Act and EPBC Act vulnerable species, Pink-tailed Worm-lizard (PTWL) has not been recorded in or near to the Project area.
- The NC Act endangered and EPBC Act vulnerable species, Golden Sun Moth (GSM), has been recorded in NTG to the south of Canberra Avenue. The species was not recorded in, and is not expected to occur in, the Project area as it does not contain suitable habitat for the species.
- The NC Act vulnerable species, Perunga Grasshopper, were not recorded within the Project area. However, the species has been recorded in NTG to the south of the Project area.
- Canberra Raspy Cricket was recorded immediately adjacent to the Project area.
- The NC Act vulnerable species, Little Eagle, is known to perch and hunt, predominantly on rabbits, in the region of Jerrabomberra Creek near Hindmarsh Drive. The breeding pair are known to nest approximately 2 km from the Project area.
- The NC Act and EPBC Act endangered species, Button Wrinklewort are not known from the Project area. Discrete populations of the species are known from Harman and an area 1.2 km to the north of the Project area near to Molonglo River.
- The EPBC Act endangered species, Hoary Sunray has not been recorded within the Project area. The species was previously recorded at Harman during surveys in 2013 and 2016, with 10 and 21 individuals respectively, mostly from a patch of NTG in the

south-east of the site with two individuals in the south-western area. Subsequent surveys, including from 2021, did not locate the species within Harman.

3.10.1. *Impacts*

The EIS identified the following direct and indirect impacts associated with ecology and natural environment during construction and operation.

Construction:

- Clearing or impact to NTG.
- Habitat loss for the GED, GSM, Canberra Raspy, Cricket and Perunga Grasshopper habitat.
- Mortality or injury of a threatened fauna species as a result of vegetation clearing and vehicle movements on site.
- Clearing or disturbance of native grassland that results in a direct impact to a threatened flora species, including Button Wrinklewort or Hoary Sunray.
- Habitat loss or disturbance of rocky habitat for the SLL and Pink-tailed Worm Lizard.
- Removal of trees, and potential impact upon fauna habitat.
- Injury or mortality to flora and fauna as a result of bushfire ignition caused by construction activity.
- Impacts to threatened fauna behaviours – noise, light and vibration during construction.
- Weed introduction, dispersal and proliferation that impacts upon threatened species habitats.
- Sedimentation of Jerrabomberra Creek causing impacts to aquatic flora and fauna.
- Accidental spill of hazardous materials that impacts upon flora and fauna or their habitats.
- Disturbance related predator abundance.
- Habitat fragmentation.

Operation:

- Mortality or injury as a result of interactions with power line infrastructure.
- Mortality or injury of a threatened fauna species as a result of maintenance works.
- Increased predator abundance and predator efficiency resulting in enhanced predation of threatened fauna.

3.10.2. *Section 224 notice*

Further information was requested to address the below items within Appendix 3 – Section 224 notice, following advice received from the Conservator of Flora and Fauna:

- ecological mapping of GED habitat;
- cumulative impacts of development on GED;
- increased predation efficiency on threatened species;
- impacts on NTG;
- weed management; and
- further details on alternative options considered for this Project.

The revised EIS was re-submitted by the proponent that included further considerations and mitigation measures in relation to ecology and the natural environment impacts. After considering the information submitted in response to the request made under section 224

submission, it has been considered that the EIS have satisfactorily addressed the scoping document. Additional mitigation measures, outlined in the revised EIS, have been incorporated under 3.10.4 of this report.

3.10.3. Findings

The EIS states that the following investigations were used to support the assessment of impacts associated with ecology and natural environment:

- Jerrabomberra 132 kV transmission line preliminary environmental assessment (WSP 2019).
- Grassland Earless Dragon (*Tympanocryptis pinguicolla*) Survey and Vegetation Assessment (Biosis Research 2012)
- Biodiversity assessment (Appendix N of the EIS)
- EPBC Act self-assessment (Appendix E of the EIS)

Surveys efforts were conducted by qualified ecologists across each of the above listed investigations and cover the required species identified in the scoping document, including:

- Grassland Earless Dragon;
- Golden Sun Moth;
- Pink-tailed Worm-lizard;
- Striped Legless Lizard;
- Perunga Grasshopper; and
- Canberra Raspy Cricket.

Patches of the threatened ecological community, NTG, are mapped in areas immediately adjacent to the transmission line alignment to the south of Canberra Avenue. These areas are known to support an isolated population of GED, and may support other threatened species, including SLL, which was recorded as being present within the Project area by WSP when undertaking ecological surveys in preparation of the Scoping Document application for this proposal in 2019.

The EIS specifies that poles will be sited within existing cleared or disturbed areas and away from key habitat areas. As a result, direct impacts relate primarily to footprints of poles and potential impacts associated with movement of vehicles around the indicative safe construction work areas.

The permanent infrastructure footprint of new poles is predicted to cover an area of up to 86.5 m² and comprises the total estimated extent of pole footing areas. Siting of the infrastructure has deliberately been located within existing maintained areas along the road reserve that do not contain NTG.

The temporary disturbance footprint around new poles is predicted to cover an area up to 1.97 ha and comprises the total area required for the undertaking of construction activities around each pole location. The EIS specifies that the entirety of the temporary disturbance footprint will also be located outside of areas of NTG. Recommended conditions are included in Part 6 of this report to ensure construction works around each pole are fully contained within road reserves.

The EIS specifies that the concept design of the Project was altered following submission of the EIS in order to minimise potential impacts upon threatened species habitat. In addition,

Evoenergy has committed to a range of mitigation measures to avoid or reduce impacts, which are detailed section 3.10.4 of this report. Key measures include:

- redesign of pole locations to move them away from areas of NTG;
- a CEMP that includes prescriptive management measures that relate to environmental risks as documented to be implemented during construction, with an Environmental Compliance Officer to oversee implementation of the CEMP;
- undertaking works outside of key breeding periods for threatened reptile species;
- weed management to be undertaken prior to and during construction as well as for 18 months following construction;
- bushfire protection measures to be implemented during construction; and
- bird deterrents to be included in the design with the aim to modify perching behaviour; and
- bird flight diverters to increase the visibility of transmission lines and reduce likelihood of line strikes by avian species.

The EIS concludes that, provided mitigation measures to avoid or reduce impacts are implemented, the Project is unlikely to have a significant adverse environmental impact on identified NC and EPBC listed species or communities within or adjacent to the transmission line alignment.

3.10.4. Mitigation and avoidance

Table 22 details the avoidance measures associated with ecology and the natural environment as proposed in the EIS. A complete table of mitigation measures is available at section 7 of the EIS.

Table 22 Avoidance and mitigation measures (ecology and the natural environment)

Proposed mitigation measures	Stage of implementation
<p>Pole locations have been located as far away from areas of NTG and threatened species habitat as technically feasible.</p> <p>Bird deterrents to modify perching behaviour are to be included in the design.</p> <p>These will include:</p> <ul style="list-style-type: none"> • Perch deterrent spikes to modify perching behaviour of bird species • Bird flight diverters to increase the visibility of transmission lines and reduce likelihood of line strikes by avian species. These may include marker balls, swinging markers, flappers or other similar devices as identified from engagement from the Little Eagle Research Group. <p>The pole type selected has the lowest construction footprint possible for the required supply (i.e. it does not comprise of towers that require larger footprints and clearances).</p> <p>Live components of the infrastructure are to be insulated, or further apart than the 1.2 m wingspan of the Little Eagle.</p>	Pre-construction

Materials laydown area and site compounds are to be limited to the locations as nominated.	
<p>All construction work is to be conducted in accordance with a CEMP that includes detailed and prescriptive mitigation measures. The CEMP will address conditions of approval and will include specific detailed work plans, including:</p> <ul style="list-style-type: none"> • Biodiversity Management Plan, including specific measures to avoid or reduce potential for impact of works in proximity to NTG. • Vegetation management plan, including tree clearing and pruning management as directed by an arborist. • Erosion and sediment control plan. • Weed management plan, including vehicle hygiene requirements, and measures to avoid introduction or spread of weeds as a result of construction. • Rehabilitation management plan. • Waste management plan. • Traffic management and control plan. <p>The CEMP will include maps that clearly demarcate areas of fauna habitat, with appropriately scaled drawings that clearly indicate areas that are no-go areas for construction vehicles or site personnel.</p> <p>A suitably qualified and experienced environmental compliance officer will be commissioned to make sure that measures documented in the CEMP are implemented.</p> <p>Monitoring will include:</p> <ul style="list-style-type: none"> • Daily check lists and records at each pole under construction • Weekly checks of the alignment • Monthly reporting on CEMP compliance. <p>The Project area will be open for inspection and audit of the CEMP will be conducted by ACT Government officers.</p>	Pre-construction and Construction
<p>To avoid potential risk of bird predators foraging on GED or other threatened species within the NTG:</p> <p>Construction of poles along Canberra Avenue will be programmed to occur between April and October.</p>	Construction
<p>Pole sites have been located within existing cleared and disturbed areas along the road reserve. There are no areas where pole sites intercept NTG.</p> <p>Pole sites have been located as far as possible from NTG patches within the technical/engineering limitations of the infrastructure.</p> <p>Vegetation trimming or clearing to allow for safe construction work area is to be of planted trees and</p>	Pre-construction and Construction

<p>shrubs within the road reserve only. Vegetative material will be removed from site and disposed of at an appropriately licensed facility.</p> <p>Materials placement will be either in the nominated material laydown area, or in the area immediately adjacent to pole sites as close to installation as possible. No materials are to be placed within areas of NTG.</p> <p>Plant and equipment are to be limited to existing tracks or the road reserve. If there is an unforeseen need for vehicles to traverse outside of these areas, an appropriately permitted fauna spotter is to be commissioned to monitor and provide clearance.</p> <p>Temporary high visibility exclusion fencing and temporary signage for contractor awareness will be installed on the roadside of the fence line between work areas and areas of NTG.</p> <p>Personnel are to be inducted to the CEMP and made aware of the environmental value of adjacent grassland areas.</p> <p>Establishment of pole footings adjacent to the NTG are to take place in cooler months (April to October) with the aim to avoid disturbing GED during important movement/breeding periods.</p> <p>Material storage at pole locations will be minimised. Materials are to be delivered for direct implementation as far as practicable.</p> <p>Observations of bird presence are to be made by contractors during the construction phase. If an elevated presence of birds is identified, adaptive management strategies will be identified for implementation to protect the threatened species population in the NTG.</p>	
<p>Pole sites have been located as far as possible from rocky habitat within the technical/engineering limitations of the infrastructure.</p> <p>Laydown areas are to be located in existing cleared and disturbed areas along Canberra Avenue.</p> <p>A qualified arborist is to assess trees for clearing or pruning in accordance with Australian Standard AS4970 – 2009 Protection of trees on development sites. Trees are to be protected as directed by the arborist.</p> <p>Vehicle traverse of the alignment and between the laydown areas / site compound and the alignment will be limited to designated access tracks, the road reserve or the road. Limitations to vehicle movements are to be clearly defined in a traffic management plan or similar.</p> <p>Designated laydown areas will be clearly signed.</p>	<p>Pre-construction and Construction</p>

Driving speeds along the road reserve (off road) will be limited to below 10 km/hr to reduce potential for the injury or mortality of fauna species.

Traverse by personnel on foot outside of the alignment in the adjacent grassland is to occur by exception only, and only in the case of unforeseen need.

Dogs or other domestic animals are not to be brought to the work site.

Vehicle hygiene measures and weed management are to be implemented, including:

- Plant and equipment are to be cleaned prior to commencement of the Project.
- The road reserve is to be mowed prior to commencement of, and (depending upon growth conditions) during works.

Temporary high visibility exclusion fencing is to be installed prior to construction:

- Around rocky areas within the road reserve.
- Adjacent to NTG (as above)
- Around areas of vegetation in proximity to the works that are not already fenced that could be at risk of impact from construction plant and equipment (e.g. planted vegetation west of Monaro Highway, vegetation adjacent to pole 12).

Materials delivery and laydown (e.g. poles and auxiliary components) is to be undertaken progressively to minimise time between material delivery and construction (i.e. instead of materials being unloaded and left at each pole site initially, they will be delivered in stages and used for construction as soon as practicable after delivery).

Signage, and if identified to be suitable by the arborist, temporary exclusion fencing will be established around trees adjacent to pole 10 which are frequently used by Little Eagles. Contractors are to be made aware of potential for occurrence of the species.

On a daily basis, a pre work check will be taken around the construction area to observe whether any evidence of GED, SLL or other species are present. In the event that a threatened lizard species (or other suspected threatened fauna species) is identified, work is to cease in that immediate area and a fauna catcher will relocate individuals under appropriate permit.

A suitably qualified and permitted fauna spotter will conduct pre-clearance surveys prior to all intrusive construction activities (e.g. excavation), and prior to drilling will confirm pole locations are clear of fauna. The

<p>fauna spotter will check for fauna species or burrows. Identified fauna are to be relocated where they are unlikely to relocate of their own accord.</p> <p>Contractor awareness training will be undertaken to educate contractors on the appearance of threatened lizards (and other species) and where along the alignment they may be more likely to occur. In any instance where a potentially threatened species is identified, work will cease immediately, and a fauna catcher will relocate individuals under appropriate permit.</p>	
<p>No clearing ground layer vegetation is to occur outside of the area immediately within the pole footprint.</p> <p>All temporary fencing is to allow safe passage of reptiles (e.g. 1 x 50 safety mesh or flagged rope).</p> <p>Materials laydown (e.g. poles and auxiliary components) is to be undertaken progressively to minimise time between material delivery and construction (i.e. instead of materials being unloaded and left at each pole site initially, they will be delivered in stages and used for construction as soon as practicable after delivery).</p>	Pre-construction and Construction
<p>Refuelling of vehicles and machinery will preferentially be undertaken offsite.</p> <p>If it is necessary to refuel on site, refuelling is to be undertaken using suitable equipment, including temporary bunding and at least 50 m from any water course. Spill kits are to be readily accessible. A spill response protocol is to be included in the CEMP.</p> <p>If necessary, fuel and other chemicals are to be stored in a locked, bunded storage area with spill kits available. Management of hazardous materials is to be defined in a hazardous materials management plan to be included in the CEMP.</p> <p>Vehicles and machinery entering the construction site are to be adequately serviced and checked for leaks prior to entry.</p> <p>An unexpected finds protocol for contaminated soils it to be included in the CEMP. Based upon geotechnical survey conducted, potential for intercepting contamination is low.</p> <p>Excavated material is to be tested, and if suitable, reused in an appropriate location or disposed of to an appropriately licenced facility.</p>	Construction
<p>No smoking is permitted on any Evoenergy site.</p> <p>No high-risk activities will be permitted on days where fire danger is high.</p>	Construction

Vehicle traverse of the alignment and between the laydown areas / site compound and the alignment will be limited to designated access tracks, the road reserve or the road. Vehicles are not permitted to park over long grass or vegetation.	
<p>Measures will be implemented before, during and after construction to prevent the establishment and/or spread of weeds, particularly Weeds of National Significance (WoNS) and/or declared pest plants.</p> <p>A Weed Management Plan will be developed and implemented as part of the CEMP. This will include management of weeds within the laydown area, and if necessary, along and immediately adjacent to designated access roads (if weeds impinge on these areas that could be spread by vehicles). Weed management will be conducted using methods in consideration of adjacent threatened ecological community and threatened species habitats. This may include use of herbicides (spot spraying application with consideration of proximity to non-target native groundcover and wind conditions), removal of seeds, seedlings and mature weeds and the use of drift fences.</p> <p>Weed management will be undertaken for 18 months post construction by a suitably qualified contractor capable of distinguishing target and non-target native and exotic vegetation.</p> <p>Vehicle traverse of the alignment and between the laydown areas / site compound and the alignment will be limited to designated access tracks, the road reserve or the road.</p> <p>Traverse by personnel on foot outside of the alignment in the adjacent grassland is to occur by exception only, and only in the case of unforeseen need.</p> <p>Presence of weeds is to be monitored monthly and documented. Weed control will be implemented as per the Weed Management Plan.</p> <p>Erosion and sediment control plan (ESCP) to be implemented as part of the CEMP will divert potential water runoff away from NTG areas to prevent water borne weed dispersal.</p>	Pre-construction, Construction and Post-Construction
<p>An Erosion and Sediment Control Plan (ESCP) is to be developed as part of the CEMP.</p> <p>Temporary sediment and erosion controls will be established as per the ESCP prior to construction. Controls will be inspected weekly or after rainfall and maintained as identified from inspections.</p>	Pre-construction and Construction

<p>If required, sediments accumulated against sediment fencing are to be removed from site and disposed of to avoid establishment and spread of weeds.</p> <p>Works are to be undertaken in consideration of rainfall and potential for runoff resulting in erosion and sedimentation. The ESCP will identify appropriate parameters.</p> <p>Following excavation and backfilling, compaction is to be achieved to reduce the potential for erosion.</p> <p>A rehabilitation plan will be prepared for areas disturbed during the works. This will identify appropriate methods for stabilisation and revegetation.</p>	
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3.10.5. Scoping document requirements

The table below details the risks associated with ecology and natural environment as defined in the EIS.

Table 23 Scoping document requirements: residual ecology and natural environment risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Direct impacts on ecological species or communities as a result of construction activities.	High	Unlikely	Major	Medium
Indirect impacts on ecological species or communities as a result of changes in physical characteristics of the area.	Medium	Remote	Major	Low
General impacts to fauna during construction.	Very low	Unlikely	Minor	Very low
Death or injury of a listed fauna species during operation (e.g. electrocution from transmission line conductors, or maintenance vehicle strikes).	Medium	Remote	Major	Low
Death or injury of a listed fauna species as a result of increased predator abundance and predation intensity.	High	Unlikely	Major	Medium

Impact upon rocky areas that provide habitat for Striped Legless Lizard (<i>Delma impar</i>).	High	Unlikely	Major	Medium
Impact upon Natural Temperate Grassland.	Medium	Remote	Major	Low

3.11. Heritage

Aboriginal places/objects are known within proximity of the proposal. The EIS identified 18 Aboriginal heritage sites within a one-kilometre search area centred around the Project. These sites consist mainly of isolated finds, with three artefact scatters located on terraces near the creek lines. An important Aboriginal stone quarry is also located to the north of the Project area, in the AMTECH industrial estate, adjacent to the main industrial area of Symonston.

A Preliminary Cultural Heritage Assessment prepared by Past Traces in July 2019 found one Aboriginal site, 'Hindmarsh 1', within the vicinity of the Project area. The transmission lines are stated as being far removed from all other identified heritage sites.

No registered historic items were identified within the Project area or immediate surrounds.

3.11.1. Impacts

The EIS identified the following heritage impacts associated with construction of the project:

- impacts on identified objects with Aboriginal Cultural Heritage Value; and
- direct impacts on existing nominated heritage places and/or object (such as physical, visual and potential vibration impacts).

3.11.2. Section 224 notice

Further information was requested on the following items within Appendix 3 – Section 224 notice, following advice received from the Council that:

- the EIS did not adequately describe the anticipated heritage impacts of the development, and how these will be avoided, minimised and mitigated; and
- the proposed development may damage Aboriginal places or objects.

The revised EIS was re-submitted by the proponent that included further considerations and mitigation measures in relation to impacts to identified heritage sites. After considering the information submitted in response to the request made under section 224 submission, it has been considered that all items have satisfactorily addressed the scoping document. Additional mitigation measures, outlined in the revised EIS, have been incorporated under 3.11.4 of this report.

3.11.3. Findings

The EIS includes a Cultural Heritage Assessment (CHA) prepared by Past Traces (Appendix O of the EIS) that investigated the Aboriginal heritage within the Project area. One Aboriginal site (Hindmarsh 1), though not within the Project alignment; was found on a track that was originally planned to be used for construction access.

From meetings held between the proponent and Representative Aboriginal Organisations, it was established that Hindmarsh 1 is considered to be of important cultural value due to the archaeological record it contains and the evidence this record represents for traditional land use and past patterns of Aboriginal occupation.

The CHA found that the site had been previously disturbed, and artefacts visibly damaged, by the installation of a fibre optic cable as part of a separate project in 2019. However, the artefacts are still present and largely intact. Because the use of the track for construction access could further disturb the site and damage artefacts the EIS has suggested avoiding the use of the track containing Hindmarsh 1 all together and, subsequently, there would be no heritage impacts to this important Aboriginal site.

The EIS notes that the proposed transmission line is far removed from all other heritage sites in the vicinity of the Project. Access to transmission lines and poles during construction will be achieved using existing access tracks entered from main roads, and going directly to pole locations, and existing via the same route. Therefore, the EIS has concluded that no impacts to any other identified heritage sites is anticipated.

Advice received from the ACT Heritage Council (the Council) confirms that the EIS has adequately identified the heritage values of the study area and provides an assessment of the likely heritage impacts and has therefore met the requirements of the EIS Scoping Document for the Project.

Further heritage controls and considerations will be required for the Project's CEMP, which will be provided to the Council for endorsement prior to works commencing.

3.11.4. Mitigation and avoidance

Table 24 details the avoidance measures associated with heritage as proposed in the EIS. A complete table of mitigation measures is available at section 7 of the EIS.

Table 24 Avoidance and mitigation measures (heritage)

Proposed mitigation measures	Stage of implementation
<p>If it becomes necessary to use the access track for construction, then an approval would be necessary (under s61H of the Heritage Act 2004), prior to use of the portion of the access track on which Hindmarsh 1 is located. This would require a SHE approved by the ACT Heritage Council and would need to meet the statutory criteria outlined in Section 61G of the Heritage Act 2004, including:</p> <ul style="list-style-type: none"> • Additional consultation with RAOs. • RTC protocol or other suitable long term management strategy if the Aboriginal objects are proposed to be collected, developed in consultation with RAOs. • Evidence of lessee and/or land manager support of the RTC location. • A statement that no future works are proposed to occur in the area that the artefacts will be moved to. 	Pre-construction and Construction

An Aboriginal Heritage Management Procedure will be included in the CEMP prepared for the Project. The procedure would provide details of management measures and procedures to be carried out during construction to minimise and manage impacts on Aboriginal heritage, and includes an unexpected finds protocol, as below.	Pre-construction and Construction
Cultural awareness training is to be included as part of any site inductions for the Project.	Pre-construction and Construction
Should any Aboriginal objects be encountered during works then works must cease immediately in the vicinity of the find, and the find should not be moved until assessed by a qualified archaeologist with the participation of the RAOs. The unexpected discovery protocols attached as Appendix 1 of the Cultural Heritage Assessment (refer to Appendix N) must be implemented.	Pre-construction and Construction
The area of the access track containing Hindmarsh 1 is to be restricted from use by all Evoenergy personnel and contractors. Requirements for the restricted, or 'no-go' area are to be documented and recorded in the Contractor's CEMP.	Construction
Ongoing protection and avoidance of the site is also required during operation and maintenance of the Project.	Operation

3.11.5. Scoping document requirements

The table below details the risks associated with heritage as defined in the EIS.

Table 25 Scoping document requirements: residual heritage risks (with mitigation)

Potential Impact	Risk Assessment			
	Risk (before mitigation)	Likelihood (after mitigation)	Consequence (after mitigation)	Residual risk
Impacts on identified Aboriginal Heritage Objects.	High	Unlikely	Moderate	Low
Direct impacts on existing nominated heritage places and/or objects (such as physical, visual and potential vibration impacts)	Negligible	Unlikely	Minimal	Negligible

3.12. Other Potential Impacts Considered in the EIS

The following is a summary of other potential impacts that have been addressed in the EIS but were not identified as matters to be considered by the Scoping Document.

3.12.1. Noise and Vibration

A Noise and Vibration Impact Assessment (NVIA) was prepared by GHD in June 2020. The assessment of noise and vibration impacts involved a review of the types of construction activities proposed, staging of work, construction noise generation and working hours, as well as operational activities.

The nearest land uses to the Project site are industrial to the north and east, residential to the north-west and commercial to the west. The NVIA found that existing noise levels are dominated by road traffic noise along Monaro Highway, Hindmarsh Drive and Canberra Avenue.

The NVIA assessed the potential noise and vibration impacts associated with construction and operation of the Project. This included:

- Modelling the plant and equipment likely to be required in each scenario to estimate noise levels during construction.
- Noise modelling and environmental sound propagation calculation. Noise modelling was carried out using SoundPlan Version 8.2.
- Predicting and assessing vibration from construction plant and equipment.
- Determining the most significant contributors to the operational noise of transmission lines, and reviewing past studies of the biggest contributor's noise levels to determine impact on nearby receivers.

Highly affected noise sensitive receivers were found to include:

- A residential property at 722 Canberra Avenue. This property is expected to experience noise levels above the criteria in all construction scenarios and exceed the noise standard by up to 14 dBA.
- Commercial receivers located at Sir Harold Raggot Drive on the west of the Monaro highway. These receivers are expected to experience noise above the noise standard for Zone E during all construction scenarios.
- Commercial receivers located at Geraldton Crescent and Tom Price Street. These receivers are expected to experience noise above the noise standard for Zone E during all construction scenarios.

The NVIA found that there may be some short-term human comfort impacts for residential receivers. However, these impacts would be minimised through construction mitigation measures such as the inclusions of noise and vibration management procedures in the CEMP. Impacts would therefore be short term and unlikely to have a significant negative impact. A complete list of noise and vibration measures can be found at Table 5.60 of the EIS.

The two key sources of operational noise are noise generated from maintenance activities and corona noise from the transmission line itself.

The noise from maintenance activities is expected to be infrequent with only light vehicles as key sources of noise during these periods. Maintenance and repairs of a network facility are

considered an exempt activity in Schedule 2 of the EPR during the following hours:

- 7 am and 10 pm on Monday to Saturday; and
- 8 am and 10 pm on Sunday or a public holiday.

The EIS notes that corona noise from the transmission line will be constant. However, will vary with weather conditions. Corona noise is minimised through the design and construction using insulation, corona rings, and making high voltage electrodes in smooth rounded shapes.

As such, the EIS considers that no operational noise impacts are expected.

3.12.2. Air Quality

The EIS found that there are very few sensitive receivers for air quality located within the vicinity of the proposal site. The nearest receivers include:

- Geoscience Australia, approximately 100 metres west from pole location 1 on Symonston: Block 10, Section 107
- Kids Club Symonston child-care centre, approximately 190 metres west from pole location 2 construction works and laydown on Symonston: Block 9, Section 107
- Private residence and farm at 722 Canberra Avenue (Jerrabomberra: Registered Rural Block No: 2233), approximately 1.7 kilometres east from Hindmarsh Drive
- Workers and residents at Harman, approximately 2 kilometres east from Hindmarsh Drive.

During operation, the Project is not anticipated to generate a substantial amount of additional air quality impacts.

The EIS states that the Project is not likely to have a significant impact on local air quality. Construction and operational air quality impacts will be managed through the application of standard environmental management measures including the provision of a Construction Air Quality Management Plan as part of the CEMP. A complete list of air quality mitigation measures can be found at Table 5.62 of the EIS.

3.12.3. Resources

The proposal alignment is primarily located within the road reserves of the Monaro Highway, Hindmarsh Drive and Canberra Avenue. The alignment does not contain values relating to resources.

The EIS states that the following resources would be used during construction and operational stages of the proposal:

- Electricity (construction and operational phases)
- Fuel (construction and operational phase)
- Concrete (primarily construction phase)
- Steel (primarily construction phase)
- Water (construction and operational phase).

This EIS found that impacts on resources is expected to be negligible as it is highly unlikely that the proposal would result in any resource becoming scarce or in short supply. The EIS states that mitigation measures will be implemented to reduce the proposal's demand on resources, such as the quantification of materials and resources required for the Project so that the minimum quantities required would be procured. A complete list of resource mitigation measures can be found at Table 5.64 of the EIS.

3.12.4. Climate Change

The EIS states that the method applied for the 132kV Harman Transmission Line climate change risk assessment is consistent with *Australian Standard 5334:2013 Climate change adaptation for settlements and infrastructure – A risk-based approach*.

The Standard follows the International Standard, *AS/NZS ISO 31000:2009, Risk management— Principles and guidelines*, which provides a set of internationally endorsed principles and guidance on how organisations can integrate decisions about risks and responses into their existing management and decision-making processes.

The assessment identified four climate hazards and associated risks that are considered to be applicable to the Project, including:

- drought;
- extreme heat;
- storms; and
- bushfires.

Associated risks:

- Increased risk of damage due to drought during construction.
- Increase risk of damage to the Project due to extreme heat during construction.
- Increased risk of damage due to storms during construction.
- Increased risk of damage due to bushfire during construction and operation.
- Increased risk of damage due to snow and frost during construction.
- Increased risk of damage due to snow and frost during operation.

The EIS states that mitigation measures will be implemented to reduce the risks associated with climate change, such as the use of concrete and steel components in the design for high emission scenarios and potentially higher/colder daily temperatures, installation of lightning protection for infrastructure components vulnerable to lightning strike, including additional buffer zones to account for extreme weather and maintenance of vegetation within the easement. A complete list of climate change mitigation measures can be found at Table 5.69 of the EIS.

The EIS also notes that due to the nature of the climate change risks, the likelihood of impacts occurring will increase over time under the climate change scenarios, even with mitigation measures being applied.

3.12.5. Greenhouse Gas

The ACT government has established a legislated target under the *Climate Change and Greenhouse Gas Reduction Act 2010* of zero net emissions by 30 June 2045.

The ACT Climate Change Strategy 2019-2025 outlines the steps the community, business and Government will take to reduce emissions by 50–60% (below 1990 levels) by 2025 and establish a pathway for achieving net zero emissions by 2045.

A greenhouse gas (GHG) assessment has been undertaken in accordance with the principles of ISO 14064-2 and the general principles for estimating emissions in the National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008.

Relevant sections of the following documents were also used for the purposes of defining appropriate methods for quantification of emissions from individual sources:

- NGER (Measurement) Determination 2008 (as amended) and NGER Act 2007, Commonwealth Department of Industry, Science, Energy and Resources; and
- National Greenhouse Accounts (NGA) Factors, Commonwealth Department of Industry, Science, Energy and Resources, 2020.

These guidelines are considered representative of good practice GHG accounting in Australia and are applicable to the Project.

The EIS states that emissions from construction of the proposal were estimated to be 422 tCO₂-e, which is approximately 0.03% of ACT's annual emissions and 0.0001% of Australia's annual emissions. Therefore, construction emissions are considered negligible compared to annual emissions in the ACT and Australia.

Although emission are stated as being low in the EIS, measures are proposed to be put in place to reduce and mitigate emissions, such as investigation of the use of biodiesel for trucks and equipment where suitable and the use of electric vehicles where feasible, in accordance with Evoenergy's asset management strategy. A complete list of greenhouse gas mitigation measures can be found at Table 5.77 of the EIS.

3.13. Conclusion of impact assessment

The supporting studies and the comments of relevant entities provide sufficient information on all impacts of the proposal identified throughout section 3, above.

4. Legislative and Policy considerations

A number of legislative requirements and ACT Policies were considered in the preparation of this EIS as outlined below.

4.1. Planning and Development Act 2007

Schedule 4 of the PD Act lists proposals requiring an EIS by activity and/or by degree of area or processes. The proposal falls under the impact track, as it meets the requirements listed in Schedule 4, Part 4.2, item 2(a), of the PD Act:

Proposal that involves

*(a) **Electricity transmission line construction**, including additions or realignment works, outside an existing easement or **exceeding 500 m in length**, that are intended to carry underground or above-ground transmission lines with a **voltage of 132kV or more***

The Scoping Document (Application Number: EIS 201900038) for the Jerrabomberra 132kV Transmission Line Extension was issued by the Authority on 25 September 2019 and provides requirements for information that is to be provided in the EIS to be submitted for planning approval.

The EIS has been prepared in a manner that is consistent with the Scoping Document.

4.2. Planning and Development Regulation 2008

This EIS must be prepared in accordance with the *Planning and Development Regulation 2008* (the Regulation). Section 50 of the Regulation outlines the requirements for the preparation of an EIS in the ACT.

The requirements of the Regulation have been met in preparation of the EIS.

4.3. Environment Protection Act 1997

The ACT Environment Protection Authority (EPA) administers the Act which provides a framework for regulating polluting activities and protecting the environment in the ACT. The proponent has provided sufficiently detailed information to the EPA in relation with the Environment Protection Act 1997.

As noted by the EPA, in their advice on the draft EIS, the documentation adequately addresses EPA concerns within the proposed works area. Further advice will be provided in relation to the proposed Project following a review of the subsequent Development Application – refer to Table 4 of this report.

4.4. Water Resources Act 2007

The *Water Resources Act 2007* (WR Act) aims to ensure the use and management of the Territory's water resources are sustainable while protecting the ecosystems that depend on the waterways. It is also designed to protect waterways and aquifers from modification and damage.

The EIS documentation states that a Waterways Works Licence may be required by the construction contractor for the works adjacent to Jerrabomberra Creek. However, if the work is approved by an Environmental Authorisation or Environment Protection Agreement

under the *Environment Protection Act 1997*, an additional waterway work licence is not required.

4.5. Nature Conservation Act 2014

The *Nature Conservation Act 2014* (NC Act) establishes a formal process for the identification and protection of threatened species and ecological communities in the ACT region. The NC Act requires the Conservator of Flora and Fauna to prepare an action plan in response to each declaration of a threatened species, ecological community, or threatening process.

The EIS documentation includes an assessment of likely impacts of the proposed development on threatened species and ecological communities listed under the NC Act.

4.6. Tree Protection Act 2005

Trees of exceptional value are protected and identified under the ACT *Tree Protection Act 2005*. The trees protected by this Act are provided for in the ACT Tree Register.

The ecological assessment undertaken as part the EIS concluded that there are no trees under the *Tree Protection Act 2005* located within the proposal site.

4.7. Environment Protection and Biodiversity Act 1999

Under the *Environmental Protection and Biodiversity Act 1999* (EPBC Act), a referral to the Australian Government is required for proposed actions that have the potential to significantly impact on matters of national environmental significance or the environment of Commonwealth land.

The proponent has completed a self-assessment against the requirements of the EPBC Act as part of the Ecological Assessment. The EIS documentation states that an EPBC referral is not required as the proposal is unlikely to result in significant impacts on matters of national significance.

4.8. ACT Climate Change Strategy 2019-2025

The ACT Climate Change Strategy 2019-2025 sets out the ACT Government's action plan to respond to climate change and its effects and manage the impacts on people, infrastructure, and services.

The EIS documentation has assessed the potential impacts of climate change and includes an assessment of the Project's impact on Climate Change in consideration of construction phase greenhouse gas emissions and the steps identified in the ACT Climate Change Strategy to reduce emissions.

4.9. Canberra's Living Infrastructure Plan: Cooling the City (2019)

Canberra's Living Infrastructure Plan: Cooling the City (2019) sets out the ACT Government's commitment to maintain and improve living infrastructure in Canberra.

The EIS documentation states the Project is not inconsistent with actions outlined in the living infrastructure plan.

4.10. Territory Plan 2008

The Territory Plan 2008 is the statutory document that guides planning and development in the ACT. The purpose of the Territory Plan is to control planning and development in the ACT in a manner which promotes *‘an attractive, safe and efficient environment in which to live, work and have their recreation’*. The Territory Plan manages development and land use by establishing strategic directions and plans, land uses as well as codes and criteria associated with different land uses.

Upon completion of the EIS, the proposal will be subject to a Development Application which will include an assessment against the relevant requirements of the Territory Plan.

4.10.1. Territory Plan Statement of Strategic Directions

The Statement of Strategic Directions sets out the principles to guide the planning and development of the ACT. These include principles relating to sustainable development relating to environmental, economic, and social sustainability as well as spatial planning and urban design principles.

The key principles in the statement of strategic directions include a balanced approach to environmental, economic, and social impacts to ensure sustainable practices.

The EIS documentation states that the proposal is consistent with the broad objectives of the Territory Plan as it will allow for the supply of electricity to industrial land in the future, promote new investment through energy provision, and has been assessed against the ecological footprint.

4.10.2. Territory Plan codes

Various codes apply under the Territory Plan and are considered during the assessment of Development Applications. The Transport and Services Zone Development Code and the Non-Urban Zones Development Code are applicable to the proposal, in addition to various general codes. Upon completion of the EIS, the proposal will be subject to a Development Application where the development will be assessed against the relevant Territory Plan codes.

4.11. ACT Planning Strategy

The ACT Planning Strategy provides long-term planning policy and goals to promote sustainable development, consistent with the social, environmental, and economic aspirations of the people. The EIS states that the proposal is considered to be consistent with the general aims and objectives of the ACT Planning Strategy.

4.12. National Capital Plan

The object of the National Capital Plan is to ensure that Canberra and the Territory are planned and developed in accordance with nationally significant planning objectives. The National Capital Plan (NCP) provides guidance for the planning, design and development of Designated Areas and other areas identified in the NCP with special requirements.

The proposal will require a Works Approval from the National Capital Authority (NCA) for the works within the road corridors of the Monaro Highway and Canberra Avenue. The EIS

documentation states that the Landscape and Visual assessment undertaken as part of this EIS has been prepared in consultation with the NCA and in anticipation for the submission of a Works Approval.

4.13. Eastern Broadacre Strategic Assessment

The Eastern Broadacre area of the ACT encompasses part of the eastern edge of the ACT including the Majura Valley in the north and the Jerrabomberra Valley in South. Development is anticipated to occur in this area over the course of 20 years and will comprise greenfield and infill development, including associated infrastructure, such as roads and services.

In 2014, the Australian Government entered into an agreement with the ACT Government to undertake a strategic assessment in accordance with Section 146 of the EPBC Act. The Eastern Broadacre strategic assessment is currently underway and has not yet been endorsed by the Commonwealth.

The Project will provide an increased electricity supply to Harman which is not included in the Eastern Broadacre strategic assessment area. The EIS considers that the Project would have no bearing on any future developments in the Eastern Broadacre area as the transmission line will only service Harman.

The Project has also been assessed as unlikely to have a significant impact upon any matters of national environmental significance following an EPBC Act self-assessment (Appendix E of the EIS). As such, the EIS considers that the Project would not affect the environmental considerations or outcomes of the strategic assessment.

4.14. Other policies addressed in the EIS

Other policies, outside the requirements of the Scoping Document, have been addressed in the EIS. These were included in the EIS by the proponent as part of consideration of general government policies.

5. Other considerations

5.1. Principles of ecologically sustainable development

The following ecologically sustainable development principles have been considered in the EIS documentation and by the Authority. It is considered that information has been provided against economic, environmental, social, and equitable considerations which are contained within the EIS documentation and inform decision-making through the implementation of the following principles.

5.1.1. Economic, environmental, social, and equitable considerations

The long-term and short-term economic, environmental, social, and equitable considerations have been considered by the Authority in the preparation of this assessment report. These included the cumulative impacts of past and present developments within the area, including known future proposals. The Authority is satisfied that information relating to the above considerations, and the cumulative impacts, have been provided in the EIS.

5.1.2. The precautionary principle

The precautionary principle has been addressed in the EIS and was considered by the Authority in the preparation of this assessment report.

The proponent has provided sufficient information relating to all potential environmental impacts and has proposed mitigation measures to be adopted during the construction and operation phases.

A thorough review of the proposed design, construction and maintenance has been undertaken to identify areas where the Project would be able to avoid or mitigate potential for impact. The EIS states that Evoenergy is committed to implementing practical measures that have been demonstrated to be effective to minimise impacts on the environmental values of the Project area.

With implementation of the proposed measures, it is considered that it would be unlikely that the Project would cause serious or irreversible damage.

5.1.3. The principle of inter-generational equity

The principle of inter-generational equity has been addressed in the EIS and was considered by the Authority in the preparation of this assessment report.

The EIS and supporting documentation has considered short-term and long-term impacts and identified mitigation measures to minimise the impacts. The information provided to address the impacts will be considered in the assessment of the DA to determine whether these impacts have been reduced to a suitable level.

Given the location and nature of the Project is within existing road reserves, the Project is not considered to result in any impacts that are likely to adversely impact on the health, diversity or productivity of the environment for future generations.

5.1.4. The conservation of biological diversity and ecological integrity

The conservation of biological diversity and ecological integrity has been addressed in the EIS and was considered by the Authority in the preparation of this assessment report (refer to the above section addressing ecology and natural environment).

5.1.5. Improved valuation, pricing, and incentive mechanisms

Improved valuation, pricing and incentive mechanisms have been addressed in the EIS and was considered by the Authority in the preparation of this assessment report.

The EIS has examined the environmental consequences of the proposal and identified management measures to manage the potential for adverse impacts. The requirement to implement these management measures would result in an economic cost to the proponent, including increased capital expenditure and operation costs. The EIS states that the Project has been developed to minimise the potential for impacts to environmental values rather than providing a least cost solution.

5.2. Proponent's environment history

Evoenergy have a proven record of development within the ACT and in other jurisdictions and the proponent is responsible for maintaining the existing network.

The EIS documentation states that Evoenergy has not had any legal proceedings in Commonwealth, State or Territory for impacts to the protection of the environment or for the conservation and sustainable use of natural resources.

Evoenergy's commitment to the protection of the environment and sustainability is set by the ActewAGL Joint Venture Board, through the Work, Health, Safety, Environment and Quality Policy.

Evoenergy operates and maintains an Environmental Management System to the ISO 14001 standard, and has a team of qualified and experienced environmental professionals to guide, monitor and report on Evoenergy's environmental performance.

6. Recommended conditions

After considering the revised EIS, the Authority recommends DA considerations to assist with the avoidance and mitigation of adverse environmental impacts, as outlined in Table 26 below.

Any DA related to the completed EIS must include the DA considerations as part of the application. In deciding a development application in the Impact Track, the Authority must consider matters raised in the completed EIS and EIS assessment report.

The information gathered through the EIS process is used to assist in the decision-making process for an impact track DA. Any matters highlighted in the EIS process as being critical for the decision-making process will need to be clearly addressed as part of the impact track DA.

Table 26 Draft Conditions of Development Approval for 132kV Jerrabomberra Transmission Line proposal

No.	Condition contents	Endorsement/approval	Construction stage	Draft condition of approval
1	General	Planning and land authority	All works	<p>All works must be consistent with the mitigation measures in Table 7.1 of the 132kV Jerrabomberra Transmission Line Environmental Impact Statement, prepared by GHD, dated 13 September 2022 (the EIS).</p> <p>Where mitigation measures cannot be incorporated into the detailed design, each residual mitigation measure must be outlined in a Construction Environmental Management Plan (CEMP).</p>
2	DA Documentation	Planning and land authority	Development Application	As part of any subsequent development application relying on the EIS, a document must be provided detailing how the recommended mitigation measures in Table 7.1 of the EIS, and the conditions in this report have/will be met.
3	Bushfire Threat Assessment and Compliance Report	ACT Emergency Services Agency	Development Application	This Development is located inside the area declared by the ESA to be subject to the threat of bushfire. The application of appropriate bushfire protection measures is advised, and an assessment of the proposal by an accredited Bushfire Consultant is required as part of any subsequent Development Application.
5	Construction Environmental Management Plan (CEMP)	Planning and land authority	Prior to construction	<p>Prior to construction, a CEMP must be prepared and submitted to the planning and land authority (EPDImpact@act.gov.au) for endorsement.</p> <p>The CEMP must outline the construction conditions and temporary environmental protection measures to manage the impact of construction activities, consistent with the EIS. The CEMP must include the mitigation measures proposed in the EIS and incorporate any other relevant management plans including, but not limited to:</p>

				<ul style="list-style-type: none"> • Traffic Management Control Plan (including a Temporary Traffic Management Plan and Construction Parking Plan); • Dial Before You Dig Report; • Waste Management Plan; • Erosion and Sediment Control Plan; • Unexpected Finds Protocol; • Landscape Management and Protection Plan; • Safety Management Plan; • Bushfire Prevention and response Plan; • Biodiversity Management Plan; • Vegetation Management Plan; • Weed Management Plan; • Rehabilitation Management Plan; • Spill Response Protocol; • Heritage management plan, including an Aboriginal Heritage Management Procedure (including an Unexpected Discovery Protocol); • Noise and Vibration Impact Procedure; and • Construction Air Quality Management Plan (including dust suppression). <p>Note: The CEMP will be referred to relevant entities for endorsement and therefore will need to incorporate their comments provided through the EIS and Development Application stage.</p>
8	Water Infrastructure	Icon Water	Prior to construction	<p>Any works that are likely to impact on, or require the relocation of, Icon Water infrastructure must have Icon Water acceptance prior to any works being undertaken.</p> <p>Any interaction with Icon Water infrastructure with the potential presence of asbestos, including the <i>Bulk Supply Main O'Malley</i></p>

				<i>Reservoir to Oaks Estate Transf: 203110 and the Bulk Supply Main Googong Pipeline Section 2: 203016, will need to be noted and managed accordingly.</i>
10	Electrical Hazard Study	Jemena	Prior to Construction	<p>An Electrical Hazard Study (EHS) is to be prepared that is consistent with the standards found within <i>Australian Standard AS4853 electrical hazards on metallic pipelines</i> to assess the interface between proposed overhead electrical infrastructure with buried steel pipeline infrastructure.</p> <p>Based on the EHS outcomes, a Safety Management Study workshop (SMS) may also be required to assess the threats and identify the required controls to minimize the impact of the high voltage transmission line on the Canberra Primary Main (CPM).</p>
11	Construction Methodology	Jemena	Prior to Construction	Prior to construction, a construction methodology outlining the construction phase activities and showing the location/distance of the new proposed transmission line in respect to the CPM is to be provided to Jemena.
12	Works Approval	National Capital Authority	Prior to Construction	Any works within Designated Areas, or works located on National Land, will require separate assessment and planning approval from the National Capital Authority (NCA).
14	CEMP	Planning and land authority	During Construction	During construction, all works must be undertaken in accordance with the endorsed CEMP.

7. Recommended action on this EIS

Having regard to the documentation and information provided, the Authority has assessed the 132kV Jerrabomberra Transmission Line revised EIS as meeting the requirements of Chapter 8 of the PD Act.

It is the Authority's assessment that the revised EIS has provided sufficient information to the ACT Government and the community to allow an informed evaluation of potential environmental impacts which could be attributed to the 132kV Jerrabomberra Transmission Line proposal. Evoenergy has proposed a range of avoidance, mitigation, and management measures to reduce and avoid potential environmental impacts arising from construction and operational activities associated with the Project. It is considered that any potential adverse impacts can be adequately addressed by implementing these measures and the development application conditions specified in this report.

The construction activity associated with the 132kV Jerrabomberra Transmission Line, and the subsequent environmental performance attributable to its ongoing operation, will be monitored by a variety of public agencies including the Conservator of Flora and Fauna, the ACT Heritage Council, the Environment Protection Authority, planning and land authority and TCCS.

The Minister has the following options under the PD Act in relation to the EIS:

- **Option 1** - take no action on the EIS.
This option applies if the Minister decides not to establish an Inquiry Panel and decides not to present the EIS to the Legislative Assembly.
- **Option 2** - not establish an inquiry panel but present the EIS to the Legislative Assembly.
The EIS process is complete upon the Minister's decision not to establish an Inquiry Panel.
- **Option 3** - establish an inquiry panel to inquire about the EIS.
The EIS process will be complete at the finalisation of the inquiry panel report.

Under s 228 of the PD Act, the Minister must decide to establish an inquiry panel within 15 working days of receiving this assessment report.

For all options above, the Minister may still choose to present the EIS to the Legislative Assembly under s 227 of the PD Act. However, this does not affect whether the EIS process is considered complete (see s 209(2) of the PD Act)

Appendix 1 – Final scoping document

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ACT
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**Environment, Planning and
Sustainable Development**

Scoping Document

Under Division 8.2.2 of the *Planning and Development Act 2007*

APPLICATION NUMBER: EIS201900038		DATE OF THIS NOTICE: 25 September 2019	
DATE LODGED: 14 August 2019			
PROJECT: Installation of a new 3.6 km 132kV transmission line from the existing East Lake-Gilmore 132kV line connecting into a new substation at HMAS Harman at Jerrabomberra			
IMPACT TRACK TRIGGER: Planning and Development Act, Schedule 4; Part 4.2 Item 2(a).			
BLOCK:	SECTION:	DISTRICT/DIVISION:	LESSEE/LAND CUSTODIAN:
10	107	Symonston	TCCS-City Presentation
13	4	Symonston	TCCS-City Presentation
11	4	Symonston	Private lease
12	4	Symonston	EPSDD-Parks and Conservation
9	4	Symonston	Private lease
6	4	Symonston	EPSDD-Parks and Conservation
14	4	Symonston	TCCS-City Presentation
8	4	Symonston	Private lease
12	111	Symonston	Private lease
2233	0	Jerrabomberra	Bonshaw ACT Ltd
10	4	Symonston	EPSDD-Parks and Conservation
6	111	Symonston	Private Lease
ADDRESS: Monaro Highway, Hindmarsh Drive, Canberra Avenue, Narrabundah Lane and Road Reserve			
PROPONENT: WSP Pty Ltd			
APPLICANT: Evo Energy Ltd			



Scoping Document

Under Division 8.2.2 of the *Planning and Development Act 2007*

SCOPING DOCUMENT

The planning and land authority (the Authority) within the Environment, Planning and Sustainable Development Directorate received your application under section 212(1) of the *Planning and Development Act 2007* (the PD Act) for Scoping of an Environmental Impact Statement (EIS) for the above proposed development. Pursuant to section 212(2) of the PD Act, the Authority has:

- a) Identified the matters that are to be addressed by an EIS in the relation to the development proposal; and
- b) Prepared a written notice (the **scoping document**) of the matters.

NB: The EIS must conform to the requirements of this scoping document. This document does not indicate approval or support in any way, nor does it indicate approval in principle.

TERM OF SCOPING DOCUMENT

Pursuant to section 213(2) of the PD Act, the proponent must give the draft EIS to the Authority by the end of the period of 18 months starting on the day the Authority gives the scoping document for the development proposal to the applicant.

FORM AND FORMAT OF EIS

The Authority requires that the proponent engage a suitably qualified independent consultant to prepare an EIS, OR the proponent submits, with the draft EIS, an independent review of the draft EIS undertaken by a suitably qualified consultant. The EIS must be in the following form and format:

- The EIS must be prepared in accordance with section 50 of the *Planning and Development Regulation 2008*.
- The EIS must be written in plain English and avoid the use of jargon as much as possible.
- The EIS is required to be provided in the same structure as described in this Scoping Document as closely as possible (e.g. executive summary, introduction, proposal details, legislative context, risk assessment, assessment of impacts, consultation, recommendations/mitigation, conclusion).
- A table that cross-references the EIS to the scoping document must be included in the EIS submission.
- The report must reference any figures or supporting information used to the supporting appendix and page number, table or figure.
- Additional technical detail, including relevant data, technical reports and other sources of the EIS analysis must be provided in appendices.
- A redacted version (in addition to the full version) of any reports containing restricted or sensitive information must be provided for public notification, such as a Cultural Heritage Assessment report.
- Maps, diagrams and other illustrative material should be included in the EIS to assist readers to interpret information.
- The EIS document sized A4 with maps and drawings in A4 or A3 format.
- The proponent must supply a copy of all draft EIS and revised EIS documents in electronic formats for circulation and web posting. These are to be supplied by email, USB, or another agreed method.
- Digital files must not exceed 20 MB each.



ACT
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**Environment, Planning and
Sustainable Development**

Scoping Document

Under Division 8.2.2 of the *Planning and Development Act 2007*

- The proponent must supply three hard copies of the draft EIS and two copies on individual USB's once it has been accepted for lodgement and three hard copies and three copies on individual USB's of the revised EIS once it had been accepted for lodgement.

COST OF PREPARATION OF EIS

The proponent is responsible for the preparation of the draft and revised EIS and any related applications and associated costs. This includes additional copies of the draft and revised EIS and other associated documents as required by the Authority from time to time.

NEXT STEPS

The proponent is now required to prepare a document (a ***draft EIS***) that addresses each matter raised in the scoping document for the proposal within the timeframe provided in this scoping document. Once the draft EIS has been accepted for lodgement, a public notification fee is payable in order for notification, referrals and assessment to commence. After the notification period has closed, the Authority will provide comments and any public representations received for the proponent to address in preparing a ***revised EIS***, and any further instructions on the application.

If you have any queries about the requirements outlined in this scoping document, please contact Kristy Moyle to arrange a suitable time to discuss.

Delegate of the planning and land authority

George Cilliers
A/g Executive Group Manager
Planning Delivery Division
Environment, Planning and
Sustainable Development Directorate

Contact

Kristy Moyle
Development Assessment Officer
Impact Assessment and Business Improvement
Environment, Planning and
Sustainable Development Directorate
Email: EPDImpact@act.gov.au

GENERAL REQUIREMENTS FOR THE EIS

1. Cover Page

The cover page must clearly display the following:

- The name of the proposal (project title)
- The block identifier(s) and street address for the proposal
- The date of the preparation of the document
- Full name and postal address of the designated proponent
- Full name and postal address of the designated applicant
- Name and contact details of the person/organisation who prepared the documents (if different to the above)

2. Glossary

Provide a glossary of technical terms, acronyms and abbreviations used in the EIS.

3. Executive Summary

Provide a non-technical summary of the EIS including a description of the proposal, key findings and recommendations.

4. Introduction

Summarise the proposal background and justification for the proposal.

5. Proposal Details

5.1. Project Description

Provide a description of the proposal, including:

- a) The objectives and justification for the proposal;
- b) The location of the land to which the proposal relates, including detailed maps;
- c) The division and/or district names and block and/or section numbers of the land under the *Districts Act 2002*;
- d) If the land is leased – the lessee's name;
- e) If the land is unleased or public land – the custodian of the land;
- f) The purposes for which the land may be used;
- g) A clear identification of all lands subject to direct disturbance from the proposal and associated infrastructure and geomorphic features such as waterways and wetlands. This is to be supported by a map showing all affected lands;
- h) An outline of any developments that have been, or are being, undertaken by the proponent, or other person(s) or entities, within the proposal area and broadly in the region. Describe how the proposal relates to these developments;
- i) A description of all the components of the proposal, including the proposal specifications, the predicted timescale for implementation (design, approvals, construction and operation) and project life;

- j) A plan/description of the precise location of any works to be undertaken, structures to be built, dimensions of machinery to be used for installation and all other elements of the proposal that may have relevant impacts; and
- k) A description of the construction methodologies for the proposal.

5.2. Alternatives to the proposal

Provide details of any alternatives to the proposal considered in developing the proposal including a description of:

- a) Any design and location alternatives to the proposal and provide reasons for selecting the preferred option with an analysis of site selection;
- b) The criteria used for assessing the performance of any alternative to the proposal considered;
- c) Any matters considered to avoid or reduce potential impacts prior to the selection of the preferred option; and
- d) Details of the consequences of not proceeding with the proposal.

6. Legislative and Strategic Context

A description of the EIS process including any statutory approvals obtained or required for the proposal, and how the proposal is aligned with strategic priorities for the ACT.

6.1. Statutory requirements

The EIS must include information on the following statutory requirements:

- *Planning and Development Act 2007*
- *Planning and Development Regulation 2008*
- *Environment Protection Act 1997*
- *Environment Protection Regulation 2005*
- *Nature Conservation Act 2014*
- *Tree Protection Act 2005*
- Other related statutory approvals

6.2. Climate change

The EIS must include information on how the proposal will reduce emissions and increase our resilience to unavoidable climate change impacts including increases in the duration and intensity of heatwaves, droughts, storms with flash flooding and bushfires. The information must address impacts on the local microclimate and how it will contribute to the reduction of urban heat and positively contribute to urban cooling measures.

Additionally, the EIS must address the greenhouse gas emissions associated with the proposal and how legislated target emissions reductions will be met.

Preparation of the EIS must consider the ACT Government's policies:

- ACT Climate Change Strategy, 2019-25 (2019), and
- Canberra's Living Infrastructure Plan: Cooling the City (2019)

6.3. Other requirements

The description must also include information on how each of the following has been considered in the preparation of the EIS and the development of the proposal:

- Territory Plan 2008
- ACT Planning Strategy
- National Capital Plan
- Relevant Environment Protection Policies and Separation Distance Guidelines for Air Emissions (https://www.environment.act.gov.au/environment/legislation_and_policies)
- Eastern Broadacre Strategic Assessment (https://www.planning.act.gov.au/topics/current_projects/studies/eastern_broadacre_planning_project)
- Plans of Management for any public land
- Any relevant Master Plan
- Other relevant planning and environmental guidelines, action plans and management plans.

6.3.1. Ecologically sustainable development (ESD)

Provide a description of the proposed action in relation to the long-term and short-term considerations of economic development, social development and environmental protection. The proponent should ensure that the EIS adequately addresses the principles of sustainable development as defined by s 9 of the P&D Act, especially the economic consequences of the environmental impacts from the proposed development.

6.3.2. Territory Plan strategic directions

A statement must be provided regarding the proposal's consistency with the principles in the Statement of Strategic Directions in the Territory Plan 2008 (Section 2.1 - Strategic Direction).

7. Risk Assessment

7.1. Risk Assessment Methodology

Provide a risk assessment in accordance with the Australian and New Zealand Standard for risk management AS/NZS ISO 31000:2009 *Risk Management – Principles and guidelines*. The proposed criteria for determining which risks are potentially significant impacts must be described.

The Preliminary Risk Assessment (PRA) submitted as part of the request for a scoping document must be revised to include, but not be limited to, the risks identified by the Authority in Table 1.

-Assessment guide-			
Provide a table with the headings below to describe the risks identified and the original risk rating without any mitigation strategies in place. This table format is one option, however alternative formats can be used provided the methodology is clearly described and in accordance with AS/NZS ISO 31000:2009 <i>Risk Management – Principles and guidelines</i>			
Risk	Likelihood	Consequence	Risk rating

The risks identified in Table 1 are based on the scoping document application and comments received from entities on the application. All of these risks are considered potentially significant (i.e. a medium risk level or above), and must be addressed in the EIS. Should any risk levels change during the preparation of the EIS or any new risks become apparent, these must be assessed and included

with a justification in the EIS, and where relevant, the residual risk assessment.

Table 1 – Identified impacts and requirements to be addressed in the EIS

Environmental Theme	Risk identified	See section/s below for further detail
Planning and Land Status	<ul style="list-style-type: none"> Impact of powerlines upon adjacent land uses identified as 'approach routes' within NCA Designated Areas 	8.2.1
Traffic and Transport	<ul style="list-style-type: none"> Increased traffic congestion and reduced road safety during construction 	8.2.2
Utilities	<ul style="list-style-type: none"> Impacts to existing infrastructure during construction 	8.2.3
Materials and Waste	<ul style="list-style-type: none"> Increased waste to landfill during construction and demolition 	8.2.4
	<ul style="list-style-type: none"> Hazards created by stockpiling of materials within the construction site 	
Soils and Geology	<ul style="list-style-type: none"> Impact on adjoining land as a result of sediment and erosion 	8.2.5
Landscape and Visual	<ul style="list-style-type: none"> Visual impacts on approach routes and iconic visual features in the ACT 	8.2.6
	<ul style="list-style-type: none"> Visual disturbance caused by the temporary storage of machinery and materials along approach routes 	
Water Quality and Hydrology	<ul style="list-style-type: none"> Impact on water quality due to potential erosion and sedimentation during and post-construction 	8.2.7
Socio-economic and Health	<ul style="list-style-type: none"> Impacts upon critical services and electricity-dependent entities as a result of temporary losses in electricity supply 	8.2.8
	<ul style="list-style-type: none"> Impacts upon human health and safety as a result of exposure to electro-magnetic fields (ELF) and frequencies associated with high-voltage power lines 	
Hazard and Risk	<ul style="list-style-type: none"> Impacts upon construction workers and service personnel as a result of exposure to high-voltage power lines 	8.2.9
	<ul style="list-style-type: none"> Risks associated with electromagnetic induction and Earth potential rise (EPR) upon human health and safety 	
	<ul style="list-style-type: none"> Risks associated with powerline failures and bushfire during extreme conditions for heat and wind velocity 	
Ecology and Natural Environment	<ul style="list-style-type: none"> Direct impacts on ecological species or communities as a result of construction activities 	8.2.10

Environmental Theme	Risk identified	See section/s below for further detail
	<ul style="list-style-type: none">Indirect impacts on ecological species or communities as a result of changes in physical characteristics of the area	
Heritage	<ul style="list-style-type: none">Impacts on identified objects with Aboriginal Cultural Heritage value	8.2.11

8. Assessment of Impacts

Sufficient information is required to provide the Authority with an adequate understanding of the environmental impacts associated with the proposal.

Each potentially significant risk identified in Table 1 and in the proponent's PRA must be addressed, and structured, as set out in sections 8.1-8.2 below.

8.1. Standard requirements

8.1.1. *Environmental conditions and values*

Describe the environmental conditions and values for the environmental themes identified in Table 1. This section should discuss the baseline conditions for the area.

8.1.2. *Investigations*

Identify the findings and results of any environmental investigation in relation to the land to which the proposal relates.

8.1.3. *Impacts*

Describe the environmental impacts associated with the construction and operation for the environmental themes identified in Table 1 and in the proponent's risk assessment (including cumulative, consequential and indirect effects) on physical and ecological systems and human communities. Particular emphasis should be placed on the potentially significant impacts identified in the risk assessment. Include a discussion of the timeframes of impacts i.e. short or long term, their nature and extent and whether they are reversible or irreversible, unknown or unpredictable. Include an analysis of the significance of the relevant impacts. Information must include any technical data and other information used or needed to make a detailed assessment of the impacts.

8.1.4. *Mitigation*

Discuss the proposed safeguards and mitigation measures that will be implemented to reduce the potentially significant impacts identified in Table 1 and the proponent's risk assessment. This is to include:

- A description and an assessment of the proposed impact avoidance, mitigation or offsetting measures to deal with the environmental impact of the proposal, along with which stage the mitigation measures will be adopted
- Any statutory or policy basis for the mitigation measures
- An outline of an environmental management plan (EMP) that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing
- The frequency, duration and objectives of monitoring proposed
- The name of the agency responsible for endorsing or approving each mitigation measure or

monitoring program

- f) Any corrective actions should the mitigation measures fail
- g) A description of the cost effectiveness of environmental mitigation or rehabilitation measures proposed and the expected or predicted effectiveness of those measures.

8.1.5. Residual risk

Provide a table that details the residual risk for potentially significant impacts identified in Table 1 and the proponent's risk assessment. A residual risk assessment is only required where the significance of impact is determined as medium or above. The calculation of the residual risk should take into account the implementation of mitigation or offsetting measures. A discussion of how the calculations were determined should also be included, including the expected or predicted effectiveness of the mitigation measures.

-Assessment Guide-				
Provide the residual risk assessment as set out in the table below.				
Risk identified in Section 7	Original risk rating from items identified in 7	Residual likelihood	Residual consequence	Residual risk rating

8.2. Detailed requirements

The following matters relate to Table 1 and must be addressed in detail in the EIS. Please note this is not an exhaustive list of matters that may be required to accurately detail the assessment scenarios.

8.2.1. Planning and Land Status

- Include a description of planning context of the area where the project will be located.
- Describe planning and development status of any land or project relevant to the proposal.
- Describe land use of the proposed land and any land to be affected (including, but not limited to, zoning, lessee(s) or custodian of the land, the permissibility of the proposed use defined in the Territory Plan).
- Include reference to the pending *Eastern Broadacre Strategic Assessment* being prepared under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

8.2.2. Traffic and Transport

- Provide a Traffic Management and Control Plan detailing all safety measures to be implemented during construction.
- Describe arrangements for the transport of construction materials, equipment, products, and personnel during the construction phase of the development proposal.
- Include a description of the volume of traffic generated during construction.
- Investigate the impacts the proposal will have on traffic congestion and road safety and describe mitigation measures to reduce the impacts.
- Investigate the impacts on the vehicular route chosen to transport oversized equipment and accessories by heavy vehicles and describe mitigation measures to reduce the impacts.
- Identify and investigate each of the entrance/exit points to be utilised during

construction to ensure the minimum stopping sight distances are achieved in accordance with any applicable standards.

8.2.3. Utilities

- Describe the existing utilities located on the land subject to this proposal.
- Describe any new utilities, removal or realignments required as a result of this development.
- Investigate potential impacts to existing infrastructure and provide mitigation measures to reduce the impacts.

8.2.4. Materials and Waste

- Describe all materials to be stockpiled on site.
- Provide details on the quantity, storage and disposal of any waste products (including any waste soil) generated during installation and commissioning works.
- Investigate potential impacts of stockpiling materials (including any hazard to persons who may use the area) and provide mitigation measures to reduce any impacts.

8.2.5. Soils and Geology

- Describe the soil and geology features of the area.
- A contaminated land search for the site needs to be performed and reflected in the EIS. Discuss any contamination impacts that are present at the site, and how the site will be remediated, if required.
- Provide a Sediment and Erosion Control Plan and describe erosion impacts from construction and operation activities, especially during extreme weather.
- Detail measures to reduce the impacts of sediment and erosion in the Plan, including dust suppression.
- An unexpected finds protocol that is prepared by a suitably qualified environmental consultant should be included in the EIS.

8.2.6. Landscape and Visual

- Undertake a visual assessment and impact analysis of the site and surrounds to describe the current landscape character of the area.
- Visual assessment and impact analysis must address impacts from the subject sites on approach routes as identified in the National Capital Plan.
- Visual assessment and impact analysis must provide perspectives of the site from both carriageways and present a comparative assessment of existing and proposed views upon immediate surrounds, views along approach routes and any significant views/vistas.
- Identify impacts on important view sheds and significant views and vistas to and from the site.
- Describe measures to be adopted to reduce the visual impact from the infrastructure bulk and scale, any stockpiling that may be required and lighting of the facility.

8.2.7. Water Quality and Hydrology

- Include consideration of water quality as a result of sediment and erosion entering drainage lines, waterways and road drainage infrastructure.
- Describe any mitigation measures required to prevent sediment and erosion from impacting on water quality.

8.2.8. Socio-economic and Health

- Consider the impact of temporary electrical outages upon critical services in proximity to the installation site. Services should include but are not limited to the following:
 - Medical services
 - Emergency services
 - Security services
 - Critical care services, including services for vulnerable people
- Consider any impact (either perceived or actual) upon human health and safety as a result of exposure to electro-magnetic fields (ELF) and frequencies associated with high-voltage power lines. Refer to studies that examine the impact of high voltage power lines and human health.

8.2.9. Hazard and Risk

- Provide an analysis of the potential causes and impacts of infrastructure failure and how the associated risks will be managed. Consider any potential risks to construction and service workers as a result of exposure to, and working in proximity to high voltage power lines both during installation and during operation.
- Consider the risk of electromagnetic induction hazards and any potential impact upon materials and persons in proximity to any infrastructure.
- Consider the risk of Earth potential rise (EPR) and associated Step, Touch and Transfer potential hazards, both from power lines and the proposed Harman zone substation:
 - Consider any factors that may cause these hazards
 - Consider the potential severity of these hazards, with consideration given to current magnitude, time duration of current flow, soil electrical resistivity, earthing systems installed on both the impacted assets and the transmission line/substation infrastructure, proximity of metallic conductors (pipelines, unearthed fences, telecommunications lines as examples). Consider any impact upon materials and persons in proximity to any infrastructure.
- Provide details of mitigation and safety measures and evidence of compliance with Australian Standards AS 7000 and AS/NZS 4853, and Other Standards as follows:
 - HB 101 – 1997 (CJC5) Coordination of Power and Telecommunications – Low Frequency Induction (LFI): Code of Practice for the Mitigation of Hazardous Voltages Induced into Telecommunication Lines
 - HB 102 – 1997 (CJC6) Coordination of Power and Telecommunications - Low Frequency Induction.
 - ENA Doc 025 – 2010 Power System Earthing Guide – Part 1: Management Principles.
 - ENA EG1 – 2006 Substation Earthing Guide.
- Consider the risk of fires starting in the grasslands.
- Provide detailed bushfire protection measures to be implemented in proximity to infrastructure, including asset protection zones and vegetation management/fuel load reduction strategies.

8.2.10. Ecology and Natural Environment

- Provide a description of the ecological values (including native vegetation, endangered ecological communities) and potential threatened species and their habitat on and adjacent to the site.
- Undertake ecological surveys by a qualified ecologist for the following species and their habitats:
 - Grassland Earless Dragon,
 - Golden Sun Moth,
 - Pink-tailed Worm-lizard,
 - Striped Legless Lizard,
 - Perunga Grasshopper,
 - Canberra Raspy Cricket.
- Provide maps showing the location of all habitat in relation to the proposal.
- Consider the direct impacts of the development on the ecological values of the area, with particular consideration to pole placement, laydown and access arrangements upon any Natural Temperate Grassland, or potential Golden Sun Moth and Striped Legless Lizard Habitat.
- Consider the impacts of the development on the Grassland Earless Dragon, particularly in consideration of the significance of any remaining habitat as detailed in the National Recovery Plan.
- Consider the indirect impacts of the development on fauna species listed above with particular consideration of the following:
 - Increased predation efficiency and predator abundance due to the erection of poles and lines adjacent to grasslands which are by nature almost treeless
 - Increased mortality of birds due to collisions with power lines, with particular consideration for Little Eagle and other avian species known to occur in the area.
- Consider the potential for weed species to be introduced to the site and describe weed hygiene and control measures to be undertaken.
- Provide details of mitigation measures to reduce the impacts identified on flora and fauna species in accordance with additional detailed assessment of both direct and indirect impacts.

8.2.11. Heritage

- A revised Cultural Heritage Assessment (CHA) must be prepared by a suitably qualified and experienced archaeologist in accordance with ACT Heritage Council (Council) 'Cultural Heritage Reporting Policy', and in consultation with Representative Aboriginal Organisations (RAOs).

8.3 Entity requirements

The EIS must address the entities comments provide in [Attachment A](#). If the issues raised by entities have been addressed in other sections of the EIS, this must be cross referenced.

9. Community and stakeholder consultation

9.1. Consultation must be undertaken with:

- Lease holders and land managers of land potentially impacted by the proposal ;
- Any recreational groups which may be affected by the proposal;
- Any volunteer conservation, landscape management or land care groups active in the area

- who may be affected by the proposal; and
- Any local community and community groups.

9.2. Consultation methods

- Describe the community consultation undertaken (methodology and criteria for identifying stakeholders and the communication methods used).
- Provide details on the information provided during the community consultation process. A plain English statement explaining the proposal and conceptual drawings must be made available to the community and stakeholders.
- Consultation should occur as early as possible and avoid, or make allowances for public holidays, school holidays and the summer holiday (Christmas) shutdown period.

9.3. Consideration of community feedback

- Provide a summary of how the community and stakeholders responded to the proposal and the main comments raised.
- Describe how any concerns have been considered and identify any changes that have been made to the proposal.

9.4. Consideration of public representations from Draft EIS notification

- The revised EIS must include the representations received, issues raised in the representations and a response to the issues and values identified. The summary response must clearly identify the representation(s) to which the responses relate.

10. Recommendations

Provide a summary of commitments to avoid, mitigate and offset the potential significant impacts associated with the proposal.

Describe the monitoring parameters, monitoring points, frequency, data interpretation and reporting proposals.

11. Other relevant information

The proponent may wish to include issues outside the scope of the EIS as a separate section of the EIS. This allows the proponent to identify matters not required to be addressed in the EIS, but that would be subject to development assessment consideration and notification. This can provide additional context for members of the public regarding management of environmental issues, by ensuring that the public is aware that these issues will be addressed in the detailed design of the proposal.

12. References

A reference list using standard referencing systems must be included.

13. Required Appendices

13.1. Scoping document for the EIS

A copy of the final scoping document should be included in the EIS. Where it is intended to bind appendices in a separate volume from the main body of the EIS, the final scoping document should be bound with the main body of the EIS for ease of cross-referencing.

13.2. Scoping Document Reference

Include a table that cross-references the EIS to the scoping document. If the EIS addresses the scoping document in multiple places then this must be also referenced.

13.3. Proponent's Environmental History

Provide details of any proceedings under a Commonwealth or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- The person proposing to take the action
- For an action for which a person has applied for a permit, the person making the application.

If the person proposing to take the action is a corporation, then provide details of the corporation's environmental policy and planning framework.

13.4. Information Sources

For information given the following must be stated:

- The author or any reports or studies
- The publication date
- The source of the information
- How recent the information is (i.e. when a study was conducted or when primary sources were produced)
- How the reliability of the information was tested
- What uncertainties (if any) are in the information

13.5. Study team

The qualifications and experience of the study team and specialist sub-consultants and expert reviewers must be provided.

13.6. Specialist studies

All reports generated based on specialist studies undertaken as part of the EIS are to be included as appendices.

13.7. Research

Any proposals for researching alternative environmental management strategies or for obtaining any further necessary information should be outlined in an appendix.

GLOSSARY

Controlled Action (EPBC): An action defined under the EPBC Act, s 67.

Development application (DA): Application for development as defined under the PD Act.

Environment: As defined under the *Planning and Development Act 2007* (the PD Act), each of the following is part of the environment:

- (a) the soil, atmosphere, water and other parts of the earth;
- (b) organic and inorganic matter;
- (c) living organisms;
- (d) structures, and areas, that are manufactured or modified;
- (e) ecosystems and parts of ecosystems, including people and communities;
- (f) qualities and characteristics of areas that contribute to their biological diversity, ecological integrity, scientific value, heritage value and amenity;
- (g) interactions and interdependencies within and between the things mentioned in paragraphs (a) to (f);
- (h) social, aesthetic, cultural and economic characteristics that affect, or are affected by, the things mentioned in paragraphs (a) to (f).

Environmental Impact Statement (EIS): As defined under the PD Act.

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

Impact Track: An assessment track that applies to a development proposal defined under the PD Act, s 123.

Long term: Greater than 15 years duration.

Medium term: Greater than three (3) years to 15 years duration.

PD Act: *Planning and Development Act 2007* (ACT)

Regulated waste: waste defined under the *Environment Protection Act 1997*

Scoping: The process of identifying the matters that are to be addressed by an EIS in relation to the development proposal - see the PD Act, s 212 (2).

Short term: Zero to three (3) years duration.

Socio-economic: Involving both social and economic factors.

ATTACHMENT A -- ENTITY COMMENTS

ACT Health

Given the historic use of the land for the proposed development. The Health Protection Service Supports comments discussed in the Contamination Preliminary Site investigation conducted by WSP as follows:

- Contamination risks must be managed by an Unexpected Finds Protocol during the installation of the transmission lines.*
- During development all reasonable and practicable measures are taken to suppress dust. There are no further public health concerns in relation to the proposed EIS scoping document.*

ACT Heritage Council

A revised and finalised Cultural Heritage Assessment, prepared in accordance with Council policy, is required as part of the project's Environmental Impact Statement. The following revisions to the CHA are required:

- Consideration of potential impacts to Aboriginal places JA1, JA7 and Hume PAD 1; and a list of any necessary mitigation measures to avoid damage to these Aboriginal places. Where these places fall within proposed project impact areas, additional archaeological survey will also be required.*
- A description of further consultation with RAOs regarding JA1, JA7 and Hume PAD 1, and description of RAO views about appropriate management of these heritage sites.*
- Both options involve damage to Aboriginal places, and the preliminary CHA recommends salvage of JA5 should Option 1 proceed and salvage of Hindmarsh 1 should Option 2 proceed.*

As both options will require Heritage Act 2004 approvals prior to the commencement of works, a Statement of Heritage Effect (SHE) application should be submitted to the Council for approval following selection of an option for the project. Any SHE approval for the project will require that a Return to Country (RTC) protocol be developed in consultation with the RAOs and other relevant stakeholders (lessees and land managers), and approved by the Council prior to delivery of this outcome.

Conservator of Flora and Fauna

While the Preliminary Environmental Assessment has identified most of the direct impacts associated with erecting poles and lines for both options presented, it has not considered indirect impacts which are likely to be significant. The following items should be included in the Scoping Document and addressed in the EIS process:

1. Increased predation efficiency & predator abundance

Grasslands, including Jerrabomberra Valley East are by their nature almost treeless. Erecting poles and lines across or adjacent to grasslands introduces an unnatural vertical structure that can be used as perching and nesting points by birds. This enables predators of threatened lizards and invertebrates a wide field of view and enhances predation efficiency. Known predators of the threatened species present at East Jerrabomberra which will utilise perches to hunt from include the Magpie, Australian Raven, Black Shouldered Kite, Nankeen Kestrel, Indian Myna, European Starling, and probably includes many other species such as the Black-faced Cuckoo-shrike, Kingfishers and Butcherbirds.

Research elsewhere has found the abundance of such predators in an area can be increased by the presence of new vertical infrastructure, while species such as magpies may nest on the structures creating a more permanent presence within a core grassland area. The potential impact of powerlines increasing both predation efficiency and predator abundance needs to be thoroughly canvassed during the EIS process, in addition to possible mitigation measures.

Within Option 2 (the preferred option) there is some existing vertical infrastructure associated with the road reserves and past plantings, but this proposal will result in a substantial increase. The proposed route also passes by the rocky hill on the Cookanalla property which is a hotspot for threatened fauna.

2. Increased avian mortality

Powerlines can cause mortality of birds through collisions. Currently a research project has satellite trackers on two male Little Eagles that are part of pairs that nest nearby. Both males have been recorded foraging over the proposal area, hunting rabbit kittens, middle sized birds (e.g. magpies, rosellas etc.) and large lizards (blue tongues and bearded dragons). Females have also been seen flying over the area and are likely to hunt there. The Little Eagle is listed as a vulnerable species in the ACT, where there are estimated to be about a dozen breeding pairs. The Scoping Document must consider the potential impact of bird strike on this and other species. This is likely to be a greater issue for Option 1 rather than (preferred) Option 2.

3. Increased risk of fire

Powerlines may increase the risk of wildfire starting within the grassland. This risk and any associated mitigation measures (e.g. reduced fuel loads under powerlines etc.) need to be addressed within the EIS process.

4. Introduction and spread of weeds

The disturbance caused by pole erection and maintenance will create conditions favourable for weed introduction and flourishing of those weed species already present in the area. Weed hygiene and control will need to be thoroughly addressed.

5. Direct impacts to native vegetation

Pole placement, laydown and access arrangements for Option 2 should seek to avoid any Natural Temperate Grassland, recorded Golden Sun Moth Habitat (note there are additional areas to those identified in the proposal documents, please see Attachment A) and minimise placement within habitat of the Striped Legless Lizard and native grassland. The assessment claims no loss of native vegetation, but this does not seem credible given the proposed mapped locations of the new poles.

Additional notes

The National Recovery Plan for the Grassland Earless Dragon found that "Because the Grassland Earless Dragon is now known from so few sites, and its former distribution has been so reduced and fragmented, all remaining known occurrences are considered critical to the survival of the species, and should not be compromised." Option 1 passes through known Grassland Earless Dragon habitat and given the direct construction impact and probable significant indirect impacts it appears impossible for this option not to compromise the East Jerrabomberra occurrence of the species.

Similarly, the likely impacts from Option 2 are of such significance that the EIS needs to include a more comprehensive and thorough investigation of possible alternatives, that do not cross or circumnavigate the native grassland areas. The project's needs require greater clarification so that the veracity of possible alternatives can be assessed.

Option 2 is likely to require referral to the Commonwealth for consideration under the EPBC Act as it is likely to result in a significant impact.

ACT Emergency Services Agency

Fire & Rescue has reviewed the Request for EIS Scoping Document (EIS201900038) – Harman 132 kV transmission line. B.10 S.107 SYMONSTON and have no comments at this time regarding the scope of the document.

Environment Protection Authority (EPA)

The scoping document adequately addresses Environment Protection Authority (EPA) concerns within the proposed works area and the EPA supports the proposed works subject to the following conditions:

- A site specific unexpected finds protocol (UFP) must be prepared by a suitably qualified environmental consultant and implemented during site development works. The UFP must include, amongst other things, appropriate procedures for the identification, assessment, management, validation and disposal of potential contamination at the site and contractor induction procedures into the use of the UFP.*
- All soil subject to disposal from site must be assessed in accordance with EPA Information Sheet 4: Requirements for reuse and disposal of contaminated soil in ACT.*
- No soil is to be disposed from the site without EPA approval.*

Further advice will be provided in relation to the proposed development following review of the Development Application.

EPD – Strategic Planning Division

Chapter 2.4 (page 19) would benefit, for completeness, with reference to the pending Eastern Broadacre Strategic Assessment being prepared under the Commonwealth's Environment Protection and Biodiversity Conservation Act 1999. The strategic assessment includes the area under consideration for the EIS.

Further information on the strategic assessment is available from:

https://www.planning.act.gov.au/topics/current_projects/studies/eastern_broadacre_planning_project

National Capital Authority

Part of the proposed transmission lines are located in the road reserves of Monaro Highway, Canberra Avenue and Harman Estate. Both roads are identified as approach routes in the National Capital Plan (the Plan) and are within the NCA's Designated Area. The NCA's interest in approach routes are identified in Section 4.15 of the Plan. A key interest for the NCA along approach routes are to enhance views to recognisable and popular images of Canberra.

The proponent has identified a medium level for risks of the NCA's interest such as visual impact, construction and traffic impact. The NCA supports the proponent providing assessments for visual and traffic impact in their EIS. The NCA requests that part of the visual analysis provides a comparative assessment of existing and proposed views of both the immediate surrounds and views along the approach routes, as well as more distant views (for example, towards sites such as Black Mountain and Mount Ainslie).

Works for the transmission line along the road reserve of Monaro Highway and Canberra Avenue will require a Works Approval from the NCA. The installations at Harman are on National Land outside of a Designated Area and will require a Letter of Consistency to be obtained from the NCA. This process is not dissimilar from the Works Approval process, and works are required that is consistent with Development Control Plan 11/04. Section 2.3.1.4 of the scoping document refers to 'draft' Development Control Plan 19/01, however this is now an approved DCP and should be referred to as such in future documentation. It should be noted that Block 12 Section 111 Symonston and Block 2233 Jerrabomberra is under EPSDD planning jurisdiction and any works on these sites are not required to be submitted for NCA Works Approval.

Utilities Technical Regulation

Risks identified by Utilities Technical Regulation that have not been included in the EIS scoping request for this project is that due to:

Electromagnetic induction (as distinct from EMF covered in clause 6.7)

Electromagnetic induction hazards can arise from normal load currents and especially when fault currents flows. The hazard can create dangerous high voltages and these can be impressed on: metallic pipelines, telecommunications cables, and unearthed wire fences (eg. fence wire on wooden posts), which can be hazardous to the impacted asset, workers and the public.

The level of severity is dependent on: the current magnitude, time duration of current flow, separation distance from the transmission line, length that the transmission line runs roughly parallel to the pipe, fence, etc., earthing systems installed on the impacted assets.

Guidance to hazard assessment and mitigation measures can be found in AS/NZS 4853, HB 101 and HB 102.

Earth potential rise (EPR) and associated Step, Touch and Transfer potential hazards. These hazards would also apply to the proposed Harman zone substation.

These hazards can arise from faults at the zone substation or on the transmission line, and the severity is dependent on the current magnitude, time duration of current flow, soil electrical resistivity, earthing systems installed on both the impacted assets and the transmission line/substation infrastructure, proximity of metallic conductors eg. pipelines, unearthed fences, telecommunications lines. The arising voltages can be hazardous to the impacted asset, workers and the public.

Guidance to hazard assessment and mitigation measures can be found in AS 7000, AS EG0, AS EG1, AS/NZS 4853, HB 101 and HB 102.

Canberra Airport

Based on the data provided the sub-station and the adjacent lightning pole will not penetrate Canberra Airport's OLS, therefore no further assessment is required by Airservices Australia (ASA) or CASA.

However, this does not take account of the construction methods to install this infrastructure, including crane operating heights which will require an independent assessment once this is known. The previous information provided in 2018 was that a crane would need to operate up to a height of 35m.

It would be useful for a condition on your approval to state that the contractor must consult with Canberra Airport for approval of any crane/s to operate on the site.

Appendix 2 – Cross reference table between EIS and the final scoping document

This page has been left intentionally blank.

Sections of the EIS where scoping document requirements are addressed are provided in Table B.1.

Table B.1 *Scoping document reference*

Scoping Document Requirement	Description	EIS Reference
1. Cover Page	The Cover page must clearly display the following: <ul style="list-style-type: none"> – The name of the proposal – The block identifiers and street address for the proposal – The date of the preparation of the document – Full name and postal address of the designated proponent – Full name and postal address of the designated applicant – Name and contact details of the person/organisation who prepared the documents 	Cover Page
2. Glossary	Provide a glossary of technical terms, acronyms and abbreviations used in the EIS	Page xii
3. Executive Summary	Provide a non-technical summary of the EIS including a description of the proposal, key findings and recommendations.	Page i
4. Introduction	Summarise the proposal background and justification for the proposal.	Section 1
5. Project Details	<p>Project Description</p> <p>Provide a description of the proposal, including:</p> <ul style="list-style-type: none"> – The objectives and justification for the proposal – The location of the land to which the proposal relates, including detailed maps – The division and/or district names and block and/or section numbers of the land under the <i>Districts Act 2002</i> – The lessee's name or custodian of the land – The purposes for which the land may be used – A clear identification of all lands subject to direct disturbance from the proposal and associated infrastructure and geomorphic features such as waterways and wetlands. This is to be supported by a map showing all affected lands – An outline of any developments that have been, or are being, undertaken by the proponent, or other person(s) or entities, within the proposal area and broadly in the region. Describe how the proposal relates to these developments – A description of all the components of the proposal, including the proposal specifications, the predicted timescale for implementation (design, approvals, construction and operation) and project life – A plan/description of the precise location of any works to be undertaken, structures to be built, dimensions of machinery to be used for installation and all other elements of the proposal that may have relevant impacts, and – A description of the construction methodologies for the proposal. <p>Alternatives to the proposal</p> <p>Provide details of any alternatives to the proposal considered in developing the proposal including a description of:</p> <ul style="list-style-type: none"> – Any design and location alternatives to the proposal and provide reasons for selection the preferred option with an analysis of site selection – The criteria used for assessing the performance of any alternative to the proposal considered – Any matters considered to avoid or reduce potential impacts prior to the selection of the preferred option, and – Details of the consequence of not proceeding with the proposal. 	Section 2
6. Legislative and Strategic Context	A description of the EIS process including any statutory approvals obtained or required for the proposal, and how the proposal is aligned with strategic priorities for the ACT.	Section 3

Scoping Document Requirement	Description	EIS Reference
7. Risk Assessment	Provide a risk assessment of the Project in accordance with the Australian and New Zealand Standard for risk management AS/NZS ISO 31000:2009 Risk Management – Principles and guidelines. The propose criteria for determining which risks are potentially significant impacts must be described.	Section 0
8. Assessment of Impacts	8.1. Standard requirements: Sufficient information is required to provide the Authority with an adequate understanding of the environmental impacts associated with the proposal. 8.2. Detailed requirements	Section 5
	8.2.1. Planning and land status	Section 5.2
	8.2.2. Traffic and transport	Section 5.3
	8.2.3. Utilities	Section 5.4
	8.2.4. Materials and waste	Section 5.5
	8.2.5. Soils and geology	Section 5.6
	8.2.6. Landscape and visual	Section 5.7
	8.2.7. Water quality and hydrology	Section 5.8
	8.2.8. Socio-economic and health	Section 5.9
	8.2.9. Hazard and risk	Section 5.10
	8.2.10. Ecology and natural environment	Section 5.11
	8.2.11. Heritage	Section 5.12
	8.3. Entity requirements: The EIS must address the entities comments. If the issues raised by entities have been addressed in other sections of the EIS, this must be cross referenced.	Section 5.18
9. Community and stakeholder consultation	9.1. Consultation must be undertaken with any relevant lease holder and land managers, recreational groups, volunteer conservation, landscape management or landcare groups, local community and community groups. 9.2. Consultation methods. 9.3. Consideration of community feedback. 9.4. Consideration of public representations from Draft EIS notification.	Section 6.3
10. Recommendations	Provide a summary of commitments to avoid, mitigate and offset the potential significant impacts associated with the proposal. Describe the monitoring parameters, monitoring points, frequency, data interpretation and reporting proposals.	Section 7
11. Other relevant information	GHD has added assessments that were not included in the scoping document. They include noise and vibration, air quality, resources, climate change and greenhouse gas.	Sections 5.13, 5.14, 5.15, 5.16 and 5.17
12. References	A reference list using standard referencing systems must be included.	Section 9
13. Required Appendices	13.1 Scoping document for the EIS	Appendix A
	13.2. Scoping document reference	Appendix B
	13.3. Proponent's environmental history	Appendix R
	13.4. Information sources	Section 9, Appendix S
	13.5. Study team	Appendix T
	13.6. Specialist studies undertaken as part of the EIS:	
	Options assessment	Appendix D
	EPBC assessment	Appendix E
	Climate change and greenhouse gas	Appendix F

Scoping Document Requirement	Description	EIS Reference
	Traffic and transport assessment	Appendix G
	Dial before you dig investigation	Appendix H
	Geotechnical investigation	Appendix I
	Landscape and visual assessment	Appendix J
	Electromagnetic fields assessment	Appendix K
	Bushfire assessment	Appendix L
	Earth potential rise assessment	Appendix M
	Ecological assessment	Appendix N
	Statement of Heritage Effect	Appendix O
	Noise and vibration impact assessment	Appendix P
	Community consultation	Appendix Q
	13.7. Research	Not applicable

Additional requirements

Table B.2 Consolidated entity advice

Entity	Comment	Section in EIS addressed
Health Protection Service (HPS)	Contamination risks must be managed by an Unexpected Finds Protocol during the installation of the transmission lines. During development, all reasonable and practicable measures are taken to suppress dust.	Section 5.6
	Future developments near the transmission lines must have appropriate set back distances in accordance with International Commission on Non-Ionizing Radiation Protection (ICNIRP) and ARPANSA exposure standards.	Section 5.9.5
	The design and construction of any sedimentation ponds must minimize for them to cause an insanitary condition under the Public Health Act 1997.	Not required.
ACT Heritage Council	Heritage assessment of the new poles on the western side of the Monaro Highway, including inspection by a qualified archaeologist and RAOs, and in consultation with RAOs about cultural values	Not required.
	Further information on the nature and extent of survey coverage for the CHA 2019, to demonstrate that the entirety of the project footprint has been adequately addressed.	Appendix O
	Clarification of the path of any proposed access routes and/or measures that will be adopted to ensure that Aboriginal places will not be subject to disturbance.	Appendix O
Conservator of Flora and Fauna	Incomplete ecological mapping. Figures do not show records or habitat for Grassland Earless Dragon. The revised EIS should include updated mapping which accurately represents the threatened ecological values in the area.	Section 5.11 Appendix N
	Increased predation efficiency and predator abundance Provide further information regarding the impact of increase predation efficiency and mitigation measures that will be applied for these impacts.	
	Increased avian mortality. The effectiveness of cable line marking to mitigate the potential for increased bird strike is unclear.	
	Alternative options to the proposed alignment.	Appendix D

Entity	Comment	Section in EIS addressed
	The revised EIS needs to comprehensively demonstrate that there are no feasible alternatives including underground transmission lines or alternative alignments.	
	Please provide further information regarding the level of impact the preferred option will have on Grassland Earless Dragon.	Section 5.11, Appendix N
	Please provide further information regarding the extent to which the proposal will intersect with the EBSA.	Section 5.2
	Natural Temperate Grassland impacts. Please address the level of impact to NTG along Canberra Avenue and the mitigation measures that will be applied to protect these areas of NTG. Please provide further details regarding the ongoing management of the 25 m transmission line easement area.	Section 5.11
	Please provide further details regarding whether other options were considered to avoid or reduce potential impacts to NTG.	Appendix D
	Please provide further information on the rehabilitation and management of disturbed areas following completion of construction of the proposal to ensure weeds are managed and suppressed.	Section 5.11
	Please provide a more detailed options analysis to demonstrate an evidence-based comparison of alternatives.	Appendix D
	Please confirm whether vegetation removal will be avoided during September to November (as well as August to January) to avoid disturbing reptiles during important movement/breeding periods.	Section 5.11.5
Jemena	The proponent is required to prepare an Electrical Hazard Study (EHS) consistent with standards found within AS4893 to assess the interface between proposed overhead electrical infrastructure with buried steel pipeline infrastructure.	Section 5.4.3 Section 5.4.4
	The provide a construction methodology which outlines construction phase activities and shows the location/distance of the new proposed transmission line in respect to Canberra Primary Main (CPM).	Section 2.4

Appendix 3 – Section 224 notice

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ACT
Government

Environment, Planning and
Sustainable Development

Jason Watson
GHD Pty Ltd
Level 7, 16 Marcus Clarke Street
CANBERRA ACT 2601

Dear Jason

**Application 201900038 –Environmental Impact Statement (EIS)
Chance to Address Unaddressed Matters – Section 224 Notice**

I refer to the revised EIS submitted to the planning and land authority (the Authority) on 30 September 2021.

The Authority has undertaken an assessment of the revised EIS in accordance with section 222 of the *Planning and Development Act 2007* (PD Act). The Authority is not satisfied that the EIS sufficiently addresses each matter raised in the scoping document for the proposal. As a result, the Authority does not accept the EIS and is providing a notice of this effect under section 224 of the PD Act.

Further information is requested as outlined in [Attachment A](#). You must respond to this notice by providing a revised EIS, or otherwise, by 30 November 2022 to EPDImpact@act.gov.au.

For your information, the Authority may provide up to two notices for a chance to address unaddressed matters under section 224A of the PD Act. If the Authority remains unsatisfied after two notices are responded to, the Authority must reject the EIS.

If you have any questions, please contact the Assessment Officer, Hayden Pini, on (02) 6207 8728 or email Hayden.Pini@act.gov.au.

Yours sincerely,

Dominic Riches
A/g Senior Director, Impact Assessment
19 November 2021

Attachment A

Further information required for Revised EIS – 201900038

Please address the following matters:

Risk Ratings/References:

- Planning and land status risk item 1: the residual risk is incorrectly stated as low. Please correct to high or revise likelihood/consequence rating (which currently states an almost certain likelihood and minor consequence).
- Hazard and Risk, risk item 4, 5 and 6: the residual risk rating is incorrect. 'Very unlikely' is not a risk category. Please correct this likelihood rating with a risk rating that is identified in the methodology in section 4.1 of the EIS. The pre-mitigated risk in Table 5-35 for "potential impact of bushfires affecting operation of the transmission lines" and "potential risk of bushfire during construction" are listed as very low, with residual risk listed as low. Please provide details as to why this risk has increased from very low to low.
- Ecology and Natural Environment risk item 2: the residual risk rating is incorrect when considering the likelihood/consequence. Please correct to high or revise likelihood/consequence rating (which currently states possible likelihood and major consequence).
- Climate Change: The section for climate change is referenced in Table 4-4 as being in section 5.14. Please revise as this theme is located in section 5.15.
- The 'Resources Section' in Table 4-4 has an error code. Please rectify. The likelihood rating assigned in this row of the table for 'increased energy consumption associated with operation of the proposal...' also states a 'certain' likelihood, which is not an identified risk rating. Please revise.

Missing information/minor typos

The following mitigation measures from Table 5-34 'Earth Potential Rise' and Table 5-42 'Operational Impacts' are missing from Table 7-1:

- "Further assessment and mitigation would be undertaken to reduce EPR risks at poles 1, 2, 3, 4 13, and 14 as indicted in the EPR assessment (July 2021) in Appendix F."
- "The use of perch guards will be employed to reduce the likelihood of electrocution of avian species caused by arcing transformers and the bridging of transmission electrical lines, and to deter avian predators from hunting vulnerable ground-dwelling species below."

Please revise and include these measures in Table 7-1.

Entity advice:

The revised EIS was referred to a number of entities and advice was received stating that further information was required. The following must also be addressed:

Conservator of Flora and Fauna**Incomplete ecological mapping:**

Complete mapping is now included in the document at Page 137-140 & 144-145. However, there remains some uncertainty around whether the preferred option will impact Grassland Earless Dragon (GED) habitat. It is also not clear how this EIS/proposal will intersect with the Eastern Broadacre Strategic Assessment (EBSA). The EBSA protected/developed all remaining GED habitat, so there is no scope for damaging any further GED habitat without these proposals being in direct contradiction. Given this, there are no offsets available, and the species is critically endangered, it is not acceptable that developments can be assessed to impact on GED on the assumption that an offset can be found, particularly when it is known that it is a virtual impossibility for this species.

The same issues apply for Striped Legless Lizard (SLL). There is an increasing problem with being able to identify and secure offsets in the ACT, and individuals were found in the proposed development easement. Without a policy to guide offsetting in the ACT, we are losing our conservation values and funding to protect species in the ACT is going to NSW. For the proponent, this indicates another reason why a referral to the Commonwealth is required.

Finally, surveys for SLL and GED were conducted in November and October to December. SLL were recorded on site (in the Revised EIS but not in the “Impacts on threatened biota” on Page 56 of Appendix D), while GED were not. The presumption from the documentation is that these species occur all year round. While they may be on site all year, the most appropriate times to survey vary. October is acceptable for SLL, but October to December isn’t suitable for GED. Such surveys would need to occur around March. Without this data it must be assumed that GED are present. Species likely to be closely associated with GED (e.g., Raspy Cricket) were identified near to the easement corridor which is further evidence that this is habitat that warrants protection for GED.

Cumulative impacts of development on Grassland Earless Dragon:

This is the third proposal for utility infrastructure that will potentially impact GEDs this year. At least one of them was along the same route as this one. The proponent will need to demonstrate that there will be NO impacts on this species, especially seeing as they have decided not to refer to the Commonwealth under the EPBC Act. I am of the opinion that this referral is required.

Note: It is not clear if the EBSA addresses the need for increasing infrastructure associated with development or its connection with this proposal. There does not appear to be any strategic approach to utilities and infrastructure planning where protected ecological matters will be impacted.

- *Please provide further information regarding the level of impact the preferred option will have on GED. The justification of “no significant impact” on Page 98 of Appendix D is lacking evidence, and the conclusion that the proposal will not impact the recovery of the species on Page 117 of Appendix D is also questionable.*
- *Please undertake an additional survey of GED populations in March to determine the accuracy of the initial finding that no GED are present in the vicinity of the proposal.*

- *Please provide further information regarding the extent to which the proposal will intersect with the EBSA.*

Increased predation efficiency:

It is not clear how the issue of increased predation efficiency has been adequately dealt with in the Revised EIS. There appear to be inconsistencies between Appendix D and Page 149 of the revised EIS, where it suggests that Evoenergy “will investigate” the installation of perch guards (without clear commitment). Given the threat that avian predators represent in this landscape, Evoenergy must install perch guards at a minimum, and this commitment should be included consistently throughout the EIS documents as it has been on Page 55 of Appendix D. The proponent should also ensure that the Revised EIS reflects the operational impacts described on Page 55 of Appendix D.

The proponent must also commit to some level of monitoring to explore the efficacy of perch guards, as well as whether the transmission poles attract perching animals/predators over a 2–3-year period. An adaptive management approach will need to be applied and, if the report shows an increase in predation, additional mitigation measures will need to be explored and installed at the expense of the proponent.

- *Please provide further information regarding the impact of increased predation efficiency and mitigation measures that will be applied for these impacts i.e., whether perch guards will be installed for avian predators. Please ensure commitments in relation to this mitigation measures are included consistently throughout the main EIS document as outlined on Page 55 of Appendix D.*
- *Please describe the extent to which the efficacy of perch guards will be monitored following completion of the proposal.*
- *Please ensure that Table 5-42 of the main EIS includes all of the ‘operational impacts’ outlined in Table 6-1 of Appendix D.*

Natural temperate grasslands impacts:

Impacts on natural temperate grasslands (NTG) have not been adequately addressed for the sections along Canberra Ave that are very close to the NTG. The proposed power poles appear to be in inappropriate locations. A 25 m corridor appears to be wider than the road reserve and details of what is required in this corridor need to be articulated (e.g., vegetation management/condition, access roads and tracks, etc.).

- *Please address the level of impact to NTG along Canberra Avenue (see Figure 4-3, Appendix D) and the mitigation measures that will be applied to protect these areas of NTG.*
- *Please provide further details regarding the ongoing management of the 25m transmission line easement area i.e., vegetation management/condition, access roads and tracks.*
- *Three alternatives to the proposal are presented in Section 2.4 of the EIS. It is not clear whether the proponent has considered matters to avoid or reduce potential impacts NTG prior to the selection of the preferred option, i.e. locating on the other side of Canberra Ave and other installation methods in these locations that will lessen the impact on protected matters. Please provide further details regarding whether other options were considered to avoid or reduce potential impacts on NTG.*

Weed management:

The ACT Government has put a significant amount of resourcing into controlling African lovegrass in this landscape including on road reserves, rural leases and Parks and Conservation Service land. This is the reason why the proponent's surveys did not identify a large amount of this species along Canberra Ave. As soon as the land is disturbed it is likely that this species will make a comeback and require management and suppression.

- *Please provide further information on the rehabilitation and management of disturbed areas following completion of construction of the proposal to ensure weed species such as African lovegrass are managed and suppressed.*

Options analysis:

Option 2 was selected based on benefits to heritage and biodiversity. It is not clear whether there is a thorough options analysis, apart from a couple of brief paragraphs outlining why option 3 is not suitable on Page 16-17.

- *Please provide a more detailed options analysis to demonstrate an evidence-based comparison of alternatives.*

Other notes:

Page 54 of Appendix D suggests that vegetation removal will occur outside breeding seasons (August to January). I would argue that September to November are important movement/breeding periods for reptiles so removal at this time would maximise disturbance. June through August may be more appropriate for vegetation removal.

- *Please confirm whether vegetation removal will be avoided during September to November (as well as August to January) to avoid disturbing reptiles during important movement/breeding periods.*

Inconsistencies between the Revised EIS and Appendix D raise concerns about how the proponent would implement this proposal. The concerns raised in these comments will need to be addressed, and any inconsistencies in the Revised EIS and Appendix D clarified before this development can be supported from a conservation perspective.

The proponent needs to give careful thought to whether offsets are available for the species and habitat that will likely be affected directly – or indirectly – by this development. There is no opportunity to directly offset GED habitat, and the justification of “no significant impact” on Page 98 of Appendix D is lacking evidence. The conclusion that the proposal will not impact the recovery of the species on Page 117 of Appendix D is also questionable. Introducing perches is a real risk for GED and options for directly offsetting SLL are extremely limited. Also, it is not clear how 2.92 ha removal of low-quality golden sun moth (GSM) habitat has been assessed as not a significant impact (see Page 92, Appendix D).

The proponent must demonstrate that there will be no impacts on EPBC listed species (GSM, SLL and GED) in order to justify not referring to the Commonwealth for assessment against the EPBC Act.

ACT Heritage Council**Background:**

A preliminary Cultural Heritage Assessment was completed by Past Traces in 2019 (CHA 2019). It was informed by consultation with Representative Aboriginal Organisations (RAOs), literature review and archaeological survey; and assessed two possible development options for the transmission line. The CHA 2019 concluded that both Option 1 and Option 2 would cause damage to Aboriginal places and mitigation measures were proposed.

CHA 2019 was provided in support of a request for the scoping document for the EIS. The ACT Heritage Council (the Council) noted in response that consideration of JA1, JA7 and Hume PAD1 (Bonshaw PAD 1) - which had not been discussed in detail - was required, as these Aboriginal places were mapped as located in areas identified as 'potential construction phase access.' The Council also advised that a revised and finalised CHA must be prepared for the EIS.

An addendum to CHA 2019 was prepared in 2020 by Navin Officer Heritage Consultants (NOHC 2020) in response to this Council advice. This focused on the final development footprint (Option 2) and included a site inspection of the Aboriginal place, Hindmarsh 1, which had been recorded in the project footprint by the CHA. No additional survey of the wider project area was undertaken for NOHC 2020.

The revised project footprint (Option 2) is proposed to be located well removed from JA1, JA5, JA6, JA7 and Bonshaw PAD 1, and appears to avoid impact to these Aboriginal places. However, the broader area in which these sites are located is still noted as 'potential construction phase access,' although the EIS suggests that this access will be limited to one to two light vehicles in the areas near the proposed pole locations and no formal access tracks will be established.

NOHC 2020 notes that the revised project footprint will likely cause damage to Hindmarsh 1, which is a small surface artefact scatter, located on an existing vehicle track which will be used for construction access. NOHC 2020 recommends that the artefacts associated with Hindmarsh 1 are moved off the track, and that the area they are moved to is fenced during works to avoid any inadvertent impacts. The report does not identify the statutory requirements for these proposed actions, and the report does not constitute a Statement of Heritage Effect (SHE) application as requirements of Section 61G of the *Heritage Act 2004* have not been met.

NOHC 2020 also includes recommendations to undertake a cultural awareness site induction with project personnel prior to works commencing and to follow the provided unexpected discovery protocols.

The Council notes that the advice previously provided on the draft EIS on 22 January 2021 has not been addressed in the revised EIS. Additionally, the NOHC 2020 report has not been updated to address previous Council comments.

Advice:

The documents referred on 7 October 2021 are unchanged in relation to heritage matters from those provided on 27 November 2020 and have not addressed previous Council advice. The submitted documents indicate that poles on the western side of the Monaro Highway (including their associated works areas) do not appear to have been assessed in either the CHA 2019 or NOHC 2020; and survey coverage for the CHA 2019 has not been made clear in either report.

Additionally, the Council has identified that while the proposed development is well removed from JA1, JA5, JA6, JA7 and Bonshaw PAD 1, the blocks containing these Aboriginal places are still noted in their entirety as 'potential construction phase access.'

On this basis the Council advises that the following information is required to adequately address the requirements of the EIS scoping document and previous Council advice in relation to heritage matters:

- *Heritage assessment of the pole locations, including the associated works areas on the western side of the Monaro Highway. This is to include inspection by a qualified archaeologist and RAOs, and consultation with RAOs about cultural values;*
- *Further information on the nature and extent of survey coverage for the CHA 2019, to demonstrate that the entirety of the project footprint has been adequately assessed; and*
- *Clarification of the path of any proposed access routes, and/or measures that will be adopted to ensure that JA1, JA5, JA6, JA7, Bonshaw PAD 1, or any other Aboriginal places will not be subject to disturbance or damage from construction phase access.*

A revised CHA including this information is required in order for the Council to endorse the EIS.

The CHA and the revised EIS have also not identified the statutory requirements of the suggested mitigation measures. The Council advises that the following will be required prior to the Development Application for the project:

- *If the artefacts associated with Hindmarsh 1 are moved off the access track, a SHE approved by the Council under s61H of the Heritage Act 2004, would be required prior to works commencing. Any SHE application must meet the statutory criteria outlined in Section 61G of the Heritage Act 2004. The addendum CHA includes consultation with the RAOs regarding this recommendation to move Hindmarsh 1, however limited timeframes for consultation were provided. Any SHE application must include additional consultation with RAOs, including reasonable opportunity to provide comment on the draft report; and*
- *The SHE application for this activity must include a Return to Country (RTC) protocol or other suitable long term management strategy if the Aboriginal objects are proposed to be collected, developed in consultation with RAOs. Evidence of lessee and/or land manager support of the RTC location is required. This should be accompanied by a statement that no future works are proposed to occur in the area that the artefacts will be moved to.*