Prepared for
RES Australia Pty Ltd
ABN: 55 106 637 754

AECOM

Planning Assessment Report
Tarong West Wind Farm

16-Feb-2024
Tarong West Wind Farm

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Prepared by

AECOM Australia Pty Ltd
ABN 20 093 846 925

on behalf of

RES Australia Pty Ltd
ABN 55 106 637 754

Job No.: 60704414

Quality Information

Document	Tarong West Wind Farm – Planning Assessment Report
Ref	60704414
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Originator	Tessa Pearson and Laura Heckel
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Revision History

Rev	Revision Date	Details	Approved	
			Name/Position	Signature
0	15-Feb-2024	For Development Application	Jared Brook Associate Director	

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Executive Summary

RES Australia Pty Ltd (RES) is developing the Tarong West Wind Farm (formerly Iron Leaf Wind Farm) (the Project). The entire Project site is approximately 17,500 hectare (ha) in size, located within the South Burnett Regional Council local government area, approximately 30 kilometres (km) west of Kingaroy and 85 km east of Chinchilla.

The Project will consist of up to 97 wind turbine generators (WTGs) capable of generating up to 436.5 megawatts (MW). Ancillary infrastructure is proposed to support the construction and operation of the WTGs. This infrastructure includes access tracks, operations and maintenance facilities, meteorological masts, substations and collector stations and connection to the transmission network via an existing on-site 275 kilovolt line.

The Project design has been refined throughout its development, influenced by a combination of factors including availability of wind resource, social and environmental considerations, proximity to existing electricity transmission network and constructability.

This Planning Report supports the code assessable development application to obtain the following development permits under the *Planning Act 2016* (Planning Act):

- Material change of use for wind farm; and
- Operational work for native vegetation clearing.

In support of this application, technical assessments have been prepared to inform the design of the Project to ascertain the likely impacts of the Project and how such impacts can be mitigated. The Project demonstrates compliance with the relevant assessment benchmarks, being State code 16: Native vegetation clearing, State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022).

The Project aligns with Queensland's renewable energy transition and will contribute to the delivery of renewable targets and actions under the Queensland Energy and Jobs Plan, September 2022 (QEJP) and the Queensland Renewable Energy Target (QRET). The Project is also expected provide social and economic benefits to the local community through the creation of up to 440 full time equivalent (FTE) jobs (including 170 FTE direct jobs and 270 FTE indirect jobs), plus establishment of a community benefit fund.

Overall, the Project is considered to positively contribute to the economy and community of the region. It is recommended that the State Assessment and Referral Agency (SARA), as the Assessment Manager, consider the proposed development favourably and impose reasonable and relevant conditions upon its approval.

Application and development summary

Site details	
Real property description – Tenure	1. 4RP890694 - Freehold 2. 5BO330 - Freehold 3. 6BO250 - Freehold 4. 7RP890694 - Freehold 5. 10SP168643 - Freehold 6. 29BO243 - Freehold 7. 36BO236 - Freehold 8. 43FTZ37338 - Freehold 9. 44FTZ37207 - Reserve (Stock route) 10. 60BO188 - Freehold 11. 62BO188 - Freehold 12. 63BO188 - Freehold 13. 64BO190 - Freehold 14. 66BO190 - Freehold 15. 67BO490 - Freehold 16. 68RP800291 - Freehold 17. 93BO190 - State land.
Site area	Approximately 17,500 hectares (ha)
Regional plan area	Wide Bay Burnett Regional Plan 2023
Local government area	South Burnett Regional Council
Local planning instrument – Zone	South Burnett Regional Council Planning Scheme 2017 – Rural zone
Proposal details	
Proposed development	Construction and operation of Tarong West Wind Farm consisting of up to 97 wind turbine generators (WTGs) and ancillary infrastructure and components, including: • WTG hardstand areas for assembly and construction. • Substations and switching yard • Connection to existing 275 kilovolt (kV) transmission line on site • Underground and overhead electrical and communications reticulation • Temporary construction compounds and laydown areas • Operations and maintenance facilities • Collector stations • Washdown areas • Site access tracks • Widening of existing public roads • Permanent and temporary wind monitoring masts. • Battery Energy Storage System (BESS)
Statutory planning details	
Development permits sought	Development permit for: • Material change of use for wind farm – Schedule 10, part 21, division 1, item 35 of the *Planning Regulation 2017* (Planning Regulation); and • Operational work for native vegetation clearing – Schedule 10, part 3, division 2, item 5 of the Planning Regulation.
Category of assessment	Code assessable

Relevant assessment benchmarks	State Development Assessment Provisions (SDAP), version 3.0, 4 February 2022: • State code 16: Native vegetation clearing • State code 23: Wind farm development.
Assessment manager	Department of Housing, Local Government, Planning and Public Works (DHLGPPW), as represented by the State Assessment and Referral Agency (SARA).
Applicant details	
Applicant	RES Australia Pty Ltd (RES), ABN 55 106 637 754 c/- AECOM Australia Pty Ltd (AECOM), ABN 20 093 846 925
Applicant contact details	Greg Wilkinson Director of Development, RES Level 6, 165 Walker Street North Sydney, NSW, 2060 M: 0412 468 355 E: greg.wilkinson@res-group.com
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AECOM reference no.	60704414

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1.0 Introduction

This planning report has been prepared by AECOM Australia Pty Ltd (AECOM) on behalf of RES Australia Pty Ltd (RES), in support of a development application to obtain the following development permits under the *Planning Act 2016* (Planning Act):

- Material change of use for a wind farm; and
- Operational work for clearing native vegetation

The permits sought will facilitate the construction of up to 97 wind turbine generators (WTGs) and ancillary infrastructure to support the establishment of Tarong West Wind Farm (the Project) – formerly known as Iron Leaf Wind Farm.

It is requested that the currency period of the Operational work aspect is six (6) years, aligned with the Material change of use.

1.1 Purpose of this report

This report provides a detailed overview of the Project and addresses the merits of the Project with respect to the relevant assessment benchmarks under the Planning Act and *Planning Regulation 2017* (Planning Regulation).

The report concludes that the Project is considered compliant with the relevant provisions and is appropriate at the proposed location. Category of assessment and assessment benchmarks

The Project is assessable development subject to **code assessment** under the Planning Regulation. The relevant assessment benchmarks have been addressed to demonstrate compliance with the relevant planning instruments detailed in **Table 1.**

Table 1 Planning instruments relevant to Project

Development Assessment Mapping System	• Queensland waterways for waterway barrier works (low, moderate, high and major risk waterways) • Native vegetation clearing (Regulated vegetation) - Category B of least concern vegetation - Category C - Category R - Essential Habitat. • State transport corridor (Kingaroy Burrandowan Road) • Water resource planning area (Burnett).
Planning Regulation, schedule 10 triggers	• Material change of use for wind farm – Schedule 10, part 21, division 1, item 35 of the Planning Regulation; and • Operational work for native vegetation clearing – Schedule 10, part 3, division 2, item 5 of the Planning Regulation.
Regional plan	Wide Bay Burnett Regional Plan 2023
Regional land use category	Regional Landscape and Rural Production Area
Local planning instrument – Zone	South Burnett Regional Council Planning Scheme 2017 – Rural zone
Category of assessment	Code assessable
Referral agencies	N/A
Applicable assessment benchmarks	State Development Assessment Provisions (SDAP), version 3.0, 4 February 2022: • State code 16: Native vegetation clearing • State code 23: Wind farm development.

Existing development approvals	N/A

Supporting documentation

In support of this development application, the following appendices are attached:

- Cover letter
- Appendix A – DA Form 1
- Appendix B – Owner's consent and RES letter of authorisation
- Appendix C – Relevant purpose determination
- Appendix D – Pre-lodgement meeting minutes
- Appendix E – Operational Works Plan
- Appendix F – Title searches
- Appendix G – Construction Management Plan
- Appendix H – Conceptual Erosion and Sediment Control Plan
- Appendix I – Aviation Impact Assessment Report
- Appendix J – Electromagnetic Impact Assessment Report
- Appendix K – Ecological Assessment Report
- Appendix L – Preliminary Fauna Management Plan
- Appendix M – Preliminary Vegetation Management Plan
- Appendix N – Preliminary Bird and Bat Management Plan
- Appendix O – Traffic Impact Assessment Report
- Appendix P – Traffic Management Plan
- Appendix Q – Transport Route Study
- Appendix R – Preliminary Stormwater Management Plan
- Appendix S – Flood Assessment Report
- Appendix T – Landscape and Visual Impact Assessment Report
- Appendix U – Noise Impact Assessment Report
- Appendix V – Baseline Noise Monitoring Report
- Appendix W – Economic Impact Assessment
- Appendix X – State Development Assessment Provisions Code Assessment
- Appendix Y – Qleave Levy Deferral

1.2 Project background and rationale

The Project is located within the South Burnett Regional Council local government area approximately 30 kilometres (km) west of Kingaroy and 85 km east of Chinchilla, as shown in **Figure 1**.

The Project will involve the construction and operation of a wind farm consisting of up to 97 wind turbine generators with an overall rated capacity of up to 436.5 megawatts (MW) of clean and renewable electricity to supply to the National Electricity Market (NEM). The Project will be established over freehold rural properties, State land and reserves, totalling approximately 17,500 ha (Project Site). The Project Site comprises the Planning Corridor, a 1,952.96 ha subset which contains a Clearing Footprint (1,062.14 ha) for the proposed wind turbines, access tracks, underground cables, overhead lines and other associated infrastructure. Except for where infrastructure is proposed, the existing land will continue to be used for rural purposes including grazing livestock and cropping.

Following approval of the wind farm, further detailed design will be completed to determine the exact location of the wind turbines and all other infrastructure within the Project Site (i.e. micro-siting). To accommodate on-site constraints, the wind turbines and ancillary infrastructure may move up to 100 metres (m) from the original proposed locations and within the Planning Corridor.

The Project is anticipated to start construction in late 2024. The Project is anticipated to be constructed as a single stage and be completed within 30 months (subject to detailed design, weather and other external factors).

1.2.1 Project drivers and benefits

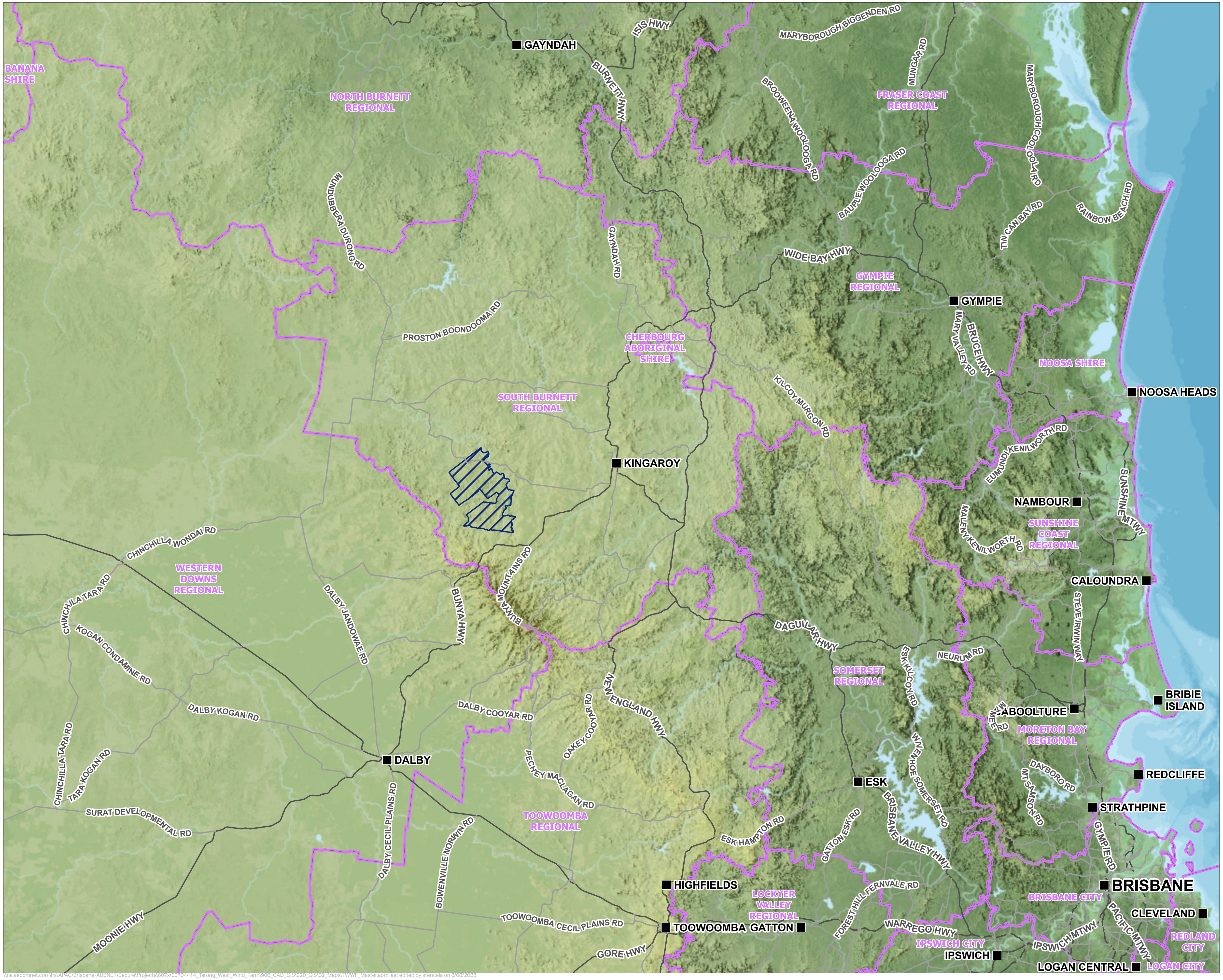
The Project will harness wind resource to generate clean and renewable energy that widely benefits the community and the environment. The Project Site has been selected based on the abundant wind resource, proximity to transmission network, low impact to the environment, distance away from sensitive land uses and landholders willing to host infrastructure.

The Project supports the advancement of Queensland's renewable energy transition by contributing to the delivery of renewable targets and actions under the Queensland Energy and Jobs Plan, September 2022 (QEJP):

- Contribute to the achievement of the Queensland Renewable Energy Target (QRET) – 50% renewable generation capacity by 2030.
- Replace carbon emissions from equivalent electricity generation saving approximately 1 million tonnes of CO_2 per annum.

As detailed below, the Project is expected to provide social and economic benefits to the local community:

- Generate up to 440 full time equivalent (FTE) jobs during the construction phase, including 170 direct and 270 indirect FTE positions.
- Generate up to 47 direct and indirect FTE jobs during operation and maintenance of the wind farm.
- Community fund to be established which will contribute over $10 million to the community through a range of proposed benefit sharing programs over the life of the Project.
- Supporting agriculture by improving land accessibility and providing diversified revenue to farms involved in the Project as host landholders.



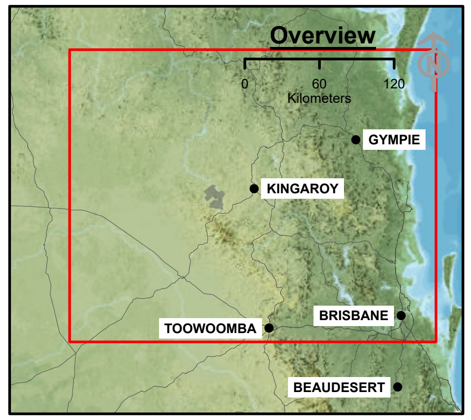
res AECOM

N

0 2 3 km

Legend

- ■ Locality
- Local government boundary
- Site Boundary



TARONG WEST WIND FARM PLANNING REPORT

Regional Context

Figure 1

1.3 The applicant

RES is the world's largest independent renewable energy company and is active in onshore and offshore wind, solar, energy storage, green hydrogen, transmission and distribution. As an industry innovator for over 40 years, RES has delivered more than 23 gigawatts (GW) of renewable energy projects across the globe and supports an operational asset portfolio exceeding 12 GW worldwide for a large client base. Understanding the unique needs of corporate clients, RES has secured over 1.5 GW of corporate power purchase agreements (PPAs) enabling access to energy at the lowest cost. RES employs over 2,500 passionate people and is active in 14 countries.

RES entered the Australian market in 2004 and now employs over 150 people across the country, with offices in Sydney, Melbourne, Brisbane and multiple regional locations. RES is engaged in all technologies: wind, solar and storage and offers development, construction management, and asset management and manages a portfolio of 2.06 GW of renewable assets in Australia. This includes some of the largest wind farms in the southern hemisphere: Murra Warra Wind Farm and Dulacca Wind Farm, as well as Emerald Solar Park; one of the first solar farms commissioned in Australia.

RES Australia has undertaken several projects under the EPBC Act and has satisfactorily implemented all the conditions of its previous Commonwealth and State approvals.

1.4 Pre-lodgement advice

To assist Project design refinement and the preparation and lodgement of this development application, four pre-lodgement meetings were held between AECOM, RES and SARA between 2018 and 2023.

- 17 September 2018 (SARA ref: 1808-6851 SPL)
- 10 October 2019 (SARA ref: 1908-12870 SPL)
- 30 August 2022 (SARA ref: 2208-30470 SPL)
- 5 July 2023 (SARA ref: 2306-35347 SPL)

Matters discussed include but were not necessarily limited to:

- Confirmation of landowner consent requirements in accordance with the Planning Act.
- Advice on native vegetation clearing and Relevant Purpose Determination requirements under section 22A of the *Vegetation Management Act 1999* (Vegetation Management Act).
- Recommended third-party engagement.
- Other secondary approvals required to facilitate the Project (e.g. Operational works for waterway barrier works).

A copy of the pre-lodgement meeting minutes and advice is included as Appendix D.

Consultation with QLeave Queensland during the preparation of this development application confirmed that payment of the QLeave Levy can be deferred. A copy of this advice is attached as Appendix Y.

2.0 Project site description

2.1 Location

The Project Site is located within the Wide Bay Burnett region, approximately 25 km west of Kingaroy, 85 km east of Chinchilla and 170 km northwest of Brisbane. The Project is wholly situated in the local government area (LGA) of South Burnett Regional Council.

The South Burnett region has a history of agricultural production. The region is dominated by rural land use and is characterised by numerous pastoral properties used for livestock production. South Burnett is also known for peanut production, timber production and viticulture, as well as coal mining and electricity generation.

2.2 Project area

Table 2 defines the area required for the overall Project. In particular, the planning corridor, a 1,952.96 ha subset of the project site, contains a clearing footprint (1,062.14 ha) for wind turbine generators, tracks, and supporting infrastructure.

Table 2 Project areas

Description	Approximate Area (ha)
Project Site – combined total area of all participating freehold, reserve (stock route) and state land lots	17,500
Planning Corridor – Project infrastructure located in the Project Site may be micro-sited within the Planning Corridor	1,952.96
Clearing Footprint – The maximum area of disturbance of the Project within the Planning Corridor. The Clearing Footprint will not extend beyond the Planning Corridor but may be micro-sited within the planning corridor.	1,062.14

2.3 Site characteristics

Table 3 details the characteristics of the Project Site identified based on desktop findings.

Table 3 Project site characteristics

Characteristic	Site assessment
Topography	The Project Site is situated generally in areas of topographic rise (hills) with elevations ranging from 390 m Australian Height Datum (AHD) to 570 m AHD.
Waterways	The Project Site is within the Burnett River basin and encompasses the following waterways: Boyne River, Jumma Creek, Mannuem Creek, Middle Creek, Boughyard Creek, Ironpot Creek and various unnamed tributaries.
Vegetation	Category X (non-remnant), Category R (riparian regrowth), Category C (high value regrowth) and Category B (remnant) regulated vegetation on the regulated vegetation map predominantly cover the Project Site. Dense patches of Category B vegetation stretch along the eastern boundary of the Project Site. Essential habitat is primarily concentrated to a small patch along the eastern boundary of the Project Site.
Improvements	The site is improved with residential and agricultural buildings (e.g. sheds, water tanks) generally owned and occupied by host landowners.
Access	• Access tracks off Jumma Road provide access points to: - Lot 4 RP890694 - Lot 5 BO330 - Lot 6 BO250 - Lot 7 RP890694

Characteristic	Site assessment
	- Lot 10 SP168643 - Lot 29 BO243 - Lot 36 BO236 - Lot 44 FTZ37207 - Lot 60 BO188 - Lot 62 BO188 - Lot 63 BO188 - Lot 64 BO190 - Lot 68 RP800291 • Access tracks off Ironpot Road provide access points to: - Lot 66 BO190 - Lot 67 BO490 - Lot 10 SP168643 - Lot 29 BO243 - Lot 68 RP800291 - Lot 6 BO250
Flora and fauna	Threatened flora species that were considered likely or possible within the Site included: • Wandering Peppercress (*Lepidium peregrinum*) • Austral Cornflower (*Leuzea australis*, previously *Rhaponticum australe*) • Austral Toadflax (*Thesium australe*) • *Polianthion minutiflorum* • *Paspalidium grandispiculatum* • *Acacia tingoorensis* • Bailey's Cypress (*Callitris baileyi*) • *Melaleuca formosa.* Threatened fauna species that were considered likely or possible within the Site included: • Koala (*Phascolarctos cinereus*) • Greater Glider (southern and central) (*Petauroides volans*) • White-throated Needletail (*Hirundapus caudacutus*) • South-eastern Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*) • Collared Delma (*Delma torquata*) • Black-breasted Button-quail (*Turnix melanogaster*) • Powerful Owl (*Ninox strenua*) • Spotted-tailed Quoll (*Dasyurus maculatus*) • Corben's Long-eared Bat (*Nyctophilus corbeni*) • Grey-headed Flying-fox (*Pteropus poliocephalus*). Migratory species that were considered likely or possible within the Site included: • Fork-tailed Swift (*Apus pacificus*) • Oriental Cuckoo (*Cuculus optatus*) • White-throated Needletail (*Hirundapus caudacutus*) • Black-faced Monarch (*Monarcha melanopsis*) • Satin Flycatcher (*Myiagra cyanoleuca*) • Rufous Fantail (*Rhipidura rufifrons*) • Short-beaked Echidna (*Tachyglossus aculeatus*).
Cultural heritage	There are no previously registered or known Cultural heritage sites within the Project Site.

Characteristic	Site assessment
	There are two Registered Native Title Bodies Corporate within the Project site: • Wakka Wakka Native Title Aboriginal Corporation (WWNTAC) • Auburn Hawkwood People Aboriginal Corporation (AHPAC).
Historical heritage	The Project Site does not contain properties listed on the local and Queensland heritage registers. There is a low likelihood of identifying historical heritage values within the study area.

Photos of the existing site are provided below**.**

Figure 2 Existing Site Photo (Source: RES)

Figure 3 Existing Site Photo (Source: RES)

2.4 Existing land uses

The majority of the Project Site is greenfield land categorised by the Australian Land Use Management (ALUM) classification system as 'grazing native vegetation'. Grazing native vegetation is characterised by domestic stock grazing on native vegetation where there has been limited or no deliberate attempt to modify pastures.

Under the South Burnett Regional Planning Scheme, the Project Site is entirely zoned as rural which seeks to accommodate relevant activities such as cropping, intensive horticulture and animal industries and animal keeping.

2.5 Surrounding land uses

The surrounding land uses that adjoin the Project Site mostly consist of grazing land and other agricultural uses.

The Project Site is within an area where numerous renewable and non-renewable power generation plants exist or are currently in development. This includes Coopers Gap Wind Farm located 5 km south, Wambo Wind farm located 10 km west and Tarong Power Station located 33 km southwest.

2.6 Land tenure

The Project Site is approximately 17,500 ha of mostly private freehold land. **Table 4** details the land tenure and other relevant particulars for each host lot. **Figure 4** illustrates land tenure in and around the Project Site.

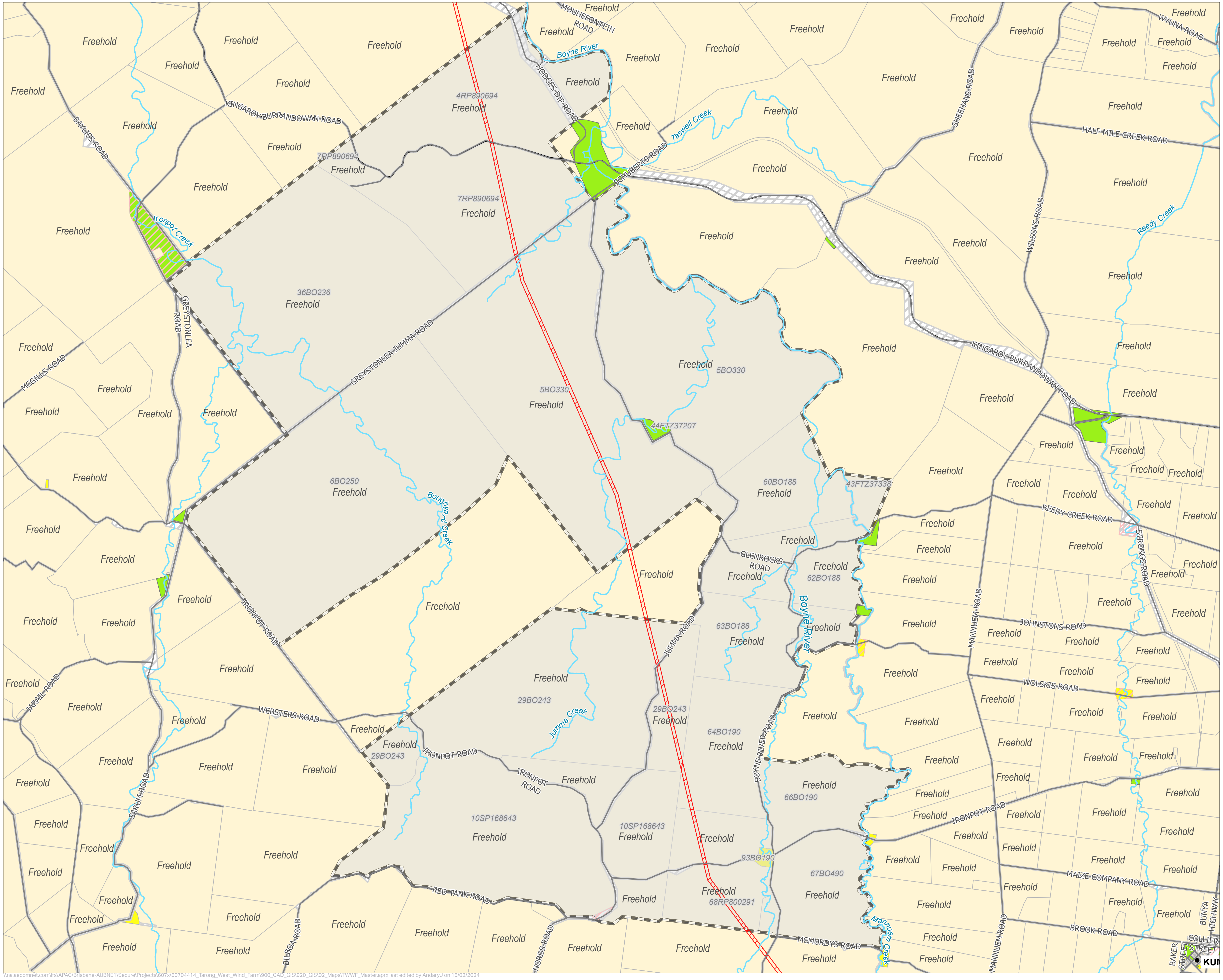
Table 4 Land tenure

Lot	Plan	Tenure	Area (ha)	Number of Turbines
4	RP890694	Freehold	922.98	4
5	BO330	Freehold	3,721.19	22
6	BO250	Freehold	2,355.45	13
7	RP890694	Freehold	971.60	4
10	SP168643	Freehold	1,924.15	8
29	BO243	Freehold	1,711.42	18
36	BO236	Freehold	1,982.99	12
43	FTZ37338	Freehold	72.84	0
44	FTZ37207	Reserve (Stock route)	12.90	0
60	BO188	Freehold	509.43	2
62	BO188	Freehold	501.89	1
63	BO188	Freehold	507.04	1
64	BO190	Freehold	512.08	4
66	BO190	Freehold	412.34	1
67	BO490	Freehold	493.51	4
68	RP800291	Freehold	511.94	3
93	BO190	State land	14.54	0
		TOTAL	**17,496.23**	**97**

Table 5 Road reserves within Project Site (all roads local roads unless otherwise stated)

Road	Adjoining lot/plan
Hodges Dip Road	Lot 4 RP890694
Kingaroy Burrandowan Road (State controlled road)*	Lot 4 RP890694 and Lot 7 RP890694
Jumma Road	Lot 5 BO330, Lot 44 FTZ37207, Lot 60 BO188, Lot 62 BO188, Lot 63 BO188, Lot 29 BO243, Lot 10 SP168643
Greystonlea Jumma Road	Lot 7 RP590694, Lot 36 BO236, Lot 5 BO330 and Lot 6 BO250
Boyne River Road	Lot 62 BO188, Lot 63 BO188, Lot 42 FTZ37338, Lot 64 BO190, Lot 65 BO190, Lot 66 BO190
Glenrocks Road	Lot 62 BO188
Red Tank Road	Lot 10 SP168643
Unnamed road	Lot 63 BO188 and Lot 65 BO190

*Part of the Project intersects Kingaroy Burrandowan Road, a State-controlled road that is owned and managed by the Department of Transport and Main Roads (DTMR). DTMR advised that no owner's consent for the purposes of lodging a properly made development application is required for works on a State-controlled road.



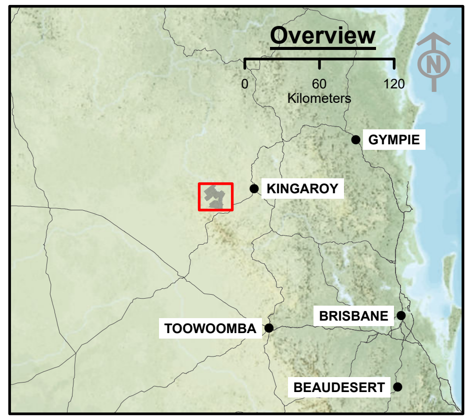
km 0 2 3

Legend

- Watercourse
- State Controlled Road
- Roads
- Site Boundary

Cadastral Boundaries (by Tenure)

- Electrical Transmission Easement
- Lands Lease
- Reserve
- Freehold
- State Land
- Unspecified



TARONG WEST WIND FARM PLANNING REPORT

Land Tenure

Figure 4

2.6.1 Easements

The following easements intersect the central portion of the Project Site:

- Queensland Electricity Transmission Corporation Limited (QETCL) Easement T RP826361 through Lot 4 RP890694
- QETCL Easement U RP826360 through Lot 7 RP890694
- QETCL Easement V RP826359 through Lot 5 BO330
- QETCL Easement X RP826357 through Lot 29 BO243
- QETCL Easement Y RP826357 through Lot 29 BO243
- QETCL Easement Z RP826356 through Lot 64 BO190
- QETCL Easement A RP826355 through Lot 68 RP800291
- QETCL Easement B RP826355 through Lot 68 RP800291.

2.6.2 Administrative advices

The following lots have administrative advice for a Veg Notice from the *Vegetation Management Act 1999*:

- Lot 5 BO330
- Lot 6 BO250
- Lot 10 SP168643
- Lot 29 BO243
- Lot 36 BO236
- Lot 43 FTZ37338
- Lot 60 BO188
- Lot 62 BO188
- Lot 63 BO188
- Lot 64 BO190
- Lot 66 BO190
- Lot 67 BO490
- Lot 68 RP800291.

3.0 Development proposal (Project description)

3.1 Overview

Tarong West Wind Farm (the Project) is proposed to consist of up to 97 wind turbine generators (WTGs) and ancillary infrastructure, including:

- Three 33 kV to 275 kV substations and one PLQ switching station to facilitate connection to connect to existing 275 kV overhead powerlines
- One battery energy storage system (BESS) up to 100 MW installed capacity
- Temporary construction compound and laydown areas
- Two batching plants^
- Up to six temporary laydown areas and stockpile areas.
- Two operations and maintenance facilities including control centre, offices, workshop, warehouse, water tanks, septic systems and parking
- Three collector stations
- Two washdown areas
- Two borrow pits*
- Wind turbine foundations and hardstand areas
- Site access and on-site access tracks
- Internal communications and electrical reticulation consisting of overhead lines (OHL) and underground (UG) cabling
- Three permanent and four temporary** wind monitoring masts.

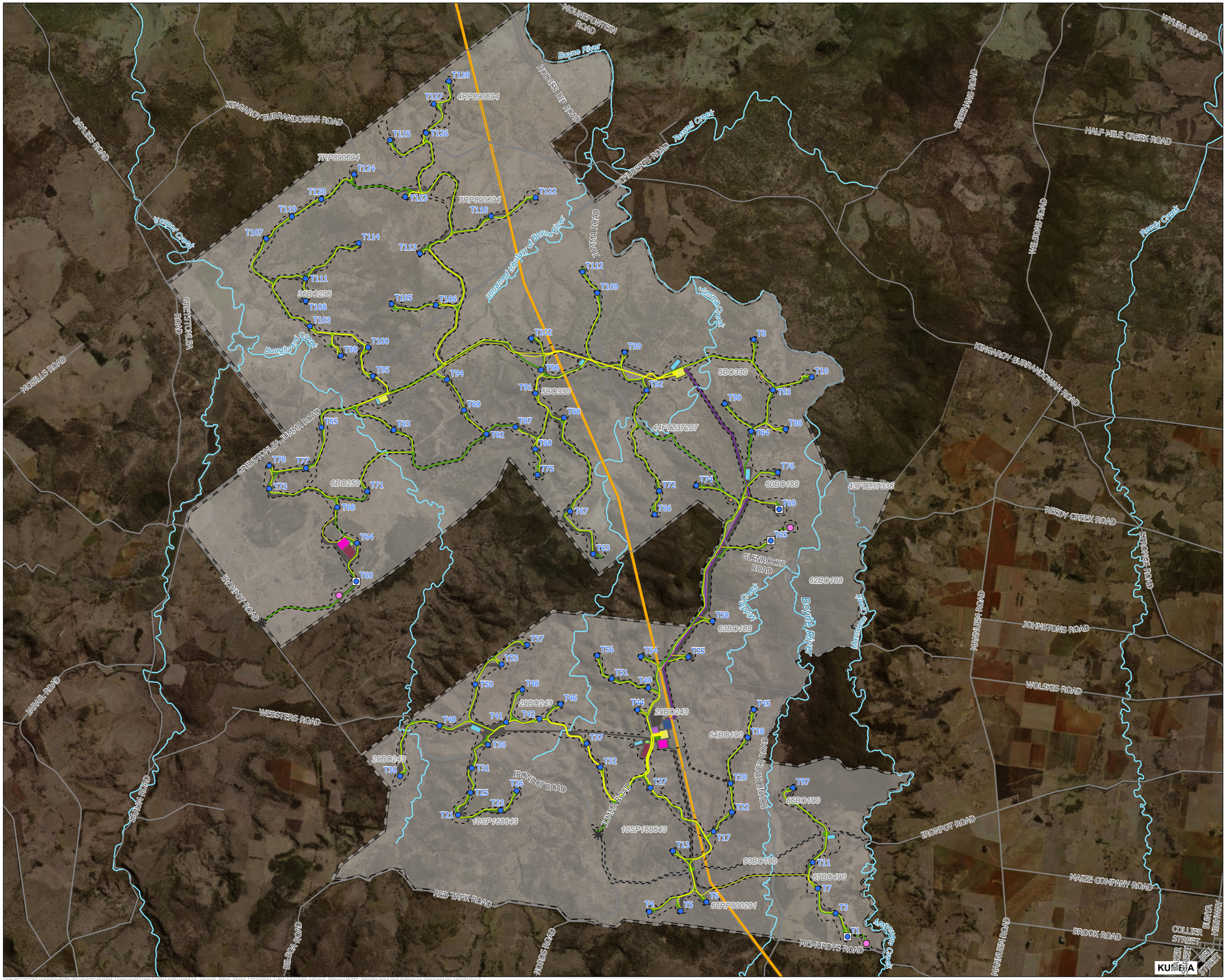
^Batching plants may be subject to separate development application(s).

*Borrow pits may be subject to separate development application(s)

**The four temporary wind monitoring masts are located at WTG locations. The temporary wind monitoring masts will be erected during the construction phase, before being decommissioned before the operations phase.

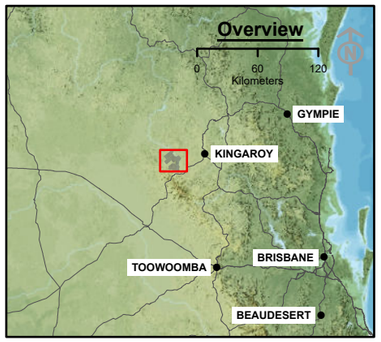
It is anticipated that existing land management practices will be largely unaffected by the Project, with the participating properties continuing to be used for grazing and agricultural activities throughout construction and operation of the Project.

Figure 5.1 outlines the proposed locations of the WTGs and required infrastructure. The layout has been extensively developed to avoid, where possible, impacts on known environmental constraints. **Figure 5.2** outlines the locations of the former turbines that have been removed from a previous 128 WTG layout.



Legend

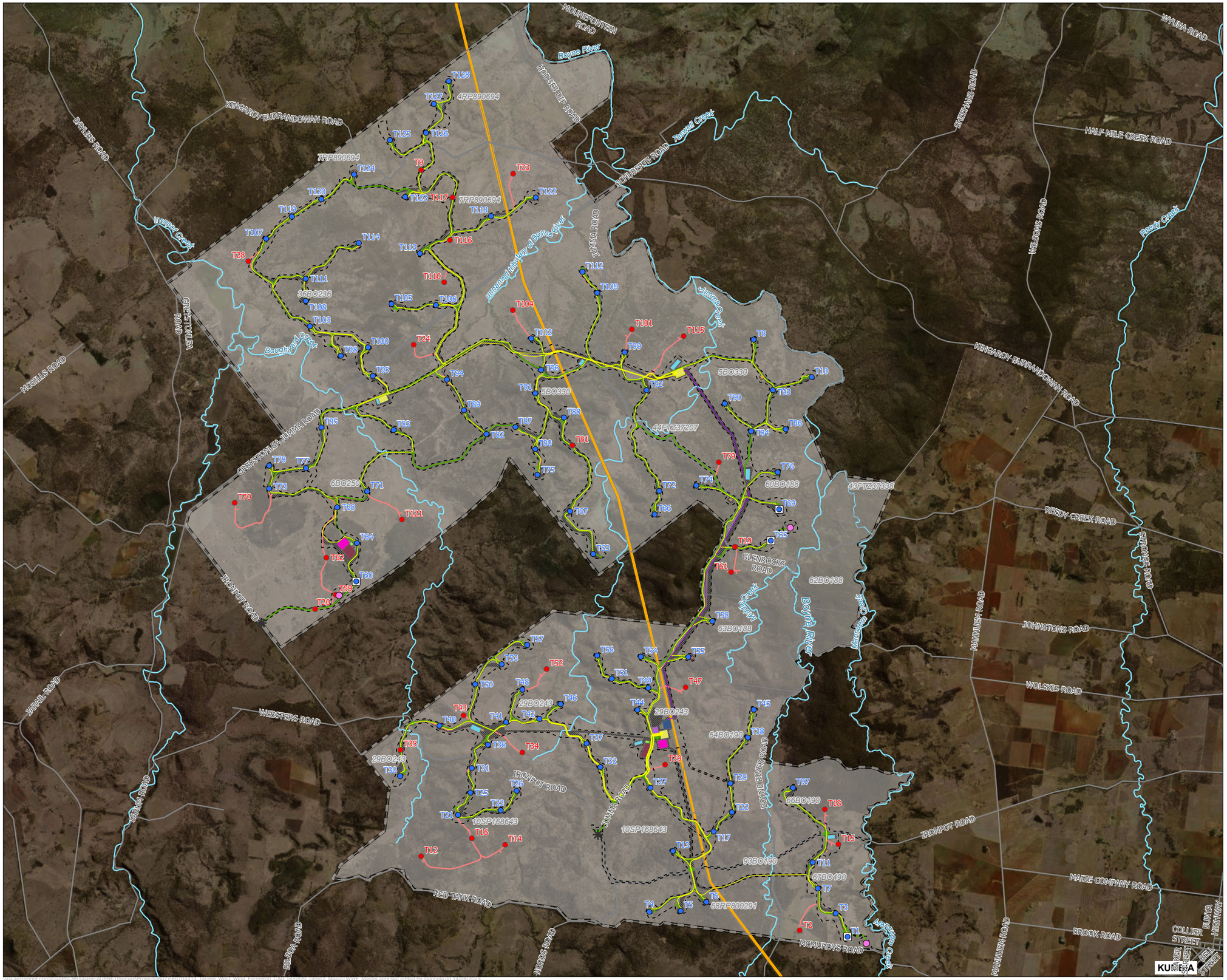
- Site Access
- Turbine
- Meteorological Mast (Permanent)
- Meteorological Mast (Temporary)
- Watercourse
- State Controlled Road
- Roads
- Access Track
- Existing Powerlink 275kV Overhead Line
- Proposed Overhead Reticulation
- Proposed Underground Reticulation
- BESS Area
- Batch Plant
- Collector Station
- Laydown
- O&M Building
- PLQ Switching Station
- Site Compound
- Substation
- Washdown Area
- Site Boundary
- Cadastral Boundaries
- Planning Corridor
- Clearing Footprint



TARONG WEST WIND FARM PLANNING REPORT

Material Change of Use Proposal Plan

Figure 5.1

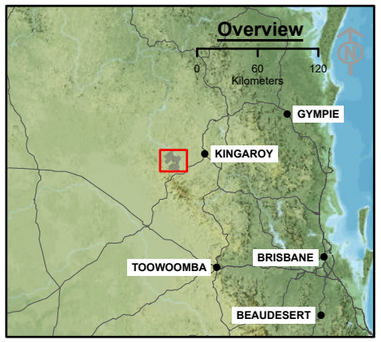


N

0 2 3 km

Legend

- Site Access
- Current 97 WTG layout
- Deleted WTGs
- Meteorological Mast (Permanent)
- Meteorological Mast (Temporary)
- Watercourse
- State Controlled Road
- Roads
- Access Track
- Deleted Access Track
- Existing Powerlink 275kV Overhead Line
- Proposed Overhead Reticulation
- Proposed Underground Reticulation
- BESS Area
- Batch Plant
- Collector Station
- Laydown
- O&M Building
- PLQ Switching Station
- Site Compound
- Substation
- Washdown Area
- Site Boundary
- Cadastral Boundaries
- Planning Corridor
- Clearing Footprint



TARONG WEST WIND FARM PLANNING REPORT

Material Change of Use Proposal Plan and Former Turbines

Figure 5.2

3.2 Wind farm layout

The Project has been refined on several occasions through an iterative process and has been influenced by a combination of factors including availability of wind resource, social and environmental considerations, proximity to existing electricity transmission network and constructability.

Following approval of the Project, detailed design will be undertaken to further refine the wind farm layout through micro-siting. To accommodate on site constraints, wind turbines and ancillary infrastructure may be micro-sited up to 100 m (from original location) within the Planning Corridor. The micro-siting process may also potentially allow for further protection of species, habitat and features of localised conservation significance.

The wind farm layout has been designed to ensure that the Project can comply with the relevant assessment benchmarks, being State code 23: Wind farm development (version 3.0). For further details refer to the Project plans contained in Appendix E and the response to the State Development Assessment Provisions at Appendix X.

Planning Corridor and Clearing Footprint

The Project Site involves construction of up to 97 wind turbine generators and associated supporting infrastructure, contained within the Planning Corridor, a 1,952.96 ha subset of the Project Site, which will contain all wind turbine generators, tracks, and ancillary infrastructure to be constructed. The Operational Works Plan at Appendix E provides an indicative location of the wind turbines and ancillary infrastructure within the Project Site. The Planning Corridor represents the maximu area within which all wind turbines and ancillary infrastructure must be contained.

The Planning Corridor contains the Clearing Footprint (1,062.14 ha), representing the maximum area of disturbance of the Project. The Clearing Footprint may be micro-sited within the Planning Corridor.

The key infrastructure elements that are proposed to make up the wind farm are explained below.

3.2.1 Sensitive land uses

Acceptable Outcome AO10.1of State Code 23: Wind farm development (Version 3.0) states:

> *AO10.1 A separation distance of at least 1500 metres is achieved between wind turbines and existing or approved sensitive land uses on non-host lots.*

Sensitive uses of the land during construction are identified as areas of high ecological value, cultural heritage value and the following land uses that are owned/accommodated by host landowners (located within the Project boundary) or non-host landowners (located outside the Project boundary):

- Caretaker’s accommodation
- Dwelling house
- Dwelling unit
- Non-resident workforce accommodation
- Rural workers’ accommodation
- Short-term accommodation
- Tourist park.

These land uses are consistent within the definition of ‘sensitive land uses’ per State code 23: Wind farm development (version 3.0) and Schedule 24 of the Planning Regulation 2017.

Heritage database searches did not identify any known heritage sites within the Project boundary. The identified Aboriginal Parties for the Project Site are the Auburn Hawkwood People Aboriginal Corporation (AHPAC) and Wakka Wakka Native Title Aboriginal Corporation (WWNTAC).

In accordance with acceptable outcome AO10.1 of State code 23: Wind farm development (version 3.0), a 1,500 m setback from existing or approved sensitive land uses on non-host lots has been applied and is illustrated on the Turbine Layout and sensitive land uses map contained in Section 4.4. Where wind turbines are within 1,500 m of existing or approved sensitive land uses on non-host lots, a

written agreement (Deed of Release) must be obtained from all affected non-host lot owners accepting the reduced setback. The proposed wind turbines are not within 1,500 m of any existing or approved sensitive land uses on non-host lots and therefore a Deed of Release is not required.

3.2.2 Staging

The Project is currently anticipated to be constructed as a single stage, however in future it may be necessary to construct the project in multiple stages.

3.2.3 Wind Turbine Generators

The power output from an operational wind farm largely depends on the strength of the wind blowing across the site at the time. During the operation of the Project, the turbines will automatically start, stop and alter their output as determined by wind speed and other environmental and electrical conditions.

Usually, wind turbine generators start to generate electricity at a wind speed of between 3 metres per second (m/s) and 4 m/s, and the output increases up to their maximum rated power at a wind speed which varies between the various turbine models. The wind turbines will also have a wind speed at which they automatically shut down. This also varies amongst the different turbine models available.

Proposed wind turbines

Each proposed turbine consists of a foundation, a steel tower, the hub, the nacelle and three blades. The adjacent hardstand area (refer Section 3.2.5) will remain throughout the project to facilitate maintenance, such as blade replacement.

The final selection of turbine technology will be determined as part of the detailed design following approval of the Project. However, the Project has been designed to accommodate the maximum specifications for the features outlined in **Table 6** so any potential impacts of the Project on environmental values can be adequately considered.

Table 6 Key turbine specifications

Feature	Details
Wind turbine type	Horizontal-axis wind turbine
Number of turbines	Up to 97 wind turbines
Turbine electrical output*	Up to **4.5** MW
Project generation capacity*	up to **436.5** MW
Tip height**	Up to **280** m from ground level to blade tip
Rotor diameter**	Up to **180** m
Hub height**	Up to **190** m
Blade length**	Up to **90** m
Blade chord thickness**	Up to **4500** mm
Colour of turbines***	White, off-white or light grey

*The actual output of the wind farm will depend on the number, size and type of turbine chosen during the detailed design phase. Regardless of the size of the wind farm generation capacity, the Project will still need to satisfy the environmental constraints and approval conditions; for example, compliance with State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022), particularly in relation to acoustic amenity and setback criteria.

**Dimensions are approximate to allow for innovation in turbine design prior to construction. Final dimensions will be confirmed during the detailed design phase of the Project, but will be limited to a maximum tip height of 280 m.

***The turbines will be uniform in colour to reduce their contrast with the background sky and minimise reflections.

The specifications listed in the **Table 6** will not restrict the final selection of turbine model in any way, rather, provides flexibility for any innovation in turbine design between now and the time of detailed design and construction.

The final choice of turbine will be based on an assessment of the most suitable turbine for the Project available at the time of procurement.

3.2.4 Turbine foundations

Each turbine foundation will comprise a reinforced concrete slab. Turbine foundations may vary in size depending on imposed loadings, ground conditions, construction methodology and the drainage design. Each turbine manufacturer has individual foundation requirements for each site which will need to be adhered to.

The detailed design of the foundations are proposed to be undertaken following approval of the Project and following the final selection of turbine model to be installed. The final design will also consider the geotechnical conditions identified through detailed site investigations.

Any material excavated to locate the foundation is proposed to be stockpiled and reused to cover the foundation. Any surplus material is proposed to be reused on site, where possible.

3.2.5 Hardstands

Turbine locations will require an area of gravel capped hardstand adjacent to each turbine foundation (approximately 270 m by 110 m plus a 30 m buffer around perimeter to allow for construction and crane placement). These hardstand areas are intended to provide a stable base on which to place turbine components ready for assembly and erection, and to locate the crane necessary to lift the turbine components into place.

The total clearing per turbine hardstand will vary across the 97 turbines, depending on the extent of vegetation at each location and the topography..

These areas may be left in place following construction to allow for the use of similar plant should major components need replacing during the life of the Project, and for use during decommissioning at the end of the operational period.

3.2.6 Electrical connections, substations and grid connection

The electricity generated must go through a transformer kiosk adjacent to (or within) each turbine in order to increase its voltage and efficiently transfer it to the proposed substation located on site. The wind turbines are proposed to be connected in ‘strings’ via underground cables or overhead lines to the main transformer located in the proposed substation.

Power and communication cables will be installed between the turbines and connect back to the substation and the operation/maintenance facility.

Substation

A substation and switching yard will be located adjacent to the existing Powerlink Queensland transmission line and will connect the wind farm to the National Electricity Market (NEM). The proposed substation and switchyard are co-located and the substation may contain offices, fencing, workshops, switch-room, a step-up transformer and high voltage equipment.

Underground cables

A series of medium voltage underground electrical cables will be laid in cable trenches and then filled in to allow for continued agricultural activities. The route of the underground cables is parallel to the internal access roads where possible to minimise impacts to vegetation.

The total length of cable trenches required will be dependent on the final layout of the substation, turbines and operation/maintenance facility.

Overhead lines

The project will involve on-site connection to the existing overhead 275 kilovolt (kV) transmission line. As well as this existing transmission line, it is proposed that there will be approximately 11 km of new overhead transmission line built to connect project infrastructure. This includes connection of the north

substation to the south substation (275kV) and connection of turbines in locations where underground cable is not practicable (33kV). Refer to **Figure 5.1**.

3.2.7 Wind monitoring masts

Three permanent and four temporary wind monitoring masts are proposed for the Project. The masts will assist in optimising the power generation of WTGs. The four temporary masts are located at WTG locations. These temporary wind monitoring masts will be erected during the construction phase, before being decommissioned before the operations phase.

Key mast design features are listed below:

- Up to 190 m in height above ground level (up to the maximum hub height of the WTGs).
- Each mast will be anchored to the ground by guy wires.
- Equipment to be installed: At height - anemometers, wind vane, temperature probe. At ground level - Logger box, 4G modem, power supply.
- Material: generally galvanised steel except for painted red/white alternating for top 1/3 (final details subject to detailed design).

3.2.8 Battery storage

If constructed, the proposed battery energy storage system compound will occupy approximately 3 ha. The specific battery storage system has yet to be selected; however, it may have the capacity to store up to 100 MW of energy that can be dispatched to the grid as required. This area will be enclosed by security fencing and include control boxes and access/circulation around the batteries for safety and maintenance access. The battery storage facility and associated infrastructure will be mounted on a bunded concrete pad. Underground cables will connect the battery storage facility to the proposed substation and then into the NEM.

3.2.9 Operation and maintenance facility

Two location options have been identified for the operation and maintenance facility within the Project Site. The footprint of the operation and maintenance facilities is up to 4 ha. These areas typically contain vehicle parking spaces, septic ablutions and wash down areas as appropriate.

The Project Site does not currently have access to the local reticulated water and sewerage network. Once operational, the Project is expected to utilise water tanks and an on-site septic system is proposed to be installed to comply with the Building Code of Australia and is proposed to be positioned adjacent to the operations and maintenance compound.

3.2.10 Compounds and laydown areas

There are six (6) optional locations for construction compounds and laydown areas. The number of laydown areas required is subject to further detailed design.

The construction compounds may be required to accommodate portacabins (site offices, first aid facilities, canteen facilities, waste disposal and toilets); storage containers for tools and equipment; storage areas for plant, fuel storage, material and components; wash down facilities; and sufficient parking for the workforce, deliveries and visitors.

The laydown areas may accommodate temporary storage of construction plant equipment, wind farm components and construction materials prior to moving to their ultimate destination. The areas may also be used for rock crushing and stockpiles.

The construction compound and laydown areas will be formed into hardstand areas. Prior to forming the hardstand area, the topsoil will be removed and stockpiled adjacent to the hardstand area. Following the completion of the construction phase, the temporary construction compound and laydown areas may be fully reinstated depending on the host-landowner requirements.

The total footprint area identified for the construction compounds and laydown areas totals approximately 10.75 ha if all six (6) areas are constructed. The exact locations, nature and number of the construction compounds and laydown areas will be established in consultation with the relevant landowners when a full construction methodology is determined.

Site access

The primary access point for the site is from Jumma Road and Ironpot Road, accessed via:

- Mannuem Road, off the Bunya Highway for OSOM vehicles only
- Nords Road and Red Tank Road, off the Bunya Highway for all non-OSOM vehicles approaching from the South (Brisbane, Toowoomba, Dalby and surrounding towns)
- Nords Road and Red Tank Road, off the Bunya Highway for all heavy vehicles approaching from the East (Kingaroy and surrounding towns)
- The Bunya Highway for light vehicles approaching from the East (Kingaroy and surrounding towns)

Other internal access locations include multipleentries off Ironpot Road to the site.

3.2.11 Internal access

The on-site access tracks have been designed to use the existing topography of the land, avoiding steep terrain where possible and minimising the amount of land required. Access tracks in close proximity to regulated vegetation have been individually refined to avoid and minimise impacts to regulated vegetation and reduce overall ecological disturbance.

The construction and overall length of access tracks will vary depending on localised ground conditions and detailed design. Conditions impacting construction include the existing vegetation, nature of the topsoil, level of moisture in the ground, geotechnical base and localised topography.

The following design criteria and mitigation measures were applied to the access track layout to mitigate potential impacts:

- Pavement width of finished tracks will typically be 5.5 m wide, plus additional width for drainage, batters and underground cabling, where required.
- Tracks may be wider in some areas to allow for regular passing places and turning areas.
- Tracks will not be sealed and constructed from locally sourced aggregate or from an on-site quarry.
- The number of watercourse crossings have been minimised as far as practicable.
- Effective sediment control measures will be implemented for track margins to reduce potential sediment-laden run off.

Post construction, the areas cleared to create batters and corners are proposed to be rehabilitated. Roads will be maintained and need to remain passable for oversize over mass loads in the event of a blade replacement during operation.

The number of watercourse crossings has been reduced where possible across the Project Site. The exact requirement and design of the water course crossings will be confirmed during the detailed design phase and will be based on geotechnical site investigations and discussions with the relevant regulators.

3.2.12 Construction workforce

The workforce required to construct the Project is approximately 170 direct and 270 indirect full-time equivalent jobs over approximately a 24-month construction period. Where possible, the construction workforce will be accommodated in existing accommodation in nearby townships. Onsite accommodation will be considered if existing accommodation options cannot support the workforce in its entirety.

3.2.13 Operational workforce and maintenance function

It is anticipated that the ownership of the Project will transfer from RES to a dedicated project company (Project owner) prior to the commencement of construction. As a specialist provider of construction management and asset management services, RES is anticipating engagement by the Project owner to provide these services on the Project. In this capacity RES will act on behalf of the Project owner to oversee the Engineering, Procurement and Construction (EPC) and Operation & Maintenance (O&M) Contractors respectively engaged to support the construction and operation of the project.

The day-to-day physical operation and maintenance of the Project will be managed by the specialist O&M Contractor. It is expected that the number of operational positions is to be 10 full-time equivalent positions. However, the number of full-time operational positions is dependent on the final configuration of the Project.

During the 30-year operational life of the Project, permanent locally based O&M personnel will be engaged to support the safe operation of the facility. The on-site O&M team will be based at the proposed operational site office on a full-time basis, supported by 24/7 monitoring of the operation of the facility by a dedicated off-site control centre and a roster of on-call O&M personnel for out of hours maintenance.

The South Burnett Region and Western Downs Region, are recognised as having a high proportion of skilled trades and O&M staff will be sourced locally where possible. Where workers cannot be secured locally, workers may be relocated to live locally to the Project. The local O&M team will be supported by specialist contractors where required. All O&M workers engaged to support the operation of the Project will be provided with relevant training and upskilling.

Aspects of the Project operation managed by onsite personnel may include:

- Scheduled and unscheduled maintenance of wind turbines and associated infrastructure, including out of hours maintenance (if required) and coordination with the Network Service Provider.
- Routine inspections, maintenance, and servicing of electrical infrastructure.
- Maintenance of on-site access tracks, gates, grids and other access related infrastructure.
- On-site safety and environmental management, including condition compliance.
- Landowner engagement and land access compliance.
- Community engagement (where applicable).

Functions anticipated to be managed by offsite personnel include:

- Australian Energy Market Operator coordination.
- Performance monitoring and generator licence compliance.
- Reporting, including environmental compliance reporting.
- 24/7 control centre monitoring and remote resetting.

3.2.14 Decommissioning and rehabilitation

At the end of the operational life of the Project, the Project will be subject to decommissioning in accordance with permit conditions, with all above-ground infrastructure on-site being dismantled and removed. Where practical, access tracks and project buildings (e.g. site warehouse) may be retained for future use by the landowner as part of ongoing agricultural use of the land or as part of local fire risk management strategy.

The decommissioning of the site will be undertaken in accordance with best practice processes relevant at the time those works commence, with the dismantling of the Project focussed on re-purposing and recycling of componentry as far as practicable. Areas subject to ground disturbance during decommissioning will be subject to rehabilitation and stabilisation. For instance, the establishment of suitable pasture coverage in consultation with the applicable landowner(s).

Alternatively, updated planning, environmental approvals, and land agreements may be secured to support an extension of the life of the existing wind farm or the ‘re-powering’ of the Project Site with updated turbine and generation infrastructure. Where the site is re-powered, existing access tracks, hardstands, connection infrastructure, and operational buildings are proposed to be utilised in the new project configuration (as far as practicable) to reduce the construction term, gap in generation potential, and to minimise the environmental impacts that may reasonably result from the repowering process. Where infrastructure is removed for replacement, there will again be a focus on re-purposing and recycling of componentry as far as practicable. Areas disturbed during the removal of unwanted componentry that will not form part of the footprint of the re-powered project will be subject to rehabilitation and stabilisation.

It is noted that the decommissioning methodology for the project has not been finalised at this stage.

3.2.15 Design certification

All Project components and infrastructure, including turbines and relevant electrical equipment, will be certified to comply with applicable Queensland, Australian, and/or International Standards (as applicable).

All turbine components will be capable of withstanding all climatic, aerodynamic, and electrical induced loads during the operational life of the Project as prescribed in applicable standards. It is noted that the operational life of the wind farm will be at least 30 years.

Final detailed design and procurement for the Project will be subject to detailed technical assessment and modelling informed by wind data collected from across the Project site during the development of the Project.

3.2.16 Utilities

To support operational activities on site, water tanks are proposed to be utilised. A supply of water will be available on-site during the construction term to support fire risk management activities. A bushfire management plan will be developed pre-construction to manage onsite fire risk.

Further, sewerage is proposed to be managed by a septic system and be removed off-site by a certified contractor, or an in-ground septic system with treated liquid influent through ground bio-irrigation (or equivalent) will be installed. The decommissioning of an installed septic system will be subject to relevant WHS and plumbing guidance in place at the time decommissioning commences.

3.3 Clearing native vegetation

3.3.1 Design flexibility

To ensure the viability of the Project, a planning corridor is proposed to allow for flexibility during the detailed design stages and enable infrastructure to be micro-sited. This will enable wind farm infrastructure to be placed in the most efficient location, ensuring optimum power production, whilst remaining consistent with the assessed impacts. Micro-siting is especially important due to the rapid change in wind turbine technology and onsite constraints, which inherently make it difficult to place infrastructure with certainty during the development assessment process.

To ensure the total clearing required for the Project, a maximum clearing area is proposed within the planning corridor (see table 2 for more detail). Following approval of the Project, it is anticipated that the clearing footprint can be moved within the planning corridor to allow for micro-siting of infrastructure.

3.3.2 Turbine areas

Turbine locations have been chosen based on several factors including availability of wind resource, social and environmental considerations, proximity to existing electricity transmission network and constructability. Turbine locations will require an area of gravel capped hardstand adjacent to each turbine foundation (approximately 270 m by 110 m plus a 30 m buffer around perimeter to allow for construction and crane placement). Where feasible, wind turbines have been located to avoid areas of regulated vegetation and ecological significance.

3.3.3 Access tracks

Where feasible, access tracks have been located to avoid areas of regulated vegetation and ecological significance however this was not always possible due to the nature of the topography on site. The width of the access tracks in regulated vegetation has been individually refined based on the natural gradient of the area and the required width to manoeuvre oversized vehicles.

The construction of access tracks will vary depending on localised ground conditions. Conditions impacting construction include the existing vegetation, nature of the topsoil, level of moisture in the ground, geotechnical base and localised topography.

The construction of access tracks will require clearing due to the cut and fill works on gradients, creation of batters and wider access tracks to allow for the pivoting of oversize vehicles, ensuring safety. Where the gradient of the site is greater, a wider access track has been planned. Project

impacts have been assessed on the basis of the maximum clearing footprint to allow construction of roads for vehicles to drive across the site and allow for the construction of overhead powerlines, and all associated cut/fill, batters, drainage and erosion and sediment controls.

3.3.4 Underground cables and overhead lines

Underground cables are proposed to be laid in trenches of varying width depending on the number of cables required. Where possible, the route of the underground cables is proposed to run adjacent to internal access tracks to reduce the amount of additional clearing required. There is approximately 11 km of new high voltage transmission lines proposed to be built to connect project infrastructure. Overhead lines are proposed to also run adjacent to internal access roads where practicable for the same reason, with on-site connection to the existing 275 kV overhead transmission line.

3.3.5 Impacts to vegetation

While impacts to vegetation cannot be entirely avoided, such impacts are considered reasonable given the extensive assessments undertaken throughout the Project's development.

The type and extent of vegetation present within the Project Site and clearing footprint is detailed in Table 7. The Category B vegetation to be potentially impacted by the Project is summarised in Table 8 below. The clearing footprint represents the maximum proposed clearing area and may be reduced by ongoing refinement in the design and micro-siting of infrastructure throughout the development phase of the project. **Figure 6** below outlines the areas of regulated vegetation within the Project Site.

Table 7 Regulated vegetation in project site and infrastructure

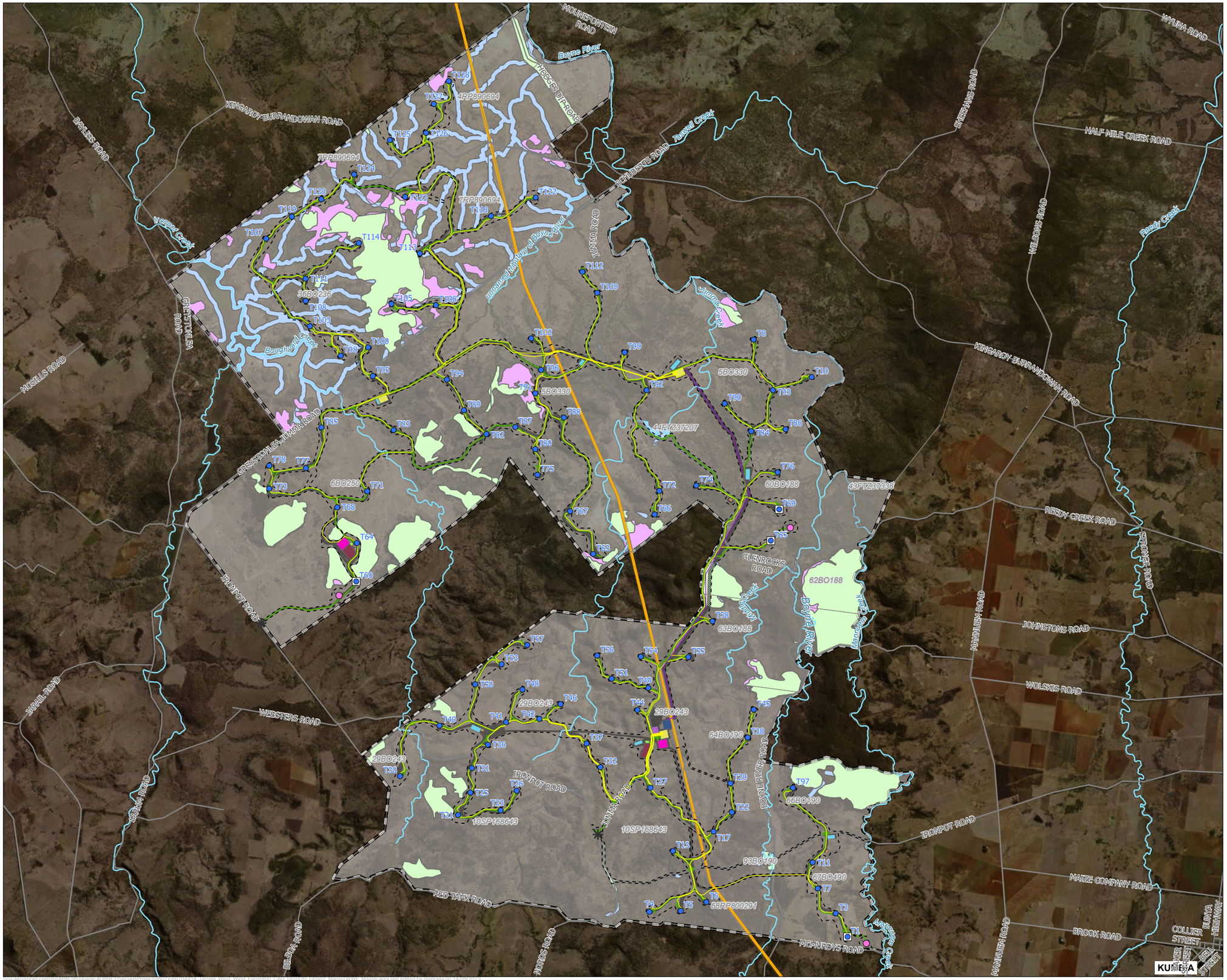
Regulated vegetation category	Potentially affected area (ha)		
	Project site	Clearing Footprint	% of project site
B	1,333.73	16.98	1.27
C	317.62	0	0
R	859.78	21.75	2.53
X	14,985.19	1,045.16	6.97
Total	**17,496.32**	**1,083.89**	**6.19**

Table 8 Potential vegetation clearance impacts

Vegetation category	Potentially affected area (ha)
Category B – Least concern	16.98
Category B – Of concern	0
Category B – Endangered	0

Where impacts to vegetation cannot be reasonably avoided or minimised, the impacts to vegetation are considered reasonable and supported by the following actions:

- Locating as much of the clearing required in Category X areas and existing cleared areas. As detailed in **Table 7,** most clearing involves Category X vegetation.
- Aligning and consolidating access tracks with cabling routes where feasible to reduce the clearing footprint across the site.
- Designing and siting project infrastructure to minimise disturbance to remnant vegetation with high conservation significance by avoiding areas containing 'of concern' vegetation where possible.
- Siting project infrastructure to maintain connectivity throughout the site, ensuring sufficient areas of remnant vegetation are retained to maintain ecological processes. It is acknowledged that there will likely be some unavoidable clearing of remnant vegetation.



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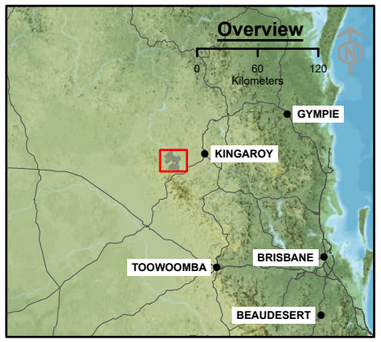
Legend

- Site Access
- Turbine
- Meteorological Mast (Permanent)
- Meteorological Mast (Temporary)
- Watercourse
- State Controlled Road
- Roads
- Existing Powerlink 275kV Overhead Line
- Access Track
- Proposed Overhead Reticulation
- Proposed Underground Reticulation
- Site Boundary
- Cadastral Boundaries
- Clearing Footprint
- Planning Corridor
- BESS Area
- Batch Plant
- Collector Station
- Laydown
- O&M Building
- PLQ Switching Station
- Site Compound
- Substation
- Washdown Area

Regulated Vegetation

- Category B
- Category C
- Category R



TARONG WEST WIND FARM PLANNING REPORT

Operational Works Plan

Figure 6

3.4 Project delivery timeframes

The construction period for the Project will be subject to change depending on contractual arrangements, weather conditions, availability of materials and personnel. Subject to Project approvals, construction is anticipated to commence in 2024 and the Project will be built 'Generally in Accordance" with the approved plans and conditions. Construction is proposed to take approximately 30 months.

During the construction phase, works could potentially occur for seven days during each week, 12 hours per day (06:30 to 18:30). Under such a scenario, materials would be transported to the Project Site for up to 28 days per month (assuming a four-week month). It may be necessary for certain construction activities to take place on a Sunday or during the night time (e.g. turbine installations during favourable weather conditions). In such instances, appropriate mitigation and management measures will be incorporated into a future Construction Environmental Management Plan (CEMP) which will contain an Out of Hours Work (OOHW) Protocol developed for the assessment, management and approval of works outside of the approved hours for construction. These assumptions will be revisited and modified as necessary during detailed design.

4.0 Technical considerations

4.1 Constructability

4.1.1 Methodology

A Construction Management Plan (CMP) (Appendix G) has been prepared that lists the activities to be undertaken during construction of the Project and demonstrates how the Project proposes to avoid, minimise and mitigate adverse impacts on environmental values, water quality objectives, amenity, local transport networks and road infrastructure.

Using the CMP as an input, a Construction Environment Management Plan (CEMP) is proposed to be prepared by the EPC Contractor prior to the commencement of any construction activities. The CEMP will include details of the construction programme, construction techniques to be employed, mitigation measures to control construction impacts, and contact protocol for queries and reporting incidents.

4.1.2 Equipment and machinery

It is anticipated that the construction work may include excavation, rock hammering, drilling, bulldozing, crushing and screening, concrete batching and, subject to geotechnical conditions, possible blasting. It is anticipated that an on-site borrow pit(s) will be utilised to source required construction material, where possible.

Noise will be generated by mobile plant such as excavators, bulldozers, mobile cranes and the movement of heavy vehicles. The following list of equipment is typical of each aspect of construction:

- Site mobilisation – road loaders, graders, backhoes, trucks, small crane and generators.
- Access tracks and hardstands – road loaders, bulldozers, excavators, graders, scrapers, rollers, articulated dump trucks, belly dumper trucks, rock crushing plant, semi-trailers, tractors, water carts and hydroseed trucks.
- Wind turbines – excavators, rock breaker, concrete trucks, flat-bed trucks, vacuum trucks, large crawler/all-terrain heavy lift cranes, small/medium crawler cranes, generators, tele-handlers, elevated work platforms.
- Electrical reticulation works – trenchers, backhoes, excavators, graders, tractors, cable laying machines, and small terrain cranes.
- Concrete batching plants.

Noise emissions from construction plant can be reduced by fitting exhaust mufflers, using reversing alarms that emit a broadband noise (e.g. white noise) rather than a beep, maintaining plant in good working order and following industry standard construction methodologies.

Other equipment and machinery may be required, depending on the nominated construction techniques.

4.1.3 Water supply

The provision of water is essential for the construction of the Project. The construction activities likely to require water are:

- Bulk earthworks and material conditioning,
- Dust suppression, and
- Drinking water for personnel and water for ablution facilities.

Water demand will vary over time, depending on the stages of the work. The total expected water requirement over the anticipated 30 month construction period by construction activity is estimated to be approximately 400 mega litres (ML). This requirement will be further refined during the detailed design of the Project.

Water demands for the Project will require different water quality standards. Potable water fit for human consumption will be required at the site offices, while both medium (suitable for use in the concrete

batching) and low-quality raw water (for earthworks and dust suppression) may be used for construction purposes. Water will be tested from various supply options and allocated to the most appropriate use.

A water sourcing strategy will be developed so that water used during the construction phase does not cause issues to adjacent landowners or other stakeholders. Where possible, potable water will be obtained from the local government water reticulation network or otherwise trucked to the site.

Lower quality water (for earthworks and dust suppression) is likely to be locally sourced from:

- Groundwater – to include artesian and sub-artesian.
- Off-site – to be sourced off-site and trucked in.

Construction water supply options will be determined during the detailed design of the Project and the relevant permits will be obtained for sourcing of water prior to construction.

Construction works

For the construction of the Project, the following activities are expected to occur:

- Site establishment (temporary site facilities, lay down areas, equipment and materials).
- Clearing areas of vegetation
- Earthworks, rock crushing, paving (with gravel cap) and drainage for access roads and wind turbine hardstands.
- Excavation for the turbine foundations and ancillary infrastructure
- Construction of wind turbine foundations (bolt cage, reinforcement and concrete) via temporary on-site concrete batching plant).
- Installation of electrical and communications cabling and equipment.
- Installation of medium and high voltage substation infrastructure including transformers
- Delivery of wind turbine components.
- Installation and of wind turbine, using large cranes.
- Commissioning and reliability testing of wind turbines.
- Progressive rehabilitation and restoration of the Project Site where feasible.

4.1.4 Construction management

A Construction Management Plan (CMP) and a Conceptual Erosion Sediment Control Plan (ESCP) has been prepared in accordance with Performance Outcome PO13 of State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022). Following detailed design, a CEMP, incorporating a final ESCP will be prepared for the Project.

The CMP outlines the different activities to be undertaken during construction and the equipment required to undertake the activities. It also identifies the potential impacts during construction and possible mitigation measures. The CMP also outlines how to measure the performance of the Project during construction and operation.

The Conceptual ESCP identifies initial risks and the subsequent management and application of sediment and erosion control techniques for the Project. The Conceptual ESCP provides conceptual information in accordance with the International Erosion Control Association (IECA) Best Practice Erosion and Sediment Control document. Detailed engineering design of controls and structures has not been provided.

Refer to the CMP and Conceptual ESCP in Appendix H for more information.

4.2 Aviation safety, integrity and efficiency

The Aviation Impact Assessment demonstrated that the project satisfies the requirements of performance outcomes PO1 and PO2 of State code 23: Wind farm development (version 3.0). The assessment determined that based on the proposed layout and overall WTG blade tip height limit of

280 m AGL, the blade tip elevation of the highest WTG, which is T4, will not exceed 860.7 m AHD (2823.7 ft AMSL) and therefore:

- will not infringe any OLS surfaces for Kingaroy Airport
- will infringe the PAN-OPS surface for the 10 nm MSA for Kingaroy Airport
- will not infringe the PANS-OPS surface of the 25 nm MSA Kingaroy Airport
- will have an impact on nearby designated air route V250
- is wholly contained within Class G airspace
- is outside the clearance zones associated with aviation navigation aids and communication facilities.

Kingaroy Airport is located approximately 27.8 km east of the Project boundary. The report identified that five WTGs infringe the PAN-OPS surface for the 10 nautical mile (nm) Minimum Sector Altitude (MSA) for Kingaroy Airport. The Proposed Development will not infringe the PANS-OPS surface of the 25 nm MSA and will not infringe any OLS surfaces for Kingaroy Airport. It is recommended that 10 nm MSA is raised by 100 ft.

The Proposed Development will have an impact on nearby designated air route V250. The Lowest Safe Altitudes (LSALT) on route V250 will have to be raised from 3600 ft Above Mean Sea Level (AMSL) to 3900 ft AMSL.

Consultation was undertaken with relevant parties, including:

- Airservices Australia
- Aerial agricultural operators (South Burnett Air Services)
- Airline operators (Fly Corporate ad Regional Express)
- Civil Aviation Safety Authority
- Department of Defence
- The Airport Group
- Queensland Fire and Emergency Services
- Royal Flying Doctor Service
- South Burnett Regional Council.

Civil Aviation Safety Authority (CASA) advised that they only review assessments referred to it by SARA. As such, written endorsement from CASA stating they have no objection to the wind farm is not provided as part of this development application.

The report concludes that following the implementation of the recommendations in the report, the Project will not adversely affect the safety, operational integrity or efficiency of air services, thereby complying with performance outcome PO1 of State Code 23: Wind farm development. The report further recommends that consideration should be given to marking any wind measurement towers according to the requirements set out in Part 139 (Aerodromes) Manual of Standards 2019, Section 8.110.

Refer to the Aviation Impact Assessment Report in Appendix I for more information.

4.3 Electromagnetic interference

The Electromagnetic Interference (EMI) Assessment has been undertaken in compliance with performance outcome PO3 of State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022) to consider the potential for the Project to interfere with radiocommunication signals.

Radiocommunications is a broad term and encompasses all services that rely on microwave or radio frequency electromagnetic waves to transfer information.

Based on the assessment, the Project will satisfy performance outcome PO3, once necessary micro-siting of turbines, mitigation and stakeholder liaison has occurred. Feedback has been received from Telstra indicates that there is a potential for impact to existing services and operations, however, these can be managed through micro-siting of turbines, appropriate mitigation measures or ongoing liaison with the developer and relevant stakeholders.

The main way the Project may interfere with radiocommunication signals is the physical presence of the turbines (obstruction, diffraction, scattering, or near-field effects). Due to the turbine layout, it is considered unlikely that electromagnetic emissions from the Project will cause interference to radiocommunication services in the surrounding area. Based on the WTG layout, there is one (1) WTG located approximately 3 metres inside the Telstra requested clearance zone for one fixed point-to-point radiocommunication link passing over the project boundary. However, it is understood that this turbine will be micro-sited outside the requested clearance zone prior to construction to satisfy the clearance zone requirement.

Where interference to radiocommunication may be caused, mitigation measures and other options can be considered and proposed to the relevant operator.

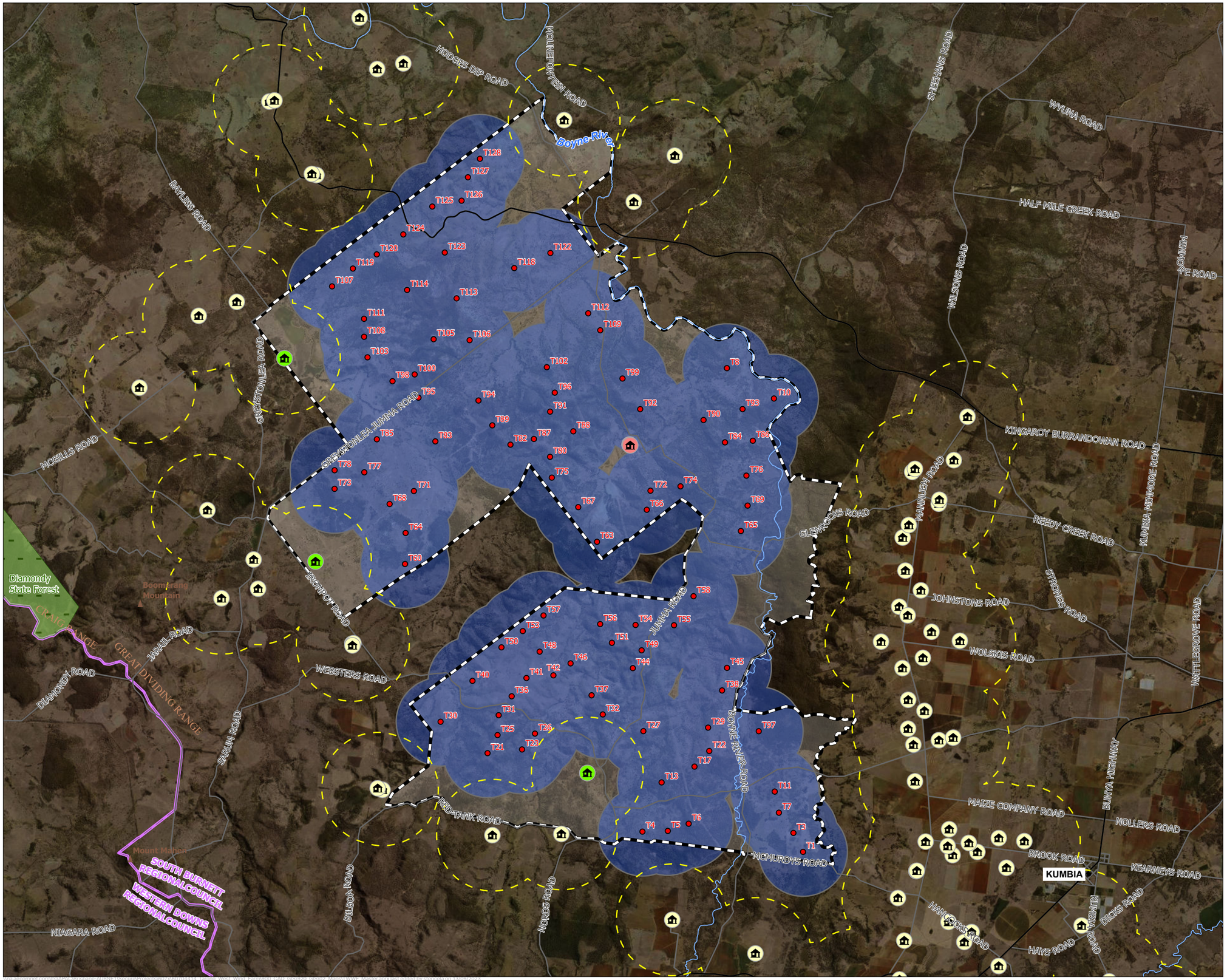
The full EMI Assessment is provided in Appendix J.

4.4 Shadow flicker

No shadow flicker assessment is required for residences beyond a distance of 265 m x maximum blade chord as per Appendix 2 of the State code 23: Wind Farm development - Planning Guidelines (February 2022).

The maximum blade chord of the wind turbines proposed for the project is 4.5 m, equating to a required assessment distance of 1,192.5 m. All identified and habitable sensitive land uses are beyond this distance from the wind turbine locations proposed for the Project, refer to **Figure 7.**

Appendix E provides further detail on the locations of the Project Site and the proposed turbine locations.



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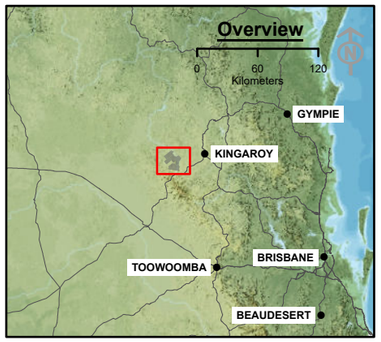
N

0 2 3 km

Legend

- Turbine
- Non-host residential receptor
- Host residential receptor
- Host residential receptor - abandoned*
- Mountain Peaks
- State Controlled Road
- Watercourse
- Roads
- Site Boundary
- Local government boundary
- State Forest
- Extent of potential shadow flicker
- 1500m setback buffer

*Abandoned structures to be relocated or demolished prior to operation of the Project



TARONG WEST WIND FARM PLANNING REPORT

SHADOW FLICKER ASSESSMENT AND SENSITIVE LAND USE SEPARATION

Figure 7

4.5 Flora and fauna

An Ecological Assessment Report has been prepared to address performance outcome PO5 and PO8 of State code 23: Wind farm development (version 3.0). As part of the ecological study, a desktop review was completed of the Project Site and transport route with a 10 km buffer prior to conducting seasonal surveys to identify ecological values. Several flora and fauna surveys were undertaken from 2019 - 2023 to ground truth the desktop information for the site.

Targeted surveys detected the presence or likely occurrence of nine fauna and one flora species considered matters of conservation significance within the Project Site:

- Koala (*Phascolarctos cinereus*), listed as Endangered under both *the Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and *Nature Conservation Act 1992* (NC Act)
- White-throated Needletail (*Hirundapus caudacutus*), listed as Vulnerable and Migratory under the EPBC Act and Vulnerable under the NC Act
- Greater Glider (*Petauroides armillatus*), listed as Endangered under both the EPBC Act and NC Act
- Grey-headed Flying-fox (*Pteropus poliocephalus*), listed as Vulnerable under the EPBC Act
- Glossy Black-cockatoo (*Calyptorhynchus lathami lathami*), listed as Vulnerable under both the EPBC Act and NC Act
- Rufous Fantail (*Rhipidura rufifrons*), listed as Migratory under the EPBC Act and Special Least Concern under the NC Act
- Satin Flycatcher (*Myiagra cyanoleuca*) listed as Migratory under the EPBC Act and Special Least Concern under the NC Act
- Fork-tailed Swift (*Apus pacificus*), listed as Migratory under the EPBC Act and Special Least Concern under the NC Act
- Echidna (*Tachyglossus aculeatus*), listed as Special Least Concern under the NC Act
- Bailey's Cypress (*Callitris baileyi*), listed as Near Threatened under the NC Act.

Through the refinement of the Project Site, impacts to one Threatened Ecological Community (TEC) (Semi-evergreen Vine Thickets of the Brigalow Belt (North and South) and Nandewar Bioregions) located to the east of the Project Site have been avoided completely.

Minimisation of residual impacts to the Koala will involve management of land-based environmental offsets, and residual impacts to the White-throated Needletail will be managed using adaptive management measures applied in accordance with the future approved Tarong West Bird and Bat Management Plan.

Impacts to regulated vegetation are considered a Matter of State Environmental Significance, and offsets may need to be considered to address the following:

- Up to 16.98 ha of Category B (remnant) regulated vegetation containing least concern REs will be impacted.
- The planning corridor contains 4.93 ha of regulated vegetation within the specified buffer distance of mapped vegetation management watercourses.

Provided the management and mitigation measures detailed in the Ecological Assessment and the project specific management plans (Preliminary Fauna Management Plan, Preliminary Vegetation Management Plan and Preliminary Bird and Bat Management Plan) are implemented, the Project will comply with performance outcomes PO5 and PO8 of State code 23: Wind farm development (version 3.0), which are relevant to ecological matters.

The full Ecological Assessment Report is provided in Appendix K.

4.6 Traffic and access

A Traffic Impact Assessment (TIA) has been prepared for the Project to address performance outcomes PO6 and PO13 to determine the potential impact that the construction and operation phases of the Project may have on the traffic operations of the surrounding road network and pavement condition. The assessment was undertaken in accordance with the requirements of the State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022).

The TIA considered the impacts to road link traffic, intersection traffic, pavement, access and frontage and provided recommendations for upgrade works and the applicable maintenance contributions to the relevant road authorities.

The assessment identified that five road sections had traffic impacts exceeding the specified 5% traffic impact value, while 11 road sections had pavement impacts exceeding the specified 5% pavement impact value. These can be attributed to low road usages and specifically low usage of heavy vehicles in most of these areas.

The key intersections expected to be utilised by the development during construction are:

- Warrego Highway / Jandowae Road.
- Dalby Jandowae Road / MacAlister Bell Road.
- MacAlister Bell Road / Bunya Highway.
- Bunya Highway / Mannuem Road.
- Mannuem Road / Ironpot Road.
- Bunya Highway / Ironpot Road.
- Bunya Highway / Nords Road.
- Nords Road / Red Tank Road.
- Red Tank Road / Ironpot Road.

The TIA outlines mitigation and control measures appropriate to mitigate the long- and short-term traffic impacts of the Project. The TIA is provided in Appendix O. A Traffic Management Plan (TMP) is also included in Appendix P.

As part of the Transport Route Study, a preliminary assessment was undertaken for the transport of 90 m long wind turbine blades from the Port of Brisbane to the Project Site.

The study identified 16 locations along the proposed 330 km transport route that have the potential to constrain component delivery due to existing infrastructure or potentially inadequate road width / turn radii to cater for the critical oversize transport vehicles. By carrying out the recommended road upgrades the impacts to the transport route will be mitigated. It is noted that the upgrade works are typically minor in nature, including temporary removal of street signs and gravel pavement widening.

Through a desktop analysis and overpass measurements along the transport route, the study determined that the largest vehicle able to travel to Site has a maximum height of 5.8 m.

The majority of roads along the transport route are approved HML roads, except Volker Street, Dalby Jandowae Road (north of Hustons Road), MacAlister Bell Road, Bunya Highway (heading north past Byrnes Road), Mannuem Road and Ironpot Road. Turbine component delivery vehicles running at HML loads on these roads will require the Contractor's appointed transportation company to apply for HML permits to the National Heavy Vehicle Regulator (NHVR).

The Traffic Impact Assessment (Appendix O), Traffic Management Plan (Appendix P) and Transport Route Study (Appendix Q) demonstrate compliance with performance outcomes PO6 and PO13 are achieved. It is further noted that a final Transport Route Study and Traffic Impact Assessment will be prepared prior to the construction of the project, with the final details for transportation, selected transport route etc taking into account any relevant constraints at that time.

4.7 Stormwater management

A Preliminary Stormwater Management Plan has been developed for the Project to assess the potential impacts of stormwater discharge on surface water quality and quantity arising from a range of activities associated with the construction, operation and decommissioning phases. The stormwater assessment has been prepared to demonstrate compliance with performance outcomes PO7 and PO8 of State code 23: Wind farm development (version 3.0).

The assessment identified potential impacts associated with the construction, operation and decommissioning phases including discharge of sediments and stormwater, restriction of fish passage, chemical spills/leaks from storage areas, discharge of untreated wastewater. The report provides a range of suitable mitigation measures including a Preliminary Stormwater Management Plan, a Conceptual Erosion and Sediment Control Plan (ESCP), dust suppression, and minimise disruption to waterways through detailed design. The report concluded that the risk posed to the surface water environment is considered low, provided mitigation measures are followed.

A Flood Assessment was undertaken to estimate the 0.5%, 1% and 20% AEP flood extent and levels for the Project Site. Results of the Flood Assessment indicated that there is no significant impact to the WTGs and negligible flooding impacts are expected for all ancillary wind farm infrastructure. Significant transverse and longitudinal drainage features, or floodways, will be required to manage the overland flow paths reporting to proposed access tracks.

The Preliminary Stormwater Management Plan is provided in Appendix R and the Flood Assessment is provided in Appendix S.

4.8 Character, scenic amenity and landscape values

A Landscape and Visual Impact Assessment (LVIA) has been prepared for the Project to assess the suitability for a wind farm development within the landscape surrounding the proposed Project Site, as well as considering the potential extent and degree of landscape impacts and visual effects on people living in and travelling through the surrounding landscape. The LVIA considered the requirements of Performance Outcome PO9 of State Code 23: Wind Farm State Code (version 3.0) and associated Planning Guideline (DSDILGP, 2022). As the Site is not located in an area of high scenic amenity value as identified in a local government planning scheme, PO9 does not directly apply to the Site. Therefore, the LVIA has been prepared in accordance with the precautionary principle and has been undertaken to accompany the Planning Report as supplementary information only. The LVIA has considered the relevance of policies in the relevant local government planning scheme (South Burnett Regional Planning Scheme 2017) to the assessment of landscape and visual values.

Five (5) Landscape Character Types (LCTs) were identified within the Project Site with associated Landscape Character Areas (LCAs). The Project Footprint is located within LCT A: Gently Undulating Foothill Plains and Valleys (LCA A1: Ironpot – Chahpingah). Based on the landscape impact assessment for the identified LCTs, the following impacts are anticipated:

- Direct Moderate, Not Significant impact on LCT A: Gently Undulating Foothill Plains and Valleys (LCA A1: Ironpot - Chahpingah).
- Indirect Minor to Moderate, Not Significant impact on LCT C: Lowland Native Forest (LCA C1: Diamondy Forest and LCA C2: Dangore Forest)
- Indirect Minor to Moderate, Not Significant impact on LCT D: Forested Volcanic Uplands (LCA D1: Bunya Mountains).
- Indirect Minor, Not Significant impact on LCT B: Rolling Hills and Ridges with Open Forest (LCA B1: Boyneside Diamondy), LCT C: Lowland Native Forest (LCA C3: Tarong Forest) and LCT E: Settled Red Soil Plains (LCA E1: Kingaroy and Kumbia Plains)
- Indirect Minor to Negligible, Not Significant impact on LCT A: Gently Undulating Foothill Plains and Valleys (LCA A2: Gordonbrook, LCA A3: Cooranga – Jandowae and LCA A4: Wengenville).

As part of the visual impact assessment, 14 viewpoints of identified receptors were nominated within 23 km of the nearest turbine and the following visual impacts are anticipated:

- Moderate to Major, Significant, impact on rural residents, residents and visitors in Kumbia or travelling along the Bunya Highway or Bunya Mountains Road
- Moderate, Not Significant, impact on rural residents and workers, visitors to the Ironpot Farmers Hall as well as motorists on Kingaroy Burrandowan Road and Ironpot Road
- Minor to Moderate, Not Significant, impact on visitors to the Mt Wooroolin Lookout, some rural residents and motorists on Niagara Road, Kingaroy Burrandowan Road and Freshwaters Road
- Minor, Not Significant, impact on visitors to Gordonbrook Dam
- No impact, Not Significant, impact on visitors hiking the Mt Kiangarow track.

The LVIA considers a number of factors to reduce and manage the impact of the project on the landscape, views and visual amenity. Due to the size of the proposed turbines and the open views to the project site, it is not possible to entirely screen or hide the turbines and associated infrastructure. However, the proposed measures could be implemented to assist in mitigating visual impacts:

- Facilities are designed to minimise impact on the current land use, including minimising land take / loss of productive rural land.
- Facilities including micro-siting of turbines and electricity poles/transmission lines have been designed / located to minimise tree and other vegetation removal where practicable.
- A light grey or white semi-matt/low reflectivity finish on the turbine towers, nacelles and blades will be used to avoid potential visual impacts from blade glint caused by reflection of the sun.
- After-dark construction lighting will be designed to minimise effects on sensitive land use receptors.
- The natural line of the landscape will be used wherever practicable to reduce visibility and assist integration of the Project infrastructure.
- As required, the Proponent will consult with affected sensitive land use receptors within 5 km of the closest turbine, to discuss individual mitigations that may be adopted for relevant sensitive land uses.

In summary, the assessment concluded that the Tarong West Wind Farm results in no significant impacts on the landscape character. For reference, the LVIA report is provided in Appendix T.

4.9 Separation distances

In accordance with performance outcome PO10 of State code 23: Wind farm development (version 3.0), wind turbines are required to be adequately separated from existing or approved sensitive land uses on non-host lots.

All wind turbines are setback at least 1,500 m from existing or approved sensitive land uses on non-host lots as shown in **Figure 7**.

4.10 Acoustic amenity

A Noise Impact Assessment has been prepared for the Project to assess the potential noise impacts on sensitive land uses. The assessment was undertaken in accordance with the requirements of the State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022). Specifically, performance outcomes PO11 and PO12 establishes acoustic criteria to be achieved by the wind farm at existing or approved sensitive land uses on host lots and non-host lots as follows:

- For host lots, noise from the wind farm must not exceed 45 dB(A) or the background noise level plus 5 dB(A), whichever is greater, during the night period (10pm to 6am).
- For non-host lots, noise from the wind farm must not exceed 35 dB(A) or the background noise level plus 5 dB(A), whichever is greater, during the night period; and 37 dB(A) or the background noise level plus 5 dB(A), whichever is greater, during the day period (6am to 10pm).

As part of the assessment, background noise monitoring has been conducted in the vicinity of the Project in accordance with State code 23: Wind farm development (Version 3.0) and State Code 23: Wind farm development – Planning guidelines (February 2022). The background noise monitoring was conducted at seven sensitive land uses (dwellings), in order to:

- determine the background noise levels (LA90, 10min) which describe the ambient noise of the area surrounding the wind farm during the day and night period; and,
- correlate the measured noise levels with wind speed to determine the relevant noise criteria at the selected representative noise monitoring locations.

In accordance with State Code 23, data have been excluded where they are considered to be adversely affected by weather or are outside the operating wind speeds of cut-in to the approximate rated power for a representative wind turbine. The data have been correlated to wind speeds measured at the subject site at a height of 166m, representing the hub height of the representative turbine. The measured background noise levels were used to determine windfarm operational noise criteria for all relevant receptors for integer hub heigh wind speeds from cut-in (2m/s) to approximate rated power.

The noise from the proposed Wind Farm, consisting of 97 turbines with a tip height of up to 249m, has been predicted for all surrounding sensitive land use receptors in the vicinity of the Wind Farm. The predictions have been conducted for the Vestas V166 4.5MW wind turbine generator having a nominal hub height of 166m for the candidate turbine. The predictions have been made using the ISO 9613-2 noise propagation model and the inputs recommended by the May 2013 UK IOA Good Practice Guide and State Code 23.

The predicted noise levels were compared with the relevant operational noise criteria derived in accordance with State Code 23. Based on the comparison, the noise from the Wind Farm is predicted to satisfy the code assessable noise requirements of State Code 23 for all host-lots and non-host lots.

Although excluded by State Code 23, the noise from the Wind Farm substations and battery energy storage system has been predicted to be more than 10 dB(A) below the WTG criteria and therefore is not expected to cause an adverse impact at the receptors.

Based on the results of the noise predictions, the noise emissions from the Project are expected to comply with performance outcomes PO11 and PO12 of State code 23: Wind farm development (version 3.0).

The full Noise Impact Assessment report is provided in Appendix U. The Background Noise Monitoring report is provided in Appendix V.

5.0 Legislative requirements

5.1 Type of development

Under schedule 2 of the Planning Act, the Project is defined as a 'material change of use' and 'operational work', being:

- **Material change of use,** of premises, means, the start of a new use of the premises.
  - Project relevance: construction and operation of a new wind farm.
- **Operational work** means work, other than building work or plumbing or drainage work, in, on, over or under premises that materially affects premises or the use of premises.
  - Project relevance: clearing of vegetation to accommodate wind turbines and ancillary infrastructure.

5.2 Category of assessment

5.2.1 Material change of use for a wind farm

As per schedule 24 of the Planning Regulation, a 'wind farm'-

a. means the use of premises for generating electricity by wind force, other than electricity that is to be used mainly on the premises for a domestic or rural use; and

b. includes the use of premises for any of the following, if the use relates, or is ancillary, to the use stated in paragraph (a)—

i. a wind turbine, wind monitoring tower or anemometer;

ii. a building or structure, including, for example, a site office or temporary workers' accommodation;

iii. a storage area or maintenance facility, including, for example, a lay down area;

iv. infrastructure or works, including, for example, site access, foundations, electrical works, substation or landscaping.

In accordance with the above definition of a wind farm, the Project will comprise of wind turbines and ancillary infrastructure (including a battery energy storage facility) as described in section 0.

As per schedule 10, part 21, division 2, table 1, column 2 of the Planning Regulation, a material change of use of premises for a wind farm is code assessable or impact assessable depending on the proximity of wind turbines to sensitive land uses, see Table 9.

Table 9 Wind farm category of assessment

Category of assessment	Criteria
Code assessment	a. all wind turbines for the wind farm are at least 1,500 m from a sensitive land use on a non-host lot; or b. 1 or more wind turbines for the wind farm are less than 1,500 m from a sensitive land use on a non-host lot and the owner of the non-host lot has, by deed, agreed to the turbines being less than 1,500 m from the sensitive land use *Note for paragraph (b)—* *See the Property Law Act 1974, section 45 for the formal requirements for deeds executed by individuals.*
Impact assessment	If not complying with criteria for code assessment

All wind turbines for the wind farm are at least 1,500 m from any existing or approved sensitive land use on a non-host lot (as demonstrated in **Figure 7**). Accordingly, the Project constitutes 'code assessable' development as defined under section 45(3) of the Planning Act. Operational work for clearing native vegetation.

In accordance with schedule 10, part 3, division 1, item 4 (1) of the Planning Regulation, operational work that is the clearing of native vegetation on prescribed land is prohibited development to the extent the work-

a. *Is not for a relevant purpose under the Vegetation Management Act 1999, section 22A; and*

b. *Is not exempt clearing work; and*

c. *Is not accepted development under schedule 7, Part 3, Section 12.*

A relevant purpose determination has been obtained for the Project and is provided in Appendix C.

Further, in accordance with schedule 10, part 3, division 3, table 1, column 2, operational work that is the clearing of native vegetation on prescribed land is assessable development, requiring code assessment, if the chief executive is the prescribed assessment manager.

Assessment manager

In accordance with part 4, division 2, section 21(2)(b)(i) of the Planning Regulation, the Chief Executive, being the Director General of the Department of Housing, Local Government, Planning and Public Works (DHLGPPW), as represented by SARA, is the assessment manager for a material change of use for a wind farm and other assessable development.

In accordance with Schedule 8, Table 4, Item 3(b), the Chief Executive, is also the assessment manager for operational work that is the clearing of native vegetation.

5.3 Assessment benchmarks

5.3.1 State Planning Policy

The SPP came into effect in July 2017 and defines the Queensland Government's policies about matters of state interest in land use planning and development. The SPP has effect throughout Queensland and applies, to the extent relevant, when:

1. Making or amending a local planning instrument
2. Making or amending a regional plan
3. Designating premises for infrastructure
4. Local government is assessing a development application, if its planning scheme has not yet appropriately integrated the relevant SPP state interest policies
5. An assessment manager or referral agency other than local government is assessing a development application.

The SPP provides that where the State government is the assessment manager or a referral agency (that is the chief executive of the department administering the Planning Act) for a development application, only Part C – Purpose and Guiding Principles and Part D – State Interest Statements apply.

Part C – Purpose and Guiding Principles provides principles that underpin the development assessment provisions outlined in the Planning Act and other statutory instruments, including the SPP, to achieve a planning scheme that is:

- Outcome focused
- Integrated
- Efficient
- Positive

- Accountable.

The Project is not considered to impact on Part C.

Part D – State Interest Statements provides high level policy statements for the 17 state interests detailed in the SPP. The relevant state interest statements are addressed in Table 10 below with a response on how the Project addresses these statements.

Mapping contained in the SPP Interactive Mapping System (IMS) supports the identification of State interest policies and assessment benchmarks relevant within the SPP. The SPP IMS State Interests that are applicable over the Study Area are listed below.

Table 10 State interest statements

State interest statement	Response
Development and construction Employment needs, economic growth, and a strong development and construction sector are supported by facilitating a range of residential, commercial, retail, industrial and mixed use development opportunities.	The Project will be an employment generator and major contributor to economic growth. The Project will support up to 440 FTE jobs, including 170 direct jobs and 270 indirect FTE jobs during the construction phase and will facilitate up to 15 direct and indirect FTE jobs during its operational phase.
Biodiversity Matters of environmental significance are valued and protected, and the health and resilience of biodiversity is maintained or enhanced to support ecological processes.	All matters of Commonwealth, State and Local environmental significance have been thoroughly assessed. All flora and fauna technical assessments are provided in the Ecological Assessment Report in Appendix K. Where there is the potential for significant impacts these have been avoided through the design of the Project. Where impacts cannot be avoided they will be suitable minimised, mitigated and if required offset.
Cultural heritage The cultural heritage significance of heritage places and heritage areas, including places of Aboriginal and Torres Strait Islander cultural heritage, is conserved for the benefit of the community and future generations	Traditional Owners have been consulted with from the early design phase of the Project to ensure that areas of cultural heritage significance are protected and conserved for the benefits of the community and future generations.
Water quality The environmental values and quality of Queensland waters are protected and enhanced.	During the construction and operation of the Project, appropriate environmental management plans, control measures (e.g., erosion and sediment control silt curtains) and water quality monitoring processes will be implemented to protect the environmental values and quality of Queensland waters.
Natural hazards, risk and resilience The risks associated with natural hazards, including the projected impacts of climate change, are avoided or mitigated to protect people and property and enhance the community's resilience to natural hazards.	Natural hazards such as flooding, and bushfire have been accounted for as part of the design process to ensure that impacts to the wind farm are avoided and mitigated where required.
Energy and water supply The timely, safe, affordable and reliable provision and operation of electricity and water supply infrastructure is supported and renewable energy development is enabled.	The Project does not impact on any major electricity or water supply infrastructure locations and corridors. The Project is providing a source of renewable energy in an appropriate location and therefore

State interest statement	Response
	supports the energy and water supply state interest.

5.3.2 Regional plan

The Wide Bay Burnett Regional Plan 2023 (Regional Plan) is the applicable regional plan for the Project Site. The Regional Plan encompasses the South Burnett Regional Council as well as the following local government areas:

- Bundaberg Regional Council
- Cherbourg Aboriginal Shire Council
- Fraser Coast Regional Council
- Gympie Regional Council
- North Burnett Regional Council.

The Regional Plan provides region specific policies to guide land use planning and development outcomes for the Wide Bay Burnett region. This includes a policy where alternative energy supplies, including renewable energy, are supported and a policy where improved public access to renewable energy options and low emission technology is increased. Table 11 demonstrates how the Project is consistent with the Regional Plan's vision.

Table 11 Project relevance to Regional Plan vision

Vision	Project relevance
Throughout the life of the plan, Australia will continue to experience the global energy shift from fossil-based systems of energy production and consumption to renewable energy sources and storage systems. This will see greater adoption of electric transportation infrastructure, fuel cell technologies and energy storage, coupled with greater usage of technologies to improve energy efficiency. WBB is in a very strong position to capitalise on this energy transformation. Already set up with large scale renewable energy generation, transmission and storage infrastructure, the region has the potential to boost its role as a net exporter and attract new energy-driven industries. The potential implications for existing freight and logistics structures must be carefully monitored, as early adaptors will be better positioned to adapt to and capitalise on these changes.	The Project will capitalise on the global shift from fossil-based systems to renewable energy sources, by establishing a new wind farm project. The addition of a new renewable energy generator further diversifies the natural resources and agriculture focused regional economy. RES has closely consulted with key stakeholders and the community to effectively communicate the Project scope, benefits and how potential impacts to the community will be mitigated.

5.3.3 State development assessment provisions

The SDAP sets out the matters of interest to the State for development assessment, where the Chief Executive administering the Planning Act is responsible for assessing development applications. SDAP is prescribed in the Planning Regulation and contains the matters the chief executive should have regard to when assessing a development application.

The Project has been assessed against the following SDAP version 3.0:

- State code 16: Native vegetation clearing

- State code 23: Wind farm development.

Consideration has been given to the State code 16 Guidance Material (February 2022) and State code 23 Planning Guideline (February 2022). An assessment against State code 16 and 23 is provided in Appendix X.

5.3.4 Local planning schemes

In accordance with schedule 6, part 2, section 7 of the Planning Regulation a material change of use for a wind farm is development that a local categorising instrument (e.g., South Burnett Regional Council Planning Scheme 2017) is prohibited from stating as assessable development.

5.4 Other approvals and obligations

Other approvals that may be required for the Project are detailed below. The requirement for these approvals will be tracked by RES to ensure compliance with the relevant pieces of legislation over the future phase of the Project.

5.4.1 Commonwealth

5.4.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water (DCCEEW). The EPBC Act establishes a process for environmental assessment and approval of proposed actions that have, will have or are likely to have a significant impact on Matters of National Environmental Significance or on Commonwealth land. Actions that adversely affect these matters may be deemed to be a 'controlled action' under the EPBC Act.

Under the EPBC Act, if the Minister determines that an action is a 'controlled action' which would have or is likely to have a significant impact on a MNES or Commonwealth land, then the action may not be undertaken without prior approval of the Minister.

A pre-lodgement meeting was held with the DCCEEW on 4 July 2023, with the Project being referred under the EPBC Act on 6 September 2023 (EPBC 2023/09643).

On 4 December 2023, pursuant to section 75 and 97 of the EPBC Act, the Decision was issued by DCCEEW where it was determined that the Project was considered a 'controlled action', and that the Project requires assessment and approval under the EPBC Act before it can proceed.

RES and AECOM are in communication with DCCEEW and are progressing to the next stages of the referral and approval process.

5.4.2 State

5.4.2.1 Planning Act 2016

Other approvals that may be required for the Project in accordance with schedule 10 of the Planning Regulation include:

- Development permit for operational work for waterway barrier works (schedule 10, part 6, division 4, subdivision 1, section 12) for the establishment of any structures that limit fish movement along the mapped Queensland waterways for waterway barrier works waterways over the site (i.e. bed level crossings, culverts, silt curtains), unless accepted development requirements apply.
- Development permit for operational work that involves taking or interfering with water (schedule 10, part 19, division 1, subdivision 1, section 29) (i.e. pumps, diverting water).

Applications to obtain these secondary approvals (if required) will be lodged separately by RES if identified to be required

5.4.2.2 Water Act 2000

Riverine protection permits may be required under the *Water Act 2000* prior to works to excavate; place fill; or destroy native vegetation in any watercourse, lake or spring, unless exemption requirements are met.

5.4.2.3 Transport Infrastructure Act 1994

Access approvals and/or licences are also required and will be sought at a later stage. These approvals may include:

- Sections 33 and 62 approval under the *Transport Infrastructure Act 1994*.

5.4.2.4 Environmental Offsets Act 2014

The main purpose of the *Environmental Offsets Act 2014* (Offsets Act) is to counterbalance the significant residual impacts of particular activities on prescribed environmental matters through the use of environmental offsets.

An environmental offset may be required as a condition of approval where, following consideration of avoidance and mitigation measures, if the activity is likely to result in a significant residual impact on prescribed environmental matters. Prescribed environmental matters include:

- Matters of National Environmental Significance (MNES)
- Matters of State Environmental Significance (MSES)
- Matters of Local Environmental Significance (MLES).

Once the administering authority has decided that a prescribed activity is required to provide an offset, the offset is required to be delivered in accordance with the Offsets Act, *Environmental Offsets Regulation 2014* and the Queensland Environmental Offsets Policy.

5.4.3 Local

5.4.3.1 South Burnett Regional Council Planning Scheme 2017

Despite the Planning Regulation exempting the wind farm from being assessable development under the South Burnett Regional Council Planning Scheme 2017 (Planning scheme), secondary approvals may be required. These secondary approvals may include:

- Development permit for reconfiguring a lot (for the Purpose of a Lease) for the establishment of a leases for more than 10 years
- Development permit for a material change of use (high Impact Industry) for the establishment of a concrete batching plant(s)
- Development permit for a material change of use (extractive industry) for the establishment of a quarry
- Development permit for operational works (earthworks) for filling and excavation over the site.

6.0 Conclusion

This Planning Report has been prepared by AECOM, on behalf of RES, in support of a development application seeking a Development Permit for a Material Change of Use (Wind Farm) and a Development Permit for Operational works (Clearing Native Vegetation) under the Planning Act for the Tarong West Wind Farm.

The proposed wind farm use and associated ancillary infrastructure is planned over 17 freehold lots comprising the Planning Corridor, a 1,952.96 ha subset which contains a Clearing Footprint (1,062.14 ha) for the proposed wind turbines, access tracks, underground cables, overhead lines and other associated infrastructure.

The Project complies with the relevant assessment benchmarks in State code 16: Native vegetation clearing, State code 23: Wind farm development (version 3.0) and State code 23: Wind Farm development - Planning Guidelines (February 2022), and therefore should be approved on the following grounds:

- The Project has been refined on a number of occasions through an iterative process and has been influenced by a combination of factors including availability of wind resource, social and environmental considerations, proximity to existing electricity transmission network and constructability.
- The wind farm will utilise turbines to generate clean and renewable electricity, contributing to the achievement of the Queensland Renewable Energy Target (QRET).
- Support agriculture by improving land accessibility and providing diversified revenue to farms involved in the Project as host landholders.
- The wind farm will provide economic stimulus and social benefit to the region through the creation of up to 170 direct jobs and 270 indirect FTE jobs during the construction phase, up to 47 direct and indirect FTE jobs during the operational phase and indirect benefits to local businesses, contractors and suppliers.
- The construction phase of the Project will be appropriately managed to ensure temporary negative impacts to the surrounding environment and community are minimised.
- Over the minimum 30-year project life, the land will continue to be used for rural purposes including grazing livestock and cropping.
- The Project will have limited impact on the land which can be readily restored for agricultural use post-operation.
- The specialised technical assessments have demonstrated that the Project is compliant with State code 16: Native vegetation clearing, State code 23:Wind farm development and will not cause significant detrimental impacts.
- The Project will positively contribute to the economy and community of the region and with a commitment to manage the wind farm in accordance with best practice requirements.

It is requested that the currency period of the Operational work aspect is for six years, aligned with the Material change of use.