

# EPBC Act referral



Australian Government

Department of Agriculture, Water and the Environment

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<b>Title of proposal</b>	<b>2021/8983 - Chalumbin Wind Farm</b>
<b>Section 1</b>	
<b>Summary of your proposed action</b>	
<b>1.1 Project industry type</b>	Energy Generation and Supply (renewable)
<b>1.2 Provide a detailed description of the proposed action, including all proposed activities</b>	
<p>Chalumbin Wind Farm Pty Ltd (CWF), a subsidiary of Epuron Projects Pty Ltd (Epuron) proposes to develop the Chalumbin Wind Farm Project (the Project) at a location approximately 15 km southwest of Ravenshoe in Far North Queensland within the Tablelands Regional Council Local Government Area (LGA). The Project is a proposed wind farm that consists of up to 95 wind turbine generators (WTGs) and associated infrastructure. A detailed project description is presented in section 3 of the MNES Assessment Report (Attachment A).</p> <p>The Project is proposed to have a maximum nameplate wind farm generation capacity of 665 MW (depending on final turbine specification). The Project will generate around 2,170 GWh of renewable electricity per year, which is equivalent to supplying power to around 350,000 Queensland homes. The Project will connect to the existing 275 kV Chalumbin to Worree transmission line, which is part of the Powerlink network in the central north of the Project area.</p> <p>Key elements of the Project include:</p> <ul style="list-style-type: none"><li>• WTGs and hardstands;</li><li>• Substations, potential battery energy storage system and rid support equipment such as synchronous condensers or reactive plant at the Project substation;</li><li>• Medium voltage overhead and underground powerlines and communication cables;</li><li>• High voltage overhead powerlines;</li><li>• Permanent meteorological monitoring masts;</li><li>• Access tracks;</li><li>• Potential concrete batching plants;</li><li>• Temporary construction compounds, laydown and stockpile areas;</li><li>• Temporary site offices, workshops, warehouses and amenities; and</li><li>• Permanent site offices for asset management and operation and maintenance facilities.</li></ul> <p>The Project area (which encompasses the land parcels within which infrastructure is proposed) is a large area that covers a total of 31,802.2 ha. The Project footprint (i.e. maximum area of disturbance) is a much smaller area within these land parcels, and is a total of 1,250.26 ha (3.93 % of the Project area). The Project footprint is sufficiently wide to allow the micro-siting of infrastructure to respond to site-specific constraints.</p> <p>Construction activities associated with the Project will broadly consist of:</p> <ul style="list-style-type: none"><li>• Site establishment and preparation, including access tracks and internal electrical reticulation;</li><li>• Turbine installation using cranes;</li><li>• Permanent meteorological mast installation;</li><li>• Medium voltage underground cabling interconnecting wind turbine sites;</li><li>• Construction of substation and control room and battery energy storage system;</li><li>• Construction of overhead powerlines for reticulation;</li><li>• Construction of the operations and maintenance facility;</li><li>• Connection of the wind farm to the existing 275 kV overhead powerline; and</li><li>• Testing and commissioning of the wind farm.</li></ul> <p>Construction of the Project is expected to commence in late 2022, subject to timely approvals and commercial agreements. The construction phase is expected to last for a period of 18-24 months, with approximately 250 to 350 personnel employed at the peak construction period. The workforce will likely reside in Ravenshoe and other surrounding townships, or a dedicated construction accommodation facility. The operational life of the Project is expected to be 30 years, at which point the Project owner will assess the infrastructure and may choose to extend the life of the existing plant, or re-power the site with new equipment. Alternatively, the owner may choose to decommission the site and rehabilitate the land in accordance with land agreements in place at that point in time.</p> <p>The potential impacts associated with the proposed action (both direct and indirect) are likely to be most significant during the construction of the Project. Upon commencement of construction, the early months will consist of site establishment, contractor engagement, vegetation clearing, commencement of building compounds and laydown areas and construction of internal site roads. During this time, detailed design of foundations and any remaining geotechnical work will be undertaken. Wind turbine components will typically arrive on site at least six months into construction. The main focus up until this time is the construction of access tracks, reticulation and building the substation. Depending on specific geotechnical conditions, some rock blasting may be necessary to support construction activities.</p> <p>Wind turbine installation begins with construction of the foundation (typically a reinforced gravity foundation of approximately 800 m<sup>3</sup> of concrete). Once the concrete has cured, the tower is installed (in sections which are lifted on top of one another). Then the nacelle is lifted (up to 400 t, which includes the drive train, generator and gearbox).</p>	



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After this point, the blades are mounted on the hub (alternatively they are arranged at ground level and lifted as a single unit). Once the wind farm has been fully constructed and tested and registered as a generator on the National Electricity Market, it can be connected to the transmission network. The potential impacts associated with construction activities are described in "Att A – MNES Assessment Report\_Part3", section 9.2, page 130.

The operational life of the wind farm is expected to be 30 years. Approximately 10 to 15 full-time jobs will be generated during operation, typically ten technicians along with a Project Manager, administration, and other support roles. This will include environmental roles on an as-needed basis to assist in operational monitoring. Typical operational activities throughout the site will be limited, and therefore the greatest operational impacts are likely to be associated with collision risk associated with the wind turbines. Potential operational impacts associated with the Project are described in "Att A – MNES Assessment Report\_Part3", section 9.3, page 138.

**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)**

The Project area is located across two properties: Glen Gordon (1SP284234 and 31SP288862) is a freehold property and Wooroora (1CWL3298) is a leasehold property. The Project footprint is a smaller subset of the Project area, defined by coordinates in Appendix B.

The Project area comprises the Glen Gordon (11,500 ha) and Wooroora (20,300 ha) properties located approximately 15 km south-west of the township of Ravenshoe in Queensland, within the Tablelands Regional Council Local Government Area. The two properties are managed for cattle grazing and have similar landform attributes consisting of steep and hilly terrain (700-1,000 m) with relatively flat grazing land leading up to ridgelines.

The Project area is located along the boundary between the Wet Tropics bioregion (to the east) and the Einasleigh Uplands bioregion (to the west). The eastern and southern parts of the Project area are within the Kirrima-Hinchinbrook sub-bioregion (7.6) and the north-western part is within

**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 Project area (which encompasses the land parcels within which infrastructure is proposed) is a large area that covers a total of 31,802.2 ha. This includes the proposed disturbance footprint (referred to as the "Project footprint" in this referral) and the avoidance footprint. The Project footprint (i.e. maximum area of disturbance) is a much smaller area within these land parcels, and is a total of 1,250.26 ha (3.93% of the Project area). The Project footprint is sufficiently wide to allow the micro-siting of infrastructure to respond to site-specific constraints. The avoidance footprint is the balance land within the Project area, and totals 30,551.94ha.

**1.7 Proposed action location**

Lot - 1CWL3298; 1SP284234; 31SP288862

**1.8 Primary jurisdiction**

Queensland

**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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<b>1.11 Provide an estimated start and estimated end date for the proposed action</b>	Start Date	01/10/2022
	End Date	01/10/2054

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

In Queensland, wind farms require a development permit under the Planning Act 2016 for a Material Change of Use (MCU) for a wind farm and for Operational Works for Clearing of Regulated Vegetation (OPW). The MCU requires assessment under State Code 23 – Wind Farm Development and the OPW requires assessment under State Code 16 – Native Vegetation Clearing. The material for the development permit is provided in one comprehensive package and is submitted to the Department of State Development, Infrastructure, Local Government and Planning (DSDILGP), represented by the State Assessment and Referral Agency (SARA), as assessment manager. The Project is also subject to any other relevant state planning instruments including State Development Assessment Provisions (SDPP) and State Planning Policies (SPP).

The Project is code-assessable under the Planning Regulation 2017 (Section 21, Division 2, Table 1) on the basis all wind turbines for the Project area at least 1,500 m from a sensitive land use on a non-host lot. State Code 23 provides performance outcomes and acceptable solutions (if applicable) in which the Project must demonstrate compliance. In accordance with State Code 23, the following studies are in progress to identify potential impacts and how they can be avoided, minimised and mitigated:

- Aviation Impact Assessment
- Electromagnetic Interference (EMI) Assessment
- Flora and fauna (including ecological assessment report, bird and bat utilisation report, preliminary bird and bat management plan, preliminary fauna management plan, preliminary vegetation management plan (PVMP))
- Preliminary Transport Route Assessment
- Preliminary Traffic Impact Assessment
- Stormwater Management Plan
- Noise Impact Assessment
- Landscape and Visual Impact Assessment
- Preliminary Construction Management Plan
- Preliminary Erosion and Sediment Control Plan

Under the Planning Regulation 2017, the clearing of native vegetation associated with the Project is not “exempt clearing work” or “accepted development” hence an OPW permit assessed under State Code 16 is required. Prior to the lodgement of a OPW development permit application, a relevant purpose determination must be obtained/has been obtained/is being obtained under s22A of the Vegetation Management Act 1999 from the Department of Resources, (DoR). The OPW requires delineation of the Project impact footprint, ground-truthed ecological value data within the Project footprint, and sufficient evidence demonstrating the clearing of native vegetation will be avoided and minimised to the greatest practical extent.

Following the approval of the Project under the Planning Act and subject to detailed design, a number of secondary approvals, permits and/or licences may be required by the Queensland Government and local council (Tablelands Regional Council). These may include waterway barrier works approvals, taking and interfering with water in waterways, approved species management programs, road works permits and operational works permits for filling and excavation access works, and stormwater works. A generation authority under the Electricity Act 1994 will be obtained to allow connection of the Project to the national electricity grid.

Further detail on the regulatory framework applicable to the proposed action is provided in “Att A – MNES Assessment Report\_Part1”, section 2.0, page 10.

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

The proponent recognises the importance of effective stakeholder engagement in the successful delivery of the Project and the realisation of positive outcomes. Community and stakeholder engagement will be undertaken in accordance with the Clean Energy Council Community Engagement Guidelines for the Australian Wind Industry, ‘Best practice community engagement in wind development’.

The following consultation has been undertaken and forms part of an ongoing stakeholder engagement strategy for the Project:

- Regular engagement and negotiation of land agreements has been ongoing with involved landowners;
- A pre-referral meeting was held with representatives of the Department of Agriculture, Water and the Environment (DAWE) in May 2021;
- A pre-lodgment meeting was held with Queensland State Government representatives in May 2021;
- Engagement with the traditional owner group (the Jirrbal People) has been ongoing, including entering into a Cultural Heritage Management Agreement and an Indigenous Land Use Agreement;
- Ongoing discussions with the Tablelands Regional Council and other key stakeholders such as the Wet Tropics Management Authority; and
- Creation and maintenance of a regularly-updated Project website (<https://epuron.com.au/wind/chalumbin/>).

**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**



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Ecological assessments of the Project area were completed between October 2020 and March 2021. Surveys were designed and completed in accordance with State and Federal guidelines including seasonality requirements, effort and methods to target potentially occurring MNES. Field surveys were informed by the results of desktop analyses which are provided in "Att A – MNES Assessment Report\_Part2", section 5.0, page 49.

Surveys that have been completed within the Project area include:

- Desktop assessments using State and Federal database material and tools
- Vegetation community assessments
- Remote camera trap program
- Anabat deployment
- Targeted threatened flora surveys
- Spotlighting surveys
- Bird and Bat Utilisation Surveys
- General fauna searches
- Habitat assessment

Details on the impact assessments for MNES are provided in "Att A – MNES Assessment Report\_Part3", section 11.0, page 151.

**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



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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

#### Property

The Project area is located adjacent to the Wet Tropics World Heritage Area (WTWHA) as defined by GIS layers provided by the Wet Tropic Management Authority (August 2020). The nearest proposed Project infrastructure is approximately 500 m from the edge of the WTWHA boundary including turbines and access tracks, with much of this is buffered by an existing high voltage powerline easement. Whilst there will be no direct impacts to the WTWHA, the proximity of the site and the mobility of many of its unique fauna suggest that there is the potential for indirect impacts on some of the features of outstanding universal value. Understanding the importance of the WTWHA, the Proponent has been active in engaging with the Wet Tropics Management Authority to date to ensure positive outcomes and will continue to do so throughout the life of the Project.

#### Impact

The proposed action has potential to indirectly impact the wilderness, natural beauty or rare or unique environmental values through modifying the landscape in an area within proximity to the WTWHA.

For the reasons outlined in "Att A – MNES Assessment Report\_Part3", section 11.1, page 151, the Project is not expected to have a significant impact on a World Heritage Property.

#### 2.1.2 Do you consider this impact to be significant?

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

In 2007, the Wet Tropics of Queensland was added to the National Heritage List alongside other World Heritage Areas (WTMA 2021). Australia's national heritage comprises exceptional natural and cultural places which help give Australia its national identity. Such places are a living and accessible record of the nation's evolving landscape and experiences.

In 2012, the Wet Tropics World Heritage Area's Indigenous heritage values were included as part of the national heritage listing of the property, acknowledging that rainforest Aboriginal heritage is unique to the Wet Tropics that represents a remarkable and continuous Indigenous connection with a tropical rainforest environment (WTMA 2021).

#### Impact

The proposed action has potential to indirectly impact the wilderness, natural beauty or rare or unique environmental values through modifying the landscape in an area within proximity to the WTWHA.

For the reasons outlined in "Att A – MNES Assessment Report\_Part3", section 11.1, page 151, the Project is not expected to have a significant impact on a National Heritage Place.

#### 2.2.2 Do you consider this impact to be significant?

Yes  No

#### 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

Prostanthera clotteniana

#### Impact

The Project has been designed to avoid all populations of the species.



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An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.2, page 153.  
The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

*Homoranthus porteri*

#### Impact

The Project has been designed to avoid all populations of the species.  
An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.4, page 163.  
The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

*Triplarina nitchaga*

#### Impact

The Project has been designed to avoid all populations of the species.  
An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.3, page 158.  
The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

Koala (*Phascolarctos cinereus*)

#### Impact

The Project area is assessed as scoring a 4 under the koala habitat assessment tool. It is therefore considered to only provide potential habitat for the koala (i.e. habitat that is not critical to the long-term survival and recovery of the species).  
An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.5, page 168.  
The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

Northern greater glider (*Petauroides volans minor*)

#### Impact

As the Project area is located in proximity to the northern extent of the species' range, it is considered that any population of greater glider within the Project area is part of an important population.

The Project area contains a mixture of potential and critical habitat for the species.

Northern greater gliders were observed on both properties during the nocturnal spotlighting surveys. In January 2021, 25 adult gliders were observed over a duration of 28 person-hours of spotlighting (on foot and vehicle transects). In March 2021, a further 14 gliders were observed over a duration of 40 person-hours of spotlighting, primarily on foot. The existing population of the species within the Project area is not considered to be a "large" population (MacHunter et al. (2011)).

The Project will involve the removal of 563.27ha of potential habitat and 56.59ha of critical habitat for the greater glider.

Despite the extent of habitat remaining in the locality, coupled with the implementation of the proposed mitigation measures, the removal of approximately 56.59ha of critical habitat is considered likely to constitute a significant impact to the species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.6, page 175.

Despite the sensitive design measures and the avoidance, minimisation and mitigation measures proposed, the Project is assessed as having a potential significant residual impact on the northern greater glider.

#### Species or threatened ecological community

Yellow-bellied glider - Wet Tropics subspecies (*Petaurus australis* unnamed subsp.)

#### Impact

One yellow-bellied glider (Wet Tropics) was heard during spotlighting in March 2021, in a small patch of simple notophyll vine forest (RE 7.12.16a) surrounded by *Eucalyptus grandis* open forest (RE 7.12.21) in the very north of the Wooroora



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property. This observation was within the Wet Tropics WHA and nearly 2 km from the nearest proposed Project infrastructure. This is consistent with previous records of yellow-bellied glider (Wet Tropics) from Wildnet. The other Wildnet records for this species were to the east of the Project area, within the Wet Tropics WHA.

Only minimal areas of habitat critical to the survival of the yellow-bellied glider have been mapped within the Project area. Project infrastructure has been sited to avoid clearing any of this habitat.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.7, page 182.

The Project is not expected to have a significant residual impact on the species.

### Species or threatened ecological community

Northern quoll (*Dasyurus hallucatus*)

### Impact

There are no known records of the species within the Project area. There are two records of the species dating from 2010 in the northwest of the Study area, near Mount Garnet (approximately 7.75 km from the Project area), as well as much older records from Ravenshoe (dating from 1921 and approximately 11.9 km to the north of the Project area) and Tully Falls National Park (dating from 1922 and approximately 2.6 km east of the Project area), also both within the Study area.

The presence of northern quoll within the Project area has not been confirmed. Extensive camera trapping effort (1,953 camera trap nights) failed to record a single image of the northern quoll and no latrines were observed during habitat assessments. Large boulder habitat is generally absent from the Project area, with rocky habitat typically comprising smaller rocks on scree slopes or flat areas of exposed bedrock. However, there are open eucalypt woodlands which provide potential foraging and dispersal habitat.

In the absence of a confirmed population of northern quoll, no habitat critical to the survival of the species has been mapped within the Project area.

Large areas of potential quoll habitat throughout the Project area will be retained.

Design has sought to avoid and minimise clearing within mapped areas of rocky relief which are more likely to support dens in the preferred form of boulder piles as well as adjacent foraging and dispersal habitat. The Project may lead to the clearing of 2.62 ha of potential shelter habitat and 384.42 ha of potential foraging and dispersal habitat for the species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.8, page 187.

The Project is not expected to have a significant residual impact on the species.

### Species or threatened ecological community

Spotted-tailed quoll - North Queensland subspecies (*Dasyurus maculatus gracilis*)

### Impact

Habitat that is critical to the survival of the species includes large patches of forest with adequate denning resources and relatively high densities of medium-sized mammalian prey. However, the threshold densities of these critical components required to support quoll populations are unknown. As a result, it is not currently possible to define or map habitat critical to the survival of the spotted-tailed quoll. Given the threat status of the spotted-tailed quoll, all habitats within its current distribution that are known to be occupied are considered important (DELWP 2016).

No habitat critical to the survival of the species has been mapped within the Project area, as there are no known records of the species within the Project area and it was not recorded during field surveys. There is limited potential habitat for the spotted-tailed quoll within the Project area.

The Project will not lead to the clearing of any habitat critical to the survival of the species but could result in clearing of 170.56 ha of potential habitat for the species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.9, page 195.

The Project is not expected to have a significant residual impact on the species.

### Species or threatened ecological community

Ghost bat (*Macroderma gigas*)

### Impact

There is an undated record of ghost bat at Mount Garnet to the west of, and outside, the Study area. An echolocation call potentially belonging to the ghost bat was recorded by Anabat adjacent to a dam within the Project area during the January 2021 surveys. It is difficult to definitively identify the ghost bat based on call alone, as it is similar to insect noise. A precautionary approach has been taken, and the ghost bat is assumed to be present within the Project area.

The ghost bat is an obligate cave dweller. Analysis of LiDAR data has been undertaken to identify areas of rocky relief within the Project area that have the potential to support caves suitable for ghost bat roosting. These areas have been as habitat critical to the survival of the species, with woodland habitats within 2 km of potential roost sites mapped as potential



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habitat. These habitats are likely to be suitable for foraging in the event that ghost bat are roosting within the Project area. The Project may lead to the clearing of 2.62 ha of habitat critical to the survival of the species and 730.02 ha of potential foraging habitat for the species.

Large areas of critical and potential ghost bat habitat throughout the Project area will be retained.

Design has sought to avoid and minimise clearing within mapped areas of rocky relief which are more likely to support caves for roosting as well as adjacent foraging habitat.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.10, page 203.

The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

Spectacled flying-fox (*Pteropus conspicillatus*)

#### Impact

The National Flying Fox Monitoring programme (DAWE 2021b) reports a spectacled flying-fox camp at Malaan, east of Ravenshoe and just outside the Study area. The desktop assessment also indicates the species' presence in the Ravenshoe Forest Reserve 1 which is within the Study Area, and abuts the Project area immediately to the north. There is limited rainforest habitat within the Project area to support a camp, and none of its key foraging habitat (Mabi Forest TEC) has been ground-truthed within the Project area. Therefore, no habitat critical to the survival of the species has been mapped within the Project area. Potential foraging habitat has been mapped as eucalypt forest within 50km of the known camp at Malaan.

There is no habitat critical to the survival of the spectacled flying-fox within the Project area. The Project may lead to the clearing of 1,184.32 ha of potential foraging habitat for the species.

Large areas of spectacled flying-fox foraging habitat throughout the Project area will be retained.

Vegetation clearing will be minimised as much as practicable through micro-siting within the proposed Project footprint.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.11, page 209.

The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

Southern cassowary - southern population (*Casuarius casuarius johnsonii*)

#### Impact

The Project has been designed to avoid all critical habitat for this species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.12, page 215.

The Project is not expected to have a significant residual impact on the species.

#### Species or threatened ecological community

Red goshawk (*Erythrotriorchis radiatus*)

#### Impact

No red goshawk were observed during the diurnal bird surveys in January 2021. A nest considered highly likely to belong to red goshawk was observed in the Glen Gordon property, in riparian vegetation to the north of the main property access road (see section 6.2.1.6 of the MNES Assessment Report in Attachment A). The nest was unoccupied (as would be expected in late January) but appeared to have been recently built (no older than the 2019-20 breeding season). Photographs of the nest were sent to a number of recognised red goshawk experts; one (a QPWS ranger) confirmed the nest as belonging to the red goshawk while two others considered it was 'possibly' belonging to the red goshawk. A precautionary approach has been taken for the purposes of this referral, and it is assumed that the Project area supports red goshawk.

Habitat critical to the survival of the red goshawk includes all known sites for nesting, food resources, water, shelter, essential travel routes, dispersal, buffer areas and sites required for the future recovery of the species (DERM 2012). The following has been mapped across the Project area:

- Habitat critical for the survival of the species: trees > 20 m within 1 km of a watercourse AND Eucalypt-dominated open forests and woodlands in or within 1 km to permanent water; and
- Potential habitat: remainder of open forests within the Project area.

The location of the potential red goshawk nest within the Glen Gordon property and within riparian vegetation associated with Blunder Creek was identified as a high constraint for the purposes of Project design. The Project footprint has been designed to achieve a separation distance of more than 1,000 m between this nest and any proposed wind turbine. The Project footprint has also avoided this location through the appropriate placement of access tracks in areas removed from this potential red goshawk nest.





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The Project may lead to the clearing of 165 ha of habitat critical to the survival of the species and 1,024.86 ha of potential habitat for the species.

The species hunts primarily under the canopy, taking small to medium-sized birds. This flight behaviour makes it unlikely it flies at the rotor swept area for the majority of time, but it is known to soar, particularly during breeding displays.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.13, page 220.

Despite the sensitive design measures and the avoidance, minimisation and mitigation measures proposed, the Project is conservatively assessed as having a potential significant residual impact on the red goshawk.

### Species or threatened ecological community

White-throated needletail (*Hirundapus caudacutus*)

### Impact

One white-throated needletail was observed during the March 2021 field surveys. The specimen was found deceased within the existing transmission line corridor.

The white-throated needletail is a non-breeding visitor to Australia arriving in October and departing by April. Numbers fluctuate on an annual basis and the species is widespread across the eastern coast, moving in response to foraging and weather conditions. The species is likely to occur on a sporadic basis over the summer months within the Project area. Within the core range of the species, numbers can vary from 0 on one day to over 1,000 the next day with seemingly little pattern, presumably driven by weather and foraging conditions. Therefore it is impossible to predict on a long-term basis any patterns of utilisation of a given site.

The species is almost exclusively aerial and direct impacts from clearance of habitat is not expected to occur as a result of the Project. The species forages frequently over all landscapes and the vegetation clearance associated with the Project is not expected to impact foraging resources.

During Project operation there is potential for the species to collide with wind turbines and tower structures during the summer months when the species is likely to be present sporadically within the Project area.

The impact is expected to be minor as this species uses a range of habitats and is widespread across eastern Australia.

Operational monitoring data from 15 wind farms in Victoria between 2003-2018 only recorded five white-throated needletail deaths as a result of turbine strike. This species is not considered to be particularly prone to turbine strike; it is a relatively mobile species and often flies at heights well above RSA.

The Conservation Advice for the species (TSSC, 2019) acknowledges collision with wind turbines as a threat, although of low severity and affecting a small number of birds (Hull, 2013).

Prior to its recent listing as threatened under the EPBC Act, and following the draft referral guidelines for migratory species under the EPBC Act (DoE, 2015) an ecologically significant proportion of the population of White-throated Needletail was estimated to be 10 birds (0.1% of the total population using the lower population estimate of 10,000 birds).

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.14, page 227.

The Project is not expected to have a significant residual impact on the species.

### Species or threatened ecological community

Masked owl - northern (*Tyto novaehollandiae kimberli*)

### Impact

During field surveys, the species was observed (through calls) at two locations along Blunder Creek within the Glen Gordon property.

The majority of the Project area, with the exception of cleared areas and rainforest patches, comprises potential habitat for the masked owl. The riparian environments of the higher stream order waterways within the Project area comprise high value foraging, breeding and roosting habitat for the species, as they typically comprise larger Eucalypt trees with potential for hollows of a suitable size. These areas are considered to constitute critical habitat for the masked owl.

The Project may lead to the clearing of 4.93 ha of habitat critical to the survival of the species and 1,185.54 ha of potential habitat for the species. This clearing represents approximately 0.5% of the critical habitat for the species mapped within the Project area.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.15, page 233.

The Project is not expected to have a significant residual impact on the species.



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### Species or threatened ecological community

Magnificent brood frog (*Pseudophryne covacevichae*)

### Impact

During field surveys, the species was observed in six locations (out of 21 survey locations), with two locations recording large groups of male frogs (15-20 individuals). These observations were generally made in disturbed environments within the Project area. Only two of the six recorded observations were above the 800 m contour, which forms the lower limit of the species' range according to published literature.

The following habitat was mapped for magnificent brood-frog across the Project area:

- Habitat critical to the survival of the species is open eucalypt forest within 50 m of a stream order 1 watercourse on rhyolites of the Glen Gordon volcanics, above 800 m; and
- Potential habitat is open eucalypt forest within 50 m of a stream order 1 watercourse on rhyolites of the Glen Gordon volcanics, below 800 m.

The Project may lead to the clearing of 27.03 ha of habitat critical to the survival of the species and 21.15 ha of potential habitat for the species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.16, page 239.

Despite the sensitive design measures and the avoidance, minimisation and mitigation measures proposed, the Project is conservatively assessed as having a potential significant residual impact on the magnificent brood frog.

### 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

Fork-tailed swift (*Apus pacificus*)

### Impact

This species was observed within the Project area during January 2021 surveys.

The fork-tailed swift is almost exclusively aerial. The Project area is not considered to provide important habitat for the fork-tailed swift, which has a vast range and very broad habitat preferences.

During Project operation there is potential for fork-tailed swift to collide with wind turbines during the summer months when the species may be present within the Project area. The impact is expected to be minor as this species uses a range of habitats and is widespread across Australia.

Fork-tailed Swift is not considered to be particularly prone to turbine strike, being a relatively mobile species and often flying at heights well above the rotor swept area.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.17, page 245.

The Project is not expected to have a significant residual impact on the species.

### Migratory species

Black-faced monarch (*Monarcha melanopsis*)

### Impact

This species was observed within the Project area during January 2021 surveys.

The following habitats have been across the Project area:

- Important habitat – rainforest communities (including wet sclerophyll forests) which occur in small, isolated patches along the boundary between the Project area and the Wet Tropics WHA; and
- Potential habitat – open eucalypt forest within 1km of the above rainforest habitats.

There is minimal important habitat for the black-faced monarch within the Project area and none of this is proposed to be cleared. The Project may lead to the clearing of 84.49 ha of potential foraging habitat for the species.

The black-faced monarch typically forages within 6m of the ground (SPRAT 2021), well below the rotor swept area. The risk of collision with the wind turbines is therefore considered negligible.



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An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.18, page 249.  
The Project is not expected to have a significant residual impact on the species.

### Migratory species

Latham's snipe (*Gallinago hardwickii*)

### Impact

This species has been historically recorded in the Project area.

There is no important habitat mapped within the Project area for Latham's snipe. Wetlands within the Project area have been mapped as potential habitat.

The Project may lead to the clearing of 4.54 ha of potential habitat for the species.

There is a risk of collision with the wind turbines during migratory flight. The Project area does not support an ecologically significant proportion of the population of Latham's snipe and there will be no direct or indirect impacts to important habitat for the species.

An impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.19, page 254.  
The Project is not expected to have a significant residual impact on the species.

#### 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

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

Yes  No



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**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

Ecological assessments of the Project area were completed between October 2020 and March 2021. Surveys were designed and completed in accordance with State and Federal guidelines including seasonality requirements, effort and methods to target potentially occurring MNES. Field surveys were informed by the results of desktop analyses which are provided in "Att A – MNES Assessment Report\_Part2", section 5.0, page 49.

Surveys that have been completed within the Project area include:

- Desktop assessments using State and Federal database material and tools
- Vegetation community assessments
- Remote camera trap program
- Anabat deployment
- Targeted threatened flora surveys
- Spotlighting surveys
- Bird and Bat Utilisation Surveys
- General fauna searches
- Habitat assessment

Details on the impact assessments for MNES are provided in "Att A – MNES Assessment Report\_Part2", sections 9.0, 10.0 and 11.0, from page 130.

Vegetation within the Project area is generally of remnant status and dominated by various communities associated with woodlands or open forests. Some areas have been cleared for grazing, generally within close proximity to the homesteads. The most common vegetation community within the Project area is Regional Ecosystem (RE) 9.12.2, a woodland community dominated by a mix of *Corymbia citriodora*, *C. intermedia* and *Eucalyptus portuensis* that occurs on the slopes and ridges of hills across both Wooroora and Glen Gordon. Within the Einasleigh Uplands bioregion portion of the Project area, the equivalent vegetation community (RE 7.12.34) is the second-most dominant. At the tops of many of these hills, scattered rocky scarps and rocky granite pavements contain shrubland and closed forest communities of *Acacia* spp. and *Lophostemon suaveolens* associated with RE 7.12.65k. Other communities that occur across these hills include the *Eucalyptus reducta* dominated RE 7.12.21, *Eucalyptus resinifera* and *Corymbia intermedia* woodland associated with RE 7.12.52, and occasional patches of vine thicket.

The most common communities within the low-lying areas of the Project Area are RE 9.5.5a, a mixed woodland of *Eucalyptus crebra*, *Corymbia clarksoniana* and *C. citriodora*, and RE 9.3.16, a *Eucalyptus tereticornis* and *E. platyphylla* woodland occurring on alluvial flats.

Surveys identified two patches of ground-truthed RE 7.8.3a within the Project area that potentially correspond to the "Broad-leaf tea-tree (*Melaleuca viridiflora*) woodlands in high rainfall coastal north Queensland" Threatened Ecological Community. However, the Project footprint has been designed to avoid these areas and no direct or indirect impacts are expected.

Surveys identified the occurrence of three MNES flora species within the Project area:

- *Triplarina nitchaga* (vulnerable)
- *Homoranthus porteri* (vulnerable)
- *Prostanthera clotteniana* (critically endangered)

These plants were all associated with a rocky pavement and shrub complex habitat. These locations have been avoided by the proposed Project footprint.

A complete list of all flora recorded is provided in "Att A – MNES Assessment Report\_Part3", Appendix B, page 269.

A total of 200 vertebrate species were recorded during the surveys, including 18 amphibians, 115 birds, 14 bats, 23 non-volant mammals and 30 reptiles. A complete list of all fauna recorded is provided in "Att A – MNES Assessment Report\_Part3", Appendix B, page 269. Four broad habitat types were characterised within the Project area:

- Eucalypt woodland
- Rocky pavement shrub complex
- Riparian zones
- Notophyll vine forest

The Project area supports habitat for a range of native fauna species. MNES fauna species known to occur within the Project area (through survey results) include:

- Northern greater glider (*Petauroides volans minor*)
- Yellow-bellied glider
- Fork-tailed swift (*Apus pacificus*)
- Black-faced monarch (*Monarcha melanopsis*)
- White-throated needletail (*Hirundapus caudacutus*)
- Masked owl (northern subspecies) (*Tyto novaehollandiae kimberlii*)
- Magnificent broodfrog (*Pseudophryne covacevichae*)

The surveys also identified the potential presence of two further MNES species:

- Ghost bat (potential) (*Macroderma gigas*)



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- Red goshawk (potential) (*Erythrotriorchis radiatus*)
- Seven pest fauna species were recorded during field surveys:
- Domestic dog (*Canis lupus familiaris*)
  - Domestic cat (*Felis catus*)
  - Domestic cattle (*Bos taurus*)
  - Feral pig (*Sus scrofa*)
  - House mouse (*Mus musculus*)
  - Common myna (*Acridotheres tristis*)
  - Cane toad (*Rhinella marina*).

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

The Project area is located on the north-eastern edge of the Herbert River catchment; the largest catchment of the Wet Tropics region. The Herbert River flows in a generally south-eastern direction intersecting 15 major tributaries before discharging into the Coral Sea near Lucinda, Queensland. The Herbert River catchment averages rainfall of 1,222 mm per year, and discharges approximately 5,081 GL annually into the ocean (DES 2019). The upper section of the catchment has primarily been developed for grazing, with the central section predominantly reserved for conservation, and the lower floodplains dominated by sugarcane farming (DES 2019). The Herbert River is a contributor of both dissolved inorganic nitrogen and fine sediments being released into the Great Barrier Reef Marine Park and is therefore managed under the Reef 2050 Water Quality Improvement Plan to reduce the amounts of fine sediments, nutrients (nitrogen and phosphorus) and pesticides flowing to the Great Barrier Reef (DES 2019).

Blunder Creek is the largest waterway to traverse the Project area with a catchment of 142 km<sup>2</sup> (Heiner & Grundy 1994). Blunder Creek flows east to west across both Wooroora and Glen Gordon before joining the Herbert River approximately 9 km to the west. Blunder Creek is identified as a stream order 4 where it traverses the Wooroora property and becomes a stream order 5 waterway within Glen Gordon. There is a series of stream orders 1, 2 and 3 across the site, including within the Project footprint. Waterways include creeks with a soft substrate bottom, and rocky gullies with distinct water holes and densely vegetated riparian vegetation. A number of farm dams also occur within the Project area.

The majority of the lower-order waterways within the Project area were not running or were holding stagnant water at the time of the dry-season flora surveys (October 2020). During the wet-season fauna surveys (January-March 2021), all waterways were at the upper limit of their capacity with scattered flooding events. Based on conversations with landholders, this seasonal and episodic inundation is considered typical for the area. An EPBC Protected Matters Search identified no Nationally Important Wetlands, however there are four Great Barrier Reef Wetland Protection Areas (Qld) located within the properties associated with The Project. None of these are located within the Project footprint.

A Flood Assessment Report of the Project area is provided in Attachment B.

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

The Project area displays characteristics associated with both the Wet Tropics (WET) and Einasleigh Uplands (EIU) bioregions, with a mix of soils and REs. The higher hills and ranges within the landscape are predominantly granite and occasionally rhyolite formations associated with Land Zone 12. Soils within this land zone are mainly tenosols on steeper slopes with chromosols and sodosols on lower slopes and gently undulating areas (Wilson and Taylor 2012). The proposed wind turbines are exclusively located on these formations.

Lower areas within the Project area range from the imperfectly or poorly drained soils in the north, to the non-sodic soils on alluvia that dominate the central and southern extent. Glen Gordon is defined by broad areas of weakly to moderately pedal yellow and grey soils formed after sediments from the Glen Gordon acid volcanics covered a basaltic plain. The soils have a pale or bleached A2 horizon grading to a D horizon of heavy clay over decomposing basalt (Heiner & Grundy 1994). Organic carbon and total nitrogen levels in these soils are generally low, and carbon/nitrogen ratios generally tends to be high (Heiner & Grundy 1994). By contrast, Wooroora has a much broader coverage of soils associated with alluvia. This is generally described as an acidic duplex humic gley formed from quaternary alluvium with a thin organic surface and grey or gleyed B horizon formed by seasonal swamps. The higher organic carbon and nitrogen levels in these soils also reflect the surface texture and the generally lower position in the landscape (Heiner & Grundy 1994). Some infrastructure, such as access roads, will be located within these lower areas.

Vegetation within the Project Area is generally of remnant status and dominated by various communities associated with woodlands or open forests, the majority of which belong to the EIU Bioregion with a few belonging to the WET Bioregion. Some areas, generally within close proximity to the homesteads, have been cleared for grazing. The most common vegetation community within the Project Area is RE 9.12.2, a woodland community dominated by a mix of *Corymbia citriodora*, *C. intermedia* and *Eucalyptus portuensis* that occurs on the slopes and ridges of hills across both Wooroora and Glen Gordon. Within the EIU Bioregion portion of the Project Area, the equivalent vegetation community (RE 7.12.34) is the second most dominant. At the tops of many of these hills, scattered rocky scarps and rocky granite pavements contain shrubland and closed forest communities of *Acacia* spp. and *Lophostemon suaveolens* associated with RE 7.12.65k. Other communities that occur across these hills include the *Eucalyptus reducta* dominated RE 7.12.21, *Eucalyptus resinifera* and *Corymbia intermedia* woodland associated with RE 7.12.52, and occasional patches of vine thicket.



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The most common communities within the low-lying areas of the Project Area are RE 9.5.5a, a mixed woodland of *Eucalyptus crebra*, *Corymbia clarksoniana* and *C. citriodora*, and RE 9.3.16, a *Eucalyptus tereticornis* and *E. platyphylla* woodland occurring on alluvial flats.

Information on the ground-truthed vegetation communities present within the Project area and within the Project footprint is presented in "Att A – MNES Assessment Report\_Part2", section 6.1, page 81; and "Att A – MNES Assessment Report\_Part3", section 9.2.1, page 131.

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

The primary natural feature that is associated with the Project area is Blunder Creek; a stream order four waterway on the Wooroora property that becomes a stream order five waterway on the Glen Gordon property as it runs east to west towards the Herbert River. The riparian vegetation associated with this waterway, and the waterway itself, provide habitat for a range of native species. Having permanent water available in various stretches of the creek, this waterway will also likely provide refuge habitat for wildlife during drier periods. The majority of infrastructure associated with the Project will avoid direct and indirect impacts on Blunder Creek.

Another natural feature within the Project area is Arthur's Seat, a large granite rock formation in the northwest of the Glen Gordon property. This site is reported to have importance as a local natural and cultural landmark. The Project footprint has been designed to avoid this feature.

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

The Project area is primarily comprised of remnant vegetation, with approximately 3.7% categorised as non-remnant. Ground-truthed vegetation within the Project area largely comprises mixed woodlands dominated by white mahogany (*Eucalyptus portuensis*) and spotted gum (*Corymbia citriodora* subsp. *citriodora*) (27.6%), white mahogany with co-dominant turpentine tree (*Syncarpia glomulifera*) (16.58%), red mahogany (*Eucalyptus resinifera*) (10.63%) and Queensland stringybark (*Eucalyptus reducta*) (9.53%) woodland communities, primarily on igneous hills, or granite or rhyolitic soils. Creeks and other alluvial areas typically consist of forest red gum (*Eucalyptus tereticornis*) communities with long-fruited bloodwood (*Corymbia clarksoniana*) and poplar gum (*Eucalyptus platyphylla*).

Information on the ground-truthed vegetation communities present within the Project area and within the Project footprint is presented in "Att A – MNES Assessment Report\_Part2", section 6.1, page 81; and "Att A – MNES Assessment Report\_Part3", section 9.2.1, page 131.

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

The Project area is located on the southern edge of the Atherton Tablelands; a fertile plateau forming part of the northern extent of the Great Dividing Range in Queensland. This plateau sits at an average of 600 m Australian Height Datum (AHD), rising to 800 m AHD in the west and reaching over 1,000 m AHD on the tops of the remnants of shield volcanoes (Whitehead 2003). Landscape formations across the Atherton Tablelands are derived from a range of lithologies but the most important are rhyolite, granite and fine-grained sedimentary rocks (Heiner & Grundy 1994).

The Project area is defined by a taller series of hills forming ridgelines, connected by numerous saddles or knolls, that extend along the eastern edge of the Wooroora property, and across the north of Wooroora and Glen Gordon. These ridges form the boundary of the local watershed formation, draining southwest through low plains and alluvial areas towards the Herbert River. The majority of the hills are associated with emergent granite formations rising to approximately 990 m AHD in the north of Glen Gordon, with the alluvial plains in the south of Wooroora being the lowest point within the Project Area at approximately 671 m AHD.

The proposed wind turbine locations are predominantly situated on the eastern and northern ridgelines described above, or occasionally located on other isolated scattered hills within the properties, with elevations ranging from 730 m to 990 m.

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

The documented history of European settlement on the Atherton and Evelyn Tablelands can be traced back to the 1870s when gold prospector James Venture Mulligan travelled along the perimeter of the rainforest west of the Tablelands with the help of Aboriginal guides (Mulligan 1877). Settlement of the areas around the Wooroora and Glen Gordon properties did not commence until the 1880s when government member and gold miner Frank Stublely established Evelyn Station which, at the time, encompassed the Project Area and was utilised for cattle grazing. Evelyn station has since been subdivided.

As European settlements such as Ravenshoe were established and train lines were extended inland, extensive clearing for logging, agricultural and grazing purposes commenced and resulted in the removal of large areas of forest in the surrounding areas. The remoteness and accessibility challenges associated with properties such as Wooroora and Glen Gordon classified many areas as unsuitable for cultivation and has contributed to the persistence of remnant woodlands and forests in broadly modified landscape; however, most of these areas have been selectively logged to some extent in the past and are still exposed to moderate levels of cattle grazing activities (Frawley 1990).

Remnant vegetation accounts for the vast majority (95%) of the Project area and was generally observed to be in good condition. Evidence of historical clearing is more prevalent in the lower areas associated Land Zone 3 and Land Zone 5 and cattle grazing is also still active in these areas.



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Surveys identified a noticeable prevalence of introduced fauna species throughout the Project area; this is expected to have a considerable influence on the presence and distribution of native fauna.

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

The Wet Tropics World Heritage Area (WTWHA) is adjacent to, and partially within, the Project area. Furthermore, the Wet Tropics of Queensland is included on the National Heritage List, as are the WTWHA's indigenous heritage values.

The Wet Tropics of Queensland stretches along the northeast coast of Australia for some 450 kilometres and encompasses 894,420 hectares of mostly tropical rainforest. Underpinning both its national heritage and world heritage listings is the fact that the region is considered to represent the most intact record of the ecological and evolutionary processes that shaped the flora and fauna of Australia, containing the relicts of the great Gondwanan forest that covered Australia and part of Antarctica 50 to 100 million years ago. All of Australia's unique marsupials and many other Australian animals originated in rainforest ecosystems, and their closest surviving relatives occur in the Wet Tropics (IUCN 1988).

Nationally, the Wet Tropics is additionally listed due to the region's indigenous heritage values. The Wet Tropics is unique in the course of Australia's cultural history, providing at least 5,000 years of evidence of occupation as the only area in Australia where Aboriginal people lived permanently in the rainforest, adapting to seasonal abundance and lean times with plants providing much of their food. Traditions linked to the volcanic events at Lake Eacham occurring between 10,000 and 20,000 years ago also suggest Aboriginal occupation of the area occurred as far back as during these events. (Horsfall and Hall 1990).

The Project is not expected to have a significant impact on the WTWHA. Further information on the heritage values of the WTWHA is provided in "Att A - MNES Assessment Report\_Part2", section 5.1, page 49.

### **3.9 Describe any Indigenous heritage values relevant to the project area**

The proponent has been engaging with the Registered Native Title Party for the Area of the Project (Jirrbal # 4) since mid-2020.

Epuron, the Jirrbal Native Title party and Wabubadda Aboriginal Corporation have entered into a Cultural Heritage Management Agreement (CHMA) which has been prepared in accordance with the Aboriginal Cultural Heritage Act 2003. This CHMA sets out mechanisms through which Cultural Heritage assessments of Project activities resulting in disturbance to the land can occur. Following surveys, the CHMA requires that Jirrbal and Epuron agree on appropriate management measures for any identified Cultural Heritage with avoidance being the preferred management measure.

In order to better understand the cultural landscape of the project area, the CHMA provided for a Preliminary Scoping Study (PSS) to be undertaken and this was completed during late 2020 and early 2021. The PSS involved input from Jirrbal representatives and cultural knowledge holders, and technical research and analysis undertaken by Jirrbal nominated technical advisors.

Research into the history of the region identified the Project area as being a part of the indigenous cultural landscape across both pre and post European settlement eras. Prior, non-Project related archaeological research has confirmed 30,000 years of occupation at sites such as the Murubun Rockshelter on Blunder Creek, located to the east of the Project Area.

Through the PSS, searches of the Queensland Cultural Heritage register identified 8 records within the Project area including scar trees (record codes EM:C68, EM:C57), artifacts (record codes EM:A56, EM:B04, EM:B05, FM:A41, EM:B06) and a contact site (record code EM:C09). Each of these sites will be avoided by the Project footprint.

Another natural feature within the Project area is Arthur's Seat, a large granite rock formation in the northwest of the Glen Gordon property. This site is reported to have importance as a local natural and cultural landmark. The Project footprint has been designed to avoid this feature.

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

The Project area is characterised by a mixture of freehold (Glen Gordon – 1SP284234 and 31SP288862) and leasehold (Wooroora – 1CWL3298) land. These properties have several easements intersecting them associated with roads and electrical infrastructure. The Project land will be accessed under Lease Agreements with the applicable landholders for the duration of the Project.

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

The Project area is currently used for agricultural purposes, with both properties used for cattle grazing. Glen Gordon Station and Wooroora Station have housing and other amenities associated with the agricultural activities.





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## 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

Avoidance, minimisation and mitigation of potential impacts is a central tenet of achieving ecologically sustainable development. This has been a major consideration in the early stage development of the Project. "Att A - MNES Assessment Report\_Part3", section 10.0, page 141, presents a number of proposed avoidance, minimisation and mitigation measures associated with the Project during the design, construction and operational phases. These are briefly described below.

##### Design

Ecological surveys of the Project area commenced at an early stage during Project design, and as such the results of the surveys have been able to significantly inform the Project layout. Central to this process was ensuring that areas of higher ecological significance were avoided to the greatest practical extent, taking into consideration the challenging terrain and wind resource requirements.

Initial ecological surveys were designed to collect information about the characteristics of the broader Project area, such that the opportunities and constraints could inform the subsequent Project design activities.

The evolution of the Project design demonstrates informed and ecologically sensitive development, where observations in the field have resulted in tangible and significant changes to the Project. From Project inception, CWF has been committed to achieving ecologically sustainable development through this Project, and this has formed a fundamental driver for the wider Project team.

Avoidance of MNES and associated habitat has been demonstrated during the design process as described below:

- Avoidance of the WTWHA
- Avoidance of rainforest habitats
- Avoidance of Arthur's seat
- Avoidance of rocky pavement habitat with known MNES flora species
- Avoidance of potential red goshawk nest
- Avoidance of creek frog habitat
- Avoidance of southern cassowary habitat
- Significant reduction in the number of proposed wind turbines (from approximately 200 down to 95) and associated

reduction in the Project footprint.

Further to the measures described above, the following general measures have been implemented throughout the design phase to avoid and minimise environmental impacts to the greatest practical extent:

- Locating the substation, office, construction compound and temporary laydown areas on existing cleared land as far as practicable, and away from watercourses;
- Co-locating underground electric cabling with Project access roads and minimising the width of Project access roads as far as practicable; and
- Minimising the number and width of watercourse crossings – this has been a considerable driver to minimise potential impacts on greater glider, masked owl and red goshawk.

For further detail, refer refer to "Att A - MNES Assessment Report\_Part3", section 10.1, page 141.

##### Construction

Numerous measures are proposed within "Att A - MNES Assessment Report\_Part3", section 10.2, page 143, to avoid and minimise potential impacts of construction works for the Project on MNES. These relate to vegetation clearing, habitat fragmentation, fauna injury or mortality, dust emissions, noise and vibration, light emissions, erosion and sedimentation, hazardous materials, pests and weeds and bushfire risk.

##### Operation

Numerous measures are proposed within "Att A - MNES Assessment Report\_Part3", section 10.3, page 148, to avoid and minimise potential impacts of the Project's operational activities on MNES. These relate to vehicle strike, collision risk, noise and light emissions, pests and weeds and bushfire risk.

Measures associated with rehabilitation and decommissioning are also identified in "Att A - MNES Assessment Report\_Part3", sections 10.4 and 10.5, page 150.

#### 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

Despite the avoidance, minimisation and mitigation measures described above and described in "Att A - MNES Assessment Report\_Part3", section 10.0, page 141, the Project is anticipated to have a significant residual impact on the greater glider, the red goshawk and the magnificent brood-frog. Offsets for the identified significant residual impacts will need to be obtained in accordance with the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy. The



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Project has sought to ensure that no significant impact will occur for other MNES. This is to be achieved through the implementation of the avoidance, minimisation and mitigation measures described within this referral.

For each MNES relevant to the Project area, a significant residual impact assessment is provided in "Att A - MNES Assessment Report\_Part3", section 11.0, page 151. This describes environmental outcomes proposed to be achieved for each individual MNES.

The proposed Chalumbin Wind Farm will be an important part of the future energy generation portfolio within Queensland, helping the state to achieve its renewable energy target of 50% by 2030. The Project will lead to significant employment opportunities during construction, a considerable number of operational jobs, substantial capital investment and the economic and social stimulation of local townships (Ravenshoe, Atherton, Malanda, Cairns) and the wider region. Furthermore, the Project will contribute to the decarbonisation of the Queensland and Australian economies.

The Project design has been refined progressively in response to the availability of information on the characteristics of the Project area in order to avoid, minimise and mitigate potential adverse impacts. Specific examples have been provided where the Project layout has been refined to avoid and minimise impacts associated with numerous MNES. It is considered that the Project promotes ecologically sustainable development, which is a key object of the EPBC Act.



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## 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



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## 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

Yes.

Epuron is a leading Australian renewable energy company with a focus on the development of utility scale wind and solar projects across Australia. Epuron has been developing renewable energy projects since 2003, with the successful permitting of over 4000MW of wind farm projects and over 400MW of solar farm projects. Epuron is committed to avoiding, minimising and mitigating potential environmental impacts through the development of its renewable energy project portfolio. Epuron's projects have a history of responsible environmental management.

#### 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

There are no 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) the person making the application.

#### 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

Epuron aims to ensure that all of its developments meet industry best practice, and that development practices are continually improved. Epuron is a leader in the renewable energy industry's best practice endeavours; contributing to the development of various government and industry guidelines, and taking a lead on project commitments.

For example, Epuron was the first company in Australia to propose a community development fund as part of a renewable energy project, a commitment which continues to this day. For the Chalumbin Wind Farm Project, Epuron will commit the Project to a suite of management actions under this referral, the Ecological Assessment Report, and other reports to be submitted for assessment under the Planning Act 2016. The tendering process to award construction contracts for the Project will consider past environmental performance, environmental policy, and environmental management systems.

#### 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

Epuron has previously referred a number of projects under the Act, including:

- St Patricks Plains Wind Farm (2019/8497)
- White Rock Wind Farm (2018/8156)
- Lotus Creek Wind Farm (2020/8627)
- Boulder Creek Wind Farm (2020/8772)
- Specimen Hill Wind Farm (2020/8864)



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

<b>Section 7</b>
<b>Information sources</b>
<b>Reference source</b>
All references used for the preparation of this referral are listed in "Att A - MNES Assessment Report_Part3", section 13.0, page 259.
<b>Reliability</b>
High
<b>Uncertainties</b>
None



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## Section 8

### Proposed alternatives

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

Yes



No



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**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) Chalumbin Wind Farm Pty Ltd  
 Business name  
 ABN  
 ACN 646785962  
 Business address Level 11, 75 Miller St, North Sydney, 2060, NSW, Australia  
 Postal address  
 Main Phone number 0284567401  
 Fax  
 Primary email address p.stangroom@epuron.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

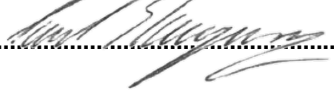
9.1.2.2 I would like to apply for a waiver of full or partial fees under Regulation 5.21A of the EPBC Regulations  
 Yes     No

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

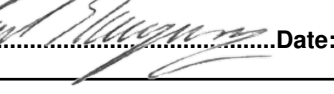
First name Paul  
 Last name Stangroom  
 Job title Development Director  
 Phone  
 Mobile 0448663441  
 Fax  
 Email p.stangroom@epuron.com.au  
 Primary address Level 11, 75 Miller Street, North Sydney, 2060, NSW, Australia  
 Address

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

I, Paul Stangroom, 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: 08/07/2021

I, Paul Stangroom, the person proposing the action, consent to the designation of Chalumbin Wind Farm Pty Ltd as the proponent for the purposes of the action described in this EPBC Act Referral.

Signature:  Date: 08/07/2021



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)	Chalumbin Wind Farm Pty Ltd
Business name	
ABN	
ACN	646785962
Business address	Level 11, 75 Miller Street, North Sydney, 2060, NSW, Australia
Postal address	
Main Phone number	0284567401
Fax	
Primary email address	p.stangroom@epuron.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	Paul
Last name	Stangroom
Job title	Development Director
Phone	0448663441
Mobile	
Fax	
Email	p.stangroom@epuron.com.au
Primary address	Level 11, 75 Miller Street, North Sydney, 2060, NSW, Australia
Address	

#### Declaration: Proposed Designated Proponent

I, Paul Stangroom \_\_\_\_\_, 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: 08/07/2021 .....





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)** ATTEXO GROUP PTY LTD  
**Business name**  
**ABN** 75637138008  
**ACN**  
**Business address** Ground Floor, 108 Wickham Street, Fortitude Valley, 4006, Queensland, Australia  
**Postal address**  
**Main Phone number** 0402645874  
**Fax**  
**Primary email address** chris.cantwell@attexo.com.au  
**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** Chris  
**Last name** Cantwell  
**Job title** Partner & Principal Consultant, CEnvP  
**Phone** 0402645874  
**Mobile**  
**Fax**  
**Email** chris.cantwell@attexo.com.au  
**Primary address** Ground Floor, 108 Wickham Street, Fortitude Valley, 4006, Queensland, Australia  
**Address**

**Declaration: Referring party (person preparing the information)**

I, \_\_\_\_\_ Chris Cantwell \_\_\_\_\_, 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:** .....8 July 2021.....



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

<b>Appendix A</b>	
<b>Attachment</b>	
<b>Document Type</b>	<b>File Name</b>
action_area_images	Att C - Project Footprint.kml
supporting_tech_reports	Att A - MNES Assessment Report_Part1.pdf
supporting_tech_reports	Att A - MNES Assessment Report_Part2.pdf
supporting_tech_reports	Att A - MNES Assessment Report_Part3.pdf
hydro_investigation_files	Att B - Flood Assessment Report.pdf

<b>Appendix B</b>
<b>Coordinates</b>
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