Title of Proposal - Hills of Gold Wind Farm

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Energy Generation and Supply (renewable)

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

The Hills of Gold Wind Farm project proposal would comprise of the installation of a wind farm with a capacity up to 410 MW that would supply electricity to the national electricity grid through capacity available in the TransGrid Liddell to Tamworth transmission line.

It is currently proposed that the wind farm would include development of the following infrastructure:

- Up to 97 wind turbines, mounted on tubular steel towers with handstand construction areas. It is currently proposed that each turbine will have a maximum tip height of 220m above ground level.
- Construction compound and temporary construction infrastructure, potentially including concrete batching facility and on-site quarry.
- Electrical connections between wind turbines and the substations (likely to be underground, subject to constructability).
- Internal access tracks and upgrades to existing access roads, where required.
- Up to two substations, control room and O&M facility.
- Up to 23km of high voltage, overhead powerline, connecting the wind farm site to the TransGrid Liddell to Tamworth transmission line.
- Connection infrastructure including a switching station and battery storage.

Major infrastructure components description below:

1) Wind turbines

The more commonly used Double Fed Induction Generator (DFIG) and the Direct Drive turbine would be considered. The main features of the wind turbines considered include:

- 3 (three) variable speed blades for main shaft rotor control.
- Upwind design (nacelle rotates into the wind).
- Power convertor on the rotor side of the generator (power exited through slip rings and carbon brushes) for variable speed grid synchronisation and power quality improvements.

The main components of turbines that would be suitable for the project are:
- Nacelle which houses the main shaft, gearbox (in DFIG) and generator.
- Blades with a rotor radius between 65 to 83m in size.

- Hub which connects the blades to the main shaft
- Tower section which connects the nacelle at a height considered between 130 to 155m.
- In built step-up transformer

Please notice that blade size as well as tower height are still indicative since we are currently exploring a combination of hub heights (tower height) and blades length with a maximum tip height (Max. T.H) of 220 m that will be compliant with DA and technical constrains while maximizing annually energy generation.

2) Laydown area
A storage yard around 5ha of fenced flat land will be required during construction of the project.

Construction machinery, turbine components and operational requirements will be stored in the yard. The storage yard will be made by levelling and temporary compaction of top surface and fencing.

This will also house the facilities required for the temporary workforce, including amenities and drinking water. The yard will include areas for loading and unloading cranes. The storage yard will be located close to access points to reduced transport movements once vehicles have entered the site.

Foundations for towers and other infrastructure
No soil or geotechnical investigations have yet been taken to inform the size and specifications of the turbine foundations and other infrastructure. Geotechnical investigations for roads, foundations, hardstands and any creek crossings would be undertaken in the detailed design phase.

The construction process of a typical 17 to 21 m diameter foundation takes about 9 to 15 days. Foundation casting can be completed after the reinforcement steel work is completed.

A concrete batching plant is expected to be installed within the project site to reduce transport movements outside of the project boundaries. To served concrete requirements including footings, enough quantity of raw material will be sourced locally wherever practicable and is subject to assessment of available materials.

3) Crane hardstands
To build the wind turbines, cranes would be used for lifting materials weighing from 70 to 80 tonnes to the hub heights between 130 to 155 meters. Typically, these are mobile 600 to 700 tonne cranes.

To handle the heavy loads, specific platforms (hardstands) are constructed, on which the crane is placed. These areas are designed specifically to the environmental and topographic constraints of the site. These areas range in size but will be approximately 6,000 square meters during construction after which the hardstand area is reduced.

4) Road works
Where required, roads will be upgraded, widened or constructed to accommodate material transportation and access to each turbine from port to site.

The following will be taken into consideration when assessing the design of onsite roads:
- Natural water flow won't be blocked, and appropriate measures will be taken for water management and soil conservation.
- Proper cross water drainage to be provided and streams would be connected to natural flow areas to prevent water stagnation.

5) Substation and connection to the grid
The wind farm will be connected to the existing 330kV TransGrid Liddell to Tamworth transmission line. We are currently investigating various transmission lines routes that avoid and /or minimize vegetation, flora and fauna impacts and are still feasible from the technical perspective. Proposed routes length varies from 13 to 23 km. The easement of this transmission line route is expected to be between 40 to 60m wide.

Connection to the wind farm electrical system would involve:
- Either one 33/330 kV or up to two onsite 33/132kV substations.
- A switching station.
- A transmission line to the TransGrid 330kV Liddell to Tamworth transmission network.

Onsite substations will include main transformers, switchgear, protection equipment and a control room. The transmission line is expected to be between 20 to 25m in height depending on span widths and local topography.

Transmission preferred route, design and length as well as number of substation and voltage will be confirmed through detailed design investigations.

6) Ancillary facilities
A maintenance and storage shed will be constructed together with a site office and car parking facilities

7) Battery storage
The project is proposed to include battery storage at the connection point and provide firming capability to the output of the wind profile. The Hills of Gold wind profile can be complimented by storing energy when there is less demand on the system and injecting when there is higher demand. The project benefits from generation in the early morning and evening, as well as its location in NSW which will provide diversification to other wind generators.

Preliminary system sizing has been carried out for a 100MW/200MWh battery system which would be further refined in line with regulatory policies and the potential closure of coal fired power stations to provide more certainty, as investigations progress.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Wind farm and	1	-31.521398942204	151.1720253125

Area	Point	Latitude	Longitude
transmission			
Wind farm and transmission	2	-31.521398942204	151.17820512207
Wind farm and transmission	3	-31.544223925392	151.17339860352
Wind farm and transmission	4	-31.561777807588	151.17477189453
Wind farm and transmission	5	-31.585762771327	151.17614518555
Wind farm and transmission	6	-31.60798722673	151.18644486816
Wind farm and transmission	7	-31.621436294297	151.17820512207
Wind farm and transmission	8	-31.637806448999	151.16241227539
Wind farm and transmission	9	-31.639560223275	151.15005265625
Wind farm and transmission	10	-31.643652234624	151.12670670898
Wind farm and transmission	11	-31.643652234624	151.11228715332
Wind farm and transmission	12	-31.637806448999	151.10336076172
Wind farm and transmission	13	-31.632544927728	151.09168778809
Wind farm and transmission	14	-31.612080626917	151.05666886719
Wind farm and transmission	15	-31.595121083079	151.01135026367
Wind farm and transmission	16	-31.589857148382	150.97495805176
Wind farm and transmission	17	-31.589857148382	150.95092545898
Wind farm and transmission	18	-31.588102437389	150.93169938477
Wind farm and transmission	19	-31.577573477507	150.92483292969
Wind farm and transmission	20	-31.560607651524	150.92277299316
Wind farm and transmission	21	-31.544223925392	150.92208634766
Wind farm and transmission	22	-31.520813612867	150.92071305664
Wind farm and transmission	23	-31.495055491895	150.9172798291
Wind farm and transmission	24	-31.503252027608	150.97427140625
Wind farm and	25	-31.505008334633	151.00654374512

Area	Point	Latitude	Longitude
transmission			
Wind farm and transmission	26	-31.521984267874	151.04636918457
Wind farm and transmission	27	-31.53369001105	151.09992753418
Wind farm and transmission	28	-31.555926880475	151.12396012695
Wind farm and transmission	29	-31.559437480781	151.14387284668
Wind farm and transmission	30	-31.538371897499	151.14249955566
Wind farm and transmission	31	-31.513203997772	151.1452461377
Wind farm and transmission	32	-31.514374748124	151.15966569336
Wind farm and transmission	33	-31.517301559833	151.16790543945
Wind farm and transmission	34	-31.521398942204	151.1720253125

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).

The proposed Hills of Gold Wind Farm site is located approximately 4km south of Hanging Rock, 8km south east of the Nundle and 60km south east of Tamworth, within the Tamworth Regional Local Government Area (LGA) and Upper Hunter Shire LGA. Site boundaries comprise approximately 6,808 ha. Land on which the project is proposed to be located is owned by 6 freehold landholdings and includes Crown land paper roads. Additional land is required to host the transmission line route.

The proposed development corridor within the project boundary is predominately agricultural land with a high percentage of overstorey native vegetation adjacent to the development corridor and within steeper terrain. The site has a history of agricultural use (grazing cattle). Native understorey has been converted to exotic pastures in many locations.

The wind farm site is primarily classified as primary production land zone and it is adjacent to forestry, National Parks and Nature Reserves zones.

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

Approximately 250ha

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title.77, 82, 83, 91, 92, 93, 94, 97,98, 100, 102, 105 in DP 755349

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?

No

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

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 01/2021

End date 12/2022

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

An application for the Secretary's Environmental Assessment Requirements (SEARs) has been submitted to the Department of Planning and Environment (DP&E), which will provide the terms of reference for an Environmental Impact Statement (EIS) for State Significant Development under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act). An assessment of whether the project will require referral to the Commonwealth Department of Environment and Energy (DoEE) is currently being completed and a referral will be submitted.

This section sets out the environmental planning context of the Hills of Gold Wind Farm project proposal. Relevant provisions are noted that will affect the planning and assessment of the proposal. The key piece of legislation that is relevant to this EPBC Act referral is the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The wind farm will be assessed as a major project under Part 4 of the EP&A Act as State Significant Development, requiring the preparation of an Environmental Impact Statement that is subject to public display. If the project is determined to be a controlled action under the EPBC Act, it would be recommended that assessment is carried out through an accreditation of the impact assessment process being completed under the EP&A Act. This process will allow the Commonwealth to issue assessment requirements, specific to matters of national environmental significance and carry out the assessment of the EIS concurrently with the NSW state process.

The remaining relevant pieces of NSW legislation described in this section will need to be addressed as part of the EIS, however they act independently of the EP&A Act.

NSW LEGISLATION

Environmental Planning and Assessment Act 1979 (EP&A Act)

Development in NSW is subject to the requirements of the EP&A Act and its associated regulations. Environmental planning instruments prepared pursuant to the Act set the framework for approvals under the Act.

The *Environmental Planning & Assessment Act* (EP&A) includes the following objectives:

Encourage the proper management, development and conservation of natural resources for the purpose of promoting the social and economic welfare of the community and a better environment; the provision of land for public purposes; the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities and their habitats; and, ecologically sustainable development.

The Hills of Gold Wind Farm project proposal will be assessed under Part 4 of the EP&A Act.

State Environmental Planning Policy (State and Regional Development) 2011

Clause 20 of Schedule 1 of *State Environmental Planning Policy (State and Regional Development) 2011* states that the following is considered a state significant development:

Development for the purpose of electricity generating works or heat or their cogeneration (using any energy source, including gas, coal, biofuel, distillate, waste, hydro, wave, solar or wind power) that:

(a) has a capital investment value of more than $30 million

The Hills of Gold Wind Farm project proposal will have a capital investment cost of more than $30 million. Therefore, the proposal is classified as “State Significant Development” under Part 4 of the EP&A Act.

State Significant Developments are major projects which require approval from the Minister for Planning. While the Minister for Planning is the consent authority for State Significant Development, the Minister may delegate the consent authority function to the Independent Planning Commission NSW (IPCN), the Secretary or to any other public authority.

If substantial numbers of submissions are received to the EIS, the proposal may be determined by the PAC, with reference to the DP&E Determination Report.

State Environmental Planning Policy (Infrastructure) 2007

Clause 34 of State Environmental Planning Policy (Infrastructure) 2007 provides that development for the purpose of electricity generating works may be carried out by any person

with consent on any land in a prescribed rural, industrial or special use zone.

Relevant to the proposal, prescribed rural, industrial or special use zones are defined to include land zoned as RU1 – primary production and RU3 – forestry. No part of the proposal would be located on E1 land, which is not included in the prescribed zones.

Tamworth Regional Local Environmental Plan 2010

The majority of the site is located within the Tamworth Regional Council LGA to which the provisions of the*Tamworth Regional Local Environmental Plan 2010* apply. The wind farm site is located on land zoned RU1 (Primary Production).

Clearing and excavation will be required for a network of turbine footings, hardstand areas, access tracks and substation(s) and control buildings. Having a dispersed and small overall impact footprint in comparison to the land available for agriculture within the proposal boundary, allowing for mixed agricultural activities concurrent with wind farm operation and being highly reversible at the end of the project's life, the proposal is considered compatible with this land zoning.

The site is located directly adjacent to land zoned RU3 (Forestry). The proposal currently shows minimal direct impact on these zones; small sections of the proposed Development Corridor are located in RU3 (Forestry); limited to access tracks that may be utilised. The proposal will improve access, due to upgrades to Morrisons Gap Road and these access tracks. This will be an operational benefit to the forestry and national park estates. It will also improve vehicular response time and access in the case of a bushfire in the area.

Upper Hunter Shire Local Environmental Plan 2013

A small component of the site is located within the Upper Hunter Shire LGA to which the provisions of the *Upper Hunter Local Environmental Plan 2013* apply. The wind farm site is located on land zoned RU1 (Primary Production).

Clearing and excavation will be required for a network of turbine footings, hardstand areas, access tracks and substation(s) and control buildings. However, in terms of overall landforming and landscape changes, the proposal would have a dispersed and small overall impact footprint. This will mean the site will retain large areas of land available for agriculture within the proposal boundary, allowing for mixed agricultural activities concurrent with wind farm operation. It is also considered highly reversible. At the end of the project's life, above ground infrastructure can be removed, returning the site to its current agricultural capability or an alternative land use. The proposal is considered compatible with this land zoning.

Biodiversity Conservation Act 2016

The *Biodiversity Conservation Act* 2016 relates to the conservation of biodiversity. The Act repeals the *Threatened Species Conservation Act 1995*, the *Nature Conservation Trust Act 2001* and the animal and plant provisions of the *National Parks and Wildlife Act 1974*. The Act commenced on the 25th of August 2017.

The purpose of this Act is to maintain a healthy, productive and resilient environment for the

greatest well being of the community consistent with the principles of the ecological sustainable development. The ecological assessment to be included in the EIS will be carried out consistent with the requirements under the *Biodiversity Conservation Act* 2016.

Protection of the Environment Operations Act 1997

The *Protection of Environment Operations Act* aims to reduce pollution of the environment and governs the way discharge of pollutants is to be managed. This includes pollution of waters.

This Act also requires Environment Protection Licences to be obtained for the conduct of certain activities, including the construction and operation of wind farms which are approved as SSD under the EP&A Act.

Rural Fires Act 1997

The site is not mapped as bushfire prone. An assessment of both the potential to cause a fire and impede access to fight a fire will be required in the impact assessment. It is likely that the project infrastructure and track establishment will facilitate firefighting access in the locality. Provisions to fight fire and allow access will be required as part of the construction and operational environmental management of the wind farm.

National Parks and Wildlife Act 1974

The NPW Act establishes the fundamental functions of the NSW National Parks and Wildlife Service. These include the conservation of nature, objects, features, places and management of land reserved under the Act. The NPW Act regulates access to National Parks.

The NPW Act also sets out to protect and preserve Aboriginal heritage values. Part 6 of this Act refers to Aboriginal objects and places and prevents persons from impacting on an Aboriginal place or relic, without consent or a permit.

Additional to the NPW Act, OEH codes set out required assessment and consultation protocols for Aboriginal heritage impact assessments.

Forestry Act 2012

This act sets out the establishment of the Forestry Corporation of New South Wales as a statutory State owned corporation and land manager of forestry areas.

The Development Corridor incorporates land zoned as RU3, managed by NSW Forestry Corporation. Access roads in this zone may be utilised to provide access to the proposed wind farm site, as such, consultation is underway with NSW Forestry Corporation. The Hills of Gold Wind Farm project is not inconsistent with the objectives of the *Forestry Act 2012*.

Fisheries Management Act 1994

This Act sets out to conserve fish stocks and key fish habitats, threatened species, populations and ecological communities of fish and marine vegetation and biological diversity. Further, it aims to promote viable commercial fishing, aquaculture industries and recreational fishing

opportunities.

Key fish habitat is defined as aquatic habitat important to the maintenance of fish populations generally and the survival and recovery of threatened aquatic species. Assessment of the Tamworth Regional LGA and Upper Hunter Shire LGA Key fish habitats (DPI, 2017) identified Key fish habitat within the proposal site boundaries. These are generally in the lower slope positions and unlikely to be directly affected by the proposal. The environmental assessment will include assessment of the water way crossings as well as clearing and excavation near Key fish habitat and include measures designed to ensure that any impacts on aquatic habitat and pollution risks are mitigated.

Water Management Act 2000

Under the WM Act, water access licences and controlled activity approvals are required for certain activities.

A controlled activity approval confers a right on its holder to carry out a specified controlled activity at a specified location in, on or under waterfront land (i.e. in or within 40 metres of a river, lake or estuary). A controlled activity approval is not required for SDD. The design of waterway crossings, installation of cables and any associated instream works would be prepared in accordance with DPI Water's Guidelines for Controlled Activities on Waterfront Land (2012) however, as a best practice measure.

Water access licenses may however be required. Water sources for construction and operations will be identified and quantified within the EIS and all required licences and approvals obtained prior to the commencement of relevant construction activities.

Roads Act 1993

Approval from the roads authority (RMS and/or Council) is required under section 138 of the Roads Act to erect a structure or carry out a work in, on or over a public road. These will be obtained prior to the commencement of relevant works.

The road upgrades required for the proposal and an impact assessment of the upgrades will be assessed and identified in the EIS.

Crown Lands Act 1989

The objective of the Crown Lands Act is to ensure that Crown land is managed for the benefit of the people of New South Wales. The Lands Division, Department of Primary Industries (DPI) is responsible for the sustainable and commercial management of Crown land. This involves the management of State owned land, linking with other agencies, local government, the private sector and communities to provide social and economic outcomes for NSW.

Section 11 of *Crown Lands Act 1989* sets out principles for Crown land management including that:

Environmental protection principles be observed in relation to the management and administration of Crown land.The natural resources of the Crown land (including water, soil,

flora, fauna and scenic quality) be conserved wherever possible.Public use and enjoyment of appropriate Crown land be encouraged.Where appropriate, multiple use of Crown land be encouraged.

Easements, licences or permits will be required if the proposed works are within Crown Land. Several ‘paper roads’ that are designated as Crown Land occur onsite.

Consultation will be required with Department of Primary Industries (Lands). All relevant tenure arrangements with Crown lands will be obtained prior to the commencement of relevant construction activities.

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

An Aboriginal Cultural Heritage Assessment (ACHA) will be required to investigate the presence of any Aboriginal sites and to assess the impacts and management strategies that may mitigate any impact. The significance of any Aboriginal heritage sites that may be potentially affected by the proposal will be determined in accordance with the *Guide to Investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW* (DECCW 2010).

Consultation with Aboriginal stakeholders in accordance with clause 80C of the *National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* is required.

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 project is not subject to any current Commonwealth, State or Territory approvals processes. As described in Section 1.12 of this form, the project has been declared NSW State Significant Development and will be assessed under Part 4 of the EP&A Act. The project proponent is currently preparing an Environmental Impat Statement, which will address the Secretary's Environmental Assessment Requirements (SEARS) issued in accordance with the requirements of the EP&A Act.

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

No

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

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

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

No

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

No

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

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

2.4.1 Impact table

Species	Impact
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	The construction and maintenance of the transmission line will likely result in a reduction in the extent of the TEC, with the potential for

Species	Impact
	direct impacts to between 0.1 – 1.1% of the TEC within the transmission line investigation area. Despite the relatively low proportion of clearing within the investigation area this impact has been assessed as potentially significant due to direct loss and fragmentation of existing patches of this TEC. During the design development for the project a transmission line route will be selected that minimises environmental impacts, while still remaining feasible from a technical and economic perspective. Part of this route selection process will consider all feasible options to minimise impacts to this TEC.
Bluegrass	There is suitable habitat for Bluegrass on the lower elevations and clay soils located within the transmission line development corridor. Habitat would be limited in the wind farm development corridor and its occurrence on these higher elevations is less likely. There are no current records of Bluegrass within 10km of the project area. Any population of Bluegrass within the project area is not likely to be classified as an important population, as the study area is not at the edge of the species known range, nor would they bey key populations for dispersal or genetic variability. If any plants or populations of Bluegrass are identified during field investigations, any feasible options to avoid impacts will be considered as part of the design development Potential impacts to Bluegrass are not considered to be significant.
Small Snake Orchid	There is suitable habitat for Small Snake Orchid on both the wind farm development corridor and the transmission line investigation area. It prefers areas with a higher soil moisture and may occur in riparian areas and sub-alpine grasslands and herb fields in the project area. There is a single historic record to the north of the wind farm development corridor. There is currently insufficient information to assess whether the project will have a significant impact to Small Snake Orchid due to the lack of targeted surveys to find a population. If a population is surveyed within the project area, there is a potential for a significant impact, however measures will be implemented to

Species	Impact
	avoid or minimise these impacts, including developing design solutions that avoid impacts to surveyed populations.
Fragrant Pepperbush	Preferred habitat for the species is tall shrubland, rainforest margins and drainage lines in Mountain Gum-Messmate-Mountain Ribbon Gum open forest. Fragrant Pepperbush occurs in discrete, separate sub-populations across it's known range so any population within the project area is likely to be defined as an important population under the EPBC Act. Targeted surveys completed in November 2018 did not identify any populations of Fragrant Pepperbush within the wind farm development corridor. If a population is surveyed within the project area, there is a potential for a significant impact, however measures will be implemented to avoid or minimise these impacts, including developing design solutions that avoid impacts to surveyed populations. There is also potential habitat to translocate any individuals within the project footprint through seed collection and propagation or movement of plants.
Austral Toadflax	There is potential habitat for Austral Toadflax on both the wind farm development corridor and the transmission line investigation area. It can occur on a wide range of soil types and is semi-parasitic on the roots of native grass species. There is currently insufficient information to assess whether the project will have a significant impact to Austral Toadflax due to the lack of targeted surveys to find a population. If a population is surveyed within the project area, there is a potential for a significant impact, however measures will be implemented to avoid or minimise these impacts, including developing design solutions that avoid impacts to surveyed populations.
Booroolong Frog	There is limited habitat for the Booroolong Frog in the wind farm corridor, with the lower order waterways on the ridge being highly ephemeral and only flowing during periods of sufficient rainfall. There are several recent records of this species within the Peel River and surrounding streams in the transmission line corridor, and the species requires permanent water to persist. The project is considered unlikely to result in a significant adverse impact to

Species	Impact
	Booroolong Frog, as direct impacts to breeding, foraging and movement habitat will be limited and the hydrological conditons of the project area can be maintained. Areas of Booroolong Frog habitat are within the Peel River and it's tributaries within the transmission line investigation area. The final route selection will consider avoiding direct impacts to these waterways, for example, by spanning over areas of habitat.
Regent Honeyeater	There is limited habitat for Regent Honeyeater on the wind farm development corridor, however the fragmented patches of eucalypt forest and woodland within the transmission line corridor are likely to be utilised. There are no known records of this species within 10km of the project area, however due to the presence of potential habitat within the transmission corridor, this assessment has taken a conservative approach and assumed there is suitable habitat present. The condition of this habitat, and it’s potential to support Regent Honeyeater will be assessed as part of the EIS. Based on the potential transmission line routes in the investigation area, there is a potential for impacts to 0.4 – 0.7% of eucalypt forest/woodland PCTs within the transmission line investigation area that may contain foraging and breeding resources for Regent Honeyeater. The project has the potential for a significant adverse impact to Regent Honeyeater, due to habitat loss and fragmentation. During the design development for the project a tranmission line route will be selected that minimises environmental impacts, while still remaining feasible from a technical and economic perspective. Part of this route selection process will consider all feasible options to minimise impacts to Regent Honeyeater Habitat.
Spotted-tailed Quoll	There is potential habitat for Spotted-tailed Quoll on both the wind farm development corridor and the transmission line investigation area. The habitats on the ridge and the adjacent Nature Refuge are good quality habitat, with extensive habitats for this species in Ben Halls Gap National Park. There are several historical records of Spotted-tailed Quoll

Species	Impact
	in the national park and along the Peel River riparian zone. Although there will be impacts to Spotted-tailed Quoll habitats, the project is unlikely to result in a significant impact to this species, as impacts to suitable habitat is generally limited to the edge of larger patches of habitat on the wind farm corridor and smaller fragmented patches in the transmission line investigation area.
Greater Glider	There are areas of suitable habitat across the wind farm development corridor and the transmission line investigation area, with all eucalypt forest and woodlands having the potential to be used. The species has a generally small home range, and has limited ability to move outside areas of native forest. There are areas of good quality habitat in large The habitat on the project area is unlikely to support an important population of the species, however the adjacent Ben Halls Gap may be an important source population. Impacts to suitable Greater Glider habitat in the wind farm development corridor is on edges of larger and better quality areas of habitat. There is limited, useable habitat in the transmission line corridor due to the extent of fragmentation and smaller patches in this area.
Brush-tailed Rock Wallaby	There is suitable habitat for the Brush-tailed Rock Wallaby within and adjacent to the wind farm development corridor only, with limited habitat available in the transmission line investigation area. Even on the wind farm development corridor, the fine-scale habitat requirements of rocky escarpments, outcrops and cliffs is uncommon. There are no historical records of Brush-tailed Rock Wallaby within 10km of the project area. The project area is unlikely to contain an important population of Brush-tailed Rock Wallaby and impacts to this species are not likely to be significant as areas of habitat can be avoided.
Koala	The project contains suitable habitat for Koalas in both the wind farm development corridor and the transmission line investigation area. Areas of open eucalypt forest and woodland in the project area contains foraging and movement habitat for Koalas. The larger, more intact areas of eucalypt open forest associated with Ben

Species	Impact
	Halls Gap National Park provide important and critical habitat for the survival of the Koala population in the project area. Under the DoEE EPBC Act referral guidelines for the vulnerable koala, habitat on the wind farm development corridor meets the definition of critical habitat. The habitat in the tranmission line investigation area does not meet this definition. The Koala population within and adjacent to the wind farm development corridor is not considered an important population. The project will impact on approximately 2.3% of the available open eucalypt forest in the wind farm development corridor. The eucalypt forest potentially impacted as part of the wind farm development, is located in smaller fragmented patches, or on the edges of a large contiguous patch.
Grey-headed Flying-fox	There are no Grey-headed Flying-fox camps within or adjacent to the project area. The closest camp is at Tamworth which is listed in the Nationally Important Camps of Grey-headed Flying-fox. This camp is located over 40km from the project area. Despite the absence of a camp within close proximity to the project, there are foraging resources in both the wind farm development corridor and the transmission line investigation area. The species can move up to 50km a night, and will move to areas of difference seasonal nectar resources. Due to the distance of the nearest camp at Tamworth, the species is unlikely to occur frequently at the project site. Grey-headed Flying-fox has the potential to visit the project area for foraging resources, however the project is unlikely to result in a significant impact to this species

2.4.2 Do you consider this impact to be significant?

Yes

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

2.5.1 Impact table

Species	Impact
White-throated Needletail	There are historical records of White-throated Needletail above the wind farm development corridor. This species visits Australia in the summer months, before migrating to the northern hemisphere in the winter. White-throated Needletail almost exclusvley forages aerially, and can occur where updraughts occur such as adjacent to cliffs and ridges. There is a potential for direct collision of birds with the operating wind turbine blades or towers and the height of the rotor swept area (RSA). There is also a risk of collision with the new overhead wires associated with the new transmission lines. Further surveys will be required to understand the potential number of birds flying above the wind farm development corridor, and the risk associated with collisions to determine if the action will seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species. If this species is identified within the project area, bird strike risk will be assessed as part of a collision risk model that will be validated with field data. Where possible, oppportunities to minimise impacts during operation will be identified and implemented.
Fork-tailed Swift	There is a single historical record of Fork-tailed Swift over the transmission line investigation area. There is a potential for direct collision of birds with the operating wind turbine blades or towers and the height of the rotor swept area (RSA). There is also a risk of collision with the new overhead wires associated with the new transmission lines. Further surveys will be required to understand the potential number of birds flying above the wind farm development corridor, and the risk associated with collisions to determine if the action will seriously disrupt the lifecycle (breeding, feeding, migration or resting behaviour) of an ecologically significant proportion of the population of a migratory species. If this species is identified within the project area, bird strike risk will be assessed as part of a collision risk model that will be validated with field data. Where possible,

Species	Impact
	oppportunities to minimise impacts during operation will be identified and implemented.
Satin Flycatcher	Satin Flycatcher is likely to occur in the wind farm development corridor. It is a seasonal migrant, moving northwards during winter. The project is not likely to result in a significant impact to these migratory birds, as loss of breeding and movement habitats is relatively minor and large areas of adjacent habitat that can support the population will be retained. There are substantial areas of suitable habitat for Satin Flycatcher and Rufous Fantail within the wind farm development corridor that will not be impacted. Based on the current concept layout approximately 2.3% of eucalypt open forest will be impacted.
Rufous Fantail	Rufous Fantail is likely to occur in the wind farm development corridor. It is a seasonal migrant, moving northwards during winter. The project is not likely to result in a significant impact to these migratory birds, as loss of breeding and movement habitats is relatively minor and large areas of adjacent habitat that can support the population will be retained. There are substantial areas of suitable habitat for Satin Flycatcher and Rufous Fantail within the wind farm development corridor that will not be impacted. Based on the current concept layout approximately 2.3% of eucalypt open forest will be impacted.

2.5.2 Do you consider this impact to be significant?

Yes

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

No

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

No

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

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

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

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

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?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

A description of the flora and fauna of the project area was provided at a high level as part of the Preliminary Environmental Assessment completed as part of the request to the Department of Planning and Environment (DP&E) for the Secretary's Environmental Assessment Requirements (SEARs) which will guide the preparation of an Environmental Impact Statement (EIS) for the proposal under Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

Additional flora and fauna investigations have been completed to identify and map vegetation communities, habitats and to assess the likelihood of occurence. These results are included in the attached Preliminary Biodiversity and EPBC Act Significant Impact Assessment.

Native vegetation along the ridgelines where turbines and access roads are proposed, comprised mostly tall Wet Sclerophyll Forests intergrading into Grassy Woodlands. The distribution of native vegetation communities on the wind farm development corridor can be described as patchy and fragmented, with signifcant areas of grazing pasture dominanted by exotic grasses. Six Plant Community Types have been ground-truthed within the wind farm development corridor, as described and mapped in the attached report.

The transmission line investigation area has not been subject to ground-truthing through ecological surveys. Vegetation within these areas has been identified using the OEH Vegetation Information System (VIS) mapping State Vegetation Type Map: Border Rivers Gwydir / Namoi Region Version 2.0. VIS_ID 4467. The majority of the vegetaiton mapped within the transmission line investigation area consists of non-native and candidate native grasslands. During the design development a final transmission line route will be selected that will aim to minimise impacts to native vegetation communities.

Along the ridgelines, clearing has occurred along existing fence lines, for the establishment of farm tracks and an airstrip and to create grazing lands. In the areas where overstorey has been removed, the groundcover has been highly modified through the application of herbicides, fertilisers and seeding of exotic pasture species.

Along the transmission line route, the woodland and forest are more cleared and fragmented. Grazing appears to be the dominant land use and there is likely to have been some degree of pasture improvement through fertiliser application and seeding along the majority of the route. It is noted that even a small component of native species in such pastures can be classed as native vegetation and require offsetting if cleared.

One noxious weed species, Blackberry (Rubus fruticosus sp. agg) was observed during the

surveys. Blackberry occurred in isolated thickets along the northern and western sections of the ridgeline. Most occurrences in the north of the proposal site showed evidence of recent control. Large patches of Blackberry were observed on properties to the east of the proposal site which are likely to be acting as a seed source.

Along the ridge lines fauna habitats comprise tall wet sclerophyll forests and tall grassy woodlands that generally border the cleared areas. An open shrub layer is generally present over a diverse grassy ground cover except for wetter areas where tree ferns are dominant in the midstorey. Measurements taken during the field survey estimated maximum tree heights to be in the range of 25 – 40m. The wooded areas support scattered to occasional hollow bearing trees and abundant fallen timber. Rocky outcrops were not observed during the survey however, there was some scattered surface rock in areas. The forest and woodland habitats support a wide range of fauna species.

Within the cleared areas, there is little value in terms of fauna habitat. The high levels of disturbance and introduction of exotic pasture species has substantially diminished the habitat values in these areas. Scattered surface rock was abundant in some areas particularly where ploughing activities had occurred. Evidence of feral pig, goat and rabbit activity was observed. Deer are also known to be present at the site.

Below the ridgeline there are numerous gullies and drainage lines. To the west and north of the ridgeline where infrastructure is proposed, these draining lines form generally permanent creeks that flow into the Peel River. The creeks provide habitat for a number of amphibian and possibly fish species.

Along the transmission line route, open woodlands are the dominant habitat type. The woodlands have generally been partially to completely cleared and grazing appears to have generally eliminated the midstorey and in many areas, degraded the groundcover. Large mature trees are present which may support hollows. These woodlands are likely to mostly support highly mobile species such as birds and bats with other fauna groups (such as other mammals and reptiles) in lower abundance.

Along the ridgeline, PCT 1194 Snow Gum-Mountain Gum-Mountain Ribbon Gum open forest on ranges of the NSW North Coast Bioregion and eastern New England Tableland Bioregion, meets the definition of Snow Gum-Mountain Gum-Mountain Ribbon Gum open forest on ranges of the NSW North Coast Bioregion and eastern New England Tableland Bioregion Endangered Ecological Community (EEC) listed under the NSW Biodiversity Conservation Act 2016 (BC Act). This community was observed in several locations on the wind farm site. Native grasslands that are derived from the clearing of this community are also considered part of the EEC and as such, adjacent cleared areas may also comprise the EEC were native groundcover species are still present.

Along the transmission line route, there are a number of PCTs that could meet the definition of a TEC under the EPBC Act. Higher quality patches may also meet the criteria of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC) listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). This community can also exist as a derived grassland.

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

Twenty-one waterways and approximately 85 wetland/farm dams occur within the proposal site. Seven waterways located to the west and south western area of the site, are tributaries of the Peel River to the east within the proposed site that is the main river system running through the town of Nundle.

Eight waterways and 11 wetland/farm dams are located within 250m of the ridgeline, where the majority of the development will take place. Four of these waterways are tributaries to the Peel River. Of the waterways present on the ridgeline, all are defined first order streams (stream order classification system; DPI n.d.).

Assessment of the Tamworth LGA and Upper Hunter Shire LGA Key fish habitats (DPI, 2017) identified approximately 9 creeks and/or river systems that enter from the west, south western and southern sections of the proposed site to be classified as key fish habitats.

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

The soils across the wind farm and transmission line appear stable and well vegetated in most locations. The wind farm site has several perched springs and even in the dry conditions during winter, the site appeared to retain good ground cover, resisting erosion. Soil constraints are considered manageable but factors affecting erosion during construction and access in wet conditions and means to control erosion during construction and operation will need to be considered in the design stage and proposal description.

Agricultural areas can have buried rubbish including contaminants such as herbicides that may be encountered during excavation.

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

The wind farm development corridor is located adjacent to Ben Halls Gap National Park

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

The project area contains native vegetation that corresponds with several Plant Community Types, as defined by OEH. The majority of the native vegetation communities are

Along the ridgeline, PCT 1194 Snow Gum-Mountain Gum-Mountain Ribbon Gum open forest on ranges of the NSW North Coast Bioregion and eastern New England Tableland Bioregion, meets the definition of Ribbon Gum-Mountain Gum-Snow Gum Grassy Forest/Woodland of the New England Tableland Bioregion Endangered Ecological Community (EEC) listed under the NSW Biodiversity Conservation Act 2016 (BC Act). This community was observed in several

locations on the wind farm site. Native grasslands that are derived from the clearing of this community are also considered part of the EEC and as such, adjacent cleared areas may also comprise the EEC where native groundcover species are still present.

Along the transmission line route, a number of PCTs potentially meet the definition of White Box Yellow Box Blakely's Red Gum Woodland EEC listed under the BC Act. Higher quality patches may also meet the criteria of White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland Critically Endangered Ecological Community (CEEC) listed under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). This community can also exist as a derived 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 wind farm development corridor is on the crest of a ridgeline that forms an approximate cirque or U-shape around the head of the Peel River valley. The valley head is approximately seven kilometres across and is intruded from its western edge by two ridge spurs running east from Crawney Pass. The crest varies from narrow to wide and is adjoined by moderate to steep northern slopes dropping down to the river valley below. The study area occupies the edge of the New England Tablelands – to the east are the rugged, elevated plateaux and mountain ridges of the Great Dividing Range while to the north and west is the lower-lying, undulating plains country.

The proposed transmission lines cross a series of low, rolling hills and ridgelines associated with the north-running spurs of the Liverpool Range off Crawney Mountain,

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

The wind farm development corridor and the tranmission line investigation area is predominately agricultural land with a high percentage of overstorey native vegetation adjacent to the Development Corridor and within steeper terrain. The site has a history of agricultural use (grazing cattle). Native understorey has been converted to exotic pastures in many locations.

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

There are no Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

3.9 Describe any Indigenous heritage values relevant to the project area.

The NSW Office of Environment and Heritage (OEH) maintains the Aboriginal Heritage Information Management System (AHIMS) database. A search of the AHIMS register for Aboriginal sites and places provides an indication of the presence of previously recorded Aboriginal sites.

A search of the Aboriginal Heritage Information Management System (AHIMS) database for the site with a 25km buffer on the 24 August 2017 identified no known Aboriginal sites or places within the proposal area, however ten sites are recorded in the wider region. These include two grinding grooves, a stone quarry, a rock shelter with art, a scarred tree and stone artefacts as both isolated finds and scatters.

Inspection of the site determined that the proposal area has the potential to contain archaeologically sensitive landscape features. Generally, the landforms retain their natural soil profile and form, suggesting that any archaeological material that may be present has not been subject to significant disturbance. The ridgetop that the wind turbines follow is relatively flat and may have provided a means for Aboriginal people to traverse the landscape. Consequently, it is expected that artefact scatters and isolated finds may be present. The ridgetops in this study area are considered to have moderate to high archaeological potential. The less traversable ridgelines, however, are unlikely to have the same level of potential.

Based on a high level interpretation of potentially sensitive landscape features within the study area the flats associated with waterways that are intersected by the transmission line including Peel Creek, Middlebrook Creek, Goonoo Goonoo Creek and the associated tributaries and drainage lines are expected to have moderate to high archaeological potential.

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

The majority of the project area is located on freehold land. Small sections of the Development Corridor are located in RU3 managed by NSW Forestry Corporation under the *Forestry Act 2012*. Only access tracks are proposed in this zone. Consultation with NSW Forestry Corporation has commenced and further consultation with National Parks and Wildlife is planned through the detailed environmental impact assessment.

Crown roads are evident on the cadastre mapping of the site. Adjacent land uses include bison grazing, sheep and cattle grazing as well as forestry and national park estate.

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

The land uses within and adjacent to the project area include grazing, foresty, and rural residential. Preliminary assessment and community consultation to date has identified approximately 42 confirmed residences or proposed residences within 3km of the proposed Development Corridor, with a number of other non-residential structures located nearby. Of the 42 residential properties, nine are owned by associated landowners, three have planning approval but are yet to be built and five are used as holiday retreats

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

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

The transmission line investigation area is a broad region between the wind farm development corridor and the existing 330kV TransGrid transmission line. The investigation area is deliberately broad, to accommodate ongoing studies into electrical transmission line design optimisation, biodiversity and cultural heritage surveys and ongoing discussions with landowners and project stakeholders. A broadly defined area enables more flexibility to avoid and minimise any potential impacts as more information is gained from ongoing studies. Additionally, the transmission line investigation area gives us the potential to explore various transmission line routes that may vary in length from 13 to 23km in length.

Design refinements will occur during the preparation of the EIS to avoid and minimise impacts to biodiversity features, as well as other environmental, social and heritage constraints.

The project is currently in the concept design phase and options to avoid and minimise impacts to signifiant environmental features will be considered. Preliminary biodiversity assessments have been completed within the wind farm development corridor, including ecological fieldwork, to prepare a constraints map. This map will be used to identify areas where infrastructure should not be located, so that impacts to significant features can be avoided or minimised. As the EIS progresses, other environmental disciplines will contribute to the constraints map within the project area so that where it is practical, impacts can be avoided or minimise.

Targeted biodiversity surveys will also be completed in winter, spring and summer to identify the presence or absence of threatened species within and adjacent to the project area that have the potential to be impacted. As the results of these surveys become available, the constraints map will be updated with important areas for threatened species communicated to the design team.

Surveys will also include winter, spring and summer bird utilisation surveys to inform an avian collision risk model. This model will be used to assess risk of bird strike wihtin the rotor swept area.

The proposal maximises use of an existing road network and agricultural pastures on the proposal site, minimising impact to native vegetation and fauna habitat. Upgrades to access may have benefits for local residents as well as forestry and park management and establishment of public viewpoints.

Wildlife corridors and connectivity to better areas of habitat will be investigated to minimise further fragmentation of habitat.

The key excavation activities (for turbine footings, hardstands and access) will be predominantly located on the elevated plateau / ridge line, out of more incised waterways with more permanent flows, reducing soil and water risks.

The development envelope for the transmission line is broad to allow ongoing investigations to identify a route that minimises impacts on landowners and the environment. The final corridor will take into account environmental constraints when selecting a route, with options to avoid or minimise impacts to significant features considered.

The project is proposing next generation, higher turbine hub-heights to increase the separation distances between neighbouring overstorey canopy and blade tips and potential impact on low flight path birds and bats, including threatened speces that forage within vegetation.

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 project has the potential to result in significant impacts to the following matters of national environmental significance protected under the EPBC Act.

Yellow Box-White Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland threatened ecological community, Regent Honeyeater, Small Snake Orchid, Blackbutt Candlebark, White-throated Needletail and Fork-tailed Swift.

The project will seek to achieve an environmental outcome where impacts to MNES are reduced to a level where there are no significant adverse residual impacts to these species. This process will be achieved by completing rigourous ecological survey, mapping and modelling to understand the baseline conditions of the project area and how MNES utilise the project area. Flexibility has been included in the current design, with the ability to move turbines and transmission infrastructure to avoid and minimise impacts.

Where possible, compensatory measures will be implemented within the project area to minimise any impacts before relying on offset actions. This may include revegetation within grazing lands on the wind farm corridor, management of native grasslands under the transmission line easement and removal of invasive pest plants in areas of native vegetation.

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

Listed threatened species and communities - Yes

5.1.5 Listed migratory species

Listed migratory species - Yes

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

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.

This preliminary biodiversity assessment has identified potential EPBC Act listed threatened ecological communities and species that are likely to occur within the project area.

The results of the EPBC Act likelihood of assessment and preliminary significant impact assessment, has identified the potential for a significant adverse impact to the following MNES.

Yellow Box-White Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland TEC, with impacts estimated to between 2-32ha within the transmission line investigation corridor.

The project has the potential for significant impacts to the following listed threatened species:

Regent Honeyeater, with potential impacts to habitat estimated to between 46-84ha within the transmission line investigation corridor.

Depending on the results of targeted threatened species surveys, the project has the potential for significant impact to:

Small Snake Orchid

Blackbutt Candlebark

Fragrant Pepperbush

Austral Toadflax

White-throated Needletail

Fork-tailed Swift

Due to the potential for significant impacts to MNES protected under the EPBC Act, it is recommended that the project is determined to be a controlled action and impact assessments address these matters as part of the project EIS.

The collection of additional ecological data and the impact assessment will continue to inform

the development of the project design and alignment options. As much as is feasible, impacts to MNES will be avoided through design development and route selection so that impacts to MNES are reduced to level where these is negligible adverse impacts.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

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

The Wind Farm proponent, Wind Energy Partners, is an Australian owned developer of renewable energy projects. The company's leadership has more than 25 years of renewable energy experience in delivering solar and wind energy projects to regional communities in Australia, Europe and Asia.

The team involved in the Hills of Gold Wind Farm have been involved in development of over 2GW of renewable energy projects including several projects now in operation in New South Wales, Victoria and Queensland and other international markets. Additionally, development team has strong scientific acumen and environmental knowledge as well as strong record in proposing environmental management plans for energy and mining projects.

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.

None

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?

No

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?

No

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
Commonwealth of Australia (2010a) Survey Guidelines for Australia's Threatened Bats. Canberra	High	None
Commonwealth of Australia (2010b) Survey Guidelines for Australia's Threatened Birds, Canberra	High	None
Commonwealth of Australia (2011a) Survey Guidelines for Australia's Threatened Reptiles, Canberra	High	None
Commonwealth of Australia (2011b) Survey Guidelines for Australia's Threatened Frogs, Canberra	High	None
Commonwealth of Australia (2011c) Survey Guidelines for Australia's Threatened Mammals, Canberra	High	None
Commonwealth of Australia (2011d) Survey Guidelines for Australia's Threatened Fish, Canberra	High	None
Commonwealth of Australia (2013) draft Survey Guidelines for Australia's Threatened Orchids. Canberra.	High	None
Department of Environment and Climate Change (2009) Threatened species survey and assessment guidelines: field survey methods for fauna. NSW Government, Sydney	High	None
Department of Environment and Conservation (2004) Threatened Biodiversity Survey	High	None

Reference Source	Reliability	Uncertainties
and Assessment Guidelines for Developments and Activities – Working Draft. NSW Government, Sydney		
NGH Environmental (2018) Preliminary Environmental Assessment, Hills of Gold Energy Project	Moderate	Ecological survey based on broad site visit, with limited access to transmission line corridor
Office of Environment and Heritage (2015) OEH Vegetation Information System (VIS) mapping State Vegetation Type Map: Border Rivers Gwydir / Namoi Region Version 2.0. VIS_ID 4467	Moderate	Errors in the classification of PCTs and the on-ground distribution of PCTs
Office of Environment and Heritage (2016) NSW Guide to Surveying Threatened Plants. NSW Government, Sydney	High	None
Office of Environment and Heritage (2017) Biodiversity Assessment Method, NSW Government, Sydney	High	None

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

The proposed location for the Hills of Gold Wind Farm has been driven by:

- A proven strong wind speed, mostly existing agricultural ridgelines and ridge orientation that is exposed to prevailing wind directions, capacity in existing electrical infrastructure and proximity to the existing transmission line.

- The proposal is seeking to take advantage of the existing investment in the transmission infrastructure built to support capacity transfer from the coal fired Liddell 2,200MW Power Plant which will be closed in 2022.

- The proposed connection into the Liddell to Tamworth TransGrid line will ensure that the size of the project supports the costs associated with a connection of this type. The proponent is considering the use of higher generation capacity wind turbines that can produce more electricity per wind turbine and improve the amount of clean energy introduced into this connection point currently being used to transmit mostly coal generated electricity in the Hunter Valley.

- Several connection routes have been considered to access the Liddell to Tamworth TransGrid connection. The transmission line investigation area includes various route options which are currently under investigation. The preferred transmission line route will be the one that avoids and/or minimises vegetation, flora and fauna impacts and is still feasible from a constructability perspective. The route also seeks to provide flexibility across existing cleared land where the number of landowners and impact to residential properties is minimised. Preliminary consultation has been held with several landowners along the proposed Development Corridor.

- The proponent initially consulted Forestry Corporation to determine whether nearby production hardwood and softwood plantations could be used to host wind turbines. It is understood that the *Forestry Act 2012* does not allow for hosting of electricity generating infrastructure. It was decided to progress on private land with further consultation with Forestry Corporation prior to lodging a detailed EIS.

- Prior to detailed environmental impact assessments, a proposed development corridor has been determined with a narrowly defined area for which the project will be designed within. It is intended to further refine this development corridor with turbine locations, access roads and a transmission line corridor based on the outcomes of further in field and technical assessments. This approach will provide greater flexibility to reduce impacts through changes to design or other mitigations strategies.

8.1 Select the relevant alternatives related to your proposed action.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Managing Director

9.2.2 First Name

Jamie

9.2.3 Last Name

Chivers

9.2.4 E-mail

jamie.c@someva.com.au

9.2.5 Postal Address

11 Lightcliff Avenue
Lindfield NSW 2070
Australia

9.2.6 ABN/ACN

ABN

28145173324 - WIND ENERGY PARTNERS PTY LIMITED

9.2.7 Organisation Telephone

0423 336 345

9.2.8 Organisation E-mail

jamie.c@someva.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:…… Date: ……

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, __Jamie Chivers_____, 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 of or for the benefit of any other person or entity.

Signature:…… Date: ……30 October 2019……

I, _____Jamie Chivers_____, the person proposing the action, consent to the designation of _____Wind Energy Partners_____ as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:…… Date: 30 October 2019 ……

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Managing Director

9.5.2 First Name

Jamie

9.5.3 Last Name

Chivers

9.5.4 E-mail

jamie.c@someva.com.au

9.5.5 Postal Address

11 Lightcliff Avenue
Lindfield NSW 2070
Australia

9.5.6 ABN/ACN

ABN

28145173324 - WIND ENERGY PARTNERS PTY LIMITED

9.5.7 Organisation Telephone

0423 336 345

9.5.8 Organisation E-mail

jamie.c@someva.com.au

Proposed designated proponent - Declaration

I, Jamie Chivers, 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: 30 October 2019

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Associate Ecologist

9.8.2 First Name

Matt

9.8.3 Last Name

Davis

9.8.4 E-mail

matt.davis@arup.com

9.8.5 Postal Address

GPO Box 685
Brisbane QLD 4001
Australia

9.8.6 ABN/ACN

ABN

76625912665 - ARUP AUSTRALIA PTY LTD

9.8.7 Organisation Telephone

07 3023 6027

9.8.8 Organisation E-mail

matt.davis@arup.com

Referring Party - Declaration

I, Matt Davis, I 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: 30 October 2019

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. 270335-10-REP-001_v7_Part 1.pdf
2. 270335-10-REP-001_v7_Part 2.pdf
3. 270335-10-REP-001_v7_Part 3.pdf
4. 270335-10-REP-001_v7_Part 4.pdf
5. 270335-10-REP-001_v7_Part 5.pdf
6. HIlls of Gold Wind Farm - SEARs.pdf
7. HoG_referral_boundaries.zip