

Title of Proposal - Banana Range 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 Project is located in Banana Shire Council Local Government Area, approximately 120 km south-west of the port of Gladstone and 20 km west of the township of Biloela, Central Queensland. The Project is proposed over five freehold properties, totaling 8,726 hectares (ha) and known collectively as the 'Project Area'

The project has been scaled so that it can be economic to connect into the existing Powerlink transmission network and to produce the lowest cost of renewable electricity.

The Banana Range Wind Farm project will consist of up to 51 wind turbines and hardstand areas. Each wind turbine will have a maximum total (tip) height of 250 m, including a rotor diameter of up to 180 m and hub height of up to 170 m. Each turbine footprint will be around 80 m by 120 m (turbine hardstand areas will be 1 ha on average). The project proposal also includes the following ancillary infrastructure:

Up to 51 km of gravel capped roads

Up to 5 permanent wind monitoring towers

Up to 2 substations including energy storage

Up to 2 permanent site offices, workshops and warehouses

Up to 16 kilometres (km) of overhead lines, together with ancillary electrical infrastructure (e.g. transformers, junction boxes)

Underground power and communication cables alongside access roads together with ancillary electrical infrastructure (e.g. transformers, junction boxes)

One permanent site entrance

New fencing with grids and gates

Up to 5 temporary construction compounds, laydown areas and stockpile areas

Up to 5 temporary wind monitoring towers

Temporary concrete Batching Plants

Water Storage.

It is proposed that the wind turbines and all infrastructure will be located within the Project Area. The Project construction footprint is anticipated to cover approximately 1,215 ha. The detailed design stage is when the selected wind turbine make and model and energy storage capacity will be completed and informed based on information on wind energy modelling from existing onsite resource monitoring, geotechnical investigations, ecological constraints, network capacity connection constraints and the market for renewable energy. The Project infrastructure is comprised of linear, non-linear and temporary infrastructure. The overall footprint of the infrastructure is determined by the final wind farm design and design of roads, cabling and

overhead lines. To accommodate these various scales and stages of the wind farm, various optional infrastructure has been included within the Project (e.g. several substation locations are included). A maximum Project layout is described, within which the Project will be accommodated. The Project layout has been developed to minimise and where possible, avoid impacts on known environmental constraints.

Project construction may be:

completed in its entirety during one construction period of around 20 months, or
 staggered to construct the Project progressively in two or more stages over a 24-month period, or
 staggered over a longer period, where some stages of the wind farm are operational for a period and the balance of the Project is completed at some point in the future.

The project can be summarised as the development, construction, and operation of a (up to) 51 turbine wind farm, including associated infrastructure.

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
Banana Range Wind Farm (approx location)	1	-24.421457960835	150.26485711298
Banana Range Wind Farm (approx location)	2	-24.421770565732	150.26485711298
Banana Range Wind Farm (approx location)	3	-24.420832748718	150.26485711298
Banana Range Wind Farm (approx location)	4	-24.428647677511	150.37403374872
Banana Range Wind Farm (approx location)	5	-24.428022501023	150.37472039423
Banana Range Wind Farm (approx location)	6	-24.540504295965	150.36957055292
Banana Range Wind Farm (approx location)	7	-24.536756523812	150.26760369501
Banana Range Wind Farm (approx location)	8	-24.421457960835	150.26485711298

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 has previously been used for cattle grazing and has three small farm dams

which still hold water. A small area on the northern part of the ridge top is reserved for telecommunication towers. Surrounding properties are a mixture of mostly cleared land for cattle grazing, some cropland towards Biloela, and state forest supporting intact native vegetation to the south of the project site.

The Project Area lies within the Brigalow Belt South bioregion and falls within the Fitzroy catchment, in Banana Shire, central Queensland. The Brigalow Belt bioregion is a wide band of acacia wooded grassland that runs between tropical rainforest of the coast and semi-arid interior of Queensland. The Brigalow Belt South bioregion is one of 85 bioregions across Australia and 15 bioregions in Queensland. The bioregion is characterised by the presence of brigalow (*Acacia harpophylla* vegetation).

The Fitzroy catchment is the largest river catchment flowing to the eastern coast of Australia and the second largest catchment in Australia. The Fitzroy river flow is highly episodic with seasonal bias to high flows in summer. The catchment has recognised land degradation problems, including all forms of soil erosion by water, and soil fertility decline. The Fitzroy catchment is a managed water plan area, where water use is subject to the Fitzroy Basin Water Plan controls.

The Banana Shire runs South-South-West from Dululu down to Taroom and includes the Belington Hut State Forest to the west. The shire is sparsely populated and supports dryland cropping and irrigation cropping, beef production, coal mining and power generation industries.

The Project Area falls within the geological Auburn Arch structure. The Auburn Arch forms the highlands of Banana Range, with Mount Benn, located within the project site, being the highest peak with an altitude of 520 m above sea level. The Auburn Arch is made up of acid and intermediate volcanic rocks of the Torsdale beds and the Camboon andesties which have been intruded by granites of the Glandore granodiorites.

The study area has a warm subtropical climate, with hot to warm temperatures all year round. Winter nights can occasionally drop below freezing; however, winters are usually warm and dry, with pleasant sunny days. Summers are hot and humid, with most rain falling with occasional thunderstorms. Record temperatures at the nearby town of Biloela have ranged from 43.1C down to -4.7C. The wettest 24-hour rainfall at Biloela was 199.6 millimetres on 31 January 1978 (BOM, 2019).

Large areas of vegetation across the project site have been historically cleared, with the only remaining patches of remnant vegetation predominantly confined to ridgelines in the north-eastern and southern portions of the property, and inaccessible steep gullies across the Project Area. Details of the vegetation communities are provided in Section 3 of this referral.

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 encompasses parts of 5 freehold rural lots comprising 8,726 ha. Construction disturbance footprint is 1,215ha.

1.7 Is the proposed action a street address or lot?

Lot

1.7.2 Describe the lot number and title. 47SP232217, 43PM375, 39RP619229, 38PM307, 10FN802236

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?

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 12/2020

End date 12/2060

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

An application has been lodged (July 2019) for a Development Permit for a Material Change of Use (Wind Farm) and a Development Permit for Operational Works (Clearing Native Vegetation) under the Queensland Planning Act 2016.

A planning report was prepared by third party specialist (AECOM Australia) to support the development application.

In support of this application, specialised ecological assessment, landscape and visual impact, noise and vibration, traffic impact assessment, route survey, stormwater, electromagnetic interference, aviation impact statement, shadow flicker and construction management assessments have been undertaken to determine the likely impacts of the Project and demonstrate how these impacts can be appropriately mitigated or managed throughout the life of the Project.

The project is currently being assessed by Department of State Development, Manufacturing, Infrastructure and Planning against the following Queensland State Codes.

State code 1- Development in a state-controlled road environment

State code 23- Wind farm development

State code 16- Native vegetation clearing

It is understood that additional statutory approvals may be required prior to the establishment of the Project, which are likely to include the following approvals:

Material Change of Use (MCU) for concrete batching (Local council)

Ministerial Determination – Reconfiguration of a Lot (ROL)

Reconfiguration of a Lot (Local council)

Building Works Permit (Local council/certifier)

Plumbing and Drainage Works Permit (Local council)

Operational Works Permit (Excavating and Filling) (Local council)

Vegetation Clearing Offset Process (DNRME)

Riverine Protection Permit (if works cannot comply with Riverine Protection Permit exemption requirements) (DNRME)

Operational Works for Waterway Barrier approval (if works cannot be undertaken in accordance with the Accepted Development Requirements) (SARA/DAF)

Operational Works for Taking or Interfering with Water (Required if not taking water from a licenced and approved source. Approval may result in additional licence requirements i.e. water allocation / licence) (SARA/DNRM)

Road Corridor Permits, Traffic Control Permits and Extra Wide Vehicle approval (DTMR)

Species Management Plan (if impacts on Nature Conservation Act species) (DES)

Aboriginal Cultural Heritage Duty of Care (Department of Aboriginal and Torres Strait Islander Partnership (DATSIP)/Relevant Aboriginal Party/ies)

These approvals will be obtained when Banana Range Wind Farm has appointed an Engineering, Procurement and Construction (EPC) contractor, confirmed detailed design and construction commencement is imminent.

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

The Proponent has identified and subsequently engaged with a number of key stakeholders on the Project and will continue to liaise with the community during the pre-construction phase, construction and operational phases of the Project. The Proponent has undertaken presentations with the following decision making bodies for various approvals required to build the wind farm (1) Pre-lodgement meeting with Assessment manager Department of State Development Mines Infrastructure and Planning - July 2018 and (2) Presentation to Banana Shire Council CEO and Councillors – August 2018.

The Project Area is subject to a registered Native Title Claim by the Gaangalu Nation People (Tribunal No- QC2012/009). The Gaangalu Nation People have been informed of the proposed Project in June 2019 and the Proponent has invited the Gaangalu Nation People to participate in the development of a Cultural Heritage Management Agreement for purposes of this Project. The Proponent commenced discussions with host landowners in early 2016 and have agreed the rights to locate a wind farm on the host landowners property.

The Proponent has consulted with the four neighbouring landowners in early 2019 to inform them of the project feasibility and what the Project may involve. Direct community engagement commenced in June 2019, with the follow activities; Establishment of a website, Project advertisement, A public exhibition, Media articles, Community Newsletter

Establishment of a website www.bananarangewindfarm.com.au which provides an information portal for the Proponent to communicate the project to the community. The website provides up to date information and also allows the community members to register so they can be kept up to date with project news. The website's other function is to capture important information, such as skills and services from local businesses, potential suppliers and individuals who are interested in working on the Project. These individuals and businesses will be kept up to date as the project moves in to contractor tendering phase so that they are aware of work opportunities.

A public exhibition was held on 9 July 2019 in the Biloela Civic Centre, which is around 20km from Project where four team members of the Proponent were on hand to provide information, answer questions, and obtain feedback from any attendees. The exhibition was advertised through the What's On Biloela Facebook page, the Central Telegraph and Rockhampton Morning Bulletin. In addition, media articles and interviews appeared on the WIN network, Gladstone Observer, and ABC Capricornia, to raise awareness of the project. Around 20 members of the community attended, with general support for the project and the annual community fund.

The annual community fund of 100,000 dollars per year is committed by the Proponent from the project to support local community projects throughout the life of the project from the start of Construction to the end of Operations. The community fund is not a mandated requirement of any approval process, however it is typically used by many wind farm operators as a positive way to spread the financial benefits of wind farm to the community beyond that received by the wind farm owners, contractors, employees and host landowners.

A project newsletter was created which was available at the exhibition and is available for download from the website.

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.

In support of the development application for a combined Development Permit for a Material change of use (Wind Farm) and Operational work (Clearing Native Vegetation) under the Planning Act 2016, an ecological assessment has been undertaken for the Project. Two seasonal surveys were carried out by suitably qualified ecologists, a post-wet (May 2018) and a pre-wet (November 2018). Effort was in accordance with appropriate guidelines and consisted

of flora surveys and vegetation community assessment, fauna and fauna habitat surveys, and bird utilisation surveys. A copy of the ecological report (Attachment name: 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5) is provided in this referral and a summary of this assessment is provided herein.

Key survey results are summarised below:

Matters of National Environmental Significance:

A single Greater Glider (*Petauroides volans*, Vulnerable under the Environment Protection and Biodiversity Conservation Act 1999) was confirmed within the Project Area.

White-throated Needletail (*Hirundapus caudacutus*) listed as migratory and Vulnerable under the EPBC Act was observed flying over the Project Area during the pre-wet surveys.

The threatened ecological community Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions was confirmed present in the southwest, outside the project impact area.

Corben's Long-eared Bat (*Nyctophilus corbeni*) listed as Vulnerable under the EPBC Act was possibly recorded on site, however this is unconfirmed as calls from this species cannot be distinguished from other species in the *Nyctophilus* genus.

Matters of State Environmental Significance:

State regulated vegetation mapping shows Of Concern (Vegetation Management Act 1999) regional ecosystem 11.3.4 within the Project Area. Ground truthing confirmed that the State-mapped Of Concern regional ecosystem 11.3.4 was incorrect and this vegetation patch was analogous to regional ecosystem 11.3.11 (Endangered, analogous with the semi-evergreen vine thicket threatened ecological community) along with an area of Least Concern regional ecosystem 11.12.4.

Greater Glider (Vulnerable under the Nature Conservation Act 1992) was confirmed on site.

Short-beaked Echidna (Special Least Concern under the Nature Conservation Act 1992) was observed within the Project Area.

Impacts Assessment Summary

Unmitigated impacts to ecological values as a result of the Project include vegetation clearing, removal of habitat, and reduced connectivity. The Project is likely to result in 28.01 hectares of remnant vegetation being cleared, of which 0.22 hectares is (State-mapped) Of Concern. The footprint was chosen to avoid any semi-evergreen vine thicket threatened ecological community. There will not be any significant residual impacts to regulated vegetation.

Impacts on Greater Glider, White-throated Needletail, Corben's Long-eared Bat and Echidna are not considered to be significant, provided mitigation measures are implemented.

General management and mitigation measures have been proposed to reduce the extent and

significance of impacts to ecological values, including the implementation of construction and operational management plans to address impacts that otherwise may not be avoidable or sufficiently minimised through the project design phase. To comply with federal and state legislation, management plans will be prepared to manage and monitor the impact of the proposal on threatened species. Following detailed design, a Construction and Environmental Management Plan will be prepared to detail specific management and mitigation measures. These plans will include information on vegetation management, including weed management, rehabilitation management, fauna management (including a Bird and Bat Management Plan), and pest animal management. Preliminary plans have been included within this present report.

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
Greater glider (<i>Petauroides volans</i>)	A single Greater Glider (<i>Petauroides volans</i>), Vulnerable under the EPBC and NC Acts, was recorded over the period of two seasonal

Species	Impact
	surveys. A total of 87 ha of Greater Glider habitat was identified within the Project Area. Suitable habitat for this species within the Project Area was in poor condition, however has mature <i>Eucalyptus citriodora</i> (diameter above 1,000 mm) present which are likely to provide nesting habitat. Impacts to the Greater Glider associated with the construction of the project includes the removal of a maximum of 20.25 ha (23.3 percent) of suitable habitat, containing hollow-bearing trees that may provide nesting habitat for Greater Gliders. Impacts include potential direct death and injury during clearing activities, displacement and destruction of den trees, displacement resulting in indirect death and fragmentation of habitat. Impacts will be mitigated by pre-clearance surveys, having a fauna spotter on site during clearing, replacement of active hollows with nest boxes. Connectivity will be maintained by minimising clearing width and installing crossing structures (i.e poles, ropes) where the slope necessitates a clearing width greater than possible glide distance. A detailed assessment of significance and additional information about mitigation is included in the attached ecological assessment report (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).
Corbens Long-eared Bat (<i>Nyctophilus corbeni</i>)	The Corben's Long-eared Bat (<i>Nyctophilus corbeni</i>), listed as Vulnerable under the EPBC Act was found to potentially be present within the Project area. It cannot be confirmed on site as calls from this species are not reliably distinguishable from other species of bats within the <i>Nyctophilus</i> genus. It was not captured during harp trapping but other members of the <i>Nyctophilus</i> genus were. <i>N. corbeni</i> is typically a clutter-foraging low flyer in forest, over water pools and is also found in disturbed forests. As such, it is not expected that <i>N. corbeni</i> will be affected by rotor blade strike, if it is indeed present. Given that <i>N. corbeni</i> has not been positively identified, and the suitable habitat for this species is fragmented and degraded. It is considered unlikely that the project will significantly impact on <i>N. corbeni</i>. A detailed assessment of significance is included in the

Species	Impact
	attached ecological assessment report (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).
White-throated Needletail (<i>Hirundapus caudacutus</i>)	The White-throated Needletail is a listed Vulnerable and Migratory species under the EPBC Act, but not listed as threatened under Queensland legislation. In November, two individuals were observed during the BUS surveys at BUS site 3 and a flock of 35 was seen moving ahead of a storm front from BUS site 1 (in the north of the Project Area). The White-throated Needletail is an aerial forager and well known to forage at rotor-swept area (RSA) height. It is not expected that numbers of White-throated Needletail passing through Banana Range Wind Farm would be great enough to place the overall population at risk, because of the large area of Great Dividing Range that this species would move through during its migration and wintering quarters. Nonetheless, impacts to migratory birds such as this will be managed through a bird and bat management plan (draft included in the attached ecological assessment report). A detailed assessment of significance is included in the attached ecological assessment report (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).

2.4.2 Do you consider this impact to be significant?

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?

No

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.

Large areas of vegetation across the project site have been historically cleared, with the only remaining patches of remnant vegetation predominantly confined to ridgelines in the north-eastern and southern portions of the property, and inaccessible steep gullies across the Project Area.

Vegetation Community 1 - *Eucalyptus crebra* and *Corymbia erythrophloia* shrubby woodland – Regional ecosystem 11.12.1. This vegetation community is listed as Least Concern RE under the Vegetation Management Act 1999 (VM Act) and is not listed under the EPBC Act.

Vegetation Community 2 - Dry rainforest and vine thickets on steeper hillsides – Regional ecosystem 11.12.4 This vegetation community is listed as Least Concern RE under the VM Act and is not listed under the EPBC Act.

Vegetation Community 3 - *Corymbia citriodora* open forest – Regional ecosystem 11.12.6. This vegetation community is listed as Least Concern RE under the VM Act and is not listed under the EPBC Act.

Vegetation Community 4 - *Eucalyptus tereticornis* open forest/Semi-evergreen vine thicket on alluvial plains - Regional ecosystem 11.3.11/11.3.25. This vegetation community occurs along a mapped Stream Order 3 watercourse within the south-western extent of the Project Area and was assessed as a mixed community consisting of RE 11.3.25 (25 percent) *Eucalyptus tereticornis* woodland fringing drainage lines and RE11.3.11 (75 percent) Semi-evergreen vine thicket on alluvial plains. Despite ongoing disturbance, in particular from grazing, this community was assessed as being in moderate to good condition. This patch of vegetation has been mapped by DNRME as RE 11.3.4/11.3.25 - *Eucalyptus tereticornis* and/or *Eucalyptus* spp. woodland on alluvial plains, however was ground-truthed to be RE 11.3.11/11.3.25. RE 11.3.11, and is considered to also be the TEC Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions, listed under the EPBC Act.

Flora species

Records exist for five (5) threatened flora species within a 10 km radius on EPBC Search Tool and no threatened flora species on the QLD Wildlife Online (Appendix B). These are Ooline (*Cadellia pentastylis*), King Blue-grass (*Dichanthium queenslandicum*), Bluegrass (*Dichanthium setosum*), *Solanum dissectum* and *Solanum johnsonianum*. No threatened flora species were detected within the Project Area, despite targeted searches during seasonal surveys. Seventy-nine (79) Least Concern flora species were confirmed within the Project Area, along with seven weed species

Fauna

Fauna studies conducted on site during the two seasons (post and pre-wet) resulted in 168 species of fauna records. In summary, the total number for each fauna group included:

18 species of mammals (excluding microbats) of which three species are introduced and two threatened species (Greater Glider and White-throated Needletail) were confirmed present; Thirteen microbat species were identified as being present or possibly present on site. Of these, nine species were confirmed based on bat call analysis and harp trapping, none of which are considered to be threatened. Calls of the *Nyctophilus* genus of bats cannot be differentiated to species level, thus the recording of this species indicated that Corben's Long-eared Bat (*Nyctophilus corbeni*), listed as Vulnerable under the NC and EPBC Acts, potentially occurs on site; Nine reptile species; Six amphibian species, one of which is introduced; Eight butterfly species; 117 bird species; The Project Area supports foraging, nesting and roosting habitat for a variety of bird species. Nesting for hollow-dependent species is most abundant in woodland and riparian habitats. Hollow-dependant bird species (e.g. Barn Owls) were recorded during spotlighting activities both within and adjacent to the woodland; Aquatic habitat for birds is limited across the Project Area, restricted to farm dams and ephemeral creeks and drainage lines, which would be seasonal resources. Wetland bird species were not observed on site.

The attached ecological assessment report provides further details on the flora and fauna within the project area (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).

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

The Project Area is located on the eastern edge of the Fitzroy catchment. The Fitzroy catchment is the largest river catchment flowing to the eastern coast of Australia and the second largest catchment in Australia. The Fitzroy river flow is highly episodic with seasonal bias to high flows in summer. The catchment has recognised land degradation problems, including all forms of soil erosion by water, and soil fertility decline. The Fitzroy catchment is a managed water plan area, where water use is subject to the Fitzroy Basin Water Plan controls.

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

The Project Area lies within the Brigalow Belt South bioregion and falls within the Fitzroy catchment, in Banana Shire, central Queensland. The soil and vegetation characteristics are best described the vegetation mapping (both state and ground-truthed mapping) which described the Regional Ecosystems of the area. The Project Area falls within the geological Auburn Arch structure. The Auburn Arch forms the highlands of Banana Range, with Mount Benn, located within the project site, being the highest peak with an altitude of 520 m above sea level.

The Project Area comprises of two dominant soil types. The lower lying areas on the western side of the site comprise mainly of stony, firm or hard setting, non-cracking clay to duplex soil with a clay loam to light clay surface, 0.05-0.25 m thick, overlying a red or brown, light to medium clay subsoil, overlying weathered andesite or spilite by 0.2-0.8 m. The Banana Range

which runs north to south along the eastern side of the site comprises stony, dark or brown, uniform sand to sandy clay loam soil, either directly overlying rock, or with a conspicuously or sporadically bleached subsurface, or a brown sandy clay loam subsoil, overlying weathered rock by 0.3-0.7 m (Geological Society of Australia Inc., 2018).

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

The vegetation communities and general ecological values of the site are not unique or outstanding. The site has been heavily degraded through grazing and past broadscale clearing.

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

Details of the vegetation communities are described in Section 3.1.

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

Action is not within a marine area

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

The Project Area supports open subtropical savannah woodland dominated by Narrow-leaved Ironbark (*Eucalyptus crebra*) and in some areas, Spotted Gum (*Corymbia maculata*). The understorey and ground layer were dominated by a mosaic of native and introduced grasses including Buffel Grass (*Cenchrus ciliaris*) and regenerating wattles (*Acacia* spp.), particularly *A. leiocalyx* subsp. *leiocalyx*. Occasional small vine thickets and stands of Paperbark (*Melaleuca* spp.) occurred in more sheltered areas such as gullies. Prickly Pear (*Opuntia stricta*; invasive) and Queensland Bottle Tree (*Brachychiton rupestris*) were scattered at low densities across the study area.

Due to the level of disturbance (e.g. historical clearing and selective logging, current land use through grazing, competition through incursion of weeds and non-native pasture species), the vegetation community on site is generally in poor to fair condition.

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

There are no previously registered or known natural heritage sites within the Project area.

There are no previously registered or known historical heritage sites within the Project area.

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

The Project Area is subject to a registered Native Title Claim by the Gaangalu Nation People (Tribunal No QC2012/009). The Gaangalu Nation People have been informed of the proposed Project in June 2019 and the Proponent has invited the Gaangalu Nation People to participate in the development of a Cultural Heritage Management Agreement for the purposes of this Project. There are no previously registered or known Aboriginal heritage sites within the Project area.

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

Freehold

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

Land use across the project area predominately consists of extensively cleared agricultural land, primarily used for grazing. The majority of the lower-parts of the site have been predominantly cleared for grazing and support areas of highly modified pastures, the higher ground is also been used for grazing and the understorey was found to be quite variable given intermittent grazing pressures.

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 following mitigation measures have been undertaken in the design of the project and are recommended for further detailed design, including micro-siting of turbines, roads and other infrastructure, to reduce or avoid unacceptable ecological impacts:

Reduce clearing of riparian vegetation as much as possible. This will limit potential impacts to water quality from sediment and erosion of waterways during construction, but will also have the added benefit of reducing the potential for removal of large hollow-bearing trees present within this area. Vegetation clearing and disturbance are to be minimised to the extent required to complete the works. Wherever practicable, excavations and vehicle/machinery movements should occur outside the canopy dripline of large eucalypts and avoid impacts within the adjacent woodland patches that are to be retained to the south of the development site. Prior to the commencement of work, a physical vegetation clearing boundary at the approved clearing limit is to be clearly demarcated and implemented. The delineation of such a boundary would include the use of temporary fencing, survey pegs or similar.

Avoid clearing hollow bearing trees in Greater Glider habitat, where feasible. The unavoidable loss of tree-hollows that are confirmed or considered likely to provide breeding habitat for Greater Glider should be compensated for with the use of nest boxes. Nest boxes should be in place at least three weeks before clearing active Glider hollows, to allow resident fauna to become aware of their availability. Nest box management will be detailed in the management plan and will include confirmed ratio, installation procedure (i.e. at 10 m height or greater; preferably north-east facing), appropriate target trees (smooth barked), and nest box dimensions (i.e. rear entry, wooden). Mitigation measures will be provided where the habitat connectivity is disturbed (i.e. the section of the road and overhead powerlines located between turbines 24 and 29, and around turbine 27).

Fragmentation impacts will be reduced by; Reviewing appropriate fencing design in this area; Retain a maximum amount of canopy vegetation in key areas; Minimize future gaps in vegetation, for example by locating the overhead powerlines and road within a minimum corridor, or by having a vegetated strip between the powerline easement and the road. This will consider an ideal glide distance of 30-40 m, and will also benefit other fauna that do not like crossing wide expanses of cleared area; Installing road/cleared gap crossing infrastructure (along boundary between turbines 24 and 29) – glider poles and rope bridges: Detailed project

design will assess the most appropriate location(s) to install crossing infrastructure, considering proximity to good quality habitat within the Project Area and adjacent lot; Crossing infrastructure will be installed as soon as possible after clearing and earthworks. Rope bridges (and poles if necessary) will be installed in such a way to be temporarily removed, if required, when oversize loads are transported; Crossing infrastructure design will take into account best practice, current literature and comparable projects, tree height (i.e. ground truthed as 25-27 m) and glide angles. Conical tree guards with a large piece of sheet metal will also to be placed along the top section of the overhead powerline posts in proximity to glider poles, to prevent Greater Glider from reaching the live powerlines.

Targeted revegetation will occur in the vicinity of glider poles and generally along suitable sections of the road batters between turbines 29 and 24, with preferential use of tree species most likely to form hollows (e.g. *Corymbia citriodora*); Targeted revegetation will also occur around turbine 27 (i.e. to maintain linkages with areas of suitable habitat); Final micro-siting of road alignments to be selected to minimise overall clearing footprint; Additional information on proposed mitigation measures is provided in Section 6 of the ecological report (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).

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 desired environmental outcome is that the project does not significantly impact on MNES. This will be done through avoidance and mitigation measures (detailed in the accompanying ecological assessment report, file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5), and summarised as:

Avoid - Detailed design which reduces clearing of riparian vegetation, avoids clearing hollow bearing trees where possible, and micro-siting of roads to reduce overall clearing.

Mitigation - Construction phase management measures to include clearly demarcated no-go areas, pre-clearance surveys to identify potential and actual fauna breeding places (within 2-4 weeks of clearing, for currency), provision of nest boxes to replace any active Greater Glider hollows, presence of a fauna spotter during clearing, salvage of hollows and other habitat features where possible, measures specific to Greater Glider (see also response to question 4.1 above). Sediment and erosion risk, along with weeds, will be managed during construction, and cleared areas will be rehabilitated.

Operation - ongoing rehabilitation and weed/pest animal management measures will continue through construction. Bird and bat strike risk will be managed through a post-construction bird and bat management plan (a preliminary bird and bat management plan is included in the attached files 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5)

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

No

5.1.5 Listed migratory species

No

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.

A detailed assessment of significance has been attached in the ecological report. Impacts on Greater Glider, White-throated Needletail and Corben's Long-eared Bat are not considered to be significant, provided mitigation measures are implemented.

General management and mitigation measures have been proposed to reduce the extent and significance of impacts to ecological values, including the implementation of construction and operational management plans to address impacts that otherwise may not be avoidable or sufficiently minimised through the project design phase. To comply with federal and state legislation, management plans will be prepared to manage and monitor the impact of the proposal on threatened species. Following detailed design and prior to construction, a Vegetation and Fauna Management Plan will be prepared. A Bird and Bat Management Plan will also be prepared prior to operation. Preliminary (draft) plans have been included within the attached ecological assessment report

(17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5).

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 company directors of Orange Creek Energy Pty Ltd have a combined experience of over 35 years in similar projects and have no adverse environmental record in any jurisdiction.

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?

Yes

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

Orange Creek Energy Pty Ltd is a special project company for this Project and currently has no environmental policy and planning framework. However, it has committed to a Construction Management Plan (attached as file name 60571538_Banana_Range_Wind_Farm_CMP_Rev_3_R), together with a suite of management plans and protocols outlined in the Ecological Assessment report (file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5) to manage the environmental impact of the construction and operation of the wind farm.

The construction of the Banana Range Wind Farm will be undertaken by a contractor with a proven track record in environmental performance on similar projects. As part of the selection process for the site contractor, the contractors will be required to provide the details of their corporation's environmental policy and environment management system.

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
Banana Range Wind Farm Ecological Assessment prepared by NGH Environmental 2019. Attached as file name 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1 through to Part5	High	Flora and fauna surveys have been undertaken by suitably qualified personnel. There are always some uncertainties with ecological survey, with survey limitations presented in the report.
Construction Management Plan prepared by AECOM. Attached as file name 60571538_Banana_Range_Wind_Farm_CMP_Rev_3_R	High	The construction management plan has been completed by suitably qualified personnel within AECOM.

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 'do nothing' option would result in a significant clean energy resource not being developed and the failure to deliver the project benefits outlined above.

Alternative site locations

In 2016 Lacour Energy, the owner of Orange Creek Energy, identified that the recent advances in modern wind turbine technology meant that wind farms were a more viable proposition in locations which were not traditionally known as "windy". At this time Queensland only had one operating wind farm, of 12 MW capacity at Windy Hill, compared to a combined total of over 3000 MW of installed capacity in the southern states. Lacour then undertook an extensive wind resource and constraints mapping exercise covering the entire state of Queensland. The study assessed a number of important factors for wind farm development including:

Wind resource potential based on regional wind mapping to select potential sites that may have economic wind resource.

Proximity to existing electricity network infrastructure to reduce the connection cost of any potential site and reduce the impact of additional long-distance high voltage powerlines.

Local land use with areas of existing

Grazing activities in predominantly cleared or Least Concern Vegetation, to avoid impacts as far as possible on more sensitive areas

Outside of National Parks, State Forest and other protected areas

Distance from local communities to minimise impacts on any community with State Code 23

Land tenure targeting Freehold Land to simplify the ability of Host Landowners to make decisions to become involved.

The study identified that there are very limited places where there is sufficient wind resource, close to the power network and in cleared land. Most of these locations are either very small in area making them less economic, or close to remote communities and houses. The small number of wind farms that have already been consented and constructed in Queensland represent those limited opportunities for a project located in cleared land that can both minimise impacts on community and be economic. Lacour Energy recognised that most wind farm projects close to the network in areas of economic wind resource and away from community may be in areas with Regulated Vegetation.

As a result of the state-wide study, the Banana Range Wind Farm site was identified as a potential wind farm site which was not under development at the time (i.e. the Coopers Gap and Mt Emerald sites were already under development by other companies).

The key advantage that the Banana Range project has as a potential wind farm site is that it is located on the Powerlink high voltage transmission network. This very close proximity to the network means the saving of tens of millions of dollars can be achieved in network connection costs when compared to other projects.

Once the Banana Range site was identified, Lacour began a process of engaging with the local landowners to gauge their interest, installing initial wind monitoring equipment and undertaking a desktop analysis of the potential environmental impact. The desktop environmental study, completed in 2016, showed that the vast majority of the site was either cleared or vegetation of 'Least Concern' and that there were no records of threatened flora or fauna on the site. On this basis the site was deemed to be an appropriate site for wind farm development, subject to actual site surveys conducted during the feasibility assessment.

Once Banana Range Wind Farm was selected, wet and dry season surveys were undertaken to identify the potential environmental impacts of a wind farm. Following the results of these field surveys, a decision has been made to seek approval to develop this wind farm.

Technology alternatives

Due to the good wind resource on top of the Banana Range, this site is more suited to wind energy development. Therefore, the focus is for the wind farm development with energy storage.

Size of proposal

The project has been scaled so that it can be economic to connect into the existing Powerlink network to produce the lowest cost of renewable electricity.

Preferred option

The preferred option is a large-scale wind farm consisting of up to 51 wind turbines and associated infrastructure located on land which is predominantly either cleared or classified as vegetation of least concern. The project, as outlined, will deliver significant benefits for the local region and the State of Queensland.

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

Director

9.2.2 First Name

James

9.2.3 Last Name

Townsend

9.2.4 E-mail

james@lacour.com.au

9.2.5 Postal Address

PO Box 7533

Cloisters Square

Perth WA 6850

Australia

9.2.6 ABN/ACN

ABN

41615593998 - ORANGE CREEK ENERGY PTY LTD

9.2.7 Organisation Telephone

(08) 9321 6632

9.2.8 Organisation E-mail

james@lacour.com.au

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

Small business

9.2.9.1 You must provide the Date/Income Year that you became a small business entity:

Thu, 10/27/2016

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: 23/08/19

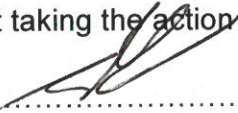
9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

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, JAMES TOWNSEND, 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: 23/08/19

I, JAMES TOWNSEND, the person proposing the action, consent to the designation of ORANGE CREEK ENERGY PTY LTD as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:  Date: 23/08/19

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Director

9.5.2 First Name

James

9.5.3 Last Name

Townsend

9.5.4 E-mail

james@lacour.com.au

9.5.5 Postal Address

PO Box 7533

Cloisters Square
Perth WA 6850
Australia

9.5.6 ABN/ACN

ABN

41615593998 - ORANGE CREEK ENERGY PTY LTD

9.5.7 Organisation Telephone

(08) 9321 6632

9.5.8 Organisation E-mail

james@lacour.com.au

Proposed designated proponent - Declaration

I, JAMES TOWNSEND, 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: 23/08/19

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Director

9.8.2 First Name

James

9.8.3 Last Name

Townsend

9.8.4 E-mail

james@lacour.com.au

9.8.5 Postal Address

PO Box 7533

Cloisters Square
Perth WA 6850
Australia

9.8.6 ABN/ACN

ABN

41615593998 - ORANGE CREEK ENERGY PTY LTD

9.8.7 Organisation Telephone

(08) 9321 6632

9.8.8 Organisation E-mail

james@lacour.com.au

Referring Party - Declaration

I, JAMES TOWNSEND, 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: 23/08/19

Appendix A - Attachments

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

1. 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part1.pdf
2. 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part2.pdf
3. 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part3.pdf
4. 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part4.pdf
5. 17_036_Banana_Range_WF_Eco_Assessment_EPBC_V7_1_Part5.pdf
6. 190715EPBCShapeFiles.zip
7. 60571538_Banana_Range_Wind_Farm_CMP_Rev_3_R.pdf