



Biala Wind Farm Biodiversity Management Plan

Final

Newtricity Developments Biala Pty Ltd

Revised March 2020

0422199

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Environmental Resources Management Australia Pty Ltd

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ABBREVIATIONS AND DEFINITIONS

ACHMP	Aboriginal Cultural Heritage Management Plan
BBAMP	Operational Bird and Bat Adaptive Management Plan
BC Act	Biodiversity Conservation Act 2016
BCD	Biodiversity and Conservation Division (BCD) of the Department of Planning, Industry and Environment (DPIE)
Biodiversity Management Zone	<p>a contiguous area adjacent to identified biodiversity values that are important for protecting the integrity of the ecological community/habitat feature. The purpose of the management zone is to minimise this risk by guiding land managers and contractors to be aware that the ecological community/habitat feature is nearby. These mapped areas identify that additional mitigation, management and reporting requirements are applicable. These management zones include:</p> <ul style="list-style-type: none"> • 30m around all woodland/forest and open woodland habitats • 50m around all areas of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland • 20m around mapped hollow bearing trees • 20m around mapped clusters of rock • 20m either side of Wattle Creek & the tributary to Biala Creek.
BJCE	Beijing Jingneng Clean Energy (Australia) Pty Ltd
BMP	Biodiversity Management Plan
Buffer Zone	<p>The Project includes a buffer distance of 350m to the large stick nest and 50m to all known hollow bearing trees. WTG cannot be micro-sited within these buffer zones.</p> <p><i>These buffer zones are separate to the biodiversity management zones. T21 has already been approved within 50m of a HBT - none of the remaining WTG can be micro-sited within these mapped buffer zones.</i></p>
CoC	Conditions of Consent including any subsequent modifications
CM	Construction Manager
Developments Biala	Newtricity Developments Biala Pty Ltd
DP&E	former Department of Planning and Environment
DPI	Department of Primary Industries (DPI) is part of the Department of Planning, Industry and Environment. (DPIE)
DPIE	Department Planning, Industry and Environment
EIA	Ecological Impact Assessment
EIS	Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1979
ERM	Environmental Resources Management Australia Pty Ltd
ha	Hectare
HBT	Hollow-bearing Tree
LGA	Local Government Area
LLS	South East Local Land Services
m	Metre

Micro-siting	Minor relocation of the WTG in the field based on site-specific requirements provided that the revised location would not result in any non-compliance with the CoC and is not located greater than 100m from the approved location as shown in Appendix 2 of the CoC.
NP&W Act	National Parks and Wildlife Act 1974
OEH	former NSW Office of Environment and Heritage
PA	Project Area
PAC	Planning Assessment Commission
PCT	Plant Community Types
PM	Project Manager
Project	the construction and operation of the wind farm and ancillary infrastructure
RFS	Rural Fire Service (NSW)
SoC	Statement of Commitments
SSD	<p>‘State significant development’ (SSD) requires development consent from the Minister for Planning and Public Spaces, their delegate or the Planning Assessment Commission (PAC) under Division 4.1 of Part 4 of the Environmental Planning and Assessment Act 1979. Involves the preparation of an Environmental Impact Statement (EIS).</p> <p>Development consent (SSD 6039) for the Project was granted by the Planning Assessment Commission on 12 April 2017. SSD6039 was modified in October 2018 to allow for the installation and operation of an additional wind monitoring mast (Mod 1) and again in January 2020 to allow for minor modifications to the internal electrical reticulation network (Mod 2).</p>
TEC	Threatened Ecological Community (includes Endangered Ecological Communities)
TMP	Traffic Management Plan
TSC Act	Threatened Species Conservation Act 1995 (repealed)
TGW	Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland.
VIS	NSW Vegetation Information System
WTGs	Wind turbine generators

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INTRODUCTION

Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Newtricity Developments Biala Pty Ltd (Developments Biala) to prepare a Biodiversity Management Plan (BMP) for the Biala Wind Farm Project. Developments Biala was acquired by a subsidiary of Beijing Jingneng Clean Energy Company Limited (BJCE) in September 2017. BJCE owns the Biala Wind Farm through its ownership of Developments Biala.

Developments Biala received planning approval for the Project by the NSW Planning and Assessment Commission (PAC), subject to Conditions of Consent (CoC), for the construction and operation of a wind farm and ancillary infrastructure in April 2017 (the Project). SSD6039 was modified in October 2018 to allow for the installation and operation of an additional wind monitoring mast (Mod 1) and again in January 2020 to allow for minor modifications to the internal electrical reticulation network (Mod 2).

The Project is located near the locality of Biala in the Southern Tablelands region of New South Wales (NSW). The Project is located approximately 14.5 km south-west of Crookwell and 8.5 km east of Biala and is wholly contained within the Upper Lachlan Local Government Area (LGA).

The Project covers approximately 1,936 hectares (ha), on which Wind Turbine Generators (WTGs), an electrical reticulation network, access roads and ancillary structures will be located (hereafter referred to as the Project Area). Biala Wind Farm is a State Significant Development (SSD) that represents an important contribution to renewable energy generation in NSW.

The development consent for the wind farm does not include the infrastructure required to connect to the electricity network. A Development Application was submitted to Upper Lachlan Shire Council in November 2017 for an underground 33kV transmission line connection to the existing Gullen Range Wind and Solar Farm substation. Development consent DA 122/2017 was granted on 17 January 2019 by the Southern Regional Planning Panel.

The Environmental Impact Statement (EIS) (ERM 2015) and associated Ecological Impact Assessment (EIA) (ERM 2015b) prepared by ERM for Developments Biala summarised the key findings of the ecological assessment and the potential impacts of the construction and operation of the Project on biodiversity.

The EIA identified the potential for impacts on biodiversity during construction and operational phases, associated primarily with impacts to habitat, vegetation clearance, disturbance to fauna behaviour and mortality of fauna due to (WTG) collision, barotrauma and vehicle strike.

The ecological surveys undertaken as part of the EIA were used to inform the removal and/or siting of WTGs and infrastructure to take into account site-specific environmental issues and minimise biodiversity impacts. This approach resulted in a number of adjustments at several locations across the Project Area. Micro-sitings for WTGs and associated infrastructure are generally carried out to avoid areas of remnant woodland vegetation and riparian habitat.

This BMP has been developed for the Project to guide the ongoing management of environmental impacts during the detailed design and construction. As detailed in the EIA, avoidance measures have been applied in the first instance to minimise ecological impacts wherever possible. Where avoidance has been deemed unfeasible, management and mitigation measures have been implemented to minimise potential ecological impacts.

Within 2 years of the commencement of construction, any residual unavoidable impacts to biodiversity within the Project Area i.e. vegetation clearing, will be offset in accordance the NSW Biodiversity Offsets Scheme noting that credits created under that *Threatened Species Act* will taken to be “biodiversity credits” under the *Biodiversity Conservation Act* by virtue of clause 22 of the *Biodiversity Conservation (Savings and Transitional) Regulation 2017*.

This BMP should be reviewed annually and revised as necessary. All revisions should be progressively submitted to DPIE. *Section 6.2* provides the relevant triggers for updating the BMP.

1.1 OBJECTIVE

The key objectives of this BMP include the following:

- ensure that any impacts to biodiversity are avoided wherever feasible, or when unfeasible minimised to the most practicable extent allowable within the scope of the development and as defined within the CoC;
- provide spatial and descriptive guidance on the avoidance of impacts on biodiversity and instruction for effective management and mitigation of potential impacts;
- ensure adequate controls and procedures are implemented during construction and operational phase to minimise potential adverse impacts to biodiversity within and adjacent to the Project Area; and
- ensure all controls and procedures are consistent with the environmental management measures detailed in the EIS Statement of Commitments (SoCs) and CoC and all relevant legislation and other requirements as described in *Section 2* of this BMP.

1.2

SCOPE

This BMP identifies the required environmental management actions to ensure Developments Biala personnel and contractors implement the following environmental management measures:

- minimise the amount of native vegetation clearing within the approved development footprint;
- minimise the loss of key fauna habitat, including tree hollows and termite mounds;
- minimise impacts on fauna, including undertaking pre-clearance surveys;
- rehabilitate and revegetate temporary disturbance areas;
- protect native vegetation and key fauna habitat outside the approved disturbance area;
- maximise the salvage of habitat resources within the approved disturbance area – including vegetative and soil resources – for beneficial reuse (including fauna habitat enhancement) during the rehabilitation and revegetation of the site;
- collect and propagate native seed (where relevant);
- ensure that feral pests are not introduced or encouraged within the project area as result of the project activities;
- potential for erosion and sedimentation as result of the project activities is managed and mitigated; and
- bushfire management.

The BMP also includes a detailed program to monitor and report on the effectiveness of each of these measures

1.3

CONTEXT

This BMP forms part of the Biala Wind Farm Environmental Management Strategy (EMS) and should be read in conjunction with the associated Management Plans and Procedures which are sub-plans under the EMS.

This BMP has been prepared to address the requirements of the following:

- New South Wales (NSW) Planning Assessment Commissions consolidated CoC (as modified). Refer to Table 2.2.
- Mitigation and management measures listed in the EIS SoC (ERM 2015b). Refer to Table 2.3.
- All applicable legislation, during the construction of the project. Refer to Section 2.1.

The Project consists of the following components:

- 31 WTGs with a maximum tip height of 185 m above ground level and hardstand areas for use as crane pads and assembly areas;
- central electrical substation / switchyard building including transformers, switchgear, insulators and other ancillary equipment;
- a permanent operations and maintenance building;
- meteorological monitoring masts;
- underground 33 kV electrical reticulation and fibre optic cabling connecting the WTGs to the on-site substation; and
- an internal private access road network connecting the WTGs and other proposed infrastructure to the public road network.

The following elements would also be required during construction of the Project:

- temporary concrete batching plant;
- earthworks (i.e. digging, stripping, grading and landform shaping) for access roads, WTG platforms and foundations;
- external water supply for concrete batching and construction activities;
- cleared hardstand areas for construction equipment and storage (construction laydown areas);
- temporary site offices, storage and car parking facilities; and
- the use and storage of hazardous substances within designated site facilities.

Since Project approval, the Project layout has been updated to optimise the wind resource. Micro-siting of the WTGs has been undertaken in accordance with Schedule 2, Condition 7 (refer to *Section 2.2*). *Figure 1.1* details the 'best-case' infrastructure layout of the Project as of 10 March 2020.

The detailed design of the above infrastructure and final layout plans (the final design) would be determined via onsite visits by Developments Biala and contractors. The final design would be prepared according to the environmental management measures detailed within this BMP and will be submitted to DPIE.

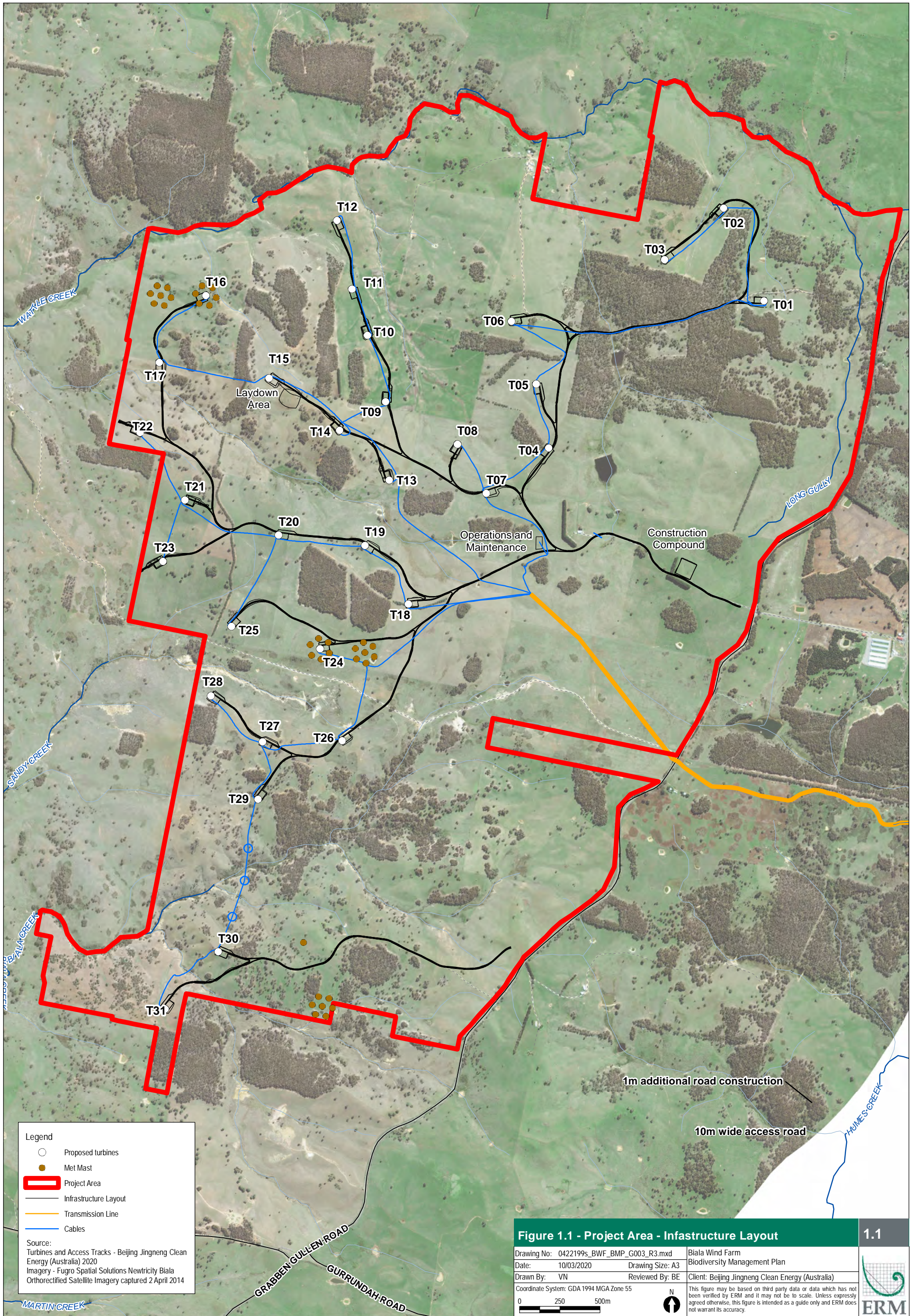
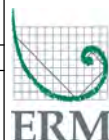


Figure 1.1 - Project Area - Infrastructure Layout

1.1

Drawing No: 0422199s_BWF_BMP_G003_R3.mxd	Biala Wind Farm
Date: 10/03/2020	Biodiversity Management Plan
Drawn By: VN	Reviewed By: BE
Client: Beijing Jingneng Clean Energy (Australia)	
Coordinate System: GDA 1994 MGA Zone 55	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.

0 250 500m



This BMP forms part of the environmental management framework for the Project which includes a number of other Management Plans governed by the EMS, and required under Schedule 3 of the CoC. These sub-plans include an Operational Bird and Bat Adaptive Management Plan (BBAMP), Aboriginal Cultural Heritage Management Plan (ACHMP) and Traffic Management Plan (TMP).

Environmental compliance is the responsibility of all Project and site personnel. For clarity and effective co-ordination, specific roles and responsibilities for environmental performance and compliance during the construction and operation stages are detailed in the EMS.

Key aspects of correspondence and guidance sought by Developments Biala from relevant stakeholders during the preparation of this BMP are summarised below.

Correspondence between the Department of Planning, Industry and Environment (then known as the Department of Planning and Environment) and Developments Biala relevant to the preparation of this BMP has included the following key points:

- the detailed design would be determined via onsite visits by Developments Biala and its contractors, including the final layout of turbine locations and all ancillary infrastructure including electricity transmission lines, internal roads, crane hardstands and permanent office compounds,
- the preparation of the BMP for the Project Area would be guided by the micro-siting restrictions (Conditions 3 and 4) and use the 'best-case' WTG micro-siting layout and updated layouts of access tracks; and
- if the engineering and construction contractors determine that the final design is unfeasible e.g. crane hardstands are on too steep ground, then the adjustment of infrastructure would be undertaken according to the BMP to avoid impacts to biodiversity within the Project Area.

1.6.2

Biodiversity and Conservation Division (BCD)

An initial meeting was held on the 17 January 2017 between ERM and the BCD (at the time known as the Office of Environment and Heritage). Employees of BCD in attendance included members of the planning and approval department and designated ecological experts.

A draft copy of the BMP was submitted to the Secretary of the DPIE (at the time known as Department of Planning and Environment) for referral to BCD on 16/02/2018. BCD provided formal comments and suggested amendments to the draft management plan on 16 March 2018. A copy of all correspondence has been provided in Annex B and has been taken into consideration during the preparation of this management plan. *Table 1.1* below identifies how each of the BCD comments have been addressed within the management plan.

Table 1.1 *BCD Comments of the Draft BMP, March 2018*

Reference	BCD Comment	Addressed
General	The relocation of six turbines closer to ecological constraints since project approval is inconsistent with the Conditions of Consent and BCD (at the time referred to as OEH) advice. Doing so substantially increases blade-strike risks to birds and bats some species of which are listed as threatened. BCD uses a standard formula of 50m from blade-tip to habitat feature to estimate appropriate buffer distances, and this generally requires turbine set-back of 75-100m from important habitat such as this.	<p>The relocation of these turbines has been undertaken based on a complex series of design requirements and is not inconsistent with the CoC in terms of biodiversity impacts as they have not been moved within 350m of the large stick nest, or within 50m of a mapped hollow bearing tree.</p> <p>The relocation of the turbines within 50m of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland and all other woodland habitats will trigger additional management, mitigation and reporting requirements (as they are located within the identified biodiversity management zone) and is consistent with the CoC.</p> <p>ERM acknowledges the recommended measurement from blade tip to habitat feature, however in this instance all measurements are from the turbine base and are consistent with the CoC.</p>
General	The small size of buffers proposed around sensitive ecological areas should be increased.	<p>In accordance with CoC, the Project includes a buffer distance of 350m to the large stick nest and 50m to all known hollow bearing trees. WTG cannot be micro-sited within these buffer zones.</p> <p>These buffer zones are separate to the biodiversity management zones which have been expanded to include:</p> <ul style="list-style-type: none"> • 30m around all woodland/forest and open woodland habitats • 50m around all areas of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland • 20m around hollow bearing trees

Reference	BCD Comment	Addressed
		<ul style="list-style-type: none"> • 20m around mapped clusters of rock • 20m either side of Wattle Creek & the tributary to Biala Creek. <p>These zones are not intended to restrict all development activity, rather they aim to clearly identify that additional biodiversity mitigation, management and reporting requirements are applicable.</p>
General	Additional information on how cleared significant habitat features will be rehabilitated should be provided.	<p>Measures to minimise and mitigate the loss of key fauna habitat are provided in <i>Table 5.3</i>.</p> <p>Measures to rehabilitate and revegetate temporary disturbance areas including the recreation of rock clusters is provided in <i>Table 5.5G</i>.</p>
Section 2.3	<p><i>SOC C-if clearing of hollow-bearing trees is unavoidable, removed hollows would be replaced with artificial shelter prior to felling"</i></p> <p>It is preferable to use hollow sections of cut trees if possible. Artificial nest boxes are not an adequate mitigation for removal of hollow-bearing trees and that they should also be offset. Alternatives to the use of artificial nest boxes should be explored and discussed with BCD.</p>	<p>Refer to <i>Table 5.3E and 5.3F</i></p> <p>Where possible, works would avoid any impact to mature trees. Unidentified hollow-bearing trees or tree limbs containing natural hollows that cannot be avoided through micro-siting of WTG and/or revised access track design should be relocated and restored for use by fauna in the nearest adjacent area of similar habitat. Only where natural hollows cannot be salvaged or arboreal fauna is being relocated have artificial nest boxes been presented as a mitigation measure. Alternatives to nest boxes may also be explored as a long-term mitigation for the removal of HBT.</p>
Section 4.1	BCD recommend against the rehabilitation of areas under turbines as suggested in Figure 3.1. All disturbance in these areas should be calculated as permanent unless adequate justification can be provided.	<p>Refer to <i>Table 5.5C</i></p> <p>Phase two revegetation works (infill planting with tubestock) will not be undertaken beneath turbines and within the laydown areas (a concentric circle of 0.32 ha around the 'crane hardstand and WTG foundation's permanent footprint). Where groundcover vegetation existed prior to disturbance these areas will be stabilised via hydroseeding/hydromulching only. Bird and bat habitat is not encouraged within these areas to reduce the risk of WTG collision.</p> <p><i>This does not change the calculations of temporary and permeant impact.</i></p>
Section 4.1	Construction and operation impacts should also include fauna mortality due to collision with turbines or infrastructure, not just vehicle strike.	<p>Refer to <i>Section 4.1</i></p> <p>Amended to include fauna mortality due to collision with turbines or infrastructure.</p>

Reference	BCD Comment	Addressed
Table 4.2	BCD advises that the likelihood of collisions of wildlife with operating machinery and plant is certain, not possible. The consequence is moderate. This makes the risk high. BCD requests that ERM define the controls that will be in place to reduce the high risk of collision to low.	The likelihood of collisions of wildlife with operating machinery and plant has been increased as recommended by BCD. Controls that will be in place to reduce the high risk of collision to low have been provided in <i>Table 5.4G</i> .
Table 5.1a	The compliance indicator should be that buffers and sensitive areas are mapped on the ecological constraints map, and these areas are protected from construction impacts.	Amended. Refer to <i>Table 5.1a</i> .
Table 5.1a	Ecological justification for the size of the buffers needs to be provided.	<p>In accordance with CoC, the Project includes a buffer distance of 350m to the large stick nest and 50m to all known hollow bearing trees. WTG cannot be micro-sited within these buffer zones.</p> <p>These buffer zones are separate to the biodiversity management zones which have been expanded to include:</p> <ul style="list-style-type: none"> • 30m around all woodland/forest and open woodland habitats; • 50m around all areas of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland; • 20m around mapped hollow bearing trees; • 20m around mapped clusters of rock; and • 20m either side of Wattle Creek & the tributary to Biala Creek. <p>These zones are not intended to restrict all development activity, rather they aim to clearly identify that additional mitigation, management and reporting requirements are applicable.</p>
Table 5.1a	What is the purpose of a buffer if construction can occur within it?	<p>The management plan has been updated to include and more clearly define:</p> <ol style="list-style-type: none"> 1. buffer zones of 350m to the large stick nest and 50m to all known hollow bearing trees. WTG cannot be micro-sited within these buffer zones ; and 2. Biodiversity Management Zones.

Reference	BCD Comment	Addressed
Table 5.1a	CoC state turbines should be 50m from HBT (this should be from turbine blade tip to HBT). We advise that 50m should be the width of buffers around HBT for all construction	In accordance with CoC, the Project includes a buffer distance of 50m to all known hollow bearing trees, measured from the turbine base. This requirement reduces the risk of bird and bat strike and is applicable to turbines only. The biodiversity management zone also provides a distance of 20m to all hollow bearing trees and triggers additional mitigation, management and reporting requirements for all other forms of construction including access tracks.
Table 5.1a	50m is not an adequate buffer for a large stick nest. This should be increased to 350m from turbines to be consistent with CoC, and 100m from other construction.	Buffer distances for the large stick nest have been increased to 350m from WTG in accordance with the CoC. The 30m wide biodiversity management zone to areas of woodland also provide a 100m wide biodiversity zone around the identified nest. <i>Refer to Table 5.1a and Annex B.</i>
Table 5.2d	Stockpiling should not occur in areas of high biodiversity or heritage value.	Amended. Refer to <i>Table 5.2d</i> .
Table 5.3a	As much as is practicable is a vague commitment and its performance cannot be measured. Further detail on how disturbance/clearing of these significant features will be rehabilitated is required.	Refer to <i>Table 5.3A</i> . 'as much as is practicable' has been deleted. Further detail on how significant habitat features will be rehabilitated is provided in Table 5.3F (salvage hollows and woody debris) and Table 5.5G (create rock clusters).
Table 5.3b	<i>If the construction activity is found to require removal of an ecologically constrained area or intersect through a sensitive area an ecologist would be engaged to inspect the demarcated disturbance footprint for any new habitat features unidentified on the ecological constraints map.</i> This action appears to be inconsistent with CoC 18, which clearly states that no more than 1.05 ha of EEC can be cleared, and impacts on, and clearing of, key habitat must be minimised.	Refer to <i>Table 5.2A and 5.3B</i> No more than 1.23 ha of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland will be cleared and the action is consistent with the CoC as modified.
Table 5.3d	Significant clusters of rock and termite mounds - the preparation of the clearance methodology should be undertaken in consultation with BCD.	<i>Refer to Table 5.3d</i> Termite mounds would be inspected for vertebrate burrows. If it is unclear if vertebrate fauna occupy the termite mounds dismantling should occur by hand.

Reference	BCD Comment	Addressed
	BCD is not aware of a methodology to relocate termite mounds. More information on the vertebrates expected to be using the termite mounds is required. If there is concern for Rosenbergs Monitor then clearing can only be undertaken during December and January and the mounds need to be checked for Rosenbergs eggs before clearing.	A review of Rosenberg's Goanna records from the Atlas of Living Australia identified the smallest isolated patch of habitat with a recent (post-1980) record of the species was 800 ha in size. Woodland and forest in the PA is highly fragmented and there are no nearby large expanses of woodland providing preferred or connecting habitat. No mapped termite mounds will be impacted by the Project and reference to the relocation of termite mounds has been removed.
Table 5.3f	Artificial nest boxes are not an adequate long term mitigation for removal of HBT. The loss of HBT should be offset with vegetation that contains hollows. Alternatives to nest boxes should be explored and discussed with BCD.	<i>Refer to Table 5.3e and 5.3f</i> Where possible, works would avoid any impact to mature trees. Unidentified hollow-bearing trees or tree limbs containing natural hollows that cannot be avoided through micro-siting of WTG and/or revised access track design should be relocated and restored for use by fauna in the nearest adjacent area of similar habitat. Only where natural hollows cannot be salvaged or arboreal fauna is being relocated have artificial nest boxes been presented as a mitigation measure. Alternatives to nest boxes may also be explored as a long term mitigation for the removal of HBT.
Table 5.4b	Nocturnal hollow dwelling fauna will be inhabiting hollows during daylight hours. Clearing of hollow bearing trees should therefore occur after dark when possible.	The clearing of hollow bearing trees after dark is not supported in this instance and would not be consistent within the CoC in regards to hours of construction and noise restrictions. Construction would be limited to daylight hours, where possible, to avoid disturbance to nocturnal fauna. If construction outside of daylight hours is required, lights should be shielded to direct lighting away from fauna habitat.
Table 5.4e	Ramps should be placed into excavation so fauna can escape	<i>Refer to Table 5.4e.</i> Ramps at an angle of no greater than 1 in 3 incline will be placed in all open excavations to allow any fauna to escape.
Table 5.5c	Revegetation of EEC or woodland using only native grasses is not considered revegetation.	<i>Refer to Table 5.5c.</i> Native grasses will be used within the Phase One of the revegetation as a component of the hydroseeding mixture. Phase two of the revegetation consists of infill planting of tubestock. Species selection and planting density of tubestock would be designed, with input from a suitably qualified ecologist, to be representative of adjacent vegetation communities, including the identified Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland and other woodland habitats.

1.6.3 *Department of Primary Industries (DPI)*

Guidance was sought during the detailed design of the Project from DPI to ensure that all required stream and river crossings within the Project Area are constructed according to relevant DPI guidelines and would support pre-development flows.

1.6.4 *South East Local Land Services (LLS)*

Guidance would be sought from LLS during the construction phase of the Project for matters concerning noxious weeds and revegetation of the Project Area.

1.6.5 *Rural Fire Service (RFS)*

Guidance would be sought from the local RFS during the detailed design and construction phase of the Project to ensure that the potential for bushfire events within the Project Area is minimised to the most practicable extent. Refer to the Bushfire Response Map for further information (*EMS Annex J*).

2.1

STATUTORY APPROVALS

Biala Wind Farm was determined as an SSD in accordance with Clause 20, Schedule 1 of the *State Environmental Planning Policy (State and Regional Development) 2011* and assessed under Part 4 of the *NSW Environmental Planning and Assessment Act 1979* (EP&A Act). The EP&A Act integrates the planning and assessment regime that requires approval from the Minister for Planning and Public Spaces, and incorporates approvals and authorisation required under other NSW legislation.

A summary of legislative requirements and associated approvals, permits and licences that relate to the Project is provided below.

Table 2.1 *Summary of relevant legislation requirements*

Legislation	Description	Application to the Project
Commonwealth		
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	The EPBC Act provides for the Commonwealth assessment and approval of projects that have a significant impact on 'matters of national environmental significance'.	An EPBC referral was made in respect of the Project and confirmed on 6 May 2015 that the Biala Wind Farm is "Not a Controlled Action" and hence no Commonwealth approval in accordance with the EPBC Act is required.
New South Wales		
<i>Environmental Planning and Assessment Act 1979</i>	The relevant planning legislation for NSW is the EP&A Act. The EP&A Act institutes the system of environmental planning and assessment in NSW and is administered by the NSW Department of Planning, Industry and Environment (DPIE).	The Project was declared a SSD in accordance with Clause 20, Schedule 1 the <i>State Environmental Planning Policy (State and Regional Development) 2011</i> . Development consent (SSD 6039) for the Project was granted by the Planning Assessment Commission on 12 April 2017. SSD6039 was modified in October 2018 to allow for the installation and operation of an additional wind monitoring mast (Mod 1) and again in January 2020 to allow for minor modifications to the internal electrical reticulation network (Mod 2).
<i>Threatened Species Conservation Act 1995</i>	The Threatened Species Conservation Act 1995 (TSC Act) establishes the mechanisms for: <ul style="list-style-type: none"> the management and protection of listed threatened species of native flora and fauna (excluding fish and marine vegetation); 	The <i>Threatened Species Conservation Act 1995</i> (TSC Act) was repealed on the 25 August 2017 with the establishment of the <i>Biodiversity Conservation Act</i> (2016) (BC Act) and the amended <i>Local Land Services Act</i> (2013) (LLS Act).

Legislation	Description	Application to the Project
	<ul style="list-style-type: none"> management and regulation of actions that may damage critical or other habitat or otherwise significantly affect threatened species, populations; and ecological communities. 	
<i>Threatened Species Conservation (Biodiversity Banking) Regulation 2008</i>	The Biodiversity Banking Scheme (BioBanking) is a voluntary scheme established under Part 7A of the TSC Act in 2008 and supported by the Threatened Species Conservation (Biodiversity Banking) Regulation 2008. BioBanking enables development proponents to offset the residual impacts of their proposed project by purchasing and retiring BioBanking Credits from a BioBank Site.	<p><i>The Threatened Species Conservation (Biodiversity Banking) Regulation 2008</i> was repealed on the 25 August 2017 with the establishment of the BC Act.</p> <p>A standalone Biodiversity Offsets Strategy would be prepared by the Proponent detailing the strategy as to how sufficient offsets would be acquired for the clearing of vegetation within the Project Area according to the requirements set out in the CoC (as modified) noting that credits created under that <i>Threatened Species Act</i> are taken to be “biodiversity credits” under the <i>Biodiversity Conservation Act</i> by virtue of clause 22 of the <i>Biodiversity Conservation (Savings and Transitional) Regulation 2017</i>.</p>
<i>NSW Biodiversity Offsets Policy For Major Projects</i>	The NSW Biodiversity Offset Policy for Major Projects outlines a standardised method for assessing impacts of major projects and determining offset requirements.	<p>The <i>NSW Biodiversity Offsets Policy For Major Projects</i> was repealed on the 25 August 2017 with the establishment of the BC Act and the BAM methodology</p> <p>A standalone Biodiversity Offsets Strategy would be prepared by the Proponent detailing a strategy on how they would determine the biodiversity credits required for the Project under new legislation.</p>
<i>Biosecurity Act 2015</i>	Identifies, classifies and guides the control of noxious weeds in NSW. The Act defines the roles of government, councils, private landholders and public authorities in the management of noxious weeds. It also determines control actions for the various noxious weeds, according to their potential to cause harm to our local environment.	Noxious weeds, where identified on site, must be prevented from spreading and their numbers and distribution reduced. The BMP identifies a range of avoidance, management and mitigation measures to control noxious weeds.
<i>Native Vegetation Act 2003</i>	The <i>Native Vegetation Act 2003</i> (NV Act) aims to provide flexibility and incentives to manage native vegetation, and broadscale clearing (unless it improves or maintains environmental outcomes) and encourage healthy and productive landscapes.	<p>Clause 12 of the NV Act states: <i>Native vegetation must not be cleared except in accordance with:</i> <i>(a) a development consent granted in accordance with this Act</i></p>

Legislation	Description	Application to the Project
		<p>Development consent in accordance with the NV Act has been provided for the Project. A number of CoC have also been set out to regulate and minimise the amount of native vegetation clearing for the Project. This BMP identifies a range of avoidance, management and mitigation measures to minimise the amount of vegetation clearance within the Project Area.</p> <p>Note: The NV Act was repealed on the 25 August 2017 with the establishment of the BC Act and the amended LLS Act.</p>
<i>Fisheries Management Act 1994</i>	The <i>Fisheries Management Act 1994</i> provides for the conservation, protection and management of fisheries, aquatic systems and habitats in NSW. Similar to the TSC Act, the Fisheries Management Act 1994 lists threatened species, populations and ecological communities of fish and marine vegetation.	<p>The Project is exempt from the regulations of this Act under Section 89J(1) of the EP&A Act.</p> <p>This BMP identifies best practice DPI guidelines to utilize in relation to potential creek/river crossings within the Project Area.</p>
<i>Biodiversity Conservation Act 2016</i>	<p>The NSW legislation regarding biodiversity transitioned on 25 August 2017 with the commencement of the BC Act. The BC Act is now required to be considered regarding biodiversity impact assessment for future development applications. Similar to the TSC Act the BC Act establishes mechanisms for:</p> <ul style="list-style-type: none"> • the management and protection of listed threatened species of native flora and fauna (excluding fish and marine vegetation); • management and regulation of actions that may damage critical or other habitat or otherwise significantly affect threatened species, populations; and ecological communities. 	This BMP has been prepared with consideration of the BC Act 2016.
<i>Local Land Services Act 2013</i>	The NSW legislation regarding regulation of native vegetation clearing, within land that has been zoned Rural, transitioned on 25 August 2017 with the commencement of the amended LLS Act.	This BMP has been prepared with consideration of the BC Act 2016 and the LLS Act.

Legislation	Description	Application to the Project
	The purpose of the Act includes the establishment of a Native Vegetation Panel responsible for approving native vegetation clearing that does not require development consent, or assessment under Part 5 of the EP&A Act.	
<i>Upper Lachlan Local Environmental Plan 2010</i>	<p>The Project Area is mapped as Sensitive Land on the Natural Resources Sensitivity – Biodiversity Map of the <i>Upper Lachlan Local Environmental Plan 2010</i>. With regard to Sensitive Land, the Plan requires the consent authority to consider any adverse impact from proposed developments on:</p> <ul style="list-style-type: none"> • a native ecological community; • the habitat of any threatened species, populations or ecological community; • a regionally significant species of fauna and flora or habitat; and • a habitat element providing connectivity. 	<p>Development consent must not be granted for development on Sensitive Land unless the consent authority is satisfied that:</p> <ul style="list-style-type: none"> • the development is designed, sited and will be managed to avoid any adverse environmental impact; • if that impact cannot be avoided – the development is designed, sited and will be managed to minimise that impact; and • if that impact cannot be minimised – the development will be managed to mitigate that impact. <p>Approval has been granted pending compliance of the Project with CoC issued by the PAC.</p>
Guidelines		
<p>NSW Department of Primary Industries – Water guidelines,</p> <ul style="list-style-type: none"> • <i>Policy and Guidelines for Fish Friendly Waterway Crossings</i> (DPI 2004) and, • <i>Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> (Fairfull and Witheridge, 2003). 	The listed documents prepared by DPI aim to minimise impacts on fish passage and general aquatic wildlife by providing practical guidelines to those involved in the planning, design, construction and maintenance of waterway crossings.	Despite the Project being exempt from the <i>Fisheries Management Act</i> the Proponent would correspond with DPI concerning river/stream crossings within the Project Area and would construct crossings according to best practice DPI guidelines.
<i>DPI Guidelines on noxious weeds</i>	DPI provides within its website WeedWise (DPI 2020) best practice methods to reduce the impact of weeds, methods of control of weeds and identifies the duty of control according to the <i>Biosecurity Act 2015</i> .	All environmental management measures detailed within this BMP, relevant to the control of noxious weeds, would be conducted according to the methods within the WeedWise website (DPI 2020).
<i>NSW Rural Fire Services – Planning for Bushfire Protection</i> (NSW RFS 2006)	The listed document prepared by NSW RFS provide guidance on the methods for responsible planning and development control relating to the protection of life, property and the environment.	All environmental management measures detailed within this BMP, relevant to the minimisation and control of bushfire events, would be conducted according to <i>Planning for Bushfire Protection</i> (NSW RFS 2019).

Legislation	Description	Application to the Project
<i>Landcom – Soils and Construction ‘Blue Book’</i> (Landcom 2004)	The listed document prepared by Landcom provides guidance on the mitigation of land disturbance impact activities on soils, landforms and receiving waters by focussing on erosion and sediment controls.	All construction activities for the Project that require ground disturbance (i.e. clearing and excavation) would be undertaken according to the control methods detailed within the <i>Soils and Construction ‘Blue Book’</i> (Landcom 2004).

2.2

CONDITIONS OF CONSENT

CoC Schedule 3, Condition 20 (b) details environmental management measures to be included within this BMP. There are a number of other CoC which detail specific requirements for mitigation and management measures relating to biodiversity impacts. The requirements of these CoC have been provided within *Table 2.2*

Table 2.2 *Relevant conditions of consent*

Aspect	CoC Reference	Requirement	Where Addressed in the BMP
Micro-siting Restrictions	Schedule 2 7(b)	The Applicant may micro-site the wind turbines without further approval, provided wind turbine T29 is moved at least 350 metres from the wedge-tailed eagle nest and if practicable, over 500 metres from this nest.	Refer to <i>Figure 3.2</i> for location of the known habitat features and <i>Annex B</i> for location of all buffer zones
	Schedule 2 7(d)	The Applicant may micro-site the wind turbines without further approval, provided the revised location of a wind turbine is at least 50 metres from existing hollow-bearing trees; or where the proposed turbine location is already within 50 metres of existing hollow-bearing trees, the revised location of the turbine is not moved any closer to the existing hollow-bearing trees.	Refer <i>Figure 3.2</i> for location of the known hollow-bearing trees and <i>Annex B</i> for location of all buffer zones
Lighting (Bat Deterrence)	Schedule 3 7(d)	The Applicant must ensure that all external lighting associated with the development (apart from any aviation hazard lighting) uses best management practice for bat deterrence.	Refer BBAMP
Restrictions on Clearing and Habitat	Schedule 3 18(a)	The Applicant must ensure that no more than 1.23 hectares of the Tablelands Snow Gum, Black Salee, Candlebark and Ribbon Gum Grassy Woodland TEC is cleared for the development, unless the Secretary agrees otherwise.	Refer to <i>Table 5.2</i>

Aspect	CoC Reference	Requirement	Where Addressed in the BMP
	Schedule 3 18 (b)	The Applicant must minimise the impacts of the development on hollow-bearing trees and termite mounds.	Refer to <i>Table 5.1 & Table 5.3</i>
	Schedule 3 18(b)	The Applicant must minimise the impacts of the development on threatened bird and bat populations.	Refer to <i>Table 5.4 & BBAMP</i>
	Schedule 3 18 (b)	The Applicant must minimise the clearing of native vegetation and key habitat within the approved disturbance footprint.	Refer to <i>Table 5.1, Table 5.2 & Table 5.3</i>
Biodiversity Offset	Schedule 3 19	Within 2 years of the commencement of construction, the Applicant must retire biodiversity credits of a number and class specified in Table 3 below, to the satisfaction of BCD, unless the Secretary agrees otherwise.	Refer to standalone Biodiversity Offsets Package
	Schedule 3 19	<p>The retirement of the credits must be carried out in accordance with the NSW Biodiversity Offsets Scheme, and can be achieved by:</p> <p>(a) acquiring or retiring 'biodiversity credits' within the meaning of the BC Act;</p> <p>(b) making payments into an offset fund that has been established by the NSW Government; or</p> <p>(c) providing suitable supplementary measures.</p> <p><i>Note: Following repeal of the TSC Act on 25 August 2017, credits created under that Act are taken to be "biodiversity credits" under the BC Act by virtue of clause 22 of the Biodiversity Conservation (Savings and Transitional) Regulation 2017.</i></p>	Refer to standalone Biodiversity Offsets Package
Biodiversity Management Plan	Schedule 3 20 (a)	Prior to the commencement of construction, the Applicant must prepare a Biodiversity Management Plan for the development to the satisfaction of the Secretary. This plan must be prepared in consultation with BCD.	Refer to <i>Section 1.6</i>
	Schedule 3 20(b)	The Biodiversity Management Plan must include updated baseline mapping of the vegetation communities and key fauna habitat on site.	Refer to <i>Section 3, Figure 1.1, Figure 3.1 Figure 3.2, Table 5.1 & Annex B</i>

Aspect	CoC Reference	Requirement	Where Addressed in the BMP
	Schedule 3 20(b)	The Biodiversity Management Plan must include a description of the measures that would be implemented for: - minimising the amount of native vegetation clearing within the approved development footprint;	Refer to <i>Table 5.2</i>
		- minimising the loss of key fauna habitat, including tree hollows and termite mounds;	Refer to <i>Table 5.3</i>
		- minimising the impacts on fauna on site, including undertaking pre-clearance surveys;	Refer to <i>Table 5.4</i>
		- rehabilitating and revegetating temporary disturbance areas	Refer to <i>Table 5.5</i>
		- protecting native vegetation and key fauna habitat outside the approved disturbance area;	Refer to <i>Table 5.6</i>
		- maximising the salvage of resources within the approved disturbance area - including vegetative and soil resources - for beneficial reuse (including fauna habitat enhancement) during the rehabilitation and revegetation of the site;	Refer to <i>Table 5.3</i>
		- collecting and propagating seed (where relevant);	Refer to <i>Table 5.5</i>
		- controlling weeds and feral pests;	Refer to <i>Table 5.7</i>
		- controlling erosion;	Refer to <i>Table 5.8 & Table 5.9</i>
		- bushfire management.	Refer to <i>Table 5.9</i>
	Schedule 3 20(b)	The Biodiversity Management Plan must include a detailed program to monitor and report on the effectiveness of these measures.	Refer to <i>Section 6</i>

2.3

STATEMENT OF COMMITMENTS

The EIS for the Project identified a number of potential methods for ameliorating minor biodiversity impacts that may potentially occur within the construction and operational phases of the Project. The SoCs stated within the EIS relating to biodiversity management are provided within *Table 2.3*.

Table 2.3 ERM EIS Statement of Commitments

Aspect	Statement of Commitments Reference	Statement of Commitment
Clearing of Native Vegetation	SoC A	Vegetation clearing areas would be clearly delineated and marked on construction plans and in the field prior to clearing.
Clearing of Native Vegetation	SoC B	Pre-clearance surveys, marking the extent of clearing and micro-siting of laydown areas and access roads would be undertaken in consultation with a qualified ecologist in the vicinity of the EEC and DNG, Woodland/Forest and Open Woodland habitats. Micro-siting would avoid disturbance to the EEC, any identified threatened flora and hollow-bearing trees where possible.
Habitat Loss / Fragmentation / Degradation	SoC C	<ul style="list-style-type: none"> • Micro-siting of laydown areas and access roads would be undertaken in consultation with a qualified ecologist in the vicinity of DNG, Woodland/Forest and Open Woodland habitats. Micro-siting would avoid any identified threatened flora and hollow-bearing trees where possible. • Clearing would be undertaken sequentially to allow fauna time to move away. If possible, clearing would be staged to direct fauna toward areas of suitable habitat. • If clearing of hollow-bearing trees is unavoidable, removed hollows would be replaced with artificial shelter prior to felling. • Habitat features such as coarse woody debris (diameter >10 cm) and large surface rocks would be relocated from the clearing area to adjacent habitat in consultation with landowners. • Measures to reduce fauna mortality on access roads within the project area would be developed and implemented, including enforcing vehicle speed limits according to habitat value and road condition, and installing signage advising of high activity wildlife areas. • Unsealed access roads and construction areas to be regularly watered to limit dust generation, particularly in windy conditions. • Imported soil and rubble would be certified as free of weeds and weed seeds. • All construction staff and sub-contractors would be educated on noxious weeds within the project area and appropriate ways to prevent the spread of weeds.
Habitat Degradation	SoC D	<p><i>Vehicle movement</i></p> <ul style="list-style-type: none"> • Vehicles movement would be restricted to designated access roads and reduced speed limits. <p><i>Dust suppression</i></p> <ul style="list-style-type: none"> • Unsealed access roads and construction areas to be regularly watered to limit dust generation, particularly in windy conditions. <p><i>Water contamination</i></p>

Aspect	Statement of Commitments Reference	Statement of Commitment
		<ul style="list-style-type: none"> Hazardous materials would be stored in areas specifically designed for containment, in accordance with regulatory requirements and Australian Standard AS1940. Spill response procedures would be developed. <p><i>Weed control</i></p> <ul style="list-style-type: none"> Imported soil and rubble would be certified as free of weeds and weed seeds. Where a specific weed risk has been identified within the disturbance footprint, all machinery, equipment and vehicles are to be washed down before entry and egress of the Project Area. All construction staff and sub-contractors would be educated on noxious weeds within the project area and ways to prevent the spread of weeds. <p><i>Erosion and sediment control</i></p> <ul style="list-style-type: none"> All erosion and sedimentation control devices would be regularly checked, cleared, and repaired; especially prior to and after periods of heavy rainfall. Stockpiles would be covered to prevent the loss of material during high wind and rainfall events, and appropriate sediment barrier fencing would be used in areas to inhibit the flow of sediment into surrounding areas. Stockpile locations would consider shelter from the wind where practical. Soil stockpiles would be located at least 50 m away from watercourses. Soil that has been sourced from areas with a high cover of non-native species would be stockpiled at least 50 m from areas of native vegetation. <p><i>Revegetation and rehabilitation</i></p> <ul style="list-style-type: none"> Disturbed soil surfaces would be stabilised as soon as practical after works have ceased in the area. Topsoil recovery would be undertaken in areas that have a high proportion of native vegetation and few weeds in the ground layer of vegetation. This topsoil would be reintroduced into disturbed areas. Control of perennial weed grasses within the Temporary Development Footprint for three to five years after construction where practical, and in consultation with host landowners, stock access would be managed during revegetation. <p><i>Watercourses</i></p> <ul style="list-style-type: none"> Watercourse crossings would be designed and constructed in a way that maintains pre-development flows.
Disturbance to fauna during construction	SoC E	<p>Construction should be limited to daylight hours, where possible, to avoid disturbance to nocturnal fauna.</p> <p>If construction outside of daylight hours is required, lights should be shielded to direct lighting away from fauna habitat.</p>

Aspect	Statement of Commitments Reference	Statement of Commitment
Mortality due to vehicle strike	SoC F	Measures to reduce fauna mortality on roads within the project area would be developed and implemented, including enforcing vehicle speed limits according to habitat value and road condition, and installing signage advising of high activity wildlife areas.
Fauna mortality during clearing	SoC G	<ul style="list-style-type: none"> Clearing would be undertaken sequentially to allow fauna time to move away from the site prior to clearing. If possible, clearing would be staged to direct fauna toward areas of suitable habitat. Fauna spotters would be employed to survey clearing areas immediately prior to clearing. If fauna are identified in the proposed clearing area, operations in the area would cease until the fauna has moved to a safe location. Construction would utilise a 'soft felling' technique in which trees are nudged by machinery, and fauna given time to leave, before slowly felling the tree; Felled trees would be left overnight or inspected by the fauna spotter/environmental officer prior to further processing. Where excavation is required, fauna fencing would be installed to prevent fauna falling into cavities, and open excavations would be regularly checked by the fauna spotter. All personnel would report any injured fauna to the fauna spotter/environmental officer.
Mortality due to WTG collision barotrauma	SoC H	<p>A Bird and Bat Monitoring Plan would be developed with the objective of minimising the impacts of the operational wind farm on threatened bird and bat species. The Bird and Bat Monitoring Plan would outline:</p> <ul style="list-style-type: none"> the required monitoring techniques and frequency; strike rate thresholds and corrective actions to be implemented when thresholds are reached; requirements for reporting to State and Commonwealth agencies; roles and responsibilities for the Proponent, operator and agencies; and an evaluation and adaptive management framework to provide for the incorporation of new information obtained through the monitoring program or relevant external research. <p>Other likely management actions may include prompt removal of stock carcasses near WTGs and no lambing near WTGs. The plan would be developed in consultation with NSW DPIE and BCD and in consideration of the monitoring guidelines provided by the Australian Wind Energy Association (Brett Lane & Associates 2005).</p>

The Project Area is located in an agricultural landscape with sheep and cattle grazing as the dominant surrounding land use. It is not located within the vicinity of any large wetlands, rivers or Important Bird Areas, and the nearest major watercourse is located approximately 17 km away.

Vegetation within the Project Area includes pasture with isolated trees and scattered woodland patches. Built structures include homesteads and associated buildings and unsealed access roads. The vegetation types, vegetation configuration and built structures within the Project Area are typical of the surrounding landscape. Woodland has poor connectivity, and the nearest large extent of woodland is approximately 17 km to the east.

The methodology used to identify Plant Community Types (PCT), key fauna habitat and to determine the likely occurrence of threatened ecological communities, flora and fauna is detailed within the EIA (ERM 2015b).

3.1

VEGETATION COMMUNITIES

The vegetation of the Project Area is typical of an agricultural landscape of the Southern Tablelands region of NSW. Generally, the vegetation is a combination of grasslands (both native and non-native pastures) with isolated, scattered patches (or 'islands') of woodland. The Project Area is comprised of 24.5% native vegetation types and 75.5% non-native vegetation types and other land cover.

Based on qualitative field observations and detailed floristic surveys, undertaken during the EIA fieldwork, native vegetation across the Project Area was categorised into PCT according to the NSW Vegetation Information System (VIS).

A qualitative site survey was conducted by an ERM ecologist over three days in December 2017 to confirm that vegetation and habitat mapping undertaken to inform the EIA still reflected the current state of the vegetation and biodiversity values of the Project Area.

Three PCTs were identified across the Project Area, which are listed within *Table 3.1*. This table also details where PCTs correspond with threatened ecological communities (TECs) listed under the BC Act and EPBC Act.

Table 3.1 *Vegetation communities within the project area*

PCT ID	PCT Name	Correspondent TEC (BC Act)*	Correspondent TEC (EPBC Act)
351	Brittle Gum – Board-leaved Peppermint – Red Stringy open forest in the north-western part (Yass to Orange) of South Eastern Highlands Bioregion	-	-
1097	Ribbon Gum – Narrow-leaved Peppermint grassy open forest on basalt plateaux, Sydney Basin Bioregion and South Eastern Highlands Bioregion	* see note below	-
1100	Ribbon Gum – Snow Gum grassy forest on damp flats, eastern South-Eastern Highlands Bioregion	* see note below	-

Note: PCT 1097 and PCT 1100 are reported as being consistent with Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland and at the time of the project approval, was listed as a TEC listed under the TSC Act. This ecological community does not currently appear on Schedule 2 of the BC Act (accessed 11 March 2020) although in line with CoC and SoC, the project will continue to manage biodiversity in line with the existing project commitments.

PCTs within the Project Area were further categorised into ‘vegetation zones’. Vegetation zones are defined in the BioBanking Assessment Methodology (BBAM) (2014) as a relatively homogenous area of native vegetation that is the same PCT and broad condition state. Primary and Secondary condition classes were assigned to each patch of PCT occurring in the Project Area.

The ‘primary condition class’ of a PCT is a dichotomy prescribed in the BBAM that requires all native vegetation on a site to be classed as either ‘low condition’ or ‘moderate condition’.

‘Low condition’ is defined as:

Woody native vegetation with native overstorey percent foliage cover less than 25% of the lower value of the over-storey percent foliage cover benchmark for that vegetation type, and where either:

- *Less than 50% of ground cover vegetation is indigenous species, or*
- *More than 90% of ground cover vegetation is cleared;*

and in native grassland where either,

- *less than 50% of ground cover vegetation is indigenous species; or*
- *More than 90% of groundcover vegetation is cleared*

‘Moderate to good condition’ native vegetation is defined as:

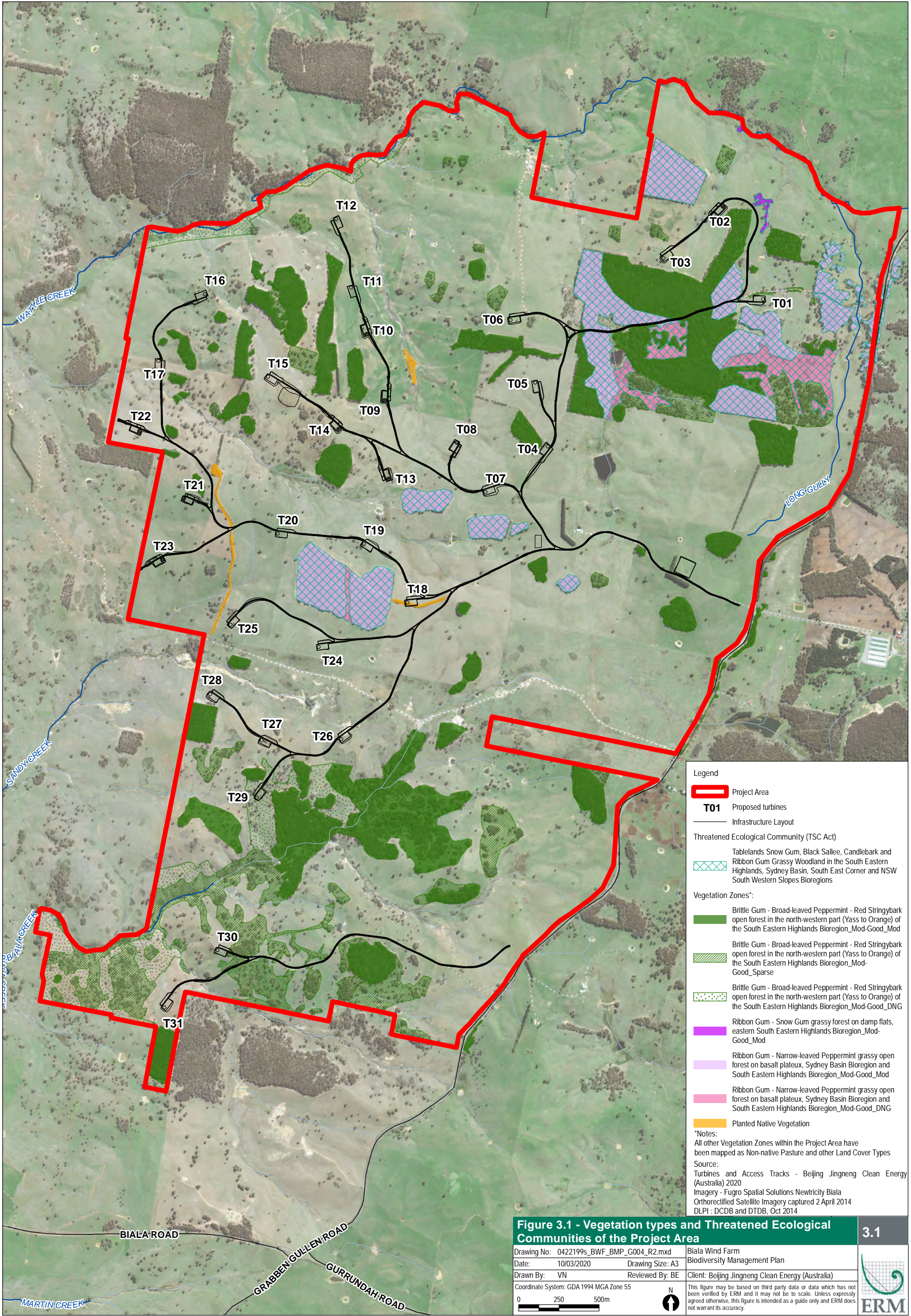
Native vegetation that is not in low condition and is in moderate to good condition

A Secondary condition class was defined for vegetation zones within the Project Area to further refine and identify differences in floristic assemblage that could not be defined within primary condition classes. The additional vegetation zones were assigned to 'Planted Native Vegetation' and 'Non-native Pasture'. This resulted in a total of three PCTs and seven vegetation zones within the Project Area.

Table 3.2 gives a summary of the condition classes present within the Project Area and their definitions. Figure 3.1 details the PCTs and associated vegetation zones present within the Project Area.

Table 3.2 **Condition Class Definitions**

Primary_Secondary Condition Class	Detail
Mod-Good_Mod	Mostly intact upper canopy, some clearance, lower storey disturbed
Mod-Good_Sparse	Sparse tree layer, partially-mostly cleared vegetation (although still >25% of the upper storey lower benchmark cover value; & >50% native understorey cover)
Mod-good_Derived Native Grassland	Derived native grassland - very cleared (<25% of the upper storey lower benchmark cover value, but still >50% native understorey cover)
1. Note that the references to 'benchmark' values are those within the NSW VIS database regarding data on the floristic and structural characteristics of each PCT.	



Habitat across the Project Area was categorised into six overarching habitat types:

- pasture (75%);
- woodland/ forest (15%);
- open woodland (5%);
- derived native grassland (4%);
- dams (<1%); and
- watercourses (<1%).

The Project Area also has a high density of hollow-bearing trees, with an average of 0.3 hollows per hectare. The majority of the hollows found to be present were in the woodland/forest habitat type, which had a density of 1.7 hollows per hectare.

In addition, a number of nest building woodland birds were encountered across the Project Area, these birds may utilize the canopy of mature trees as a breeding resource during specific seasons. One wedge-tailed eagle nest was recorded during field surveys for the EIA in 2013, this has been observed to be actively used for breeding. No wedge-tailed eagle individuals were observed within the vicinity of the nest during the recent fieldwork conducted by ERM in December 2017.

Termite mounds, a potential refuge and breeding resource for burrowing reptiles, were observed to occur across the Project Area with the highest density of mounds being present within a large patch of woodland/forest type habitat within the north east of the Project Area.

Rocky habitats within the Project Area were limited to:

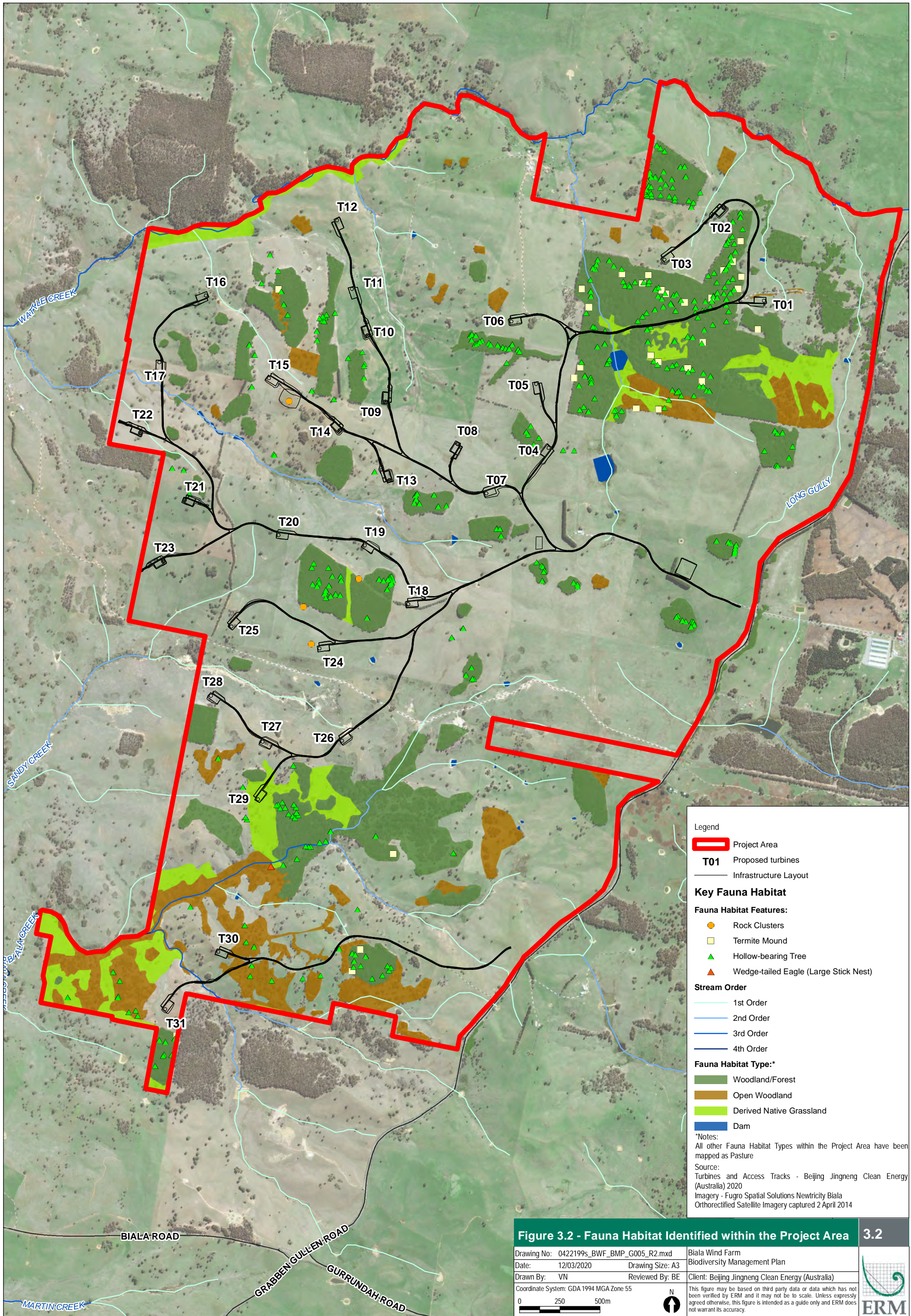
- a basalt knoll in the north;
- a rock pile among short pasture in the centre; and
- two small rock patches among short grass on the edge of a patch open forest.

Approximately 20 non-perennial first-order watercourses occur within the Project Area. These exist within broad open depressions mostly without incised channels or defined beds or banks; and are for the most part stable and well vegetated with pasture grasses. The majority of the watercourses within the Project Area were assessed as part of the EIA as being unlikely to provide habitat for fish and other aquatic fauna and have only been considered in the remainder of the BMP for the design of river crossings.

Two more substantial watercourses occur within the Project Area: Wattle Creek on the northern boundary; and a tributary to Biala Creek located within woodland in the south. Both of these creeks were assessed as representing a higher quality habitat for aquatic fauna and have been given further consideration in relation to environmental management measures within this BMP.

Further updates to the fauna habitat map would be conducted for the Operational BBAMP. This would focus on nest site and other habitat resources for at-risk bird and bat species. The BBAMP is currently being prepared in accordance with CoC Schedule 3, Condition 21 and would be approved by the Secretary prior to the commissioning of any wind turbines. The BBAMP would be developed in consultation with the BCD and form part of the Project EMS.

The location of all habitat types and habitat features within the Project Area is displayed within *Figure 3.2*.



3.3

THREATENED ECOLOGICAL COMMUNITIES

The Project Area contains no TECs currently listed under the EPBC Act or the BC Act.

88.12 ha of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland (TGW) has been recorded within the Project Area and at the time of the project approval, was listed as a TEC under the TSC Act. This ecological community does not currently appear on Schedule 2 of the BC Act (accessed 11 March 2020) although in line with the CoC and SoC, the project will continue to manage biodiversity in line with the existing project commitments.

Two of the Vegetation Zones within the Project Area form part of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland (refer *Table 3.1*) as shown in *Figure 3.1*.

Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland occurs in 37 discrete, isolated patches within the Project Area, ranging in size from less than 1 ha to 18 ha per patch. Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland also occurs in five very small (less than 0.10 ha) patches near the northern eastern corner of the Project Area.

3.4

THREATENED FLORA

A total of 156 flora species were identified during the surveys of the Project Area (ERM 2015b), 123 (79%) of which were native and 33 (21%) are introduced. No threatened flora species were identified within the Project Area during field surveys. However, four threatened flora species were assessed as having the potential to occur based on species distribution and habitat suitability within the Project Area. These species have been listed in *Table 3.3*.

Table 3.3 *Threatened flora with potential to occur within the Project Area*

Common name	Scientific Name	BC Act	EPBC Act
<i>Ammobium craspedioides</i>	Yass Daisy	V	V
<i>Diuris aequalis</i>	Doubletail Buttercup	E	V
<i>Leucochrysum albicans</i> <i>var. tricolor</i>	Hoary Sunray	-	E
<i>Thesium australe</i>	Austral Toadflax	V	V
Legend			
V = Vulnerable, E = Endangered			

Fauna field surveys recorded 120 species, including 115 native species and five non-native species, excluding domestic animals, within the Project Area (ERM 2015b).

The desktop review and field surveys undertaken to inform the EIA identified five bird species and two microbat species listed as threatened under the BC Act as occurring within the Project Area. A further 15 species were identified as having the potential to occur.

Table 3.4 *Threatened fauna known or with potential to occur within the Project Area*

Scientific Name	Common Name	BC Act	EPBC Act
Fauna known to occur			
<i>Daphoenositta chrysoptera</i>	Varied Sittella	V	
<i>Epthianura albifrons</i>	White-fronted Chat	V	
<i>Ninox strenua</i>	Powerful Owl	V	
<i>Oxyura australis</i>	Blue-billed Duck	V	
<i>Petroica boodang</i>	Scarlet Robin	V	
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	
<i>Miniopterus orianae oceanensis</i>	Eastern Bentwing-bat	V	
Fauna with potential to occur			
<i>Anthochaera phrygia</i>	Regent Honeyeater	CE	CE
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	
<i>Circus assimilis</i>	Spotted Harrier	V	
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	
<i>Grantiella picta</i>	Painted Honeyeater	V	V
<i>Hieraaetus morphnoides</i>	Little Eagle	V	
<i>Lathamus discolor</i>	Swift Parrot	E	CE
<i>Melanodryas cucullata cucullata</i>	Hooded Robin	V	
<i>Neophema pulchella</i>	Turquoise Parrot	V	
<i>Ninox connivens</i>	Barking Owl	V	
<i>Petroica phoenicea</i>	Flame Robin	V	
<i>Rostratula australis</i>	Australian Painted Snipe	E	E
<i>Stagonopleura guttata</i>	Diamond Firetail	V	
<i>Cercartetus nanus</i>	Eastern Pygmy Possum	V	
<i>Phascolarctos cinereus</i>	Koala	V	V
V = Vulnerable, E = Endangered CE = Critically Endangered			

The development footprint for the Project includes both permanent and temporary development footprints. These are summarised below:

Permanent Development Footprint as the area of land that would be subject to permanent alteration as a result of installation and operation of Project infrastructure. This covers 35.89 ha and is comprised of:

- access roads (generally 8 m wide including shoulders either side)¹;
- permanent operation and maintenance building
- other facilities including localised road widening and intersections;
- crane hardstand and WTG foundation (a rectangular area 0.32 ha including the WTG foundation and adjacent to each of the 31 WTG points); and

Temporary Development Footprint as the area of land that would be temporarily disturbed during construction of the Project and rehabilitated following construction. This covers 22.19 ha and is comprised of:

- access road construction (additional 1.75 m either side of the permanent access road);
- temporary site office and parking;
- underground 33 kV electrical cabling;
- crane hardstand and rotor assembly areas;
- concrete batching plant; and
- laydown areas including around the 'crane hardstand and WTG foundation's permanent footprint', and equipment laydown areas.

The anticipated worst-case development footprint for the Project is 58.08 ha, comprising approximately 3% of the total Project area. *Figure 1.1* details the anticipated development footprint within the Project Area.

Some localised sections of wider temporary disturbance may be required either side of the access road to reduce erosion effects, ensure adequate drainage on steep slopes and/or to support transportation of the WTG components. This localised widening is difficult to quantify although all reasonable efforts must be made to ensure that the average impact area for the access roads does not exceed 12m wide across the Project.

¹ Upgrading existing farm access roads have not been considered in the Permanent Development Footprint calculation if these areas are already disturbed.

Construction and Operational Impacts

The potential worst-case impacts from the Project on biodiversity during the construction and operation phases include the following:

- clearing of or where possible trimming of trees within native vegetation (construction phase);
- clearing of or where possible trimming of trees within Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland (construction phase);
- habitat loss, alienation, fragmentation and degradation within the project area and within adjacent areas (construction and operational phase);
- aquatic habitat loss or degradation within the Project Area and within adjacent areas (construction and operational phase);
- erosion and sedimentation impacts within the Project Area and within adjacent areas;
- fauna mortality due to vehicle strike (operation phases); and/or
- fauna mortality due to vehicle strike, clearing and excavation works (construction phase);
- fauna mortality due to collision with turbines or infrastructure (construction and operation); and
- modification of fire regimes within the Project Area.

The risks of these potential impacts occurring are discussed in further detail below.

4.2 BIODIVERSITY RISK ANALYSIS

Activities undertaken during the construction and operation of the Project have the potential to cause impacts on flora and fauna species and threatened ecological communities (biodiversity values) within the Project Area. In addition, construction activities can also modify habitat structure and function (habitat values) within the Project Area both directly and indirectly.

The risks that these activities pose to the biodiversity and habitat values that occur can be determined by considering the likelihood of potential impacts and their consequences as shown below in *Table 4.1*.

Construction and operational activities that may have an impact on biodiversity and habitat and their associated risk ratings are summarised in *Table 4.2*.

Table 4.1 **Risk Matrix**

		Impact ¹		
		Major	Moderate	Low
Likelihood ²	Certain	High	High	Moderate
	Possible	High	Moderate	Moderate
	Remote	Moderate	Moderate	Low
Legend <ul style="list-style-type: none"> • High: Potential for significant environmental consequences, regardless of the likelihood of occurrence; • Moderate: Potential for serious environmental consequences, but is unlikely to occur; or potential for moderate environmental consequences, but is likely to occur; and • Low: Potential for moderate environmental consequences, but is unlikely to occur; or potential for low environmental consequences, but is likely to occur. 				

Table 4.2 **Biodiversity impact analysis**

Activity	Potential Impact	Likelihood	Consequence	Risk (In absence of Controls)	Residual Risk with Controls
Clearing, pruning and grubbing	Habitat removal (native vegetation and mature/hollow-bearing trees)	Certain	Moderate	High	Low
	Habitat modification	Certain	Moderate	High	Low
	Degradation of adjacent areas of habitat	Remote	Moderate	Moderate	Low
	Noxious weed introduction and spread	Possible	Moderate	Moderate	Low
Excavation (for access tracks and pole footings)	Habitat removal (termite mounds and clusters of rock)	Possible	Moderate	Moderate	Low
	Habitat modification	Certain	Moderate	High	Low
	Erosion of disturbed areas and stockpiles	Possible	Moderate	Moderate	Low
	Dust generation	Possible	Low	Moderate	Low
	Noxious weed introduction and spread	Possible	Major	High	Low

Activity	Potential Impact	Likelihood	Consequence	Risk (In absence of Controls)	Residual Risk with Controls
	Trapping of fauna within excavation voids	Possible	Moderate	Moderate	Low
Installation and use of crossings over drainage lines	Sedimentation of waterways	Possible	Moderate	Moderate	Low
	Sedimentation of waterways outside of Project Area	Possible	Moderate	Moderate	Low
Operation of machinery and plant	Noise	Certain	Low	Moderate	Low
	Collisions with wildlife	Certain	Moderate	High	Low
Daily operation of Windfarm	Fire Events	Possible	Moderate	Moderate	Low
	Modifying fauna behaviour	Possible	Moderate	Moderate	Low
	Noxious weed introduction and spread	Possible	Major	High	Low

Activities with the highest risks are associated with habitat removal and modification, machinery and plant collisions with wildlife, and the introduction of noxious weeds to the Project Area. Generally, given the small scale of the works and discreet nature of the impacts, the environmental risks are considered to be moderate.

Identification of biodiversity management zone, implementation of controls to minimise impact to these areas and effective rehabilitation of temporarily disturbed areas are the primary issues for the Project and are treated in more detail below.

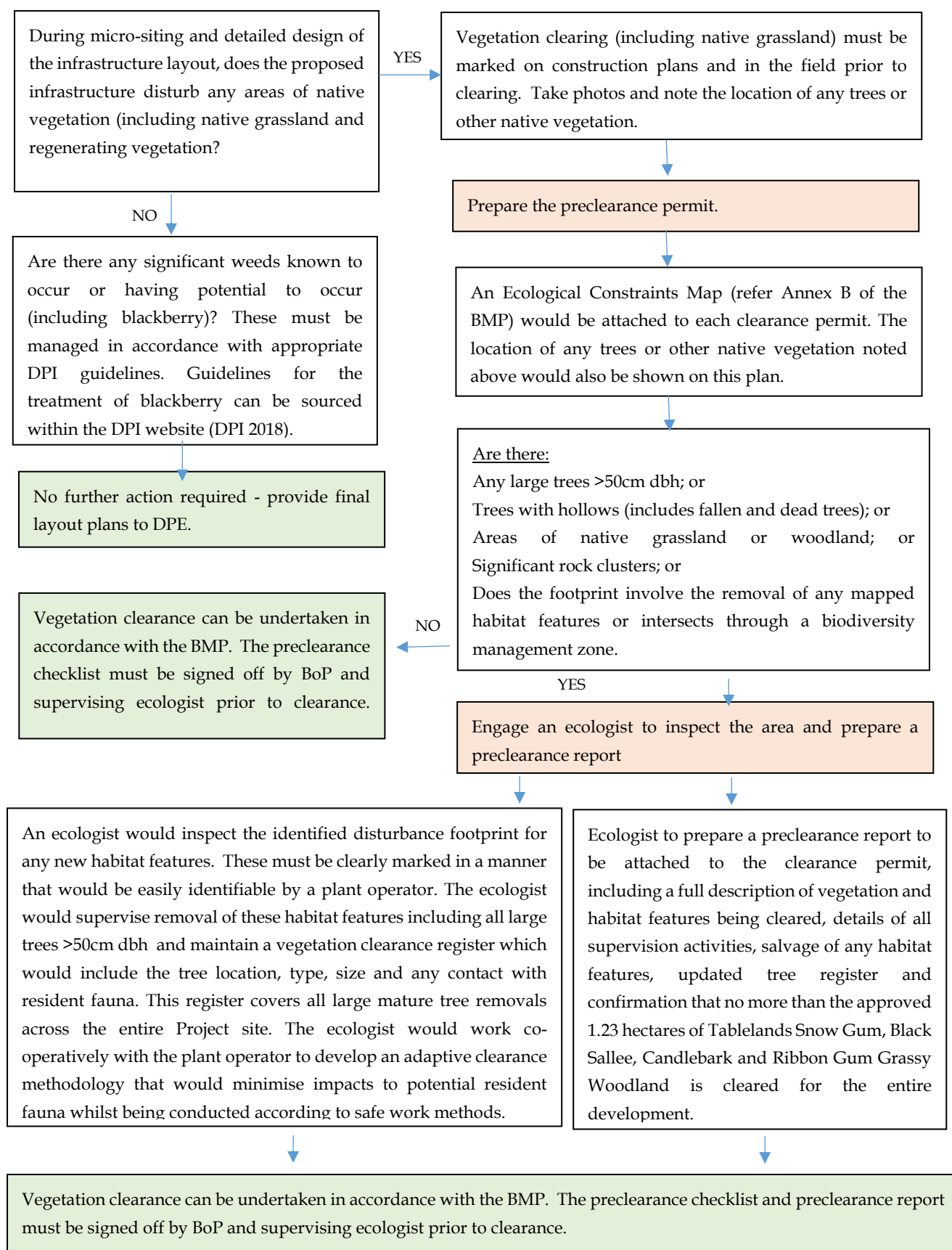
The following tables detail the environmental management and mitigation measures in accordance with the Project's CoC, SoC and decisions made in consultation with relevant government agencies, regulators and local landholders:

- *Table 5.1* - Ecological Constraints Mapping
- *Table 5.2* - Measures to minimise the amount of native vegetation clearing within the approved development footprint
- *Table 5.3* - Measures to minimise the loss of key fauna habitat
- *Table 5.4* - Measures to minimise the impacts on fauna on site
- *Table 5.5* - Measures to rehabilitate and revegetate temporary disturbance areas
- *Table 5.6* - Measures to protect native vegetation and key fauna habitat outside of the approved disturbance area
- *Table 5.7* - Measures to control weeds and feral pests
- *Table 5.8* - Measures to control erosion, water contamination and dust generation
- *Table 5.9* - Bushfire management measures

Each measure is characterised by a set of principles and associated actions which are required to be adhered to, and implemented by responsible Developments Biala personnel and contractors. Each principle has been provided with an identifier (ID), and cross references have been provided where specific actions apply to multiple principles.

A checklist for construction crews to complete prior to, during and after undertaking construction activities has been attached to *Annex A* of this BMP. This checklist provides key aspects to be included within a site-specific clearance permit and an example of how this clearance permit could be prepared. This is a checklist to be signed off by BoP and supervising ecologist, and provides a record of clearing undertaken. It is not required to be signed off by external approval authorities.

Figure 5.1 Process for micro-siting infrastructure and the preparation of a site-specific clearance permit



Note: All areas within the Project Area that have not been previously cleared, do not have an approved clearance permit and have not been demarcated would be treated as a 'no go zone' until the process described above has been followed to

An Ecological Constraints Map identifying areas of high biodiversity values, previously recorded TECs, habitat features and biodiversity management zones has been attached in *Annex B*. This map is referenced in the following tables and should be consulted before undertaking any action that may cause impact to biodiversity or habitat values.

Biodiversity Management Zones are a contiguous area adjacent to identified biodiversity values that are important for protecting the integrity of the ecological community/habitat feature. The purpose of the management zone is to minimise this risk by guiding land managers and contractors to be aware that the ecological community/habitat feature is nearby. An ecologist would be engaged to inspect the identified disturbance footprint (preclearance survey) for any new or additional habitat and would prepare a vegetation and habitat clearance report to be appended to the required clearance permit. The ecologist will also confirm that no more than the approved 1.23 hectares of the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the entire development.

The recommended management zone is 30 m from the outer edge of the native woodland/forest and open woodland habitats as this distance accounts for maximum possible influences upon the root zone. This zone has been increased to 50m for the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland. A distance of 20m has been identified around all other identified habitat features including hollow bearing trees, clusters of rock and either side of Wattle Creek & the tributary to Biala Creek.

Table 5.1 Ecological Constraints Mapping

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.1A	Define constraint areas	<p>The following areas will be clearly shown on the Ecological Constraints Map (<i>Annex B</i>) :</p> <p>Buffer Zone (WTG cannot be micro-sited within these buffer zones):</p> <ul style="list-style-type: none"> 350m to the large stick nest; and 50m to all known hollow bearing trees. <p>Biodiversity Management Zones (Construction may occur within these areas although additional mitigation, management and reporting requirements are applicable):</p> <ul style="list-style-type: none"> 30m around all woodland/forest and open woodland habitats 50m around all areas of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland 20m around mapped hollow bearing trees 20m around mapped clusters of rock 20m either side of Wattle Creek & the tributary to Biala Creek. 	<p>Buffers and Biodiversity Management Zones are mapped on the Ecological Constraints Map.</p> <p>These areas are managed in accordance with this BMP.</p> <p>No more than 1.23 hectares of Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the development.</p>	Detailed design phase	Balance of Plant (BoP) Contractor Project Manager (PM) and Compliance Manager (CM)	<p>Schedule 3 18(a), 18(b) 20(a) & 20(b)</p> <p>SoC A</p>
5.1B	Design to avoid constraint areas	<p>Project design, including micro-siting of WTGs, will be undertaken incorporating requirements from:</p> <ul style="list-style-type: none"> Principles 5.3A & 5.4A CoC & SOC and; with input from engaged ecologist and; correspondence with BCD, DPIE, DPI, landholders and other relevant stakeholders. 	Document how final infrastructure layout avoids constraint areas	Detailed design phase	BoP PM and CM	
5.1C	Manage activities to minimise impact to constraint areas	<p>Vegetation clearing areas will be delineated and marked on construction plans and in the field prior to clearing. As per Principle 5.3B & 5.4B.</p> <p>Construction activities within a biodiversity management zone will be conducted according to the relevant measures set out in Tables 5.3, 5.4 & 5.5.</p>	Construction plans and reporting by BoP CM	Construction phase	BoP PM and CM	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.1D	Constraint area communication	<p>Before any construction activities are undertaken, the development footprint, including all areas required to be cleared/ disturbed must first be clearly demarcated on the ground, in a manner that minimises soil disturbance (i.e. pegs, paint or flagging) and maintains a clear line of sight between each demarcation.</p> <p>The location and significance of all ecological constraints within the Project Area will be made known to all contractors and staff. Annotated site plans will be displayed in lunch room / site offices.</p> <p>Specific management measures required within identified Buffer Zones and Biodiversity Management Zones will be discussed in tool box talks and as part of all inductions.</p>	Presence of site plans and induction material	Construction and operation phase	BoP PM and CM	

Table 5.2 Measures to minimise the amount of native vegetation clearing within the approved development footprint

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.2A	Design to avoid vegetation clearing	<p>The final detailed design for the infrastructure layout will:</p> <ul style="list-style-type: none"> • prioritise, where feasible, the use of previously cleared or disturbed areas, • maximise, where feasible, the use of existing vehicle tracks or fence lines, • avoid constraint areas as much as possible; • prioritise the avoidance of TECs within the Project Area such that no more than 1.23 hectares of the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the development; and • minimise, as much as possible, the total length of access tracks. <p>A suitably qualified ecologist, with knowledge of the Project Area, will provide input in determining the best possible routing of access tracks and cables and micro-siting of WTGs that will minimise impact to constraint areas. Measures for minimising the amount of disturbance required for construction will continue to be adapted throughout the construction process.</p>	<p>Clear documentation of how final decisions for infrastructure layout design minimises vegetation clearance.</p> <p>No more than 1.23 hectares of the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the development.</p>	Detailed design phase	BoP PM and CM	<p>Schedule 3 18(a), 18 (b) & 20 (b)</p> <p>SoC A, B & C</p>

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.2B	Implement clearance permitting	A site specific clearance permit prepared by Developments Biala will be required prior to creating any disturbance within areas of the Project Area that have not been previously cleared/disturbed. This clearance permit must be submitted to the BoP PM or delegate for review and approval prior to clearing. Key aspects required for inclusion within the site-specific clearance permit have been provided in <i>Annex A</i> .	Copies of all clearance permits	Pre/during construction phase	BoP PM and CM	
5.2C	Demarcate disturbance zones	Methods for marking the extent of disturbance footprints will be undertaken as per Principle 5.4B.	See principle 5.4B	See principle 5.4B	See principle 5.4B	
5.2D	Minimise impacts from stockpiles	Materials lay down, stockpiling and the deposition and retrieval of spoil will use areas of existing disturbance wherever practical. Where placement within existing clearings is not feasible controls will be implemented as according to Principle 5.8C. Stockpiling must not occur in areas of high biodiversity or heritage value.	Reporting by BoP CM	Pre/during construction phase	BoP PM and CM	

Table 5.3 Measures to minimise the loss of key fauna habitat

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.3A	Design and construct to avoid loss of key fauna habitat	<p>As per Principle 5.1A, the final infrastructure layout will be designed to avoid ecological constraints. Where clearing of areas of ecological significance or key fauna habitat as identified in Annex B is required, it will be undertaken to avoid.</p> <ul style="list-style-type: none"> • mature trees, in particular hollow-bearing trees • significant fallen timber and clusters of rocks • termite mounds • native grassland • significant aquatic habitat <p>Any unavoidable disturbance to these areas will be rehabilitated and habitat resources will be salvaged.</p> <p>Note that WTG cannot be micro-sited within 350m of the large stick nest or 50m of hollow-bearing trees as outlined within Principal 5.1A.</p>	Clear documentation of how final decisions for the infrastructure layout design minimises loss of key fauna habitat	Pre- detailed design phase	BoP PM and CM	
5.3B	Pre-clearance Survey	<p>Prior to the construction phase, a clearance permit must be prepared by the BoP CM and engaged ecologist. Key requirements of the site-specific clearance permit have been attached in <i>Annex A</i>.</p> <p>Before any construction activities are undertaken, the development footprint, including all areas required to be cleared/ disturbed must first be clearly demarcated on the ground, in a manner that minimises soil disturbance (i.e. pegs, paint or flagging) and maintains a clear line of sight between each demarcation. Any large trees >50cm dbh; trees with hollows (includes fallen and dead trees); or areas of native grassland or woodland will need to be recorded on the clearance permit and an ecologist will be engaged to undertake a preclearance site inspection.</p> <p>An Ecological Constraints Map (<i>Annex B</i>) will be attached to each clearance permit. This map will be used to determine if the disturbance footprint involves the removal of any mapped habitat features or intersects through a biodiversity management zone.</p> <p>If the construction activity is found to intersect through a biodiversity management zone an ecologist will be engaged to inspect the identified disturbance footprint (preclearance survey) for any new habitat features unidentified on the ecological constraints map (i.e. unidentified hollow-bearing trees, newly constructed bird nests and termite mounds).</p>	Copies of all clearance permits & ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	<p>Schedule 3 18 (b), 20(b)</p> <p>SOC A, B, C, E & G</p>

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
		<p>The ecologist will confirm that no more than the approved 1.23 hectares of the Tablelands Snow Gum, Black Salee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the entire development.</p> <p>All habitat features that are likely to require removal will be clearly marked in a manner that will be easily identifiable by a plant operator.</p> <p><u>All areas within the Project Area that have not been previously cleared, do not have a signed clearance permit and have not been demarcated will be treated as a 'no go zone' until the clearing permit has been prepared and signed off by the BoP and Ecologist.</u></p> <p><u>A copy of the Clearance Permit and Ecological Constraints Map must be provided to the CM prior to commencement of clearance works.</u></p>				
5.3C	Protect streams and rivers	<p>Where crossings over a stream or river is required, the crossings must be designed and constructed in a way that maintains pre-development flows and is developed in accordance with relevant DPI guidelines:</p> <ul style="list-style-type: none"> • Water and DPI (Fisheries) guidelines, Policy and Guidelines for Fish Friendly Waterway Crossings (DPI 2004); and • Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (Fairfull and Witheridge, 2003). <p>Disturbance to watercourses and/or associated riparian vegetation must be rehabilitated to a standard equal to or better than the existing condition in consultation with the DPI - Water and DPI (Fisheries) within six months of the cessation of construction activities at the relevant area.</p>	<p>Clear documentation for compliance of design of river crossings with guidelines.</p> <p>Rehabilitation report prepared by BoP CM</p>	Detailed design phase and construction phase	BoP PM and CM	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.3D	Protect significant clusters of rock and termite mounds	<p>Where possible, works will avoid any impact to clusters of rock and termite mounds. Significant clusters of rock and termite mounds are shown in the Constraints Map (Annex B) although it is noted that additional habitat features may be encountered across the Project site during construction and must be managed in accordance with this BMP.</p> <p><i>Note: This management measure is aimed at avoidance of significant habitat features; it does not apply to isolated surface rocks that may be scattered across the Project site.</i></p> <p>Where unavoidable, works will minimise impacts to these habitat features as follows:</p> <ul style="list-style-type: none"> excavated soils will not be placed on top of these features; and no spoil (or other materials) will be stored upslope from these features. <p>A suitably qualified and experienced ecologist will be employed to supervise removal of these habitat features and work in conjunction with the plant operator. Both parties must work co-operatively to develop an adaptive clearance methodology that will minimise impacts to potential resident fauna whilst being conducted according to safe work methods. This methodology will include the following key aspects:</p> <ul style="list-style-type: none"> clusters of rock will be dismantled, where appropriate, by hand and with the aid of plant machinery; and termite mounds will be inspected for vertebrate burrows. If it is unclear if vertebrate fauna occupy the termite mounds dismantling must occur by hand. Any fauna found within these habitat features will be relocated to the nearest similar habitat feature. After determining that these habitat features are free of resident fauna, actions will be taken during clearance to relocate these features to the nearest adjacent area of similar habitat. If feasible, clusters of rock will be rebuilt to match the size and dimensions of the cluster disturbed. Rebuilding of rock clusters within areas of temporary disturbance will only occur if there is available space within the disturbance area and these features will not impede access or other operations within the Project Area. 	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.3E	Protect all mature trees & habitat bearing trees	<p>Where possible, works will avoid any impact to large mature trees across the Project site. For the purposes of this BMP, a mature tree is defined as being ≥ 50cm diameter at breast height (dbh) measured at 1.3m above the ground. This definition is based on the large tree benchmarks of the identified PCTs as listed in the OEH Biodiversity Assessment Methodology (2017). Where unavoidable, works must minimise impacts to mature tree, and any unidentified hollow-bearing trees as follows:</p> <ul style="list-style-type: none"> • Where a tree must be disturbed the priority will be given to pruning rather than clearing; and • The clearing of any trees must be undertaken in a manner that avoids damaging adjacent vegetation i.e. all trees will be felled into disturbed areas when feasible. <p>A suitably qualified and experienced ecologist will be engaged to supervise removal of all large trees > 50cm dbh and maintain a vegetation clearance register which will include the tree location, type, size and any contact with resident fauna. This register covers all large mature tree removals across the entire Project site.</p> <p>The supervising ecologist will work co-operatively with the plant operator to develop an adaptive clearance methodology that will minimise impacts to potential resident fauna whilst being conducted according to safe work methods.</p> <p>The adaptive clearance methodology will include the following key aspects:</p> <ul style="list-style-type: none"> • Construction will utilise a 'soft felling' technique in which trees are 'nudged' by machinery and fauna given time to leave (overnight), before slowly felling the tree the following day; • If fauna is identified within the proposed clearing area prior to clearing, or after 'nudging' the tree, operations will cease until the fauna has moved to a safe location. If fauna flee into a habitat tree demarcated for removal this tree will also be nudged and left to fell until the following day; and • All hollow logs and felled trees will be inspected by the ecologist before relocation into areas of similar adjacent habitat. 	Ecologist report of clearance activities & vegetation register	Construction phase	BoP PM, CM and engaged ecologist	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
		<p>All habitat tree felling activities and results will be reported by the supervising ecologist including death and injuries. All fauna sightings/captures will be recorded and uploaded to the NSW Wildlife Atlas. Any injury / death of threatened species will be reported to BCD.</p> <p>Any captured displaced fauna will be relocated to the nearest area of appropriate habitat. If arboreal, the fauna will be placed inside an artificial nest box and relocated. If the displaced fauna is nocturnal relocation must occur during dusk.</p>				
5.3F	Salvage hollows and woody debris	<p>Habitat salvage will be undertaken for all disturbed areas, with the salvage methodology including the following key aspect:</p> <ul style="list-style-type: none"> Tree limbs containing natural hollows must be relocated and restored for use by fauna in the nearest adjacent area of similar habitat, in consultation with landowners, and by a suitably qualified ecologist. <p>Only where natural hollows cannot be relocated:</p> <ul style="list-style-type: none"> An artificial nest box must be installed onto a tree in the nearest adjacent area of similar habitat by a suitably qualified ecologist; the nest boxes selected must be of a similar size and dimension to the hollow removed; and nest boxes will be installed at a ratio of 1 nest box per hollow to be removed. <p><i>Note: The salvage and use of natural hollows is the preferred mitigation measure and artificial nest boxes are to be used only where natural hollows cannot be salvaged or arboreal fauna is being relocated. Alternatives to nest boxes may also be explored as a long-term mitigation for the removal of HBT.</i></p> <p>Where removal of woody debris is required:</p> <ul style="list-style-type: none"> Dead trees and large woody debris that are removed (diameter >10 cm) must be placed in the nearest adjacent area of similar habitat in consultation with landowners and a suitably qualified ecologist; and woody debris must be placed along the same contour to aid in preventing erosion. <p><i>Note: The salvage of woody debris is aimed at large debris >10cm diameter and >1m long and is most likely to be found within, or adjacent to woodland habitats within the mapped Biodiversity Management Zones. Large fallen trees with the broader Project site that may provide habitat must also be salvaged.</i></p>	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.3G	Retain topsoil	Methods to retain topsoil will be implemented as per Principle 5.8C.	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	

Table 5.4 Measures to minimise on-site impacts on fauna

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.4A	Avoid habitat features	Where possible, works will avoid any impact to habitat features as per Principle 5.3A. Where unavoidable, any works will be undertaken to the minimum extent practicable required for the construction activity.	Clear documentation of how final decisions for the infrastructure layout design minimises loss of key fauna habitat	Pre- detailed design phase	BoP PM and CM	Schedule 3 18(b), 20(b) SOC A, B, C, D, E, F & G
5.4B	Time habitat clearance	<p>Clearing of any identified habitat features mapped within Annex B, or within the identified Biodiversity Management Zones must be undertaken in mid-winter where possible to reduce impact on potentially breeding fauna. Where this is not possible consultation with an ecologist will be required to determine the likelihood of breeding fauna occurring within disturbance areas and to suggest additional measures to avoid interruption to breeding cycles.</p> <p>Construction will be limited to daylight hours, where possible, to avoid disturbance to nocturnal fauna. If construction outside of daylight hours is required, lights must be shielded to direct lighting away from fauna habitat.</p> <p>Clearing will be undertaken sequentially to allow fauna time to move away. If possible, clearing will be staged to direct fauna toward areas of suitable habitat. The adaptive clearance methodology will be undertaken as per Principle 5.3E.</p>	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	
5.4C	Manage clearing of habitat bearing trees and hollow logs	Measures to minimise the impacts to hollow-dependant and arboreal fauna during the clearance of vegetation and hollow-logs will be undertaken as per Principle 5.3E & 5.3F.	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.4D	Manage clearing of significant rock clusters & termite mounds	Measures to minimise the impacts to fauna dependant on clusters of rocks and termite mounds will be undertaken as per Principle 5.3D.	Ecologist report of clearance activities	Construction phase	BoP PM, CM and engaged ecologist	
5.4E	Inspect excavation voids	Ramps at an angle of no greater than 1 in 3 incline will be placed in all open excavations that are left open overnight to allow any fauna to escape. Open excavations left open overnight must be checked each morning for any trapped fauna. All trapped fauna will be reported to the BoP CM who will immediately organise capture and relocation efforts to be undertaken by a suitably qualified ecologist.	Reporting by BoP CM & ecologist report of clearance activities	Construction phase	BoP PM and CM	
5.4F	Micro-siting of WTG	All micro-siting of WTGs must be conducted as per the Operational BBAMP.	Refer to BBAMP	Refer to BBAMP	Refer to BBAMP	
5.4G	Avoid collision with fauna (operating machinery, plant and turbines)	<p>Measures to reduce collisions of wildlife with operating machinery and plant will be implemented including:</p> <ul style="list-style-type: none"> • direct contact with any wildlife will be avoided wherever possible; • vehicle speed within the project area will be limited during the construction phase of the project (e.g. 60 km/hr with speed limits adjacent to habitat areas to be reduced to 40km/hr); • construction will be limited to daylight hours, where possible, to avoid periods of high activity (dawn and dusk); • signage to be installed around all high activity wildlife areas; • no workers to be permitted to bring dogs onto the site; and • all food waste must be disposed of in covered waste bins. <p>The above measures will be included within the site-specific environmental induction required for all employees and sub-contractors entering the site. A register of any collision with fauna during construction will be kept and updated by the BoP CM.</p> <p>Measures to avoid collision of fauna with turbines will be implemented in accordance with the Operational Bird and Bat Adaptive Management Plan (BBAMP).</p>	Induction material reporting of incidents	Construction and operations phase	BoP PM and CM	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.4H	Avoiding operational impacts on fauna	<p>Measures to reduce impact to resident fauna within the Project Area during the operations phase will be implemented including:</p> <ul style="list-style-type: none"> • direct contact with any wildlife will be avoided wherever possible; • vehicle speed within the project area will be limited according to adjacent habitat value and road condition (e.g. 40km/hr); • signage to be installed around all high activity wildlife areas ; • no workers to be permitted to bring dogs onto the site; and • all food waste must be disposed of in covered waste bins. <p>The above measure will be included within site-specific environmental induction required for all employees and sub-contractors entering the site. A register of all disturbances to fauna caused during site operations will be kept and updated by the BoP CM.</p>	Induction material reporting of incidents	Construction and operations phase	BoP PM and CM	
5.4I	Assisting injured fauna	<p>Any animals injured by clearance activities or during operations must be taken immediately to the Southern Tablelands Veterinary Hospital (Open 8am-6pm weekdays) for treatment.</p> <p>Any animals suspected to require rehabilitation will be delivered to an appropriate animal rehabilitator associated with either WIRES Southern Tablelands Regional Branch (Telephone No. 1300 094 737) or Wildcare Queanbeyan Inc. (Telephone No. 62991966).</p>	Reporting by BoP CM	Operations and construction phase	BoP PM, CM and engaged ecologist	

Table 5.5 Measures to rehabilitate and revegetate temporary disturbance areas

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.5A	Stabilise the land form	<p>All earth disturbed by excavation will be rehabilitated by stabilising the landform.</p> <p>The following key aspects will be included in landform stabilisation method:</p> <ul style="list-style-type: none"> • The soil profile will be restored to its preclearance condition to maximise the potential for seeds in the soil bank to germinate naturally; • For any soils containing rocky material, the ground surface will be returned to a similar composition to that prior to disturbance; 	Rehabilitation report prepared by BoP CM	Construction and operations phase	BoP PM and CM	Schedule 3 20(b) & SOC C & D

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
		<ul style="list-style-type: none"> Erosion control features (e.g. roll over banks) will be installed on low slopes at 80m intervals, 50-60m intervals for slopes of 4:1; and 20-30m intervals for slopes of 3:1; Bunds and swales must be developed to reduce water flow velocity and the potential for concentrated flows in high rainfall events; and Rocks and logs disturbed during works must be replaced to assist with soil retention. 				
5.5B	Ripping and topsoiling	<ul style="list-style-type: none"> All sites that are to be mechanically turned or ripped will be prepared to ensure that the soil layers will match the preclearance soil profile; Prior to the application of topsoils (where they existed prior to disturbance i.e. unlikely to be required within eroded areas) compacted areas will be ripped to a depth of 150mm to loosen the surface; 50-80mm of topsoil will be placed over the ripped surface; and Any exotic grass/weed growth occurring on topsoil stockpiles will be sprayed with herbicide before re-spreading. The last application of herbicide will be applied greater than 4 weeks before re-spreading the topsoil or longer if recommended by the manufacturer. 	Rehabilitation report prepared by BoP CM	Construction phase	BoP PM and CM	
5.5C	Revegetation	<p>The objective of revegetation is to reinstate the vegetation to the same vegetation structure (strata present – groundcover, shrub, sub-canopy, etc) that occurred prior to disturbance or as detailed in this BMP. Revegetation measures will be applied to temporary disturbance areas where groundcover vegetation existed prior to disturbance and where there is sufficient soil and surrounding vegetation to support groundcover vegetation. All revegetation works will be carried out to maximise the potential to create an ongoing source of plant recruitment. Revegetation will preferably commence in late summer/early autumn as temperatures decrease and evaporation rates fall, to prevent potential requirement for intensive irrigation. Areas that require revegetation outside of this recommended revegetation time could be stabilised as per phase one (see below) as a temporary measure until plant establishment can be undertaken.</p>	Rehabilitation report prepared by BoP CM	Construction & operations phase	BoP PM, CM and engaged ecologist	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
		<p>Disturbed sites will be prepared for revegetation by ensuring that the area has been stabilised, reshaped and aligns with surrounding land contours. Where practical, and in consultation with host landowners, stock access will be managed during revegetation.</p> <p>Revegetation will be carried out in two phases.</p> <p><u>Phase one</u> will occur via hydroseeding/hydromulching within 5 -10 days of completed soil preparation or, if delayed by the weather conditions as soon as conditions permit. Follow-up watering and reseedling will be undertaken as required.</p> <p>The following species will be considered as components of the hydroseeding mixture utilized for revegetation.</p> <ul style="list-style-type: none"> • spear grass (<i>Austrostipa</i> spp.) • shorthair plume grass (<i>Dichelachne micrantha</i>) • red-anthered wallaby grass (<i>Joycea pallida</i>) • snowgrass (<i>Poa sieberiana</i>) • kangaroo grass <i>Themeda australis</i> • wallaby grass <i>Rytidosperma</i> sp. • purple wiregrass <i>Aristida ramosa</i> <p>A sterile cover crop (e.g. sterile oats) may be necessary to include within the hydroseeding mixture to assist in accelerating soil retention. If required correspondence with Local Land Services and local landholders may be undertaken to identify the most suitable cover crop.</p> <p><u>Phase two</u> consists of infill planting of tubestock which will occur 20-40 days after phase one (where possible, subject to seasonal restrictions affecting successful plant establishment). Species selection and planting density of tubestock will be designed, with input from a suitably qualified ecologist, to be representative of adjacent vegetation communities, including the identified Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland and woodland habitats.</p> <p>The planting of tubestock is required for all temporary disturbance within the mapped Biodiversity Management Zones, or where woodland habitat existed prior to disturbance.</p>				

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
		<i>Note: Phase two revegetation works (infill planting with tubestock) will not be undertaken beneath turbines and within the laydown areas (a concentric circle of 0.32 ha around the 'crane hardstand and WTG foundation's permanent footprint). Where groundcover vegetation existed prior to disturbance these areas will be stabilised via hydroseeding/hydromulching only. Bird and bat habitat is not encouraged within these areas to reduce the risk of WTG collision. Phase two revegetation works is also not required beside the access roads where mature trees may create access or safety restrictions during the operational and maintenance of the windfarm.</i>				
5.5D	Revegetation benchmarks	<p>Rehabilitation will be undertaken with the goal of representing adjacent ecological communities at a moderate condition class or better. Reference sites of moderate/good quality vegetation patches of all disturbed PCT types will be selected, with input from a suitably qualified ecologist, that represent revegetation success benchmarks. The following will be considered as indicators of revegetation success:</p> <ul style="list-style-type: none"> • Low percentage of bare ground • High percentage ground layer vegetation cover • Evidence of natural vegetation recruitment (seedlings, re-sprouting present) • Active soil erosion/ ground surface stability • No presence of exotic species 	Rehabilitation report prepared by BoP CM. (including before and after records and photographs)	Construction & operations phase	BoP PM and CM	
5.5E	Monitoring	<p>Monitoring of rehabilitation sites will occur after the revegetation phase has been completed.</p> <p>Monitoring will occur at following time periods:</p> <ul style="list-style-type: none"> • after first significant rainfall event; • 1, 3, 6 & 12 months after rehabilitation activity; and • bi-annually after first 12 month mark until 3 year mark is reached or revegetation site has reached benchmark goal. <p>Data describing how revegetated sites have reached revegetation success benchmarks must be provided in the rehabilitation report prepared by BoP CM.</p>	Rehabilitation report prepared by BoP CM (including quantitative data collection within revegetated site)	Construction & operations phase	BoP PM and CM (until practical completion), then Developments Biala	

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.5F	Fertiliser application	Fertilizer will be applied as pelletised poultry manure to be applied at a rate of 250 kg/hectare, or another nitrogen, phosphorus and sulphur based fertilizer substitute at 150kg/ha.	Rehabilitation report prepared by BoP CM	Construction & operations phase	BoP PM and CM (until practical completion), then Developments Biala	
5.5G	Local provenance native plants	When appropriate, and if practical, seed will be collected from native woodland vegetation cleared in the disturbance areas, propagated and used for rehabilitation purposes. It is recognised that some plants do not produce seed yearly (perennial species) and seed collection might not be possible during the construction phase of the project. Where seed collection from adjacent habitat is unfeasible (based on advice from an experienced bushland regenerator) native plants will be sourced from local nurseries with certified provenance from stock indigenous to the Southern Highlands IBRA Bioregion.	Rehabilitation report prepared by BoP CM	Construction & operations phase	BoP PM and CM(until practical completion), then Developments Biala	
5.5H	Create rock clusters	If there is suitably sized waste rock produced from excavations consideration will be given to creating rock clusters within the vicinity of disturbance areas. Creation of these habitat features will only occur if there is available space within the disturbance area and these features will not impede access or other operations within the Project Area.	Rehabilitation report prepared by BoP CM	Construction & operations phase	BoP PM and CM (until practical completion), then Developments Biala	

Table 5.6 Measures to protect native vegetation and key fauna habitat outside of the approved disturbance area

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.6A	Protect areas adjoining the Project Area	Measures detailed within Table 5.5, Table 5.7 and Table 5.8 have been implemented to control potential factors that could potentially impact areas adjoining the Project Area.	See Table 5.5, Table 5.7 & Table 5.8	See Table 5.5, Table 5.7 & Table 5.8	See Table 5.5, Table 5.7 & Table 5.8	Schedule 3 20 (b)

Table 5.7 Measures to control weeds and feral pests

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.7A	Minimise new weed infestations	<p>The following measures will be implemented to prevent exotic plant material from entering the Project Area:</p> <ul style="list-style-type: none"> No plant equipment or imported material will be permitted within the project area unless it has been inspected and confirmed to be free of dirt and mud which may contain weed seeds and vegetative material such as bulbs, root fragment, tubers or rhizomes; Vehicles and machinery will be clean of soils, vegetation and seeds that have been brushed off or washed down prior to entering the project. A clean down register must be maintained at each clean down location; and All temporary disturbed areas will be rehabilitated according to the relevant Principles within Table 5.5. 	Clean down register & weed free certification documents	Construction and operations phase	BoP PM and CM	
5.7B	Treat existing infestations	<p>All employees and sub-contractors working within the Project Area must be educated on the identification of noxious weed species known to occur or with potential to occur, during site specific induction. A protocol of reporting and mapping any sightings of these species will be developed by the BoP CM.</p> <p>As a part of the clearance permitting process any significant weeds known to occur or having potential to occur (including blackberry (<i>Rubus fruticosus</i> agg. spp.)) that are encountered within the identified disturbance footprint will be managed in accordance with appropriate DPI guidelines. Guidelines for the treatment of blackberry can be sourced within the DPI website (DPI 2020).</p> <p>Noxious weeds will be treated onsite in preference to transporting off-site for disposal.</p>	Site-specific induction material & site-specific noxious weed reporting protocol	Construction and operation phase	BoP PM and CM	Schedule 3 20 (b) SOC C & D
5.7C	Control feral pests	Procedures to ensure that feral pests are not introduced or encouraged within the project area as result of the project activities must be implemented. Appropriate management of any feral pest species found within the development footprint during the project construction phase will be implemented by the BoP CM, as necessary, in correspondence with local landholders.	Feral pest control procedures	Construction and operations phase	BoP PM and CM	

Table 5.8 Measures to control erosion, water contamination and dust generation

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.8A	Permanent erosion control measures	<p>The potential for erosion will be managed and mitigated in accordance with Soils and Construction 'Blue Book' (Landcom, 2004).</p> <p>Measures to ensure construction does not cause excessive erosion includes the following:</p> <ul style="list-style-type: none"> • permanent tracks must be stabilised as soon as practical; • temporary tracks and excavation voids will be rehabilitated as soon as practical according to Principle 5.5A; and • care must be taken on steep slopes to ensure that erosion does not occur, with any problems rectified as soon as they are identified. 	Soil and Water Quality Management Procedure (EMS Annex I)	Construction & operations phase	BoP PM and CM	
5.8B	Temporary erosion control measures	<p>Temporary erosion and sediment controls will be installed to avoid further disturbance and degradation of soils and nearby features (e.g. water ways, adjacent constraints areas and vegetation).</p> <p>Such temporary controls will include the following measures:</p> <ul style="list-style-type: none"> • Use of weed free hay bales, sediment fences, and catch drains or raised berms to minimise erosion and redirect water away from exposed and unstable earth surfaces. <p>Geotextiles applied for</p> <ul style="list-style-type: none"> • steep, unstable areas which are particularly susceptible to erosion <p>Controls will remain in place until a long term rehabilitation solution is achieved (i.e. Land stabilisation or revegetation). All materials associated with controls will be removed from areas where successful stabilisation is achieved.</p>	Soil and Water Quality Management Procedure (EMS Annex I)	Construction & operations phase	BoP PM and CM	<p>Schedule 3 20 (b)</p> <p>SOC C & D</p>

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.8C	Prevent stockpile erosion	<p>The following measures will be undertaken to stabilise, manage and reduce impact from stockpiled soil and other potentially erodible material within the Project Area:</p> <ul style="list-style-type: none"> • Long-term stockpiles will be covered to prevent the loss of material during high wind and rain events; • appropriate sediment barrier fencing will be used to inhibit the flow of sediment into surrounding areas; • stockpiles will be placed in areas that are of less than 4:1 slope; • stockpiles must be located at least 50 m away from watercourses; and • stockpiles potentially containing seeds of non-native species must be located at least 50 m from areas of native vegetation. 	Soil and Water Quality Management Procedure (EMS <i>Annex I</i>)	Construction & operations phase	BoP PM and CM	
5.8D	Prevention of excessive dust	Unsealed access roads and construction areas to be regularly watered to limit dust generation, particularly in windy conditions.	Soil and Water Quality Management Procedure (EMS <i>Annex I</i>)	Construction & operations phase	BoP PM and CM	
5.8E	Avoidance of spills	Hazardous materials must be stored in designated areas specifically designed for containment, in accordance with regulatory requirements and Australian Standard AS1940. Spill response protocols will form a part of site facility management practices.	Pollution Incident Response Management Plan	Construction & operations phase	BoP PM, CM and all staff	
5.8F	Maintain and repair of erosion controls	All erosion and sedimentation control devices will be regularly checked, cleared, and repaired; especially prior to and after periods of heavy rainfall. The erosion and sediment control plans must be updated regularly.	Soil and Water Quality Management Procedure (EMS <i>Annex I</i>)	Construction & operations phase	BoP PM and CM	

Table 5.9 Bushfire management measures

ID	Principle	Actions	Compliance Indicator	Timing	Responsible Party	Relevant CoC/SoC
5.9A	Management of fire events	Fire response procedures will be developed to manage and respond to potential fires in consultation with local RFS and local landholders.	Bushfire Response Map (EMS Annex J).	Construction & operations phase	BoP PM and CM	Schedule 3 20(b)
5.9B	Design to reduce fire risk	Potential fire risk will be avoided by implementing the following measures: <ul style="list-style-type: none"> • provision for asset protection in accordance with the RFS planning for bushfire protection (2006) and suitable equipment made available to respond to any fires on site; • Use of fully enclosed electrical equipment on turbine structures and pad-mount transformers; • Extensive use of underground cabling between turbines; • Design of any overhead lines in accordance with industry standards; • Exclusion of vegetation from within the substation enclosure; and • Use of circuit breakers and fuses to interrupt any electrical fault. 	Bushfire Response Map (EMS Annex J).	Detailed design phase	BoP PM and CM	
5.9C	Construction to reduce fire risk	Potential fire risk will be avoided during the construction phase by implementing the following measures: <ul style="list-style-type: none"> • A safety and risk assessment being conducted for all construction activities to commence during days declared a total fire ban or when the fire danger rating for the region is catastrophic; • A total smoking ban within the Project Area; and • All construction vehicles and mobile plant to carry a fire extinguisher which is in a good and efficient working condition. 	Fire event risk assessments & Bushfire Response Map (EMS Annex J).	Construction phase	BoP PM and CM	
5.9D	Operation to reduce fire risk	Potential fire risk will be avoided during the operation phase by implementing the following measures: <ul style="list-style-type: none"> • No petrol fuelled vehicles will be allowed access to areas outside of access roads and parking stations; and • A total smoking ban within the Project Area. 	Bushfire Response Map (EMS Annex J).	Operations phase	BoP PM and CM	

Monitoring and inspections of all biodiversity measures implemented during the design and construction phase of the development will continue throughout the life of the Project.

The inspection requirements for each environmental management principle are provided in *Table 6.1* below.

6.1**RECORD KEEPING AND AUDITING**

All records would be stored safely and be readily accessible for auditing. The BoP CM is responsible for maintaining all environmental management documents as current at the point of use. Types of records relevant to this BMP include:

- monitoring, inspection and compliance reports/records;
- clearance permits submitted during construction;
- registers of fauna disturbance, vegetation clearance and vehicle clean down;
- weed free certificates for all imported/exported material;
- certificates of revegetation material provenance;
- correspondence with public authorities;
- induction and training records;
- reports on environmental incidents, other environmental incidents non-conformances; and
- records of complaints and follow-up action.

6.2**BMP UPDATE AND AMENDMENT**

This BMP should be considered a living document which would need to be revised whenever the construction program, scope of work or work methods change, whenever the work methods and control structures are found to be ineffective, or if so directed by Developments Biala or relevant government regulators. In addition, this BMP should be reviewed annually and revised as necessary for the effective administration of the biodiversity impacts of the Project. Revisions will be progressively submitted to the DPIE.

Table 6.1 Schedule for Monitoring, Reporting and Inspections

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.1A Define constraint areas	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design approved Buffers and Biodiversity Management Zones are mapped on the Ecological Constraints Map and managed in accordance with this BMP. No more than 1.23 hectares of the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the development.
5.1B Design to avoid constraint areas	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design submitted to DPIE
5.1C Manage activities to minimise impact to constraint areas	inspection	weekly	BoP PM and CM	<ul style="list-style-type: none"> clearance zones clearly demarcated clearance activities undertaken according to clearance permits ecologist supervision report of area (as required)
5.1D Constraint area communication	inspection/ audit	weekly/ monthly	BoP PM and CM	<ul style="list-style-type: none"> annotated site plans displayed and up-to-date all employees inducted on project area specific biodiversity issues and induction material up-to-date
5.2A Design to avoid vegetation clearing	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design submitted to DPIE No more than 1.23 hectares of the Tablelands Snow Gum, Black Sallee, Candlebark and Ribbon Gum Grassy Woodland is cleared for the development.
5.2B Implement clearance permitting	audit	as required	BoP PM and CM	<ul style="list-style-type: none"> clearance permits for all relevant construction activities
5.2C Demarcate disturbance zones	inspection	weekly	BoP PM and CM	<ul style="list-style-type: none"> clearance zones clearly demarcated

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.2D Minimise impacts from stockpiles	inspection	monthly	BoP PM and CM	<ul style="list-style-type: none"> Stockpiles placed within pre-cleared areas and managed as per Principle 5.8C.
5.3A Design and construct to avoid loss of key fauna habitat	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design submitted to DPIE clearance undertaken according to clearance permits, ecologist supervision report of area BoP CM rehabilitation report
5.3B Inspect prior to clearing	inspection	weekly	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> clearance zones clearly demarcated all habitat features clearly marked and easily identifiable
5.3C Protect streams and rivers	inspection/ audit	monthly	BoP PM and CM	<ul style="list-style-type: none"> final detailed design approved BoP CM rehabilitation report
5.3D Protect significant clusters of rock and termite mounds	inspection	as scheduled	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> clearance undertaken according to clearance permits ecologist supervision report of area
5.3E Protect all mature trees & habitat bearing trees	inspection	weekly	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> clearance undertaken according to clearance permits, no unintentional impact to adjacent vegetation ecologist supervision report of area vegetation clearance register is consistent with clearance activities
5.3F Salvage hollows and woody debris	inspection/ audit	weekly/ monthly	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> clearance undertaken according to clearance permits, ecologist supervision report of area ecologist nest box installation report
5.3G Retain topsoil	inspection	monthly	BoP PM and CM	<ul style="list-style-type: none"> clearance undertaken according to clearance permits topsoil stockpiles retained and protected as per Principle 5.8C.
5.4A Avoid habitat features	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design approved

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.4B Time habitat clearance	audit	as scheduled	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> ecologist supervision report of area
5.4C Manage clearing of habitat bearing trees and hollow logs	audit	as scheduled	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> ecologist supervision report of area
5.4D Manage clearing of significant rock clusters & termite mounds	audit	as scheduled	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> ecologist supervision report of area
5.4E Inspect excavation voids	inspection	weekly	BoP PM and CM	<ul style="list-style-type: none"> register of fauna disturbance
5.4G Avoid collision with fauna (operating machinery and plant)	inspection	monthly	BoP PM and CM	<ul style="list-style-type: none"> register of fauna disturbance
5.4H Avoiding operational impacts on fauna	inspection	monthly	BoP PM and CM	<ul style="list-style-type: none"> register of fauna disturbance signage installed effectively to prevent accidents no employee or contractor owned dogs within Project Area no waste found within Project Area all employees inducted on Project Area specific biodiversity issues and induction material up-to-date
5.4I Assisting injured fauna	audit	monthly	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> register of fauna disturbance ecologist supervision report of area

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.5A Stabilise the land form	inspection	after first significant rainfall event & 1, 3, 6 & 12 months after rehabilitation activity. Then bi annually until 3 year mark or when moderate condition benchmark is reached	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> soil profile and terrain restored to pre-disturbance condition erosion and sediment controls installed
5.5B Ripping and topsoiling	inspection	after first significant rainfall event & 1, 3, 6 & 12 months after rehabilitation activity. Then bi annually until 3 year mark or when moderate condition benchmark is reached	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> soil profile and terrain restored to pre-disturbance condition rehabilitated areas free of weeds
5.5C Revegetation	inspection	after first significant rainfall event & 1, 3, 6 & 12 months after rehabilitation activity. Then bi annually until 3 year mark or when moderate condition benchmark is reached	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> soil profile and terrain restored to pre-disturbance condition no weed populations greater than 10% of revegetation no failed vegetation patches greater than 1 m² ground cover achieves seed set across more than 80% of area trees and shrubs achieve more than 80% survival in 12 months evidence of natural vegetation recruitment (seedlings, re-sprouting present)
5.5D Revegetation benchmarks	inspection	after first significant rainfall event & 1, 3, 6 & 12 months after rehabilitation activity	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> soil profile and terrain restored to pre-disturbance condition rehabilitated areas free of weeds low percentage of bare ground high percentage ground layer vegetation cover evidence of natural vegetation recruitment (seedlings, re-sprouting present) vegetation in good health vegetation consistent with moderate condition reference site of same PCT type

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.5E Monitoring	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> Rehabilitation reporting and data reflects current status of rehabilitated areas
5.5F Fertiliser application	inspection	after first significant rainfall event & 1, 3, 6 & 12 months after rehabilitation activity	BoP PM, CM and engaged ecologist	<ul style="list-style-type: none"> native vegetation growth rate consistent with growth rate of undisturbed communities
5.5E Local provenance native plants	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> certification of native plant provenance
5.5G Create rock clusters	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> waste rock clusters stable and not impeding operations
5.6A Protect areas adjoining the project area	inspection	weekly	BoP PM and CM	<ul style="list-style-type: none"> water quality and turbidity of watercourses downstream of Project Area consistent with watercourses upstream pre-development flows occurring downstream of Project Area no evidence of runoff or polluting substances entering areas adjoining Project Area
5.7A Minimise new weed infestations	audit	monthly	BoP PM and CM	<ul style="list-style-type: none"> clean down registers completed and consistent with number of plant machinery entering site weed free certification of all imported material
5.7B Treat existing infestations	inspection	after first significant rainfall event 1, 3 and 6 months after construction activity	BoP PM and CM	<ul style="list-style-type: none"> all employees inducted on Project Area specific biodiversity issues and induction material up-to-date protocol for reporting infestations in place up-to-date map of weed infestations no unmapped and unmanaged weed infestations present in vicinity of infrastructure
5.7C Control feral pests	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> no reports of uncontrolled number of feral pests

Principle	Monitoring Method	Frequency	Responsible Party	Performance Criteria
5.8A Permanent erosion control measures	inspection	monthly & after significant rainfall events	BoP PM and CM	<ul style="list-style-type: none"> all cleared areas not under construction stabilised no evidence of significant erosion
5.8B Temporary erosion control measures	inspection	weekly & after significant rainfall events	BoP PM and CM	<ul style="list-style-type: none"> temporary erosion control measures implemented and effective temporary control measures removed after landform stabilisation achieved
5.8C Prevent stockpile erosion	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> stockpiles in place to prevent erosion temporary erosion control measures implemented and effective
5.8D Prevention of excessive dust	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> no excessive dust detected within Project Area
5.8E Avoidance of spills	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> spill response protocols in place
5.8F Maintain and repair of erosion controls	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> all erosion control measures implemented and effective
5.9A Management of fire events	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> fire response procedures in place and endorsed by local RFS
5.9B Design to reduce fire risk	audit	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> final detailed design approved
5.9C Construction to reduce fire risk	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> records of fire event risk assessments completed for all days of construction commencing during a total fire ban or when fire danger rating is catastrophic all construction vehicles contain fire extinguishers in operational condition
5.9D Operation to reduce fire risk	inspection	as scheduled	BoP PM and CM	<ul style="list-style-type: none"> reports of fire incidents within the Project Area

DPI (2004) *Policy and Guidelines for Fish Friendly Waterway Crossings*. Department of Primary Industries. NSW, Australia

DPI (2020) *NSW WeedWise*. Accessed 10 March 2020 from:
<https://weeds.dpi.nsw.gov.au/>

ERM (2015) *Biala Wind Farm Environmental Impact Statement*. Environmental Resources Management Pty Ltd. NSW, Australia

ERM (2015b) *Biala Wind Farm Ecology Impact Assessment* Environmental Resources Management Pty Ltd. NSW, Australia

Fairfull & Witheridge (2003) *Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*. NSW Fisheries. Cronulla, Australia

Landcom (2004) *Managing Urban Stormwater: Soils and Construction*. National Library of Australia, Canberra, Australia

NSW RFS (2006) *Planning for Bushfire Protection*. NSW Rural Fire Service. NSW, Australia

Annex A

Clearance Permit

Clearance Permit Form				
Project:	Biala Windfarm		Clearance Permit Reference Number:	
Requested by:			Completion date:	
Clearing start date:				
Clearing Location				
Location reference	Is this a temporary disturbance? (i.e. not a permanent structure)	Infrastructure Components to be Constructed		
What is the approximate size of the development footprint?	Is the construction taking place on a slope?	Additional comments on location		
This section is to be completed by the Newtricity EO		Yes	No	
Refer to the Biodiversity Constraints Mapping. Does the development footprint require removal of ecological constraints, any identified habitat features or intersect with a Biodiversity Management Zone?		An ecologist must inspect the development footprint and prepare vegetation clearing report - evidence to be appended to this permit before approval		
		Prepare hygiene and control protocols and attach to this permit		
Is there a risk of weed infestation and spread within the development footprint?				
If no state why:				
Are there likely to be salvageable habitat resources within the development footprint? This includes woody debris >10cm diameter, hollow logs/limbs and rock clusters.				
If no state why:				
Will the topsoil within the development footprint be retained?				
If no state why:				
Have adjacent receiving areas for topsoil, stockpiles and salvageable resources been identified?				
If no state why:				
Is the construction activity likely to cause soil disturbance?		Prepare specific erosion and sedimentation protocol & attach to this permit		
If no state why:				
Have the relevant issues above been identified on an annotated aerial map of the development footprint area and attached to this clearance permit?				
If no state why:				
Has the construction supervisor been briefed on the relevant issues above and been given guidance on appropriate protocols and controls to implement?		Briefly summarise protocols to be implemented below		
This Section is to be completed by the construction supervisor		Yes	No	
Has the development footprint been pegged out and is easily identifiable by crew?				
If no state why:				
Are there marked habitat features within the development footprint?		Ecologist supervision of construction activities is required		
Has there been any observed fauna activity within the development footprint. (e.g. kangaroos moving through the footprint or trees with high bird activity)		Summarise findings below.		
Has a site walk of the development footprint been conducted checking for any noxious weeds unidentified by the Newtricity EO?				
If no state why:				
Has vegetation (all treed vegetation and native grass) & salvageable resources (including coarse woody debris >10cm diameter, hollow logs, clusters of rock) to be retained been demarcated?				
If no state why:				
Have photographs from within the disturbance area been taken detailing tree cover, habitat, ecological constraints etc?				
If no state why:				
Have the construction crew been briefed in toolbox talks on limit of clearing, retention of vegetation, soil and habitat features and any other required environmental management measures				
Have pre-construction biodiversity management measures identified as required by the EO been implemented?		Briefly summarise measures implemented below		
Approvals Will further environmental management measures be required to be implemented before construction takes place				
	Yes	No	Signature	
Newtricity EO:	Summarise below			
Supervising Ecologist	Summarise below			

Annex B

Ecological Constraints Map

