EPBC Act referral

Australian Government
Department of Agriculture, Water and the Environment

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Title of proposal	2021/9121 - New transmission infrastructure, HumeLink

Section 1

Summary of your proposed action

1.1 Project industry type Energy Generation and Supply (non-renewable)

1.2 Provide a detailed description of the proposed action, including all proposed activities

Transgrid proposes to increase the energy network capacity in southern NSW through development of approximately 360 km of new high-voltage transmission lines and associated infrastructure. This proposal is collectively referred to as HumeLink.

HumeLink would connect existing substations near Wagga Wagga and Bannaby as well as a future substation at Maragle (in the Snowy Mountains), which is subject to a separate major project approval (SSI-9717, EPBC 2018/836).

The proposal would provide the required support for the network in southern NSW, allowing for the increase in transfer capacity between new renewable generation sources and the demand centres of Sydney, Newcastle and Wollongong.

When completed, HumeLink aims to:
- Increase transfer capacity between southern NSW and major load centres within NSW (Sydney, Newcastle and Wollongong)
- Reinforce stability and reliability in the network
- Facilitate transition of the network to new generation sources.

The proponent is New South Wales (NSW) Electricity Networks Operations Pty Ltd (referred to as Transgrid). Transgrid operates and manages the main high voltage transmission network in NSW and ACT and is the Authorised Network Operator for the purpose of an electricity transmission or distribution network under the provisions of the Electricity Network Assets (Authorised Transactions) Act 2015.

Details of proposed action

HumeLink includes the following key components:
- Substation works:
  *A new substation (Gugaa 500/330 kV (Gugaa 500 kV)) located approximately 15 km east of the existing Wagga 330/132 kV substation (Wagga 330 kV)
  *Augmentation of the existing Wagga 330 kV and Bannaby 500/330 kV (Bannaby 500 kV) substations
- New transmission line circuits between:
  * Maragle 500 kV substation and Bannaby 500 kV substation
  * Maragle 500 kV substation and Gugaa 500 kV substation
  * Gugaa 500 kV substation and Bannaby 500 kV substation
  * Existing Wagga 330 kV substation and new Gugaa 500 kV substation
- Ancillary development:
  * Two telecommunication huts along the transmission lines
  * New and upgraded temporary and permanent access tracks and roads
  * Temporary facilities required for construction of the proposal e.g. laydown and staging areas, stockpiling areas, concrete batching plants, brake/winch sites, site offices, parking areas and accommodation camps

Transmission line easements

The transmission lines would be supported on a series of free-standing steel lattice structures up to 75 m in height and generally spaced 300 to 600 m apart.

The footings of each structure would require an area of up to 300 m2, depending on ground conditions and the proposed structure type. Additional disturbance at each structure site to facilitate structure assembly and stringing may be required.

The easements for the 330 kV transmission lines would be 60 m wide, while the easements for the 500 kV double circuit transmission lines would be 70 m wide. The easement provides a right of access to construct, maintain and operate the transmission line and other operational assets.

Substations

Construction of the new Gugaa 500 kV substation including two new 500/330 kV transformers and two 500 kV reactors. The new Gugaa 500 kV substation is expected to occupy an area of up to 170,000 m2.

The existing Wagga 330 kV substation on Ashfords Road, Gregadoo would be reconfigured to accommodate new bays for two new 330 kV transmission line circuits within the existing substation property boundary.

The existing Bannaby 500 kV substation on Hanworth Road, Bannaby would be expanded within existing Transgrid owned land to accommodate connections for new 500 kV transmission line circuits.

HumeLink would connect to the Maragle 500 kV substation that would be constructed as part of the Snowy 2.0 Transmission Connection Project.

Access

Access to each transmission line structure and the substation sites would be required during construction and operation. Where possible, existing roads, tracks and other existing disturbed areas would be used to minimise vegetation clearing or disturbance. In areas where there are no existing roads or tracks, suitable access would be constructed. This may include watercourse crossings.

Telecommunication huts

Two telecommunications huts (optical repeaters) are required to be located along transmission lines greater than 135 km in length, to boost the signal in the Optical Fibre Ground Wire (OPGW). These would be small huts located near a transmission line structure (within easement or adjacent to easement), with cable connections to the earth wire on the transmission line structure and to a local distribution line for power supply.

Ancillary sites

Various ancillary sites would be required during the construction of the new transmission lines to support staging/laydown areas, concrete batching and workforce accommodation.
Staging and laydown areas would be required along the transmission alignment for the temporary storage of materials, plant and equipment required to construct the various elements of the project.
Helipad and helicopter support facilities may also be required. The location of ancillary sites would be refined during further stages of design.

Earthworks

Earthworks would be required for various purposes at the substations and along the transmission line including:
- Bulk earthworks at substations
- Establishment of construction pads for each transmission line structure
- Earthworks for new access tracks as required.

Earthworks associated with the project may require blasting subject to further ground condition investigations.

Construction activities

Construction works for the proposal would typically include:
- Site establishment works including:
  * Establishment of construction compounds, accommodation camps and other construction locations
  * Establishment, vegetation clearance and bulk earthworks for the new and augmented substations and telecommunication huts
  * Utility adjustments and protection
  * Property adjustment, including fencing and access
  * Additional environmental, geotechnical, contamination investigations or other survey work
- Civil works associated with the proposed transmission lines, which would include:
  * Construction of access tracks and waterway crossings to accommodate safe access of construction machinery and materials to each transmission line structure site
  * Earthworks, vegetation clearance and establishment of construction pads for each transmission line structure
  * Construction of footings and foundation works for the new transmission line structures including boring and/or excavation, steel fabrication works and concrete pours
  * Erection of the new transmission line structure
  * Stringing of conductors, overhead earth wires and OPGW

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* Installation of associated transmission line structure fittings inclusive of all earthing below ground level
- Civil and building works associated with substations would generally include:
* Concrete foundations at the substation sites
* Drainage, access roads, oil containment tanks/dams
* Erection of steelwork and fencing
* Electrical fit-out with new substation equipment
* Testing and commissioning of the new substation equipment

Attachments to this referral

Att 1: Maps
Att 2: PBA
Att 3: TG Environmental policy
Att 4: MNES assessment V2
Att 5: Community engagement

1.3 What is the extent and location of your proposed action?

See Appendix B

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for off-shore actions, shortest distance to mainland)

It is located within five local government areas: Wagga Wagga, Snowy Valleys, Cootamundra-Gundagai, Yass Valley, and Upper Lachlan Shire. Wagga Wagga (10 km north of the nearest point) and Gundagai (20 km north-west) are nearby major centres. Smaller towns near the project include Tumut (2 km south), Tumbarumba (20 km west), Batlow (5 km west), Yass (6 km south), Crookwell (15 km north) and Taralga (8 km north-west).

The terrain within the proposed action area varies including alpine regions near Maragle and alluvial valleys near the Murrumbidgee River.

It extends across four surface water catchments: namely Hawkesbury-Nepean, Lachlan, Murrumbidgee and Murray. The area within the Hawkesbury-Nepean catchment is also in the Sydney drinking water catchment.

The proposed action area crosses major waterways including the Lachlan River, Murrumbidgee River, Tumut River near Blowering Dam, Goodradigbee River, Yass River, Wollondilly River near Pejar Dam and Tarlo River, and minor streams.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

The proposed action area is generally 1 km wide up to 5 km wide in some locations (about 48,322.3 ha in total) and is where HumeLink assets such as transmission lines and substations are likely to be located.

The disturbance and avoidance footprints would be located within the proposed action area and are subject to design refinement. To calculate an indicative disturbance footprint (about 5,714.3 ha in total), the following was assumed:

- an indicative area of investigation (AOI), which is 100 to 200 m wide and follows an indicative 360 km long transmission line route. This is conservative as the easement would be 70 m wide and have refined assumptions for vegetation clearance over a certain height.
- Indicative footprints for the new Gugaa 500 kV substation (17 ha), augmented Wagga 330 kV substation (0.09 ha) and augmented Bannaby 500 kV substation (4.21 ha)

Additional areas of disturbance for construction locations are yet to be determined and would be confirmed in the EIS.

1.7 Proposed action location

Other - Transgrid Bannaby substation, 486 Hanworth Road, Bannaby NSW 2580

1.8 Primary jurisdiction New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

☐ Yes ☑ No

1.10 Is the proposed action subject to local government planning approval?

☐ Yes ☑ No

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1.11 Provide an estimated start and estimated end date for the proposed action	Start Date	01/04/2024
	End Date	01/12/2026

1.12 Provide details of the context, planning framework and state and/or local Government requirements

Strategic context

As the National Energy Market (NEM) transitions to lower emission energy generation sources, the transmission network needs to be reconfigured to connect renewable generation to major load centres. The Integrated System Plan (ISP) identifies the role of transmission lines in connecting and sharing energy produced by geographically dispersed renewable generation.

The ISP forecasts the transition of the National Energy Market (NEM) toward a mix of renewable, conventional and distributed generation. Renewable Energy Zones (REZs) will play an important role in supporting a competitive and low-cost electricity market, as well as being the most cost-effective way to add capacity and balance variable resources across the whole NEM. HumeLink would facilitate development of renewable generation in the Wagga Wagga and Tumut REZ in southern NSW identified in the 2020 ISP. The Wagga Wagga REZ is an area with high potential for solar generation and is expected to deliver about 1,000 MW of electricity. The Tumut REZ is in the Snowy Mountains area of pumped hydro generation and would add 2,230-2,570 MW of electricity to the NEM. The draft 2022 ISP identifies HumeLink as an Actionable grid project and critical to address the current cost, security and reliability issues which face the Australian energy network (AEMO, 2022).

The NSW Transmission Infrastructure Strategy (DPE, 2018) is the NSW Government's plan to unlock private sector investment in priority transmission infrastructure projects, which can deliver least-cost energy to customers through to 2040 and beyond. The South-West Energy Zone was identified as one of three priority energy zones; areas with high energy generation potential where planned transmission infrastructure upgrades could allow multiple generation projects to connect to the network with associated cost efficiencies.

The NSW Electricity Strategy (DPIE, 2019) plans for a reliable, affordable and sustainable electricity future that supports a growing economy and sets out actions to support the energy market.

The Electricity Infrastructure Roadmap (DPIE, 2020) aims to coordinate investment in generation and transmission infrastructure so that generators can be sure of a reliable connection to the network, and transmission infrastructure projects can be planned and approved to provide the connection in time. By providing additional transmission capacity, HumeLink would play a critical part in providing investor confidence in new generation projects.

NSW planning framework

On 7 March 2018, the NSW Minister for Planning (NSW Minister) declared Snowy 2.0 and Transmission Project (parts of which are now HumeLink) to be Critical State Significant Infrastructure (CSSI). Transgrid is in the process of requesting the NSW Minister to make a further declaration to include minor amendments to the description of the project as per the current proposed action. Once the new declaration is made, the whole of the proposed action (subject of this referral) will be declared CSSI under section 5.13 of the EP&A Act by virtue of part 2.3, clause 2.15 and Schedule 5, clause 9(4) of the State Environmental Planning Policy (Planning Systems) 2021.

HumeLink is classified as SSI as it falls within the provisions outlined in Schedule 3, paragraph 1 of the SEPP (Planning Systems) 2021 on the basis that it is development for the purposes of clause 2.44 of State Environmental Planning Policy (Transport and Infrastructure) 2021. Clause 2.44 permits development for the purpose of an electricity transmission or distribution network, carried out by, or on behalf of, an electricity supply authority or public authority without consent on any land.

Transgrid is defined as an electricity supply authority under clause 2.43 of the SEPP (Transport and Infrastructure) 2021 being both an energy services corporation under the Energy Services Corporations Act 1995 and a transmission operator under the Electricity Supply Act 1995.

The proposed action requires approval from the NSW Minister under Division 5.2 of the EP&A Act and does not require consent under Part 4 of the EP&A Act.

An Environmental Impact Statement (EIS) for the proposed action would be prepared and publicly exhibited in accordance with the EP&A Act. A Scoping Report has been prepared and submitted to the NSW Department of Planning and Environment (DPE) in February 2022 to support a request for Secretary's Environmental Assessment Requirements (SEARs) for the EIS under the EP&A Act.

Commonwealth planning framework

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A bilateral agreement between the Commonwealth of Australia and the State of New South Wales relating to environmental assessment (the assessment bilateral agreement), allows the Commonwealth Minister for the Environment to rely on specified environmental impact assessment processes of NSW in assessing actions under the EPBC Act. As such this referral has been prepared in accordance with standard NSW processes.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders

Stakeholder and community consultation for HumeLink is an integral part of informing scoping investigations for the proposal. A key focus to date has been on ensuring that potentially affected landowners receive comprehensive updates about the proposal and that they have the opportunity to provide information about their properties and businesses. Local councils, key stakeholders and the broader community have also been consulted and feedback on the proposal continues to be encouraged. Consultation Manager is being used to record all interactions and feedback.

One-on-one landowner engagement has been the key focus of the engagement program. This acknowledges that landowners will be highly impacted by the proposal and that they are best placed to provide key local insights which can help refine the development of the proposal. Transgrid has met with over 400 affected landowners on-property. The purpose of these meetings has been to understand landowner sentiment and any concerns or opportunities, seek input and receive local information including local farming operations, logistics, land use and environmental and cultural considerations.

Public consultation activities to date have included updates to and responses via email, phone and Transgrid's project website; stakeholder briefings, including with Government representatives (local, state and federal), advocacy groups, community groups, industry representatives, and major development proponents; events and drop-in sessions; and one-on-one landowner meetings.

Stakeholder engagement has focussed on briefing Government (Political representatives), Local Federal Members, Local State Members, Local Government, and Government (departmental and agency), community groups, local businesses, industry representative groups, major development proponents and renewable generators, community and landowners, which has involved some technical meetings.

Consultation with Traditional Owners and other Aboriginal representative groups have involved Brungle-Tumut Local Aboriginal Land Council, Onerwal Local Aboriginal Land Council, Pejar Local Aboriginal Land Council, Wagga Wagga Local Aboriginal Land Council, Wagonga Local Aboriginal Land Council, and Riverina Murray Regional Alliance. Consultation with these groups has involved identification of culturally significant sites and cultural heritage survey requirements and findings.

In addition, as part of the Aboriginal cultural heritage assessment, a program of Aboriginal consultation has been initiated in accordance with DECCW's Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 to invite registration of interest in the proposal.

Engagement will continue and will inform the preparation of the EIS, as well as the proposal more broadly. Transgrid is committed to continuing to engage the community and stakeholder throughout all proposal stages and to build and maintain strong relationships within the communities where the HumeLink infrastructure will be located.

Ongoing community and stakeholder engagement established through early engagement activities will complement and support the formal consultation required under planning regulations, including activities that may be stipulated in the SEARs and in the preparation of the EIS.

Engagement approaches will be evaluated and reviewed on a quarterly basis to ensure they are providing adequate participation opportunities and responding to stakeholder needs and expectations. Regular community and stakeholder surveys will also be conducted to track engagement performance, sentiment and issues of concern and opportunity.

Proposed consultation activities include:
- One-on-one stakeholder briefings
- Landowner one-on-one briefings
- Community Consultative Groups
- Community information sessions and events
- Stakeholder and community group presentations and briefings
- HumeLink toll-free community information number and dedicated email address
- HumeLink webpage
- HumeLink interactive map focused on collecting stakeholder feedback on the proposed route
- Communications materials (newsletters, letters and factsheets)
- Media, social media and advertising

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1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project

The proposed action would be assessed as CSSI under Division 5.2 of the EP&A Act. A CSSI application and Scoping Report has been submitted to DPE.

Transgrid would prepare an Environmental Impact Statement (EIS) for HumeLink to address EP&A Act requirements. The EIS would be displayed for comment with all submissions addressed in a submissions report.

Approval from the NSW Minister for Planning would be required before Transgrid can proceed with construction and operation of the proposed action.

Environmental issues identified as part of the Scoping Report (Aurecon, 2021) included:
- Biodiversity
- Heritage
- Social
- Economic, property and land use
- Landscape character and visual amenity
- Soils and contamination
- Water
- Hazards
- Traffic and access
- Noise and vibration
- Air quality and greenhouse gases
- Climate change risk
- Cumulative impacts.

Further environmental assessment of each issue would be completed as part of the EIS.

1.15 Is this action part of a staged development (or a component of a larger project)?

☐ Yes ☑ No

1.16 Is the proposed action related to other actions or proposals in the region?

☑ Yes ☐ No

1.16.1 Identify the nature/scope and location of the related action (Including under the relevant legislation)

Snowy 2.0 (Main works and Transmission Connection) is a project that will increase the capacity within the existing Snowy hydro-electric scheme by linking the Tantangara and Talbingo reservoirs to a new underground power station.

Snowy 2.0 and Transmission Project has been declared as CSSI (Transgrid has submitted a request to amend the CSSI to reflect the current HumeLink scope) as it is considered essential for NSW as well as under Section 5.13 of the EP&A Act, by virtue of clause 16 and Schedule 5, clause 9(4) of SEPP (Planning Systems) 2021.

HumeLink would connect to the future Maragle substation in Bago State Forest that has been assessed as part of the Snowy 2.0 Transmission Connection Project. Snowy 2.0 Transmission Connection is subject to separate assessment and approval under Division 5.2 of the EP&A Act and the EPBC Act (SS1-9717, EPBC 2018/836) and is yet to be approved.

Snowy 2.0 Main Works has been approved under the EP&A Act and the EPBC Act (EPBC 2018/8322).

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Section 2

Matters of national environmental significance

2.1 Is the proposed action likely to have any direct or indirect impact on the values of any World Heritage properties?

☐ Yes ☑ No

2.2 Is the proposed action likely to have any direct or indirect impact on the values of any National Heritage places?

☑ Yes ☐ No

Place

There are two EPBC Act listed national heritage places have been identified as occurring within the proposed action study area:

* Australian Alps National Parks and Reserves (natural)
* Snowy Mountains Scheme (historic)

Impact

There are three distinct transmission line corridor options in this section: a Tumut North option, a Tumut option and a Blowering option. If either the Tumut North option or Tumut option was selected as the preferred option, no direct or indirect impacts on National Heritage places are expected as the corridor would be about 10 km north-west of the curtilages at its closest point. Therefore, any potential direct or indirect impacts on National heritage places would be limited to the Blowering option. The preferred option will be confirmed in the EIS.

The Australian Alps National Parks and Reserves have been listed for both natural and cultural values and the Snowy Mountains Scheme for its engineering and social values.

Only a very small section of the Australian Alps National Parks and Reserves listed curtilage is within the proposed action area (within the Blowering corridor option). There is potential for use and/or upgrade of existing access tracks within this curtilage, however it is unlikely that the proposed new transmission line easement would directly impact the listed curtilage. This is because the transmission line route for HumeLink is expected to be refined to avoid direct impacts on this curtilage. As such, impacts on this place are expected to be limited to indirect impacts such as construction noise and visual changes from new transmission line structures erected nearby.

The proposal passes through the northern extremity of the listed curtilage of the Snowy Mountains Scheme (within the Blowering corridor option). The Snowy Mountains scheme is listed primarily for its engineering and social values. The Snowy Mountains Scheme is an unprecedented civil engineering project. The scheme is the most significant project to be undertaken as part of the Post-war Reconstruction program and has become an enduring symbol of Australia's identity as a multicultural, independent, and resourceful country. Apart from the sheer scale of the site, the Snowy Mountains Scheme also has rare engineering features, such as underground power stations, very large earth-filled dams, and two examples of pumped storage capacity, using off-peak power to top-up supply reservoirs, which are the only known examples of their type in Australia. The Scheme was hailed as a model of multicultural co-operation and integration and provided the opportunity for thousands of migrants to start a new life after the impacts of the war. The majority of those who came to build the Scheme stayed, becoming Australian citizens. There is potential for the proposed action to result in direct impacts within the Snowy Mountains Scheme from a new transmission line easement being established within the curtilage, including visual and land use changes from vegetation clearance and the new transmission line structures. There is also potential for indirect impacts during construction of the proposed action, such as noise and vibration, that may impact on the amenity of this area. However, the proposed action would directly support the transfer of power from the expanded Snowy Hydro Scheme, which is considered to be of long-term benefit to the ongoing operation of the Snowy Mountains Scheme and aligned with its engineering and social values.

Any impacts (direct or indirect) will be assessed further in the EIS.

2.2.2 Do you consider this impact to be significant?

☐ Yes ☑ No

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2.3 Is the proposed action likely to have any direct or indirect impact on the ecological character of a Ramsar wetland?

☐ Yes ☑ No

2.4 Is the proposed action likely to have any direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

☑ Yes ☐ No

Species or threatened ecological community

Summary of threatened ecological communities listed under the EPBC Act.

Impact

A search of the Protected Matters Search Tool (PMST) was carried out (17 September 2021) and is provided in Attachment 2 PBA, Appendix B, Page 99. The search included 10 km from the proposed corridor and is referred to as 'the proposed action study area'.

The search indicated that six EPBC Act-listed Threatened Ecological Communities (TECs) are known to occur or are likely to occur or may occur in the proposed action study area. These include:

- Alpine Sphagnum Bogs and Associated Fens
- Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
- Natural Temperate Grassland of the South Eastern Highlands
- Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion
- Weeping Myall Woodlands
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland

The publicly available vegetation mapping has also identified PCT 1300 Whalebone Tree - Native Quince dry subtropical rainforest on dry fertile slopes, southern Sydney Basin Bioregion. This vegetation type corresponds to the critically endangered community Illawarra-Shoalhaven subtropical rainforest in the Sydney Basin Bioregion under the EPBC Act. The mapping showed the vegetation type being present within the north east of the study area. This has not yet been field validated. The ecological community tends to occur on the coast and upper coastal valleys, which do not traverse the proposed action area. This TEC was not identified in the PMST modelling but has been included as a precaution.

Of the TECs above, the proposed action is considered likely to potentially have a significant impact on 3 EPBC Act listed TECs as they would have a high or moderate likelihood of occurring within the proposed action area. The EPBC Act listed TECs are: Grey Box Grassy Woodlands and Derived Native Grasslands, Alpine Sphagnum Bogs and Associated Fens and White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

A more detailed assessment for these 3 EPBC Act listed TECs is provided in the rows below.

Species or threatened ecological community

Alpine Sphagnum Bogs and Associated Fens.

Impact

The proposed action has the potential to directly impact approximately 5.27 ha, of which about 5.07 ha of this TEC has been verified as being present. There is the potential to fragment, introduce exotic species or pathogens and alter hydrological processes supporting the community.

The potential impact area was calculated using the indicative disturbance footprint, desktop mapping using available data, and limited survey. The final impact area is subject to change through design refinement and field verification of the extent of this TEC through further field surveys in 2022. The final impact area will be confirmed as part of the EIS.

The community occurs in the alpine region of the proposal in the following local government areas of Tumbarumba, Tumut and Upper Lachlan.

Design refinement and environmental management measures may assist in reducing impacts on this community. These would be described in the EIS and BDAR. It is likely that ongoing management of the community in the proposal area would be limited since it does not contain a canopy.

The proposed action is expected to result in clearing, the introduction of exotics and potentially altering the hydrological processes supporting the community. The scale of these impacts would be relatively small, but permanent. Despite this, the impacts are unlikely significant.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.1, Pages 7-8 for more information.

Species or threatened ecological community

Grey Box Grassy Woodlands and Derived Native Grasslands.

Impact

The proposed action has the potential to directly impact about 0.14 ha. There is potential to fragment, introduce exotic species and remove habitat features (e.g. hollows and coarse woody debris) supporting fauna in the community.

The potential impact area was calculated using the indicative disturbance footprint, desktop mapping using available data, and limited survey. The final impact area is subject to change through design refinement and field verification of the extent of this TEC through further field surveys in 2022. The final impact area will be confirmed as part of the EIS.

The community occurs predominantly within the Riverina and South West Slopes regions of NSW down to the Victorian border. In the proposed action area it occurs in the following LGAs, Cootamundra-Gundagai Regional, Upper Lachlan Shire, and Wagga Wagga.

Design refinement and environmental management measures may assist in reducing impacts on this community. These would be described in the EIS and BDAR.
The proposed action is expected to result in clearing, removal of threatened species habitat and the introduction of exotics. The scale of these impacts would be relatively small, but permanent. Despite this, the impacts are unlikely significant.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.1, Pages 7-8 for more information.

Species or threatened ecological community

White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

Impact

The proposed action has the potential to directly impact up to 1861.72 ha, of which about 1583.98 ha of this TEC has been field validated. There is potential to fragment, introduce exotic species and remove habitat features (e.g. hollows and coarse woody debris) supporting fauna in the community.

The potential impact area was calculated using the indicative disturbance footprint, desktop mapping using available data, and limited survey. The final impact area is subject to change through design refinement and field verification of the extent of this TEC through further field surveys in 2022. The final impact area will be confirmed as part of the EIS.

The community occurs predominantly within the Riverina and South West Slopes regions of NSW down to the Victorian border. In the proposed action area it occurs in the following LGAs, Cootamundra-Gundagai Regional, Upper Lachlan Shire, Yass and Wagga Wagga.

Design refinement and environmental management measures may assist in reducing impacts on this community. These would be described in the EIS and BDAR.
The proposed action is expected to result in clearing, removal of threatened species habitat and the introduction of exotics. The scale of these impacts is potentially large, despite efforts to minimise through design refinement. The potential impacts are likely to have a significant impact on this community.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.1, Pages 7-8 for more information.

Species or threatened ecological community

Summary of threatened flora species listed under the EPBC Act.

Impact

The proposed action is considered likely to potentially have a significant impact on 6 flora species.

The flora species are: Yass Daisy (Ammobium craspedioides), Hoary Sunray (Leucochrysum albicans var. tricolor), Bago Leek Orchid (Prasophyllum bagoense), Terrestrial Leek Orchid (Prasophyllum keltonii), Button Wrinklewort (Rutidosis leptorrhynchoides) and Swamp Everlasting (Xerochrysum palustre).

The McPherson's Plain area, which is located in the southern extent of the proposed action study area, about 16 km north east of Maragle, contains many of the orchids of concern. Surveys during 2019 identified the following species of Commonwealth-listed orchid:

- Prasophyllum bagoense
- Prasophyllum keltonii

Within the study area, the most likely flora species to be affected are Ammobium craspedioides, Xerochrysum palustre and Leucochrysum albicans var. tricolor, which have been found at numerous locations. Several threatened orchid species have been found in the Alpine areas, but no other threatened flora have been recorded to date. Additional survey of the proposed action study area would need to be completed prior to EIS submission.

A more detailed assessment for each of the species above is provided in the rows below.

The full list of flora species that are likely to experience direct or indirect impacts from the proposed action is provided below.

According to the PMST, there are 44 threatened flora species or species habitat known to occur within the proposed action study area. The PMST threatened flora species include:

- Bynoe's Wattle (Acacia bynoeana)
- Yass Daisy (Ammobium craspedioides)
- Graceful Swamp Wallaby—grass (Amphibromus fluitans)
- Mueller Daisy (Brachyscome muelleroides)
- Sand-hill Spider Orchid (Caladenia arenaria)
- Crimson Spider Orchid (Caladenia concolor)
- Thick-lip Spider Orchid (Caladenia tessellata)
- Mauve Burr-daisy (Calotis glandulosa)
- Curtis' Colobanth (Colobanthus curtisiae)
- Dwarf Kerrawang (Commersonia prostrata)
- White-flowered Wax Plant (Cynanchum elegans)
- Buttercup Doubletail (Diuris aequalis)
- Pale Golden Moths (Diuris ochroma)
- Creeping Hop Bush (Dodonaea procumbens)
- Black Gum (Eucalyptus aggregate)
- Paddy's River Box (Eucalyptus macarthurii)
- Brittle Midge Orchid (Genoplesium baueri)
- Spring Midge Orchid (Genoplesium vernale)
- Clover Glycine (Glycine latrobeana)
- Wee Jasper Grevillea (Grevillea iaspicula)
- Grevillea raybrownii
- Tumut Grevillea (Grevillea wilkinsonii)
- Perennial Paper Daisy (Helichrysum calvertianum)
- Cambage Kunzea (Kunzea cambagei)
- Aromatic Peppercress (Lepidium hyssopifolium)
- Winged Peppercress (Lepidium monoplocoides)
- Hoary Sunray (Leucochrysum albicans var. tricolor)
- Soft Geebung (Persoonia mollis subsp. Revoluta)
- Dwarf Phyllota (Phyllota humifusa)
- Rufous Pomaderris (Pomaderris brunnea)
- Cotoneaster Pomaderris (Pomaderris cotoneaster)
- Pale Pomaderris (Pomaderris pallida)
- Bago Leek Orchid (Prasophyllum bagoense)
- Brandy Mary's Leek Orchid (Prasophyllum innubum)
- Kelton's Leek Orchid (Prasophyllum keltonii)
- Tarengo Leek Orchid (Prasophyllum petilum)
- Kiandra Greenhood (Pterostylis oreophila)
- Eastern Underground Orchid (Rhizanthella slateri)

- Button Wrinklewort (Rutidosis leptorrhynchoides)
- Fluffy Groundsel (Senecio macrocarpus)
- Mountain Swainson-pea (Swainsona recta)
- Kangaloon Sun Orchid (Thelymitra kangaloonica)
- Austral Toad-flax (Thesium austral)
- Swamp Everlasting (Xerochrysum palustre)

Species or threatened ecological community

Yass Daisy (Ammobium craspedioides), Hoary Sunray (Leucochrysum albicans var. tricolor), Button Wrinklewort (Rutidosis leptorrhynchoides) and Swamp Everlasting (Xerochrysum palustre).

Impact

The proposed action would potentially clear large areas of habitat of these species. Three of the four species have been observed during surveys, excluding Button Wrinklewort (Rutidosis leptorrhynchoides). Despite the potential habitat occurring, the species' occupancies have not been high.

The final impact area is subject to change through design refinement and field verification of the extent of these species through further field surveys in 2022. The final impact area will be confirmed as part of the EIS.

These four species occupy grassy woodland communities across both high and lower slope country. Since these species occupy the ground cover, there is a possibility that management of the corridor may avoid complete vegetation removal. This and other measures to avoid and minimise impacts would be described in the EIS and BDAR.

The proposed action is expected to result in clearing, removal of threatened species habitat and the introduction of exotics. The scale of these impacts is potentially large, despite efforts to minimise through design refinement. However, the level of occupancy of these species across the potential habitat is relatively low. The potential impacts are unlikely to have a significant impact on these species.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.2.1, Pages 9-10 and Section 1.3.3.1, Pages 14-16 for more information.

Species or threatened ecological community

Bago Leek Orchid (Prasophyllum bagoense) and Terrestrial Leek Orchid (Prasophyllum keltonii).

Impact

Several small populations of these species were observed on McPhersons Plains and Modder Creek Plain. These areas are treeless plains and swamps. The proposed action has the potential to remove small areas of potential habitat for these species, introduce weeds and potentially alter hydrological processes that may support species' microhabitats.

The final impact area is subject to change through design refinement and field verification of the extent of these species through further field surveys in 2022. The final impact area will be confirmed as part of the EIS.

These species occupy treeless communities on the high plains near Maragle. Since these species occupy the ground cover, there is a possibility that management of the corridor may avoid complete vegetation removal. This and other measures to avoid and minimise impacts would be described in the EIS and BDAR.

The proposed action could result in removal of species habitat and the introduction of exotics. The scale of these impacts is potentially small due to the ability to microsite tower pads and avoid large scale clearing of treeless areas. However, it is recommended that due to the highly restricted habitats and areas of occupancy, low population numbers and sensitivity to disturbances, these species' habitats are avoided altogether.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.3.2, Pages 16-17 for more information.

Species or threatened ecological community

Summary of threatened fauna species listed under the EPBC Act.

Impact

The proposed action is considered likely to potentially have a significant impact 7 threatened fauna species. The fauna

species are Swift Parrot (Lathamus discolor), Superb Parrot (Polytelis swainsonii), Greater Glider (Petauroides volans), Pink-tailed Worm Lizard (Aprasia parapulchella), Striped Legless Lizard (Delma impar), Koala (Phascolarctos cinereus) and Golden Sun Moth (Synemon plana).

A more detailed assessment for each of the species above is provided in the rows below.

The full list of fauna species that are likely to experience direct or indirect impacts from the proposed action is provided below.

The PMST search identified 38 species of threatened fauna listed under the EPBC Act. The threatened fauna records comprise the following:
- 11 bird species
- 10 species of mammals
- Five fish
- Eight frog species
- Two reptile species
- Two insect species.

Threatened fauna records listed under the EPBC Act include:
- Regent Honeyeater (Xanthomyza phrygia)
- Australasian Bittern (Botaurus poiciloptilus)
- Curlew Sandpiper (Calidris ferruginea)
- Grey Falcon (Falco hypoleucos)
- Painted Honeyeater (Grantiella picta)
- White-throated Needletail (Hirundapus caudacutus)
- Swift Parrot (Lathamus discolor)
- Malleefowl (Leipoa ocellata)
- Eastern Curlew (Numenius madagascariensis)
- Superb Parrot (Polytelis swainsonii)
- Australian Painted Snipe (Rostratula australis)
- Flathead Galaxias (Galaxias rostratus)
- Trout Cod (Maccullochella macquariensis)
- Murray Cod (Maccullochella peelii)
- Macquarie Perch (Macquaria australasica)
- Southern Pygmy Perch (Nannoperca australis)
- Large-eared Pied Bat (Chalinolobus dwyeri)
- Spotted-tail Quoll (Dasyurus maculatus)
- Broad-toothed Rat (mainland) (Mastacomys fuscus mordicus)
- Corben's Long-eared Bat (Nyctophilus corbeni)
- Greater Glider (Petauroides Volans)
- Brush-tailed Rock-wallaby (Petrogale penicillate)
- Koala (Phascolarctos cinereus)
- Smoky Mouse (Pseudomys fumeus)
- New Holland Mouse (Pseudomys novaehollandiae)
- Grey-headed Flying-fox (Pteropus poliocephalus)
- Sloane's Froglet (Crinia sloanei)
- Giant Burrowing Frog (Heleioporus australiacus)
- Booroolong Frog (Litoria booroolongensis)
- Growling Grass Frog (Litoria raniformis)
- Spotted Tree Frog (Litoria spenceri)
- Alpine Tree Frog (Litoria verreauxii)
- Southern Corroboree Frog (Pseudophryne corroboree)
- Northern Corroboree Frog (Pseudophryne pengilleyi)
- Pink-tailed Worm-lizard (Aprasia parapulchella)
- Striped Legless Lizard (Delma impar)
- Bathurst Copper Butterfly (Paralucia spinifera)
- Golden Sun Moth (Synemon plana)

The above listed protected matters have the potential to be affected by the proposed action, via vegetation clearing and habitat removal.

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Species or threatened ecological community

Swift Parrot (Lathamus discolor) and Superb Parrot (Polytelis swainsonii).

Impact

The proposed action may result in clearing of potential foraging habitat in suitable woodland areas near Wagga Wagga.

Due to these species' large home ranges, nomadic nature and the potential ability to avoid breeding areas, the proposed action is not considered likely to significantly contribute to a long-term decline in the size of a population of these species.

Although potentially suitable woodland habitat has been mapped within the proposal study area, records within the area are rare and intermittent. It is considered unlikely that the proposal will fragment an existing population given the ecology of the two species and current fragmented state of potential habitat.

Avoidance of large tracts of suitable woodland habitat through proposal design refinement would reduce potential impacts and these would be described in the EIS and BDAR. The proposed action is considered unlikely to have a significant impact on these species.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.2.2, Pages 10-11 and Section 1.3.3.3, Pages 18-19 for more information.

Species or threatened ecological community

Pink-tailed Worm Lizard (Aprasia parapulchella) and Striped Legless Lizard (Delma impar).

Impact

The proposed action may result in clearing of potential habitat for these two species.

There are no records of these species within the proposal study area however they are known from the wider locality and occupy grassy woodlands and native grasslands. Survey for these species continues in 2022 and would inform the design, EIS and BDAR. The final design and its impacts would be described in the EIS.
Efforts to minimise impacts would occur and include potentially avoiding areas containing these species, avoiding clearance of the grassy understories and minimising clearing for towers.

Considering the fragmented state of the landscape, the proposed action is unlikely to significantly fragment and/or isolate these species that would place it them at risk of extinction. For the above reasons the proposed action is unlikely to significantly impact these species.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.2.3, Pages 11-12 for more information.

Species or threatened ecological community

Greater Glider (Petauroides volans).

Impact

The proposed action has the potential to clear and fragment habitat and remove habitat features (e.g. hollows and coarse woody debris) supporting populations of this species. The Greater Glider is found in higher montane wet forests. These forests have been observed between Maragle and Tumut in managed state forests. Large areas of these forests were burnt in 2019/2020, although they were regenerating in 2020 and 2021. It is highly likely that some hollow trees would have been burnt, with tree fall rendering the hollows unsuitable for the Glider.

The final impact area is subject to change through design refinement. The final impact area will be confirmed as part of the EIS.

The size of the population overall is estimated around 100,000 individuals across its range (TSSC 2016), with densities between 0.6 and 2.8 per hectare in Victoria and higher in the north-east of NSW. This species has been observed during survey and field verification of the extent of habitat is subject to further field surveys in 2022.
This species has relatively small home ranges and is likely to be very sensitive to fragmentation as a result. Therefore, minimisation of the proposed action on potential habitat would be a key feature to reduce impacts on this species. The species relies on hollows for denning and requires a high density of hollows to persist. Hollow removal is therefore a key threat to the persistence of populations.

While efforts would be made to minimise or avoid hollow bearing trees, it is likely that hollows and other features would be removed from potential Glider habitat. The proposed action has the potential to fragment habitat and introduce pathogens which could affect habitat trees and connectivity between forest patches.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.2.4, Pages 13-14 for more information.

Species or threatened ecological community

Golden Sun Moth (Synemon plana).

Impact

The proposed action may result in clearing of large areas of potential habitat for the Golden Sun Moth.

The Golden Sun Moth's NSW populations are found in the area between Queanbeyan, Gunning, Young and Tumut. There are no records of these species within the proposal study area however they are known from the wider locality and occupy grassy woodlands and native grasslands. The Conservation Advice (TSSC 2013) suggests that while the extent of occurrence is large, the area of occupancy of this species is very small.

The presence of wallaby grasses is a key characteristic of the species' habitat and presence of interstitial tussock spaces is also important.

The species is generally a poor flier, with females being reluctant to fly and males limited to relatively short distances (about 100 m) (DPIE 2021). Thus, the species is sensitive to fragmentation, as well as modification of soil and grass diversity, invasion of exotic grass species and habitat loss.

Survey for this species continues in 2022 and would inform the design, EIS and BDAR. The final design and its impacts would be described in the EIS. Survey carried out to date has not identified any individuals, although the conditions during survey were noted to be unsuitable due to prolonged wet weather.

Efforts to minimise impacts would occur and include potentially avoiding areas containing this species, avoiding clearance of the grassy understories and minimising clearing for towers and reducing gaps between habitats to less than 200 m.

There are potentially large areas of habitat in the proposed action area. While fragmentation of the habitat could be minimised and long-term maintenance of habitat (i.e. slashing) avoided, habitat loss of over 0.5 ha in a large or contiguous habitat is likely to be significant (DEWHA 2009). Therefore, there is potential that the proposed action would be a significant impact on this species.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.3.4, Pages 19-21 for more information.

Species or threatened ecological community

Koala (Phascolarctos cinereus).

Impact

The occurrence of Koala feed tree species is prevalent throughout the proposed action area including preferred species such as White Box (Eucalyptus albens), Blakely's Red Gum (Eucalyptus blakelyi), Brittle Gum (Eucalyptus mannifera), Ribbon Gum (Eucalyptus viminalis). Followed by high use trees such as Inland Scribbly Gum (Eucalyptus rossii), and significant use trees; Mountain Gum (Eucalyptus dalrympleana), and Broad-leaved Peppermint (Eucalyptus dives).

The proposed action would increase fragmentation of remnants, through the removal of native vegetation for the proposed transmission line and associated infrastructure. The increase in fragmentation may influence Koala movement and habitat use throughout the region however the extent of impact in this regard is likely to be limited given no hard barriers to Koala movement would be introduced from the proposed action. Therefore, the proposed action is unlikely to fragment existing known populations.

Movement and connectivity on either side of the proposed action area are retained by riparian corridors, smaller remnants, paddock trees and nearby larger areas of intact, contiguous vegetation in the wider locality (e.g. Belanglo State Forest, Bungonia State Conservation Area, Tarlo River National Park, Bannaby, Black Arm Nature Reserve, Mundoonen Nature Reserve, Bango Nature Reserve, Bungongo State Forest, Red Hill State Forest, Billlapaloola State Forest, Tumut State Forest, Bago State Forest, Kosciusko National Park, Ellerslie Nature Reserve).

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The Koala has been recently observed (in the last 20 years) mostly near Bungonia State Conservation Area (highest number of records), Mundoonen Nature Reserve (near Jarrawa) and Kapooka (near Wagga Wagga). The proposed action would result in the clearing of known and potential habitat, including koala use trees (used for sheltering, dispersal, foraging and potentially breeding). It is noted that the indicative disturbance footprint does not directly impact on any of these conservation areas or reserves. The species is known to use paddock trees and small remnants to move between patches, however, clearing of native vegetation has the potential increases the risk of overbrowsing (overuse of trees leading to defoliation), disease, predation, vehicle strike and altered movement corridors. The proposed action would remove some, but not all crucial habitat elements for Koala, and is unlikely to substantially fragment movement/dispersal corridors. This proposed action would not affect the entire species' distribution and impacts from the proposed action are distributed throughout a large area. Therefore, while the proposed action would modify and remove habitat, this is unlikely to cause the species to decline.

Refer to Attachment 4 Detailed MNES impact assessment, Section 1.3.3.5, Pages 21 – 23.

2.4.2 Do you consider this impact to be significant?

☑ Yes ☐ No

2.5 Is the proposed action likely to have any direct or indirect impact on the members of any listed migratory species or their habitat?

☑ Yes ☐ No

Migratory species

Summary of Migratory wetland species

Impact

Desktop assessment and likelihood assessment identified a total of seven migratory wetland species listed under the EPBC Act that were determined to have a high or moderate likelihood of occurring within the proposed action study area. These species have been assessed together as they are all migratory wetland species supported by similar habitat within the proposed action study area. These include:

- Common Sandpiper (Actitis hypoleucos)
- Sharp-tailed Sandpiper (Calidris acuminata)
- Curlew Sandpiper (Calidris ferruginea)
- Pectoral Sandpiper (Calidris melanotos)
- Latham's Snipe (Gallinago hardwickii)
- Eastern Curlew (Numenius madagascariensis)
- Osprey (Pandion haliaetus)

Using the EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species and the report by Bamford et al. (2008), an assessment of the likely presence of migratory shore and wetland birds was made. Important habitat does not occur within the proposed action area for migratory wetland bird species. The proposed action area does not contain wetland habitat preferred by these species, as they primarily prefer coastal intertidal areas. Therefore, the proposed action is unlikely to substantially modify, destroy, or isolate an area of habitat or important habitat for migratory wetland species.

Potential impacts on these species will be assessed in detail and confirmed during the preparation of the EIS.

Migratory species

Migratory Marine Birds - Fork-tailed Swift (Apus pacificus)

Impact

Using the EPBC Act Policy Statement 3.21 - Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species and the report by Bamford et al. (2008), an assessment of the likely presence of migratory shore and wetland birds was made. Fork-tailed Swift was identified on the PMST as a species that may occur in the proposed action study area. However, important habitat does not occur within the proposed action study area for migratory wetland bird species. The proposed action study area does not contain wetland habitat preferred by these species, as they primarily prefer coastal intertidal areas. Therefore, the proposed action is unlikely to substantially modify, destroy, or isolate an area of habitat or important habitat for migratory wetland species.

Referring to the Referral guideline for 14 birds listed as migratory species under the EPBC Act, an assessment of the likely

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presence and potential impacts was made. The Fork-tailed Swift is almost exclusively aerial and breeds in the northern hemisphere. There are only rare occurrences of this species within the proposed action study area, or an ecologically significant population as determined by the EPBC Act. The proposed action is considered unlikely to have a significant impact on the Fork-tailed Swift.

These potential impacts will be assessed in detail and confirmed during the preparation of the EIS.

Migratory species

Summary of Migratory terrestrial species

Impact

Based on the desktop assessment, a total of five migratory terrestrial species listed on the EPBC Act were found to occur in the proposed action study area. These species included:
- White-throated Needletail (Hirundapus caudacutus)
- Black-faced Monarch (Monarcha melanopsis)
- Satin Flycatcher (Myiagra cyanoleuca)
- Rufous Fantail (Rhipidura rufifrons)
- Yellow Wagtail (Motacilla flava)

Migratory terrestrial species have the potential to be affected by the project, either via direct impacts at ground level (i.e. vegetation clearing and habitat removal) or at the transmission line level, such as fragmentation of flightpaths. These impacts may be significant when assessed against relevant policy advice.

Of the migratory terrestrial species listed above, only Yellow Wagtail is likely to be unaffected by the proposed action.

The remaining species have important habitats that intersect with the proposed action study area. It is unknown whether an ecologically significant proportion of a population of the birds would be affected.

These potential impacts will be assessed in detail and confirmed during the preparation of the EIS.

2.5.2 Do you consider this impact to be significant?

☑ Yes ☐ No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

☐ Yes ☑ No

2.7 Is the proposed action likely to be taken on or near Commonwealth land?

☐ Yes ☑ No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

☐ Yes ☑ No

2.9 Is the proposed action likely to have any direct or indirect impact on a water resource from coal seam gas or large coal mining development?

☐ Yes ☑ No

2.10 Is the proposed action a nuclear action?

☐ Yes ☑ No

2.11 Is the proposed action to be taken by a Commonwealth agency?

☐ Yes ☑ No

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2.12 Is the proposed action to be undertaken in a Commonwealth Heritage place overseas?

☐ Yes ☑ No

2.13 Is the proposed action likely to have any direct or indirect impact on any part of the environment in the Commonwealth marine area?

☐ Yes ☑ No

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Section 3

Description of the project area

3.1 Describe the flora and fauna relevant to the project area

The flora and fauna relevant to the proposed action study area have been assessed using desktop review. Preliminary field investigations have also been carried out to identify and/or validate the biodiversity values. A significant portion of the proposed action study area is located on agricultural lands containing a mix of woodlands and forests consistent with TECs listed under the EPBC Act. In general, vegetation on public lands is more intact than in the agricultural lands.

At least 85 native Plant Community Types (PCT) and 13 vegetation formations have been mapped or recorded within the proposed action study area. The vegetation formations include:

- Alpine Bogs and Fens
- Alpine Herbfields
- Floodplain Transition Woodlands
- Inland Rocky Hill Woodlands
- Montane Bogs and Fens
- Montane Wet Sclerophyll Forests
- Southern Tableland Wet Sclerophyll Forests
- Subalpine Woodlands
- Tableland Clay Grassy Woodlands
- Temperate Montane Grasslands
- Upper Riverina Dry Sclerophyll Forests
- Western Slopes Dry Sclerophyll Forests
- Western Slopes Grassy Woodland

The PMST identified the following MNES under the EPBC Act within the proposed action study area (adopts a 10 km buffer around the proposed action):

- Seven wetlands of international importance
- Six listed TECs
- 82 listed threatened species, comprising:
  * 44 threatened flora species
  * 11 bird species
  * 10 species of mammals
  * Five fish
  * Eight frog species
  * Two reptile species
  * Two species of insect
- 13 listed migratory species.

However, it is noted that the proposed action area does not contain any wetlands of international importance with the nearest (NSW Central Murray State Forests) being about 200-300 km away.

Publicly available vegetation mapping recognised one TEC not identified by the PMST.

Several fauna species are likely to be high level constraints to the development of the project and will require careful consideration during the project planning. These are listed in section 2.4.

Several microchiropteran bats are known to occur in proximity to the proposed action study area. Consideration of proximity of the proposed action to any breeding sites would be carefully considered. This would be investigated and considered as part of formal EIS technical studies.

Five listed threatened fish species have the potential to occur in waterways within the proposed action study area. Three have been mapped as having key fish habitat within proposed action study area. No significant impacts are anticipated for these species since the waterways can be avoided by spanning conductors.

All native vegetation, regardless of TEC status, would require assessment at the EIS phase. Impacts from the proposed action on TECs and threatened species is discussed above in Section 2.4. Impacts on migratory species are discussed in Section 2.5. More detailed information is provided in Attachment 2 - PBA, Section 3.3.1, page 32 and Appendix B, page 99 and Attachment 4 – Detailed MNES impact assessment, Section 1.1, page 1. These impacts will be assessed in detail during the preparation of the EIS.

3.2 Describe the hydrology relevant to the project area (including water flows)

Hydrology within the proposed action study area is influenced by topography and rainfall. The average annual rainfall of the four key bioregions include:
- NSW South Eastern Highlands IBRA Region: 460 – 1883 mm
- NSW South Western Slopes IBRA Region: 360 – 1266 mm
- The Australian Alps Bioregion: 606 – 2344 mm

The proposed action study area is located within the following catchments:
- Lachlan
- Hawkesbury
- Murrumbidgee
- Murray

For the most part, the proposed action study area is within the Riverina district of western NSW. The study area is located within the Murrumbidgee Unregulated River Water Sources 2012 and Murrumbidgee Alluvial Water Sources 2020 water sharing plans.

The Murrumbidgee River is a major watercourse that connects Gundagai to Wagga Wagga, and is a major landscape feature of the proposed action study area. Other major rivers include:
- Lachlan River
- Tumut River
- Yass River
- Goobarragandra River
- Tarlo River

The following large waterbodies either within or proximal to the proposed action study area include:
- Blowering Reservoir – within the proposed action study area
- Pejar Reservoir – within the proposed action study area
- Lake Sooley – 5 km south east of the proposed action study area

Water quality within the proposed action study area is expected to influenced by local factors such as existing agricultural operations. This may include discrete use of substances such as pesticides, herbicides, fertilisers and sedimentation of waterways potentially polluting surrounding waterways.

An assessment of surface water impacts will be included in the EIS.

3.3 Describe the soil and vegetation characteristics relevant to the project area

There are four IBRA bioregions present within the proposed action study area:
- NSW South Eastern Highlands IBRA Region
- NSW South Western Slopes IBRA Region
- The Australian Alps Bioregion
- Sydney Basin IBRA Region

There are six IBRA subregions within the proposed action study area:
- Inland Slopes
- Murrumbateman
- Bungonia
- Crookwell
- Bondo
- Snowy Mountains

There are 28 NSW landscapes within the proposed action study area. Due to this extent, there is a high degree of variation in the soil and vegetation characteristics of the proposed action study area. Generally, the existing dominant land use is a mix of grazing (modified pastures), grazing (native vegetation) and productive native forests. Vegetation and soils are characterised in accordance with the IBRA7 bioregions relevant to the proposed action study area, which are described in the following section.

Bannaby is the eastern most point of the proposed action and is located in the South East Highlands (SEH) bioregion. This bioregion extends from the Shoalhaven in the NSW coastal hinterland west to Goulburn, Queanbeyan and Yass in the centre. The SEH bioregion is comprised of diverse vegetation communities which consist of yellow box (Eucalyptus melliodora), red box (Eucalyptus polyanthemos) and Blakely's red gum (Eucalyptus blakelyi), with areas of white box (Eucalyptus albens) occupying lower areas. Red stringybark (Eucalyptus macrorhyncha), broad-leaved peppermint (Eucalyptus dives) and white gum (Eucalyptus rossii) associations dominate hills in the west of the bioregion, towards the

township of Yass. River oak is widespread along streams. Vegetation in this bioregion was confirmed during field surveys 2019-2021 (refer Attachment 2 PBA, section 2.3, page 22). The TEC White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland is likely to be widespread in the part of the proposed action area. Natural temperate grasslands of the South eastern highlands are likely to be present.

Soils vary across the bioregion in relation to altitude, temperature and rainfall. Soils are generally derived from Tertiary basalts and granite, with areas of rock outcrops to the south. On Tertiary basalts, soils are shallow red brown to black stony loams, with alluvial loams and black clays in swampy valley floors. On the granites, shallow red earths occur on ridges, yellow texture contrast soils on all slopes and deep coarse sands are found in alluvium.

Most of the proposed action is located in the NSW South Western Slopes Bioregion (SWS), which is directly west of the SEH. The SWS bioregion captures key areas of Wagga Wagga which is where the Gugaa substation is located. The SWS bioregion includes parts of the Murray, Murrumbidgee, Lachlan and Macquarie River catchments. In the higher rainfall eastern hill country, woodlands and open woodlands of white box (Eucalyptus albens) are dominant. To the west and north these give way to vegetation communities dominated by grey box (Eucalyptus microcarpa) and white cypress pine (Callitris glaucophylla). The TEC Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia is likely to be widespread in the part of the proposed action study area.

The southern portion of the proposed action study area is located within the Australian Alps Bioregion (AA), which comprises granites that have formed faulted, stepped ranges which highly influence climate, landforms and biodiversity. The proposed action is generally located two areas of the AA: montane areas, which range between 1,100 and 1,400 m in elevation, and tablelands areas, which includes areas below 1,100 m.

The Maragle substation is in the montane area. Vegetation is dominated by forests and woodlands of stringybarks and gums which grow in sequence from swamp gums (Eucalyptus ovata), peppermint forests (narrow-leaved peppermint E. radiata) and blue gums (E. globulus ssp. bicostata) on the lower slopes, to mountain gum (E. dalrympleana), candlebark (E. rubida), ribbon gum (E. viminalis) and alpine ash (E. delegatensis). These montane forests and woodlands are mainly associated with snow gums of E. pauciflora, E. dalrympleana, E. rubida. The southerly and southeasterly aspects (NSW NPWS 1988) is made of up wet sclerophyll forest, which has an understorey of species that are similar to those in sub-alpine areas. Tablelands are described as savannah woodlands situated on well-drained granites. Sedimentary rocks and moist higher rainfall areas support pine ash forests and fern gullies.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area

Listed critical habitat

The PMST search returned no critical habitat within the locality of the proposed action study area. No listed critical habitats are anticipated to be impacted by the proposed action.

Conservation areas

Within the proposed action study area and broader locality, important biodiversity values are known to occur within a range of conservation areas including national parks, nature reserves, state conservation areas, state forest and other protected areas.

Nature reserves within the biodiversity study area (the proposed action area plus a 500 metre buffer) include:
- Mudjarn
- Back Arm
- Bango

National Parks within the biodiversity study area include:
- Tarlo River National Park
- Kosciuszko National Park
- Minjary National Park

The following NSW State Forests were recorded within the biodiversity study area include:
- Bago
- Maragle
- Green Hills
- Tumut
- Red Hill

The following Conservation Areas are located within the biodiversity study area:
- Wereboldera Conservation Area
- Eurabbie Flora Reserve
- Laurel Hill Flora Reserve
- Tumut Subregion of the Southern Region Protected Area
- Forestry Management Areas in Tumut (FMZ2) Protected Area

3.5 Describe the status of native vegetation relevant to the project area

The status of native vegetation observed during the preliminary site investigations was highly varied.

The proposed action study area was identified using the methodology outlined in Attachment 2 PBA, section 2, page 18. The proposed action study area has generally already been selected to avoid vegetation (in particular TECs) as far as possible and to follow already disturbed areas such as existing roads, and other disturbed areas, where possible. The preliminary surveys have found that the condition of the vegetation within the proposed action study area ranges broadly from high to low condition (Attachment 1 - maps, figures 1-5).

A large portion of the proposed action study area is described as severely degraded in terms of both biodiversity and cover of native plants, due to 2019/2020 fires. Observations from the field surveys indicated that the Green Hills State Forest, Maragle State Forest and Red Hill State Forest were all severely affected by the 2019/2020 fires. There was evidence of regeneration and revegetation from these fires. In addition, several areas degraded due to drought. A figure of burnt areas is provided in Attachment 1 maps, figure 6.

From Bannaby to Gugaa, the alignment heads in a west/south west direction. Through this section, the proposed action study area intersects a number of plant communities. Diverse vegetation communities occur across the bioregion, including those consisting of yellow box (Eucalyptus melliodora), red box (Eucalyptus polyanthemos) and Blakely's red gum (Eucalyptus blakelyi), with areas of white box (Eucalyptus albens) occupying lower areas.

From Gugaa to Maragle, native vegetation is generally intact due to the protection of state forests and national parks along the south-eastern corner of the proposed action study area. The 2019/2020 summer bush fires have affected areas within the state forests and national parks (reference to the burnt areas map in Attachment 1 maps, figure 6) although recent survey effort has seen recovery and regeneration throughout these areas. Other vegetation is in good condition (based on preliminary validation) due to protected status within state forests in the south western extent of the proposed action study area.

A summary of the preliminary field-based PCT mapping and broadscale mapping of areas remaining to be surveyed within the proposed action study area is provided in Attachment 2 – PBA, section 3.3.2, pages 37-56. Further field validation of the ecological values within the proposed action study area is planned to be completed in 2022. Additional detailed vegetation assessments of the proposed action study area, using the Biodiversity Assessment Method (BAM), will be undertaken as part of the EIS process.

It is highly likely that the following TECs consistent with the thresholds under the EPBC Act would be present across parts of the proposed action study area:
- Alpine Sphagnum Bogs and Associated Fens
- Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia
- Natural Temperate Grassland of the South Eastern Highlands
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area

The proposed action area passes through a wide variety of terrains, ranging between alpine regions near Maragle at approximately 1,225 m elevation, and alluvial valleys near the Murrumbidgee River with a minimum elevation of approximately 385 m.

The proposed action is within the geological subdivision known as the Lachlan Orogen or Lachlan Fold Belt, which was generally formed at a convergent plate margin. This formational environment resulted in a highly varied geological environment dominated by deep-water sedimentary rocks, volcanic rocks and granitic plutons, as well as extensive thrust (reverse) faulting and folding.

The proposed action study area is not within a marine area.

3.7 Describe the current condition of the environment relevant to the project area

There is significant variation in the condition of the study area. A large portion of the state forests within the proposed action study area are mapped as being burnt in the 2019/2020 bushfires. As a result, the structure and composition are altered in areas in the south western portion of the project study area, such as within the Bago, Green Hill, Red Hill and Maragle state forests. Other areas to the east of Gundagai were not burnt. Fire affected areas are shown in Attachment 1 Maps, Figure 6.

Much of the land within and adjacent to the proposed action study area is predominantly used for agricultural purposes. Other land uses within and surrounding the study area include farm buildings and infrastructure, roads and road reserves, broad acre rural residential development, drainage channels for irrigation and existing transmission line easements. Vegetation within the proposed action study area is extensively cleared and the condition is strongly influenced by seasonality. It is also periodically affected by drought, fire and floods.

The ecological condition of the proposed action study area will be further investigated as part of the biodiversity assessment to be carried out for the EIS.

3.8 Describe any Commonwealth Heritage places or other places recognised as having heritage values relevant to the project

There are no places on the Commonwealth heritage list within the proposed action area. There are two sites listed on the National Heritage List within the proposed action area: they are the Snowy Mountains Scheme and Australian Alps National Parks and Reserves. The Australian Alps National Parks and Reserves have been listed for both natural and cultural values and the Snowy Mountains Scheme for its cultural values.

The proposed action passes through the northern extremity of the listed curtilage of the Snowy Mountains Scheme. The Snowy Mountains scheme is listed primarily for its cultural values. The Snowy Mountains Scheme is an unprecedented civil engineering project. The scheme is the most significant project to be undertaken as part of the Post-war Reconstruction program and has become an enduring symbol of Australia's identity as a multicultural, independent, and resourceful country. Apart from the sheer scale of the site, the Snowy Mountains Scheme also has rare engineering features, such as underground power stations, very large earth-filled dams, and two examples of pumped storage capacity, using off-peak power to top-up supply reservoirs, which are the only known examples of their type in Australia. The Scheme was hailed as a model of multicultural co-operation and integration and provided the opportunity for thousands of migrants to start a new life after the impacts of the war. The majority of those who came to build the Scheme stayed, becoming Australian citizens.

The EIS would assess and consider whether the proposed action is likely or not to have a significant impact on the values for which the Australian Alps National Parks and Reserves and Snowy Mountains Scheme. Refer to Section 2.2 for more discussion on potential impacts on National Heritage places.

3.9 Describe any Indigenous heritage values relevant to the project area

A preliminary desktop cultural heritage assessment completed for the proposed action concluded that there are several areas of Aboriginal heritage sensitivity within the proposal. A search of the Heritage NSW Aboriginal Heritage Information Management System (AHIMS) was carried out and 291 Aboriginal heritage items/recordings are located within the heritage study corridor (searched 03/09/2021). It is important to note that the number of sites are considered low as there are likely gaps in survey coverage.

The known Aboriginal sites within heritage study area encompass the following archaeological site types/features:
- Aboriginal ceremony and dreaming (2)
- Aboriginal resource and gathering (4)
- Artefacts (both isolated finds and artefact scatters) (204)
- Ceremonial ring (1)
- Hearth (1)
- Modified trees (32)
- Stone arrangement (2)
- Potential archaeological deposits (45)

The occurrence and survival of archaeological sites is dependent on many factors including micro-topography and the degree of land surface disturbance. It should also be noted that for practical reasons, archaeological surveys tend to focus on environments identified as archaeologically sensitive on the basis of previous research and aided by effective ground visibility. As a result, predictive site location models can tend to reflect previous survey bias and to become self-perpetuating.

The following site types are likely to occur in the heritage study area:
- Artefact scatters
- Modified trees
- Isolated finds

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

- Potential archaeological deposits
- Other site types including more fragile sites such as burials hearths, ceremonial sites and bora rings, stone arrangements, habitation structures, and carved trees.

In addition, the Nationally Listed Australian Alps National Parks and Reserves identifies moth feasting by Aboriginal groups as an aspect of the significance of this item. There is no Aboriginal site on AHIMS in the area of this listing. There are no known sites related to moth feasting within the proposed action area.

Archaeological survey and an Aboriginal cultural heritage assessment will confirm if there are any sites or areas of cultural value relating to moth feasting in the proposed action area.

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area

Land tenure in the study area is predominantly freehold, particularly on the western side of the proposed action area. Easements 70 m wide would be sought from public and private landowners for each proposed transmission line. The easements would provide a right of access for construction, operation and maintenance of the transmission infrastructure. To the east, State forests and NSW National Parks and Wildlife Service Estates make up a substantial portion of land.

Crown Land including road reserves and rail corridors occur throughout the proposed action area. There are 993 Crown Land sites in the proposed action area, including 76 Crown waterways, 838 Crown roads and 79 Crown parcels. There are no Commonwealth landholdings within the proposed action area.

There are no native title claims near the proposed action area. An ILUA (Gundungurra Area Agreement (NI2014/001)) at the eastern extent of proposal, near the Bannaby substation, was registered on 27 February 2015.

3.11 Describe any existing or any proposed uses relevant to the project area

The proposed action is located within the LGAs of Wagga Wagga, Snowy Valleys, Yass Valley, Cootamundra-Gundagai, and Upper Lachlan Shire and is near the LGA of Goulburn Mulwaree.

The predominant land uses along or near the proposed action area are:
- Agriculture including irrigated, cropping, dryland cropping and dryland grazing
- Forestry
- Transport infrastructure including highways, several regional road and railway lines
- National Parks, nature reserves and other conservation areas
- Rivers and waterways
- Electrical infrastructure including the existing Wagga 330 kV and Bannaby 500 kV substations, and transmission lines and distribution lines
- Energy generation including wind turbines, solar farms, and hydroelectric dams

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 4

Measures to avoid or reduce impacts

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action

The identification of the proposed action area has been based on analysis of extensive geospatial data as well as the results of environmental survey and stakeholder engagement carried out to date (these activities will continue during development of the EIS).

The corridor selection and refinement process followed general principles of avoid, minimise and mitigate to reduce impacts by considering of a range of constraints and opportunities including:
- Tier 1 constraints: areas where the transmission line cannot be located due to known presence of sensitive features (No-Go)
- Tier 2 constraints: areas that are to be avoided wherever possible or minimised due to the known presence of certain features (Avoid)

In addition to these Tier 1 and Tier 2 criteria, several opportunities to minimise impacts and maximise benefits from the proposal were identified including:
- Minimising overall transmission line length to reduce costs, impacts and construction time
- Locating new transmission lines next to existing transmission lines, wherever possible, to allow use of existing access tracks for construction and maintenance
- Targeting areas of existing disturbance, such as roads, tracks and property boundaries to reduce environmental and property impacts

The process for refinement of the proposed action area is currently ongoing due to the early stage of design and high number of constraints and opportunities to consider. As a result, the proposal would continue to be refined through community engagement and field validation of environmental constraints.

The proposed action would affect threatened species, ecological communities and their potential habitats. The total extent to which impacts would be realised depends on several factors, which would be determined during the detailed impact assessment phase. The proponent is committed to minimising impacts to MNES as much as practicable during the design, construction and operation of the proposed action and where complete avoidance is not possible, management and mitigation measures would be implemented. The final action area would consider MNES (including habitat) and other key species for avoidance as well as cultural heritage, land access and amenity.

Transgrid would develop environmental management and mitigation measures during the preparation of the EIS and Construction Environmental Management Plan (CEMP), as required under the conditions of the NSW State approval and with consideration to MNES where relevant.

The following measures would be undertaken to avoid or minimise the impacts on biodiversity:
- Refine the proposed action footprint to maximise avoidance of biodiversity values. The currently proposed study area contains potential habitat for numerous threatened species. Detailed specialist biodiversity studies (such as habitat mapping, PCT mapping) would be used to identify key areas of habitat for threatened species so that the proposed action can ‘design around’ these sensitive areas. There would likely be good opportunities for avoidance, due to the fragmented nature of the landscape, particularly within the proposed action study area.
- Prioritise existing cleared land for infrastructure. Biodiversity considerations will be incorporated into the proposed action design by maintaining habitat corridors between and throughout the proposed action study area. This would include a combination of:
  * Avoidance of more intact ecological communities to minimise impacts on TECs and threatened species habitats
  * Targeted surveys to be completed to verify the presence of threatened flora and fauna and avoid or minimise impacts on threatened flora and fauna species and their preferred habitats, where possible
  * Targeted pre-clearance walkovers to be carried out prior to construction activities to identify and clearly delineate or flag threatened flora species locations, any important habitat or communities to be retained or avoided
  * Bird diverters (reflectors) are recommended to be installed on transmission lines within 1 km of wetland / riverine habitats to reduce impacts on threatened aerial species from collision
  * Aquatic riverine / wetland habitat which provides potential habitat for threatened fish species will be avoided where possible. Where transmission lines require crossing of these habitats, the line will span watercourses so as not to directly affect a river channel / wetland

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved

The proposed action has the potential to result in significant impacts to MNES protected under the EPBC Act. The proposed

action will seek to achieve an environmental outcome where impacts to MNES are minimised much as practicable during the design, construction and operation of the proposed action.

Transgrid will develop environment and community commitments and outcomes during the preparation of the EIS and Construction Environmental Management Plan (CEMP), as required under the conditions of the NSW State approval and with consideration to MNES where relevant.

Final environmental commitments and outcomes are expected to include the following:
- Application of the NSW no net loss standard under the NSW Biodiversity Offset Scheme
- No introduction of new species of weeds declared or listed under relevant legislation, plant pathogens or pests (including feral animals), nor sustained increase in abundance of existing weed or pest species as a result of proposed action-related activities
- No contamination of land and soils as a result of proposed action-related activities
- Temporarily disturbed areas to be rehabilitated consistent with the existing land use or as otherwise agreed with the landholder and relevant government agencies.

Where complete avoidance is not possible, management and mitigation measures will be implemented. This process will be achieved through ecological survey and assessment to understand the baseline conditions of the proposed action area and how MNES utilise the proposed action area. Flexibility has been included in the current design, with the ability to site proposed action components to avoid and minimise impacts. Where possible, compensatory measures will be implemented to minimise any impacts before relying on offset actions. This may include revegetation, management and removal of invasive pest plants in areas of native vegetation. Offsets will be delivered for any significant residual impacts to MNES that cannot be otherwise avoided.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 5

Conclusion on the likelihood of significant impacts

5.1 You indicated the below ticked items to be of significant impact and therefore you consider the action to be a controlled action

- ☐ World Heritage properties
- ☐ National Heritage places
- ☐ Wetlands of international importance (declared Ramsar wetlands)
- ☑ Listed threatened species or any threatened ecological community
- ☑ Listed migratory species
- ☐ Marine environment outside Commonwealth marine areas
- ☐ Protection of the environment from actions involving Commonwealth land
- ☐ Great Barrier Reef Marine Park
- ☐ A water resource, in relation to coal seam gas development and large coal mining development
- ☐ Protection of the environment from nuclear actions
- ☐ Protection of the environment from Commonwealth actions
- ☐ Commonwealth Heritage places overseas
- ☐ Commonwealth marine areas

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action

Not applicable as the proposed action is considered likely to potentially have a significant impact on TECs listed in 2.4. The proposed action is also considered to potentially have a significant impact on several threatened species as outlined in section 2.4.

Attachment 4 includes an assessment for each TEC and threatened species likely to occur against the Matters of National Environmental Significance Significant Impact Guidelines 1.1 EPBC Act. Mitigation measures listed in Section 4.1 will minimise the risk to other TECs and threatened species considered likely to occur. The migratory species have been included as a precautionary measure in the absence of full survey and complete design and alignment. See section 2.5 for details.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 6

Environmental record of the person proposing to take the action

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Explain in further detail

Transgrid has a consistent record of proactively seeking environmental approvals where required and ensuring that any commitments or conditions placed on activities as a result of these approval processes are adhered to.

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application

In 2001, Transgrid was subject to proceedings under State Environmental laws for clearing vegetation in the vicinity of transmission lines. Transgrid subsequently invested $5 million toward site rehabilitation. Since the 2001 incident, Transgrid has not been subject to any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

☑ Yes ☐ No

6.3.1 If the person taking the action is a corporation, provide details of the corporation's environmental policy and planning framework

Transgrid Environment Policy is available on their web site and has also been provided an Attachment 3.

Transgrid is committed to conducting its activities and services in a manner that minimises pollution and complies with relevant environmental legislation, industry standards and codes of practice. Transgrid implores all employees and contractors to stop and consider the potential impact to the environment from their activities.

We aim to enhance our systems and processes in a manner that promotes continuous improvement in environmental management, and which will lead to the achievement of industry best practice.

In meeting these commitments, Transgrid:

* Maintains an Environmental Management System (EMS) that provides the framework for setting and reviewing our environmental objectives and targets, including the implementation, monitoring and review of these objectives and targets, as well as facilitating continuous improvement in environmental performance
* Continues to develop systems that recognise sensitive environmental and cultural sites on or near our infrastructure, and provides processes to manage and our activities with the aim of preventing environment harm or adversely impacting the environment
* Integrates environmental management considerations into the planning, design, siting, construction, maintenance, operation, decommissioning and disposal of all Transgrid assets
* Provides environmental training, assessment and authorisation under our Environmental Management System to employees and contractors to enable them to perform their duties in an environmentally sensitive manner
* Engages with the community, customers, employees, government and other stakeholders regarding potential environmental or cultural impacts associated with our plans and activities
* Pursues opportunities to maximise resource efficiencies and reduce the generation of waste through avoidance, reduction, reuse and recycling programs
* Identifies, sets and monitors realistic environmental performance measures and communicates them to all employees and stakeholders.

Transgrid's Environmental Policy commits to protecting and enhancing the natural environmental and social values in all Transgrid's activities. Transgrid's planning framework allows for early identification of environment and social values and methods for avoiding, minimising and mitigating impacts caused as a result of their developments via preliminary detailed screening and risk assessments within the development envelope and finally subsequent footprint selection.

Transgrid's EMS is independently certified and covers all of their processes and activities that have the potential to impact on the environment. The EMS enables compliance with Transgrid's environment and heritage compliance obligations, providing the framework for driving environmental requirements throughout leadership, planning, support, operation, performance evaluation and continuous improvement actions. The proposed action, therefore, will be undertaken, monitored and measured in accordance with the Transgrid's EMS.

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

☑ Yes ☐ No

6.4.1 EPBC Act No and/or Name of Proposal

* Transgrid/Energy generation and supply (non-renewable)/ EnergyConnect (NSW – Western Section) Reference Number: 2020/8673
* Transgrid/Energy and Infrastructure Snowy 2.0 Transmission Connection Project Reference Number: 2018/380
* NSW Electricity Networks Operations Pty Ltd/Energy Generation and Supply (renewable)/South of Parkwood Drive, extending up to 900m to the south of Stockdill Drive/Australian Capital Territory/Construction of new substation and associated transmission line works, ACT. Reference No. 2016/7784
* Transgrid/Energy generation and supply (non-renewable)/Lismore to Dumaresq, near Bonshaw/NSW/330 kV Transmission Line, 205km in Length. Reference No. 2010/5326 Proposal withdrawn
* Transgrid/Transmission line between Parkes and Manildra Substations, NSW. Date Received: 17 February 2009 Reference Number: 2009/4741
* Transgrid/Energy generation and supply (non-renewable)/Block 1653, Williamsdale, Tuggeranong/ACT/New Electricity Substation and Access Road Date Received: 01 Dec 2008 Reference Number: 2008/4619
* Transgrid/Telecommunications/Singleton Military Area, 3.5 km east of Broke/NSW/Singleton Military Area Vegetation Maintenance, Liddel-Killingworth Transmission Line Easement Date Received: 18 Dec 2007 Reference Number: 2007/3929
* Transgrid/Energy generation and supply/Wollar to Wellington/NSW/construct 330kV transmission line & switching station Date Received: 06 Jul 2005 Reference Number: 2005/2202
* Transgrid/Energy generation and supply/Tuggerah Substation to Ourimbah State Forest/NSW/330kV Transmission Line Date Received: 11 Nov 2002 Reference Number: 2002/863
* Transgrid/Energy generation and supply/Warabrook to Kooragang Island/NSW/Transgrid 132kV Power Transmission Line Date Received: 03 Sep 2002 Reference Number: 2002/794
* Transgrid/Energy generation and supply/Eastern Creek/NSW/Transgrid Sydney West 330kV Substation Augmentation Date Received: 30 May 2002 Reference Number: 2002/677
* Transgrid/Energy generation and supply/Singleton Military Area/NSW/Vegetation Maintenance, Liddell-Killingworth 330 kV Power Line Easement, Singleton Date Received: 03 May 2002 Reference Number: 2002/649
* Country Energy/Energy generation and supply/Molong/NSW/66kV transmission line to link the Molong-Cumnock and the Transgrid Molong-Manildra 132kV transmission lines Date Received: 21 Mar 2002 Reference Number: 2002/616
* Transgrid/Energy and Infrastructure (incl. Pipelines)/Molong to Manildra/NSW/132kV transmission line Date Received: 12 Dec 2001 Reference Number: 2001/527
* Transgrid/Energy and Infrastructure (incl. Pipelines)/Buronga (NSW) to Monash (SA)/NSW/Electricity Transmission Line Date Received: 10 Aug 2001 Reference Number: 2001/380
* Project EnergyConnect (NSW – Eastern Section) Reference Number: 2020/8766
* Project EnergyConnect (NSW – Western Section) Reference Number: 2020/8673

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 7

Information sources

Reference source

M. Bamford, D. Watkins, W. Bancroft, G. Tischler and J. Wahl Wetlands International - Oceania 2008, Migratory Shorebirds of the East Asian - Australasian Flyway: Population estimates and internationally important sites.

Reliability

The report was prepared by suitably qualified ecologists based on shorebird count data accumulated through the efforts of Wetlands International and its Asian Waterfowl Census, the Australasian Wader Studies Group and its shorebird population monitoring programme, and the work of individuals who counted birds and reported their findings. As such, a reasonably high level of reliability is assumed

Uncertainties

Any uncertainties identified in the cited text should be considered in the context of the uncertainties and data missed of the field survey results presented and would be subject to completion of further detailed surveys.

Reference source

Department of Agriculture, Water and Environment 2015 Draft referral guideline for 14 birds listed as migratory species under the EPBC, http://www.environment.gov.au/system/files/resources/c05f5b87-0a99-4998-897e-7072c236cf83/files/migratory-birds-draft-referral-guideline.pdf

Reliability

This guideline was prepared by suitably qualified ecologists and is licensed by the Commonwealth of Australia for use under a Creative
Commons Attribution 4.0 Australia licence. The information contained within this guideline uses the nest information available at the time of writing.

Uncertainties

The guideline is general in nature. Any uncertainties identified in the cited text may relate to any updates to the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and the guideline does not remove the obligation to consider whether a referral to the Minister for the Environment is required.
The guideline has been developed using the best information available at the time of writing. However, impacts of proposals will be assessed by the Australian Government Department of the Environment on the basis of the best information available at that point in time, which may differ from the information on which the guideline is based.
The guideline does not provide guidance on requirements under international, state or local government laws.

Reference source

Department of Planning, Industry and Environment 2021, BioNet Atlas, https://www.environment.nsw.gov.au/topics/animals-and-plants/biodiversity/nsw-bionet

Reliability

BioNet is made up of a number of data collections. It is somewhat reliable, and subject to limitations relating to the way the data has been collected. It has been used as an indication of likelihood of presence ahead of field surveys

Uncertainties

The BioNet Atlas is not a comprehensive inventory of all species, nor of all locations of species in NSW. The data may contain errors and omissions and is subject to updates over time

Reference source

Department of Agriculture, Water and Environment 2021, EPBC Online Protected Matters Database Search, http://www.environment.gov.au/webgis-framework/apps/pmst/pmst.jsf

Reliability

PMST is considered a source of high reliability, having been prepared by the Australian Government. However, it is still subject to limitations relating to the way data has been collected. It has been used as used as an indication of likelihood of presence ahead of field surveys

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Uncertainties

PMST is not a comprehensive inventory of all species nor of all species in Australia. The data may contain errors and omissions and is subject to updates over time

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Section 8

Proposed alternatives

Do you have any feasible alternatives to taking the proposed action?

Yes ☑ No

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Section 9

Person proposing the action

9.1.1 Is the person proposing the action an organisation or business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	NSW Electricity Networks Operations Pty Limited
Business name	
ABN	
ACN	609169959
Business address	180 Thomas Street, Haymarket, 2000, NSW, Australia
Postal address	
Main Phone number	(02) 9284 3841
Fax	
Primary email address	Christine.Lussier@transgrid.com.au
Secondary email address	

9.1.2 I qualify for exemption from fees under Regulation 5.23(1)(ii) of the EPBC Regulations because I am:

☐ Small business
☑ Not applicable

9.1.2.2 I would like to apply for a waiver of full or partial fees under Regulation 5.21A of the EPBC Regulations

☐ Yes ☑ No

9.1.3 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Elli
Last name	Baker
Job title	Project Director – HumeLink
Phone	
Mobile	0414 780 585
Fax	
Email	Elli.Baker@transgrid.com.au
Primary address	180 Thomas Street, Haymarket, 2000, NSW, Australia
Address	

Declaration: Person proposing the action (To be signed by the person at 9.1.3)

I, ELLI BAKER, on behalf of NSW Electricity Networks Operations Ltd **, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf or for the benefit of any other person or entity.**

Signature: ..... **Date:** 11/03/2022

I, ELLI BAKER, on behalf of NSW Electricity Networks Operations Ltd **, the person proposing the action, consent to the designation of** NSW Electricity Networks Operations Ltd **as the proponent for the purposes of the action described in this EPBC Act Referral.**

Signature:.....**Date:** 11/03/2022

Australian Government
Department of Agriculture, Water and the Environment

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Proposed designated proponent

9.2.1 Is the proposed designated proponent an organisation or business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	NSW Electricity Networks Operations Pty Limited
Business name	
ABN	
ACN	609169959
Business address	180 Thomas Street, Haymarket, 2000, NSW, Australia
Postal address	
Main Phone number	(02) 9284 3841
Fax	
Primary email address	Christine.Lussier@transgrid.com.au
Secondary email address	

9.2.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Elli
Last name	Baker
Job title	Project Director – HumeLink
Phone	0414 780 585
Mobile	
Fax	
Email	Elli.Baker@transgrid.com.au
Primary address	180 Thomas St, Haymarket, 2000, NSW, Australia
Address	

Declaration: Proposed Designated Proponent

I, ELLI BAKER, on behalf of NSW Electricity Networks Operations Ltd **,the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.**

Signature: ..... **Date:** 11/03/2022 .....

Australian Government
Department of Agriculture, Water and the Environment

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Referring party (person preparing the information)

9.3.1 Is the referring party an organisation or a business?

☑ Yes ☐ No

Organisation

Organisation name (as registered for ABN/ACN)	AURECON AUSTRALASIA PTY LTD
Business name	
ABN	54005139873
ACN	
Business address	Level 5, 116 Military Road, Neutral Bay, 2089, NSW, Australia
Postal address	
Main Phone number	+61 405 399 774
Fax	
Primary email address	Michael.Drowley@aurecongroup.com
Secondary email address	

9.3.2 Contact (for an organisation - the contact details of the person authorised to sign on behalf of the organisation)

First name	Michael
Last name	Drowley
Job title	Associate, Environment and Planning
Phone	+61 405 399 774
Mobile	
Fax	
Email	Michael.Drowley@aurecongroup.com
Primary address	Level 5, 116 Military Road, Neutral Bay, 2089, NSW, Australia
Address	

Declaration: Referring party (person preparing the information)

I, Michael Drowley on behalf of Aurecon Australasia Pty Ltd, declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:  **Date: 11/03/2022**

Note: PDF may contain fields not relevant to your application. These fields will appear blank or unticked. Please disregard these fields.

Appendix A

Attachment

Document Type	File Name
public_consultation_reports	Att 5 - Community engagement.pdf
dbf	Humelink_v9_corridor.dbf
kml	Humelink_v9_simplififed_corridor.kml
prj	Humelink_v9_corridor.prj
shp	Humelink_v9_simplified_corridor.shp
shx	Humelink_v9_simplified_corridor.shx
supporting_tech_reports	Att 2 - PBA.pdf
supporting_tech_reports	Attachment 4 - MNES assessment V2.pdf
flora_fauna_investigation	Att 1 - Maps.pdf
corp_env_policy_docs	Att 3 - TG Environmental Policy.pdf

Appendix B

Coordinates