



White Rock Wind Farm – Stage 2

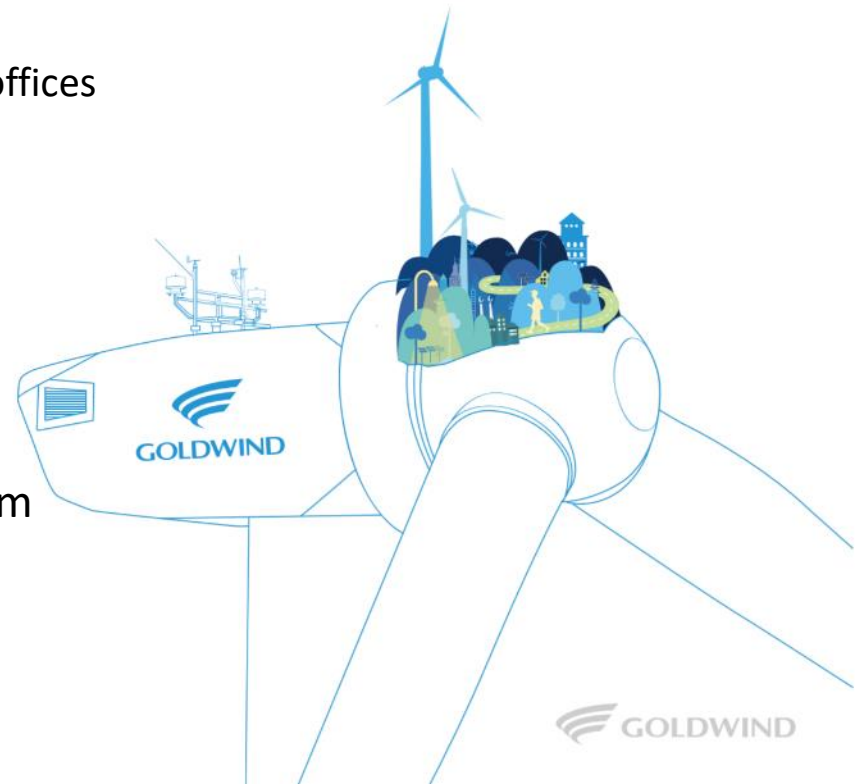
IPC Presentation on Modification 6
23 September 2019



Presentation Structure

- Goldwind and CECEP
- Project Background
- Modification 6
- Key Assessment Issues
- Community Consultation
- Conclusion
- Q&A

- A global leader in manufacturing wind turbines, across six continents
- 20 years of experience in the wind industry
- 28,500 turbines, 44+ GW installed worldwide
- Leader in permanent magnet drive wind turbines – no gear box
- Goldwind Australia (est. 2009):
 - Offices in Sydney, Melbourne as well as site offices
 - 250+ people employed
- Multiple projects in Australia:
 - Operating (570+ MW)
 - In construction (1,300+ MW)
 - In planning (1,000+ MW)
- Goldwind owns 25% of White Rock Wind Farm



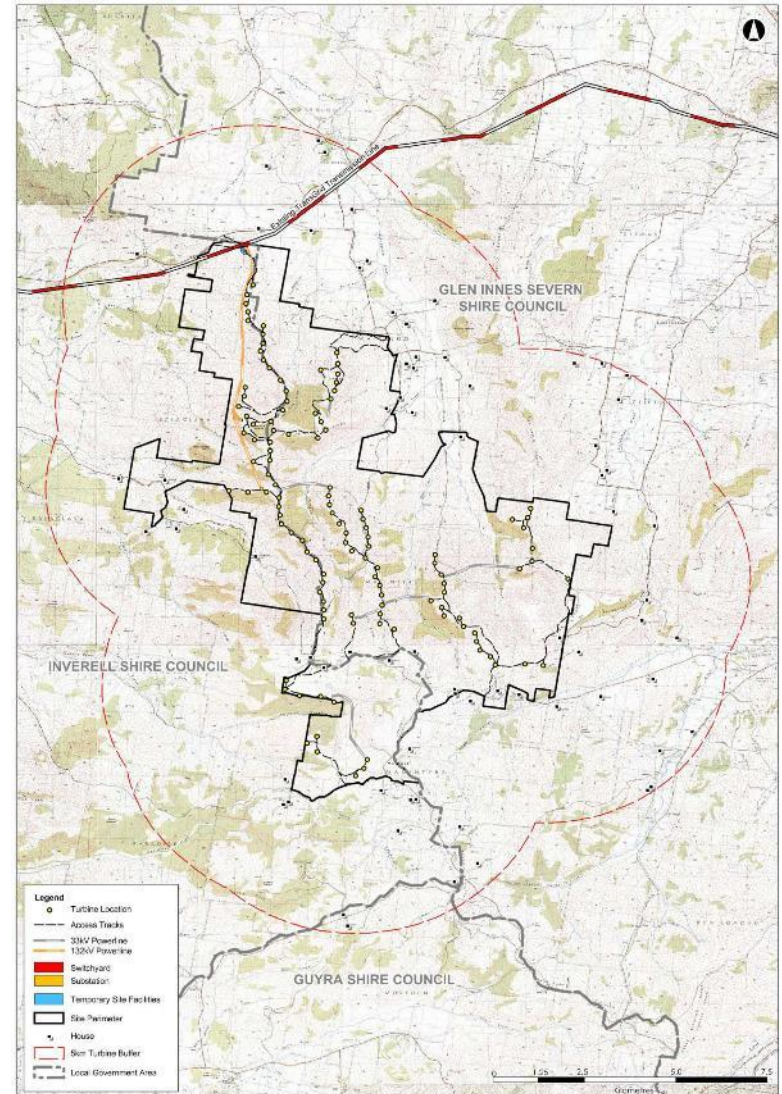
CECWPC

- CECWPC is majority owned by the China Energy Conservation and Environmental Protection Group (CECEP)
- CECEP is China's largest technology-based service group in the field of energy conservation, emission reduction and environmental protection.
- CECWPC was founded in 2006 and listed in Shanghai Stock Exchange in 2014, specializing in development, investment, management, construction and operation & maintenance of wind power projects.
- The total capacity both installed and under construction in China has reached 1900 MW.
- CECWPC is 75% owner of White Rock Wind Farm



Project Background

- Initially developed by Epuron 2007-2014, acquired by Goldwind in 2015
- Development consent under Part 3A (MP10_0160, 2012):
 - 119 wind turbines (150m tip)
 - 132 kV grid connection
 - 17 host landowners
- Modifications to approval:
 1. [Withdrawn]
 2. Administrative (clearing, noise) (2015)
 3. Stage 1 detailed design, staging (2016)
 4. 330 kV connection, clearing (2017)
 5. Administrative (subdivision) (2017)
- Stage 1 (70 x 2.5 MW turbines) built
 - Construction 2016-2018
 - Operational from April 2018
- Modification 6 to allow Stage 2 (see next slide)
- Stage 2 construction commence late 2020



Modification 6

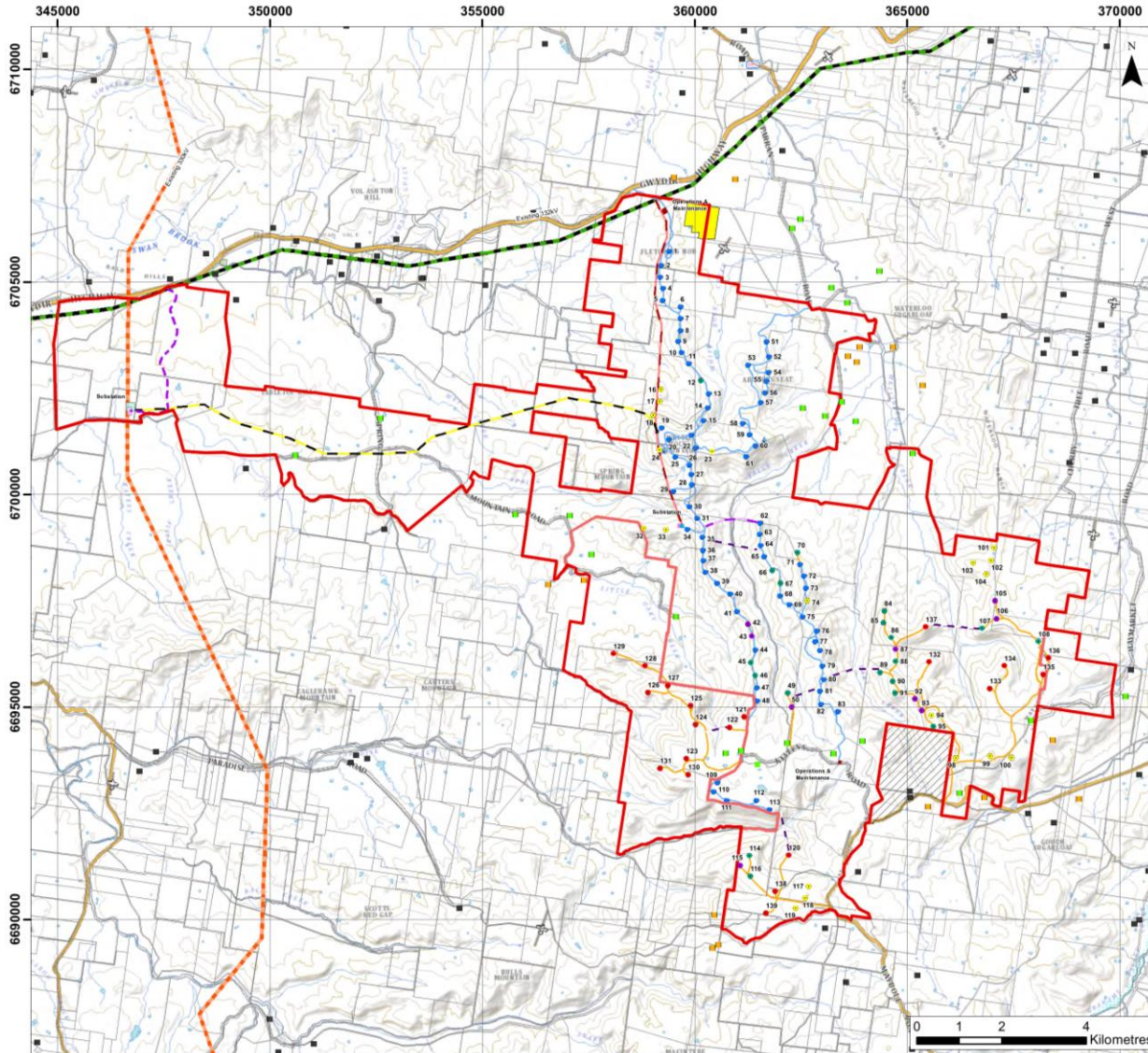
Mod 6 seeks to consent Stage 2 development of White Rock Wind Farm, specifically:

- A reduction in the number of Stage 2 turbines from 49 to up to 48 turbines;
- Increased turbine dimensions (200m tip height, up to 85m blades, up to 130m hub)
- Changes to the project area:
 - add four additional properties within the project area; and
 - to remove a property originally included in the project area in response to the landowner's request.
- Modifications to and additional access tracks, cabling and connection circuits for the new or relocated wind turbines;
- Expansion of the existing Stage 1 132 kV substation;
- Additional temporary construction and ancillary facilities;
- Additional hub height monitoring masts; and
- Variations to specific conditions of the Project Approval including increased clearing limits and project area.

Why Mod 6?

- Current consent based on a 10 year old design methodology
 - Original approval lacked detailed engineering design
 - Ecological constraints can no longer be met as a result
 - Advances in wind turbine technology allow greater generation for larger turbines
 - More suitable turbine locations to help reduce impacts
- Technology changes in wind turbine design
 - Wind turbine technology has advanced considerably over 10 years
 - Modern wind turbine designs increase output and offer better economics
 - Turbines with taller hub heights and longer blades more cost-effective
- Updated assessment criteria
 - More detailed assessment of ecological impacts
 - Planning considerations now require more detailed project designs
 - Greater restrictions of placement of turbines for noise and visual impact
- Restructuring of wind turbine layout for Stage 2
 - Relocates turbines to more appropriate locations
 - Seeks to minimise impacts whilst increasing turbine dimensions

WRWF Stage 2 Project Map



PROJECT
White Rock Wind Farm

TITLE
Site Layout Stage 1 & 2

LEGEND

- White Rock Wind Farm Boundary (MOD6)
- White Rock Wind Farm Boundary
- Withdrawn Land
- White Rock Solar Project Area
- Cadastral Boundary
- Transgrid 132kV Power Line
- Transgrid 330kV Power Line
- Residence**
- Associated Landowner
- Associated Neighbour
- Non-Associated
- MOD4 Infrastructure (330kV Connection)**
- Substation Access Track
- Approved Substation (132kV / 330kV)
- Alternate 132kV Overhead Line
- Stage 1 Infrastructure**
- Stage 1 Turbine (x70)
- Access Tracks
- Permanent Mat Mast
- Substation / Switchyard (33kV / 132kV)
- 132kV Overhead Line
- 33kV Overhead Line
- Operation & Maintenance Facility
- Approved Turbine Site (Not Stage 1 or 2)
- Access Tracks
- Alternate Access Track
- Stage 2 Infrastructure**
- Approved Stage 2 Turbine, No Change
- Approved Stage 2 Turbine, Minor Change
- Relocated Stage 2 Turbine
- 33kV Overhead Line
- Revised Substation (132kV / 330kV)
- Substation Expansion (33kV / 132kV)

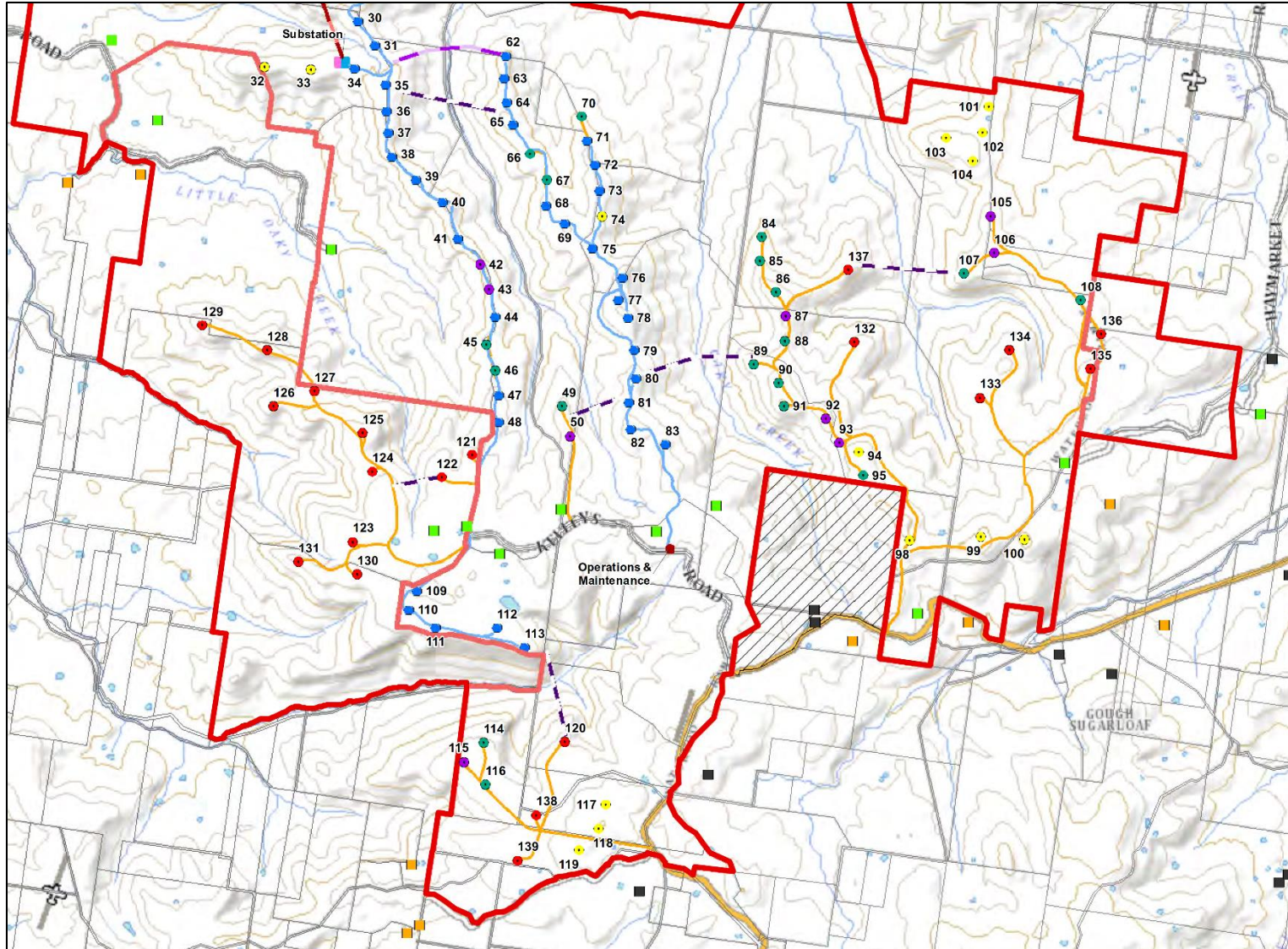
LOCATION PLAN

WHITE ROCK
Wind Farm
White Rock Wind Farm Pty Ltd

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PROJECTION	GDA94 MGA55	SCALE	@A3: 1:90,000	CHECKED	L.Mackay
STATUS	Final	PRODUCED	C.McAvlin	APPROVED	A.Madlocks
DRAWING No.	WRWF_MOD6_001_3A_2C			REV	02C

Project Map Detail



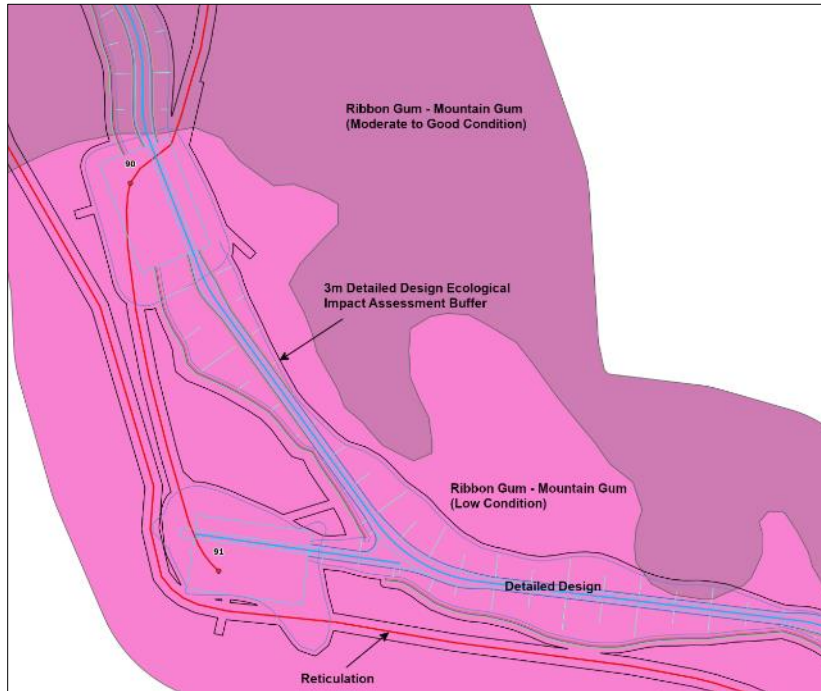
Key Issues

- Ecology
 - Updated flora and fauna assessment in Stage 2 areas
 - EPBC Referral submitted, controlled action, being finalised
- Offsets
 - Additional offset requirements
- Visual
 - Updated assessment of visual impact, relocation of turbines
- Noise
 - Updated modelling based on new turbine designs
- Heritage
 - Additional assessment within Stage 2 areas
- Aviation
 - Impact assessment for larger turbines, night lighting

Response to Submissions

- 61 submissions received
 - 2 from local councils;
 - 10 from government agencies;
 - 2 from the public as comments; and
 - 47 from the public with objections.
- Public submissions
 - 7 (14 %) from within 25 km of WRWF
 - 42 (86 %) greater than 25 km of WRWF
- Additional mitigation measures
 - Minimise noise impacts from wind turbines by turbine management
 - Improved management of steep slopes and batters
 - Further set back T95 from N180/N190 property boundary
 - Minimise aviation lighting impacts with ADLS, if required by CASA
 - Minimise flora and fauna impacts

Updated Impact Assessment



Mod 6 Ecology and Detailed Design

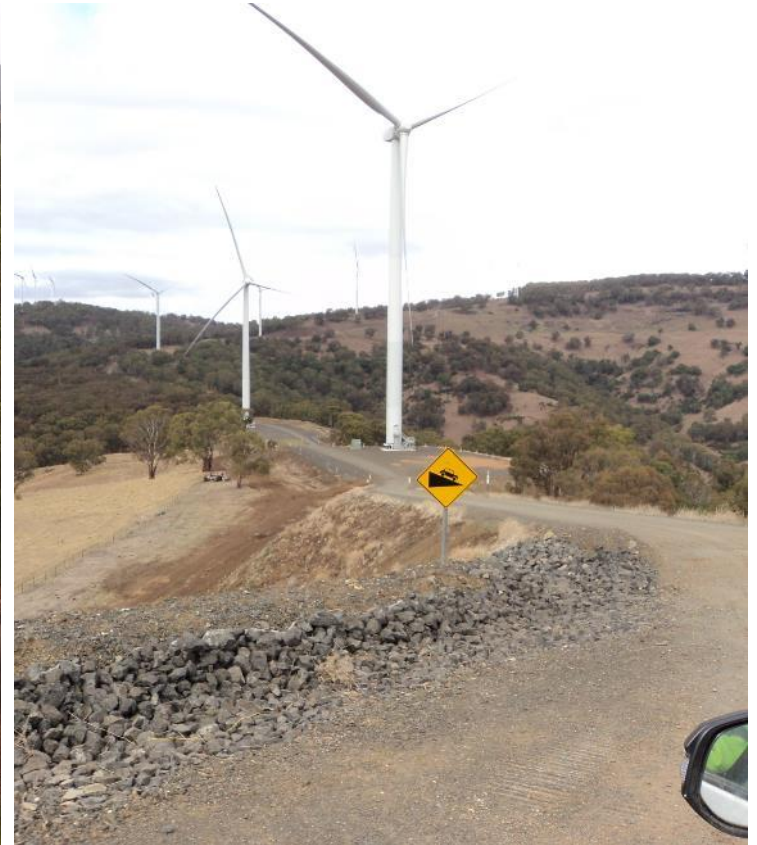


Original EA Ecology and Indicative Design

- Changes in assessment criteria produce a realistic consideration of impacts
- As a result, original clearance allowances do not reflect reality
- In order to construct Stage 2, increased allowances are required

Stage 1 Civil Works Example

WHITE ROCK
Wind Farm - Stage 2

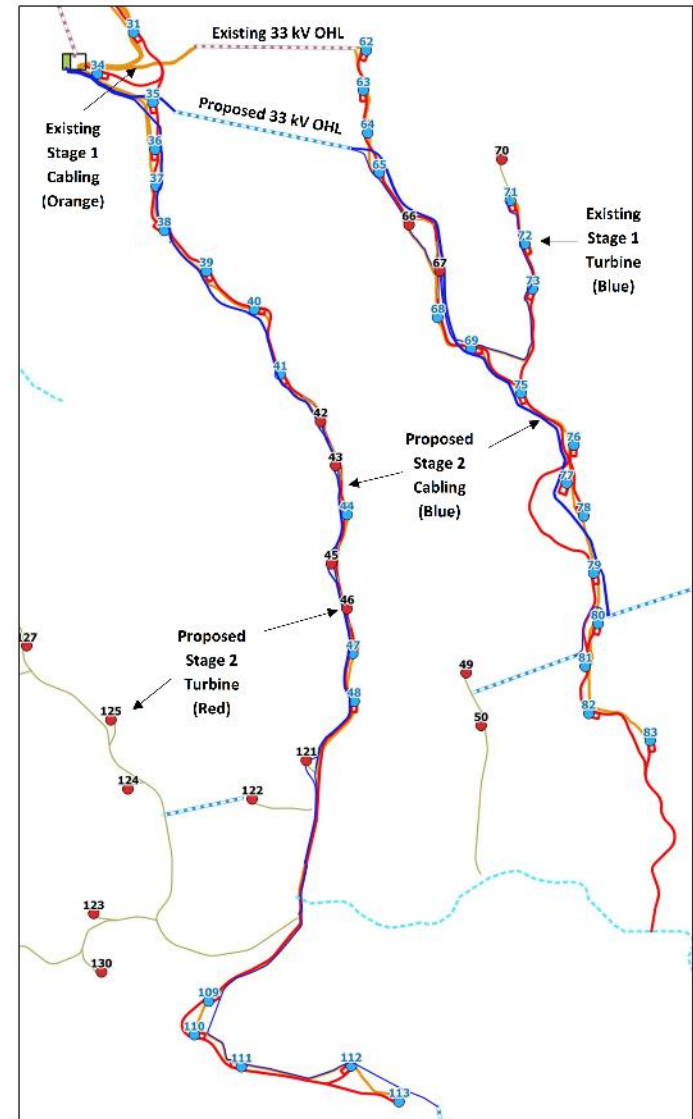


Ecological Impacts

- Increased impacts to EEC due to detailed design and changed assessment methodology:
 - Ribbon Gum – Mountain Gum increase from 28 ha to 93 ha
 - Box Gum Woodland included at 8.5 ha
 - Additional increase in Ribbon Gum required for Stage 2 cabling in Stage 1 footprint, est. 5-10 hectares
- Increased blade swept area assessed and covered under Bird and Bat Adaptive Management Plan requirements
- Biodiversity Offsets to be updated based on final construction design
 - ‘Tangari’ property includes Stage 1 and Stage 2 offsets
 - Additional offsets can be secured where necessary
- EPBC Referral submitted:
 - Determined a Controlled Action
 - Final stages of completing, pending final ecological assessments
- Ecological impacts are consistent with current requirements for mapping habitat and assessing detailed project design

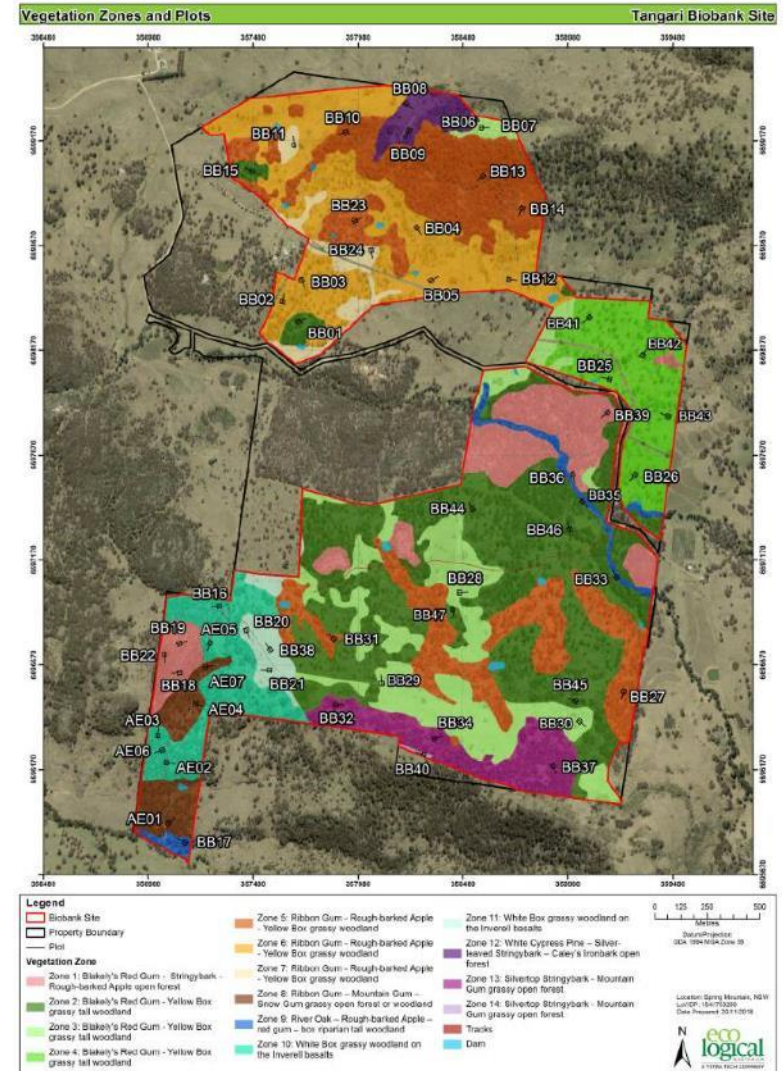
Stage 2 cabling in Stage 1 area

- Mod 6 proposes to install Stage 2 cabling through the existing Stage 1 footprint
- Detailed design has determined that additional vegetation impacts will result, due to:
 - Unfeasible to upgrade Stage 1 cables
 - Steep terrain hampers cabling in Stage 1 impact areas
 - Increased number of cables required for larger turbines
 - Better siting of cables to minimise impacts
- Additional assessment will be carried out spring 2019 to determine impacts
- Main priority will be to minimise impacts on vegetation, where feasible
- Will likely result in request to increase Ribbon Gum – Mountain Gum clearance limit
- Results available November 2019 to include in Modification 6, if possible



Biodiversity Offsets

- ‘Tangari’ property acquired by WRWFPL as part of planning condition requirements
- Property subsequently assessed as suitable for biodiversity offsets
- Biobanking Agreement entered into 2019 for combined Stage 1 and 2
- Provides all offsets for:
 - Stage 1 impacts
 - 330 kV overhead line (Mod 4)
 - Stage 2 impacts (as currently proposed)
- If additional offsets required, either
 - Increase offset area on ‘Tangari’
 - Seek additional offset area

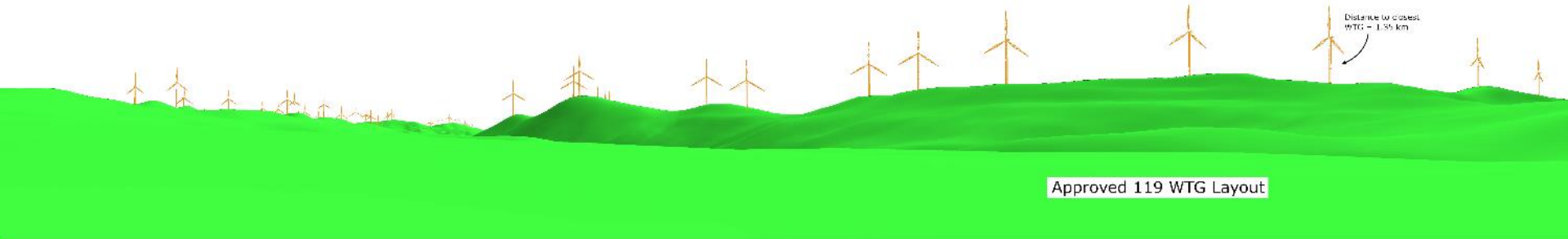


Visual Impact Assessment

- Mod 6 seeks to relocate wind turbines into less populated areas, reducing visual impacts
- Neighbour Agreements offered to neighbouring residences
- Landscape screening offered to all residences within 5 km of a turbine
 - 28 offers of landscaping sent out for Stage 1
 - 6 residences took the offer, others signed Neighbour Agreements
- N180/N190/L220 residences:
 - Neighbour Agreements offered
 - L220 derelict house, turbines set back
 - N180/190 originally part of project, turbines removed or set back
 - Voluntary Acquisition as proposed is acceptable
- Aviation lighting
 - Low intensity lighting consistent with Sapphire Wind Farm proposed
 - Use of Aircraft Detection and Lighting System (ADLS) if required by CASA

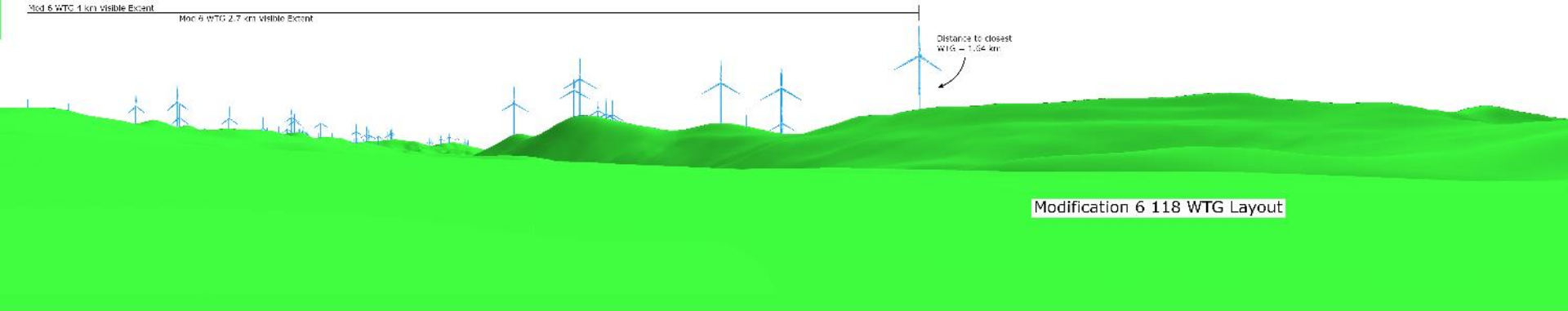
N180/190 'Mountview'

Approved WTG 4 km visible extent
Approved WTG 2.7 km visible extent



Approved 119 WTG Layout

Mod 6 WTG 4 km visible extent
Mod 6 WTG 2.7 km visible extent

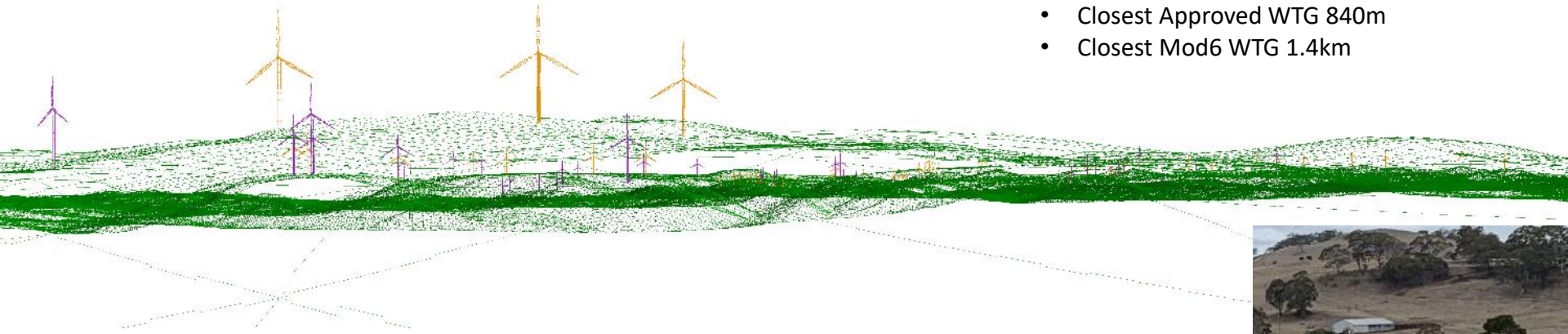


Modification 6 118 WTG Layout

- Stage 2 has reduced the spread of wind turbines
- Set back of T95 from project boundary
- Owner has never formally objected to project
- Owner lives in QLD, not primary residence



L220 'Wilaroo'



- Brown = Original EA, Purple = Mod 6
- Closest Approved WTG 840m
- Closest Mod6 WTG 1.4km

- Mod 6 has set back the original EA wind turbines
- Reduced visual impact, even with increased tip height
- Residence is derelict for many years, uninhabitable in current state
- Same owner as N180/190



Community Engagement

- WRWF has pro-actively engaged with local community:
 - Local Community Representative during construction
 - Glen Innes shop front (6,800 visits over 2 years, Stage 1)
 - Sponsorship budget during construction
 - Presentations, talks, site visits and open days
- WRWF Community Consultative Committee ongoing
- WRWF website, email, phone, newsletter ongoing
- Stage 2 will follow similar Community Engagement Plan
- Stage 2 has been regularly highlighted since Mod 6 was submitted in January 2018
- Neighbour Agreements:
 - 59 residences within 4 km of a wind turbine:
 - 35 are associated
 - 24 non-associated
 - Agreements in place:
 - Stage 1 = 8 active
 - Stage 2 = 6 pending construction



Community Benefits

- Capital investment of \$300 million using Australian construction firms and local ancillary businesses
- Up to 200 full-time construction jobs for 2 years
- Up to 5 additional full-time operational jobs
- Community Fund for the life of the project:
 - Voluntary contribution of \$2,500 per turbine
 - Projects within 50 km of WRWF
 - Stage 1 = \$175,000, CPI'd
 - Stage 2 = up to \$120,000 additional



WHITE ROCK
Wind Farm

**White Rock Wind Farm
2019 Community Fund Projects**

The following 18 projects were allocated funding from this years Community Fund of \$179,375.

PROJECTS <\$5,000	PROJECTS >\$5,000
Glen Innes and District Historical Society Inc.: Storage cabinets	Tingha Recreation Reserve Land Manager: Rainwater tanks
Northsports Glen Innes Inc.: Hockey starter kits	Glen Innes Redfins Swim Club: New grandstand
Glen Innes and District Tennis Association Inc.: Net post upgrade	Glen Innes High School P&C: Furniture for Senior Study
Emmaville Golf Club: Upgrade water system	Glen Innes Pottery Club: New kiln
Reachout Mobile Resource Unit Inc (Toy Library): Storage upgrade	Glen Innes Arts Council: Portable sound system
Glen Innes Junior AFL Club Inc.: Gazebos	Glen Innes Seventh Day Adventist Church: New fridge-freezer
Glen Innes Mineral and Gem Club Inc.: Upgrade equipment	Friends of the Glen Innes Severn Library: Waterproof sail
Rural Outreach and Support Services: Information workshops	Glen Innes Highlanders Football Club: Ground improvement
Safe in Our Town – Domestic Violence Committee: Marque and media	Glen Innes and District Football Association: Kitchen upgrade

White Rock Wind Farm would like to thank all applicants, successful or unsuccessful, for taking the time to submit their projects. Applications for next year's Community Fund will commence in April 2020.

Conclusion

- Mod 6 seeks to maximise the benefit of Stage 2 whilst minimising impacts on the environment and surrounding community
- WRWFPL commits to minimising vegetation impacts
- WRWPL has already committed to a Biodiversity Offset for both Stage 1 and Stage 2, regardless of the success of Mod 6
- WRWFPL has engaged with the local community to share the benefits of the project
- The project supports the Commonwealth's *Renewable Energy Target* and the NSW *Climate Change Policy Framework*
- WRWFPL agrees with the DPIE's recommendation that Mod 6 be approved with conditions