

Liverpool Range Wind Farm

Fact Sheet

October 2021

Summary of Proposed Modifications Fact Sheet

The Liverpool Range Wind Farm (the Project) constitutes an approximately \$2 billion investment and is located to the east of Coolah township within the Central West and Orana region, New South Wales. State Significant Development Consent SSD 6696 was granted by the State Government in March 2018 for the construction, operation and decommissioning of up to 267 wind turbines with a maximum blade tip height of 165 metres above ground level (AGL) and associated infrastructure (Approved Project).

In the years since the original Development Consent was determined, there have been significant advances in wind turbine technology, most notably the sector-wide shift towards longer blades and taller towers, allowing more energy to be produced with less turbines.

In addition, once Tilt Renewables acquired the Project in 2019 from Epuron Pty Ltd (who originally developed the Project) a detailed layout review and constructibility assessment was undertaken based on improved knowledge and greater experience with construction of wind farm projects.

It is now proposed to modify the Development Consent under section 4.55(2) of the Environment Planning and Assessment Act 1979 (EP&A Act). The proposed modifications to the Development Consent will enable the Project to take advantage of these technology changes and provide greater certainty with regards to the constructibility of the Project.

The Modification Application will be lodged with the Department of Planning, Industry and Environment (DPIE) for consideration by the Minister for Planning and Public Spaces. A summary of the proposed modifications is provided in the table below.

	Aspect / Component	Proposed Modification
	Turbine	Increase the maximum blade tip height to 250 m AGL (currently approved up to 165 m AGL)
	parameters	• Decrease the maximum number of turbines to 223 (currently approved up to 267)
	Site layout, ancillary infrastructure, and connection works	• Modify turbine locations and other permanent wind farm infrastructure such as on-site collector substations, access tracks, O&M facility, overhead power lines and underground cabling, and temporary infrastructure such as concrete batching plant, laydown areas, and construction compounds.
		 Include a Battery Energy Storage System (BESS) with an indicative capacity of approximately 150MW / 300 MWh, located either at the switchyard at Ulan or within the Wind Farm Site.
		 Include indicative locations for up to 14 x permanent Power Curve Validation (PCV) meteorological masts (referred to as permanent met masts) to the final hub height (currently approved for up to 10).
		 Include potential locations for up to 9 x temporary concrete batch plants operational at any given time (currently approved for up to 4).
		 Include potential locations for up to 9 x temporary construction compounds and material laydown areas (currently approved for up to 6).
		• Include potential locations for up to 3 Operations and Maintenance (O&M) facilities (currently approved for up to 1)
		 Include required upgrade works to TransGrid's transmission line infrastructure at the proposed point of connection at Ulan.
		• Include a preferred alternate transmission line alignment to avoid a portion of the Durridgere Conservation Area.
		• Update key project design metrics, such as infrastructure disturbance areas and access track and reticulation cabling lengths, to reflect the Modified Project layout.
		Update native vegetation and habitat clearance limits, where required to reflect the Modified Project layout.

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Aspect / Component	Proposed Modification			
	 Modify short sections of the Approved Over-size/over-mass (OSOM) Haulage Route to enable longer blades and larger wind farm components to be transported from the Port of Newcastle. 			
	Modify slightly the Approved Over Dimensional (OD) and Heavy Vehicle Access Route to:			
	i) remove the southern section of Rotherwood Road (no longer required).			
	ii) include the eastern portion of Gundare Road that is located within the Site Boundary to be used for Light and Heavy vehicles. The western portion of Gundare Road outside of the Site Boundary is not proposed to be used.			
Linula en vente	• Deletion of approved Site Access Point #9 off Vinegaroy Road as it is no longer required.			
and public road	Include 92 potential site access points from nearby public roads (currently approved for 28 site access points).			
upgrades	 Define the public road upgrades that are anticipated to be required, applicable road upgrade standards as agreed with the relevant Roads Authorities, include a mechanism to review the applicable road upgrade standards at highly constrained locations, and accurately estimate associated ground disturbance areas. 			
	 Include the potential for road upgrades to be delivered in a staged manner to reduce the overall construction period. Full completion of relevant road upgrades would occur prior to the delivery of large wind turbine components by OSOM vehicles. 			
	 Specify a maximum limit for native vegetation and habitat clearance required to construct required public road upgrades (currently there are none specified in Development Consent SSD 6696). 			
Site Boundary and Development Corridor	 Modify the Site Boundary and Development Corridor to reflect the modified layout and design of the Project 			
Development Consent Conditions	• Update existing conditions related to Aboriginal cultural heritage, biodiversity, noise, traffic and transport, and visual impact to reflect the Proposed Modifications, the Modified Project layout, and to incorporate key recommendations of the relevant technical assessments.			

Why have we prepared the Modification Application?

The proposed modifications to the Development Consent are required to enable the Project to take advantage of recent improvements in wind energy technology that enable significantly more renewable energy to be produced from fewer, larger wind turbines. The proposed modifications also reflect the outcomes of substantial design optimisation work and constructability assessments that has been carried out over the last 18 months to progress the Project towards construction.

The justification for the proposed modifications and the associated benefits can be summarised as follows:

- By using the more efficient turbine models the Project has the potential to generate more renewable electricity from a similar development footprint, ultimately resulting in a lower cost of energy from the Project with clear benefits to the end user and energy consumer.
- Optimised cabling and transmission line infrastructure minimises electrical losses and maximises the generation capacity and efficiency of the Project. Subsequent benefits of this include:
 - Minimisation of resource use and waste generation;
 - Reduced project cost and timelines; and
 - Reduced haulage requirements.
- The Project is strongly aligned with the NSW Government's energy policy and the Commonwealth Government's climate policies. The Project will provide 100% emissions-free renewable energy and contribute to NSW's transition away from its current reliance on carbon intensive fuels which release greenhouse gases that hasten and intensify climate change impacts.
- The Project will make a significant contribution to the shortfall in generation that will arise with the forecast retirement of Liddell Power Station in the near future and other coal-fired generators over the coming years.
- The Project will provide full time direct employment for around 800 staff during construction and around 47 full-time staff during its operational life providing increased employment opportunities.
- The Project will also result in a direct injection of approximately \$6-\$7 million per annum to the local community through payments to landholders, permanent staff and benefit sharing plan contributions providing better diversification of income and a drought proof and post retirement income for farmers and shared benefits.

What assessments does the Modification Application consider, and what did they find?

Detailed assessments of the potential impacts associated with the proposed modifications are being undertaken by a team of suitably qualified and experienced technical specialists. All assessments are nearing completion and will be included in the Modification Application.

The assessments focus on the potential change in impacts compared with the Approved Project. The assessments have also taken into consideration the relevant environmental issues and Statement of Commitments set out in the original development application documentation that was prepared in 2014 and 2017. The following table summarises the key changes to impacts, mitigation strategies and Development Consent conditions:

Specialist Assessment Type	Change in Impact	Changes in Mitigation Strategies	Changes to Development Consent
Visual Impact	Not considered to result in a magnitude of visual change that would significantly increase visual effects (and former visual impact ratings) associated with the Approved Project. The proposed increase in blade tip height results in a greater distance within which mitigation measures should be considered (increase from 4,000 m to 4,950 m).	Yes	Yes
Shadow Flicker and Blade Glint	No increased shadow flicker impacts at Non-associated residences and no impact of blade glint.	No	No
Noise	The Modified Project is expected to result in increased noise levels at several Non-associated residences, but all predicted noise levels comply with the applicable noise limits. Consistent with recent wind farm approvals, it is anticipated that DPIE will update the Development Consent to require compliance with the relevant noise guidelines, and remove the existing reference to specific noise limits at each non-associated residence.	No	Yes
Biodiversity (Vegetation)	Calculations of native vegetation and habitat clearing and comparison against the Approved Project are still being prepared. It is expected that there will be an increase in the extent of native vegetation and habitat clearing, mainly due to the significant design effort that considers constructibility, and the inclusion of public road upgrades. Mitigation measures are available to minimise potential impacts.	No	Yes
Biodiversity (Bird and Bat)	Due to the proposed increase in maximum blade tip height and potential for longer blades, several high-flying bird and bat species are likely to be placed at greater risk of blade strike than the risk associated with the Approved Project. Mitigation measures are available to minimise potential impacts.	No	No
Aboriginal Cultural Heritage Assessment	Additional Aboriginal cultural heritage values identified. However with the implementation of mitigation measures set out in the original cultural heritage assessments in 2014 and 2017 and the updated ACHA report, the Modified Project will result in similar impacts as the Approved Project.	No	Yes
Historic (European) Heritage	No additional heritage values identified. With the implementation of mitigation measures set out in the original cultural heritage assessments in 2014 and 2017, the Modified Project will result in similar impacts as the Approved Project.	No	No
Traffic and Transport	 The Modified Project will result in a 6% reduction in traffic movements during peak construction. All proposed site access points comply with Austroads standards. Increase the number of potential site access points from nearby public roads from 28 to 92, as follows: - 53 potential site access points provide access internal to the wind farm site (currently approved for 24). - 39 potential site access points provide access to the approximately 45 km long external transmission line between the wind farm site and the connection point at Ulan and associated upgrades to TransGrid infrastructure (currently approved for 4). Note: it is unlikely that all identified site access points will be required. Minor change to OSOM Haulage Route will result in OSOM vehicles travelling along 2-3 Local roads within Musswellbrook local government area to avoid low-clearance bridge at Denman. Road upgrade standards have been negotiated with relevant councils, and associated ground disturbance areas have been accurately estimated. Potential impacts can be avoided/minimised through the implementation of appropriate mitigation measures required by the 	No	Yes

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Specialist Assessment Type	Change in Impact	Changes in Mitigation Strategies	Changes to Development Consent
Electromagnetic Interference	Potential impacts to the signal quality of the Bureau of Meteorology's Namoi weather radar located approximately 80 kms to the north. Mitigation measures are available to rectify potential impacts. Potential impact to one nearby private Land Mobile communication link and further consultation with the licencee is required. Mitigation measures are available to rectify potential impacts.	Yes	No
Aviation	No infringement of any OLS or PANS OPS surfaces. Little to no impact upon local flying activities and unlikely to affect ATC surveillance systems. The Modified Project will infringe one Lowest Safe Altitude (LSALT) protection surface by 30 m. Mitigation measures are available to rectify potential impacts	Yes	No

The assessments prepared confirm that the proposed modification to the Development Consent will result in potential impacts that can be appropriately managed by the Statement of Commitments set out in the original development application and the existing and proposed revised conditions of the Development Consent.

Minor updates will be sought to the Development Consent to address the following potential impacts associated with the Modified Project:



ABORIGINAL CULTURAL HERITAGE: Inclusion of additional cultural heritage items that must be avoided, impacts minimised, or salvaged/translocated.



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BIODIVERSITY: Update the native vegetation clearance limits to account for the Modified Project layout and public road upgrades.

NOISE: Consistent with recent wind farm approvals, it is anticipated that DPIE will update the Development Consent to require compliance with the relevant noise guidelines, and to remove existing references to specific noise limits at relevant non-associated residences.



TRAFFIC AND TRANSPORT:

- Update the road upgrade standards agreed in consultation with the relevant councils.
- Update the site access points and public roads proposed to be used for construction and operation of the Modified Project.
- Removal of the condition that allows Site Access Point 9 from Vinegaroy Road to be used, as that site access point is no longer required by the Modified Project.



VISUAL IMPACT: Increase in the distance out to which visual impact mitigation measures are available to Non-associated residences from 4 km to 4,950 m (increase of 950 m) from the nearest proposed turbine.

 For more information, please visit the website below

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